"Step after step the ladder is ascended."—George Herbert, *Jacula Prudentum*.
"Agriculture is the most healthful, most useful, and most noble employment of man."—WASHINGTON.

THE TROPICAL AGRICULTURIST:

(ESTABLISHED 1881.)

A MONTHLY RECORD OF INFORMATION FOR PLANTERS

OF

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EDITED BY

J. FERGUSON,

of the "CEYLON OBSERVER," "CEYLON HANDBOOK AND DIRECTORY," *&c.*

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1900.

TO OUR READERS.

In closing the Nineteenth Volume of the "**Tropical Agriculturist,**" we would as usual direct attention to the large amount of useful information afforded and to the great variety of topics treated in the several numbers. From month to month, we have endeavoured to embody in these pages the latest results of practical experience and scientific teaching in all that concerns tropical agriculture ; and our ambition has been to make this periodical not only indispensable to the planter, but of service to business men and capitalists, never forgetting that agriculture trenches upon every department of human knowledge, besides being the basis of personal and communal wealth.

While directing our attention chiefly to the products prominently mentioned on our title-page, we have always taken care to notice minor industries likely to fit in with sub-tropical conditions ; and our readers have an ample guarantee in the index pages before them, that, in the future, no pains will be spared to bring together all available information both from the West and East, the same being examined in the light of the teachings of common sense as well as of prolonged tropical experience in this, the leading Crown and Planting Colony of the British Empire.

Special attention has, during the past year, been given to the introduction and extension of an industry in rubber-yielding trees (more especially in the planting of Para and Castilloa trees), and much literature on the subject will be found throughout our ages ; also on cacao in Central America and the West Indies as well as in Ceylon ; coffee nd allied products in Brazil, Mexico, Costa Rica, East Java, Nyassaland, British Central Africa ; Liberian coffee in Sumatra, Java, the Straits Settlements ; and to other new developments in coconuts and tobacco planting, &c., in the Malayan Peninsula, Sumatra and North Borneo, as well as in this Island.

The Tea-planting Industry has sprung into so much importance in India (South as well as North) and Ceylon, as also in Java, that a considerable amount of space is naturally given to this great staple ; and we think it will be admitted by impartial judges that the *Tropical Agriculturist* should be filed, for the convenience of planters, in every Tea Factory in this Island, in India and in Java.

A full and accurate Index affords the means of ready reference to every subject reated in this, the Nineteenth volume, which we now place in our subscribers' hands, in the ull confidence that it will be received with an amount of approval, at least equal to that which has been so kindly extended to its predecessors.

To show how fully other Products besides Tea are treated in this volume, we may mention the number of entries under several headings as follows:—Coffee (including Liberian) 42 ; Cacao 24 ; Indiarubber 55 ; Coconuts and other Palms 18 ; and Miscellaneous Products nearly 1,000. In the 19 Volumes, the references to Rubber, Cacao and Coffee number many thousands, as also to Coconuts and other Palms.

We are convinced that no more suitable or useful addition can be made to a Planting Company's Library or gift to a tropical planter or agriculturist, whether he be about to enter on his career, or with many years of experience behind him, than the nineteen volumes of our periodical which we have now made available. They are full of information bearing on every department and relating to nearly every product within the scope of sub-tropical industries.

In conclusion, we have to tender our thanks to readers and contributors, and our wish that all friends may continue to write instructively and to read with approval ; for then, indeed, must the "**Tropical Agriculturist**" continue to do well.

J. FERGUSON.

COLOMBO, CEYLON ; 5TH JULY, 1900

☞ **All Planters of New Products or Pioneers in new lands should not fail to order this periodical as their best instructor.—Every Tea Factory, Coffee or Cacao Store ought to have a file of the TROPICAL AGRICULTURIST, which contains a vast amount of information about Tea, and a Record of the Tea and other Produce Sales.**

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To Messrs. A. M. & J. FERGUSON,

"CEYLON OBSERVER" OFFICE,

COLOMBO, CEYLON.

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WHAT IS THOUGHT OF

THE "TROPICAL AGRICULTURIST."

A gentleman resident in the Central Province, who has as good opportunities of knowing what is of benefit to Planters as anyone we know, sent us the following explicit testimony to the value of the "*T.A.*":—

"Since its commencement, I have regularly seen and perused the *Tropical Agriculturist*. There can be but one opinion that its scope and object are highly important, and that it supplies a distinct desideratum, which it is to the interest of every estate proprietor, to have available in the bungalow for the use of his *locum tenens*, or superintendent. As a magazine it provides varied and instructive fresh literature at intervals; deprived, as most in Ceylon are, of easy access to libraries; and as years go by it will growingly become 'The Ceylon Encyclopædia' with reference to agricultural operations. Viewing estate property as practically a permanent investment to any proprictor, the trifling charge of R12 per annum—a rupee a month—is certainly of no account, provided the separate numbers are kept, and bound together yearly as a book of reference for the benefit of the manager and his successors. In that light, as the property of an estate to be handed over just as much as its office furniture, few proprietors would probably refuse to authorise its being taken and filed regularly (if the periodical was brought under their notice), more especially as on looking over the most recent volume one cannot fail to see how much valuable information on 'Tea' has been collated. In the belief that 'Tea' has restored prosperity to Ceylon, and that plantation property is a good investment for capitalists, such should not omit the office and connected equipment so advisable on all 'pucka' estates, a part of which should be the *Tropical Agriculturist*. I find I have gone on writing, but, as I am getting the numbers for the past year ready to be bound, the volume is before me."

THE VALUE OF THE "*T.A.*" TO CEYLON ESTATE OWNERS.—A planting correspondent wrote some time ago:—"I think proprietors should supply every tea estate with the *T.A.* The information in it with regard to everything in connection with tea &c. is invaluable: it would pay its value over and over again. Owners of estates should not leave it to hard-up superintendents to take it in."

A Correspondent writes:—"I venture to say the volumes of the *Tropical Agriculturist* will be at a premium a few years hence: it is a book which is bound to rise in value as time rolls on, and subscribers will probably, if they so choose, be able to sell at a handsome profit, besides having had the benefit of using the information in the meantime."

From a Proprietor:—"I wonder how many planters know what they lose in not subscribing to your wonderful publication? The cost is absolutely nothng, compared to the convenience of having in a bound book all that is interesting and necessary in the literature of their calling. Information culled from a thousand sources, price lists of all produce sold locally, and home advertisements not seen elsewhere and a hundred other things necessary for them to see and to know. The *T.A.* is, in fact, a convenient file of useful information daily arising and permanently preserved."

Sir W. T. Thistleton Dyer, F.R.S., F.L.S., C.M.G., of Kew Gardens:—"Sir Joseph Hooker and myself always look out for the successive numbers of the *T.A.* with eagerness, and I keep a file in my office for reference. It is impossible to speak too highly of the utility of such a publication and of the way it is managed."

Sir George King, late of the Calcutta Government Museum:—"I know your *Tropical Agriculturist* well, having carefully secured every number since the beginning. You have succeeded in making it a wonderfully useful magazine of information for planters."

Surgeon-Major Bidie, F.L.S., of the Government Central Museum, Madras:—I find the *Tropical Agriculturist* a most interesting and useful publication. It finds a place on the table of our Public Library and is much prized."

The TROPICAL AGRICULTURIST MONTHLY.

Vol. XVIII. COLOMBO, JULY 1st, 1899. No. 1.

TESTING CEYLON TIMBERS.

CEYLON timber logs have frequently been tested both practically and scientifically. Mr. Henry Byrne, when chief assistant to Major Skinner, we remember, published a series of tables with tests of a great variety of local timber trees in logs, scantlings, &c. But we suppose the most elaborate series of scientific tests is that which reaches us in the "Imperial Institute Journal" for May, being a report on the results of mechanical tests applied to a series of logs of timber received from the Ceylon Government (by Professor W. C. Unwin, F.R.S., Referee to the Scientific and Technical Department of the Imperial Institute. We read:—"The whole of the samples (22 in number) were in a dry and well-seasoned condition, but some of them had serious drying cracks or shakes. No. 8 sample (Mandora), and No. 20 (Halmilla) have a good elastic range. No. 13 is an exceptionally light timber and—as would be expected—of relatively low strength. On the other hand, No. 22 (Nedun) is a very heavy timber of relatively great strength. No. 16 (Chomunti) is rather heavier than No. 22, but its strength is not so great. No. 14 (Walukina) is a rather light timber of good strength. The following tabular statements give:—(1) The heaviness of the timbers; (2) Their resistance to shearing along the fibres; (3) The crushing strength; (4) The transverse strength; (5) The deflections observed in the bending tests; and (6) The co-efficient of elasticity from the bending tests." We give the tables below:—

REPORT ON THE RESULTS OF MECHANICAL TESTS APPLIED TO A SERIES OF LOGS OF TIMBER RECEIVED FROM THE CEYLON GOVERNMENT.

(By Professor W. C. Unwin, F.R.S., Referee to the Scientific and Technical Department of the Imperial Institute.)

Table I.—HEAVINESS.

No. of Specimen.	Name of Timber.	Locality.	Weight of Timber in pounds per cubic foot.	
1 (c)	Sapu ...	Ceylon	41·75	mean
	do ...	do	41·07	41·41
2 (c)	Panah Ka ...	do	55·06	54·86
	do ...	do	54 66	
3 (c)	Gurukina ...	do	63·02	62·62
	do ...	do	62·23	
4 (c)	Vuinauku ...	do	40·58	40·41
	do ...	do	40·24	
5 (c)	Satinwood ...	do	64·66	64·32
	do ...	do	63·98	
6 (c)	Milla ...	do	60·81	60·92
	do ...	do	61·03	
7	Hauthai ...	do		48·87
8	Mandora ...	do		59·70
9	Ubberiya ...	do		56·71
10	Jawenna ...	do		46·11
11	Dawata ...	do		47·33
12	Margosa ...	do		47·32
13	Lunumidella...	do		20·39
14	Walukina ...	do		32·41
15	Ranai ...	do		63·31
16	Chomunti ...	do		75·46
17	Suriya ...	do		50·33
18	Jak ...	do		43·37
19	Del ...	do		48·09
20	Halmilla ...	do		49·93
21	Suriya Mara...	do		57·01
22	Nedun ...	do		70·79

Table II.—RESISTANCE TO SHEARING ALONG THE FIBRES.

No. of Specimen.	Name.	Locality.	Area shared. Sq. in.	Shearing Pounds per sq. in.	Stress. Tons. per sq. in.
1 (f)	Sapu ...	Ceylon	4·010	753	0·3359
2 (f)	Panah Ka ...	do	3·960	745	0·3325
3 (f)	Gurukina ...	do	3·999	948	0·4231
4 (f)	Vuinauku ...	do	3·960	486	0·2170
5 (g)	Satinwood ...	do	3·999	1,903	0·8496
6 (g)	Milla ...	do	4·100	1,147	0·5116
6 (f)	do ...	do	4·240	880	0·3936
6 (h)	do ..	do	4·000	984	0·4392
7	Hauthai (1) ...	do	4·120	1,013·4	0·452
8	Mandora (2) ...	do	3·984	620·4	0·277
19	Ubberiya (1) ...	do	4·041	1,066·6	0·476
10	Jawenna (3) ...	do	4·036	1,083·7	0·484
11	Dawata (5) ...	do	3·880	1,075	0·480
12	Margosa (4) ...	do	3·835	1,326·0	0·592
13	Lunumidella (6)	do	3·901	478	0·213
14	Walukina (1) ...	do	4·096	336·9	0·150
15	Ranai (5) ...	do	3·821	925	0·413
16	Chomunti (5) ..	do	3·940	1,333	0·595
17	Suriya (1) ...	do	3·862	926 9	0·414
18	Jak (5) ...	do	3·881	672	0·300
29	Del (7) ...	do	3 744	1,236	0·551
20	Halmilla ...	do	4 028	830·3	0·371
21	Suriya Mara (7)	do	3·880	1,283	0·572
22	Nedun (5) ...	do	3·920	1,486	0·663

(1) Nearly plane fracture. (2) Rather ragged fracture. (3) Irregular fracture small knot. (4) Irregular fracture. (5) Fairly plane fracture. (6) Broke partly by tension. (7) Very irregular fracture.

TABLE III.—CRUSHING STRENGTH.

No. of Specimen.	Name.	Locality.	Dimensions in inches. Section.	Height.	Area of crushed section. sq. in.	Crushing Stress. Tons per sq. in.
1						
2 (c)	Sapu ...	.. Ceylon	3·049 by 3·057	8·130	9·320	1·570 (5)
3 (c)	Panah Ka ...	... do	3·175 by 3·159	8·075	10·020	2·768
4 (c)	Gurukina ..	.. do	3·061 by 3·034	8·085	9·285	2·408 (5)
4 (c)	Vuinanku ..	.. do	2·892 by 2·874	7·984	8·312	1·932
4 (d)	Do ..	.. do	2·891 by 2·892	8·057	8·360	1·942
5 (e)	Do ..	.. do	2·917 by 2·876	7·967	8·389	1·927
6 (c)	Satinwood ..	.. do	3·151 by 3·166	8·008	9·974	3·374
7 (c)	Milla ..	.. do	2·890 by 2 925	8·007	8·453	3·118
8	Hauthai (2) ..	.. do	3·100 by 2·672	8·146	8·283	2·778
9	Mandora (1) ..	.. do	3·194 by 3·068	8·139	9·799	2·619
1	Ubberiya (1) ..	.. do	3·033 by 3·026	8·140	9·178	3·433
10	Jawenna (3) ..	.. do	3·043 by 3·034	8·152	9·232	3·454
11	Dawata (1) ..	.. do	2·879 by 2·862	8·034	8·240	2·670
12	Margosa (1) ..	... do	3.086 by 2·497	8·171	7·706	2·9-7
13	Lunumidella (1)	... do	2·872 by 2·850	8·037	8·166	1·358
14	Walukina (4)	... do	2·910 by 2·819	8·026	8·203	2·743
15	Ranai (2) ...	... do	2·863 by 2·888	8·015	8·268	2·605
16	Chomunti (1)	.. do	2·913 by 2·867	7·974	8·351	2·938
17	Suriya (4) ...	... do	2·976 by 2·833	8·036	8·430	2·818
18	Jak (2) ...	... do	2·897 by 2·873	7·910	8·323	3·400
29	Del (1) ...	... do	2·896 by 2·869	7·925	8·308	2·932
20	Halmilla ...	... do	3·012 by 2·996	8·146	9·024	3·442
21	Suriya Mara (1)	... do	2·881 by 2·851	8·012	8·214	4·184
22	Nedun (1) ...	... do	2.884 by 2·851	7·933	8·222	3·919

(1) Gave way by shearing.
(2) Gave way by shearing and splitting.
(3) Split before testing. Gave way by shearing.
(4) Split along the grain.
(5) Knot in specimen.

TABLE IV.—TRANSVERSE STRENGTH.

No. of Specimen.	Name.	Locality.	Dimensions in inches. Breadth.	Depth.	Span Ins.	Centre Breaking Load. Pounds.	Co-efficient of Transverse Strength. Pounds per sq. in.	Tons per sq. in.
1 (a)	Sapu ..	.. Ceylon.	2·925	3·378	42	4,000	7,551	3·370
1 (b)	Do ..	.. do	2·924	3·387	42	4,300	8,078	3·606
						Means	7,815	3·488
2 (a)	Panah Ka	.. do	2·915	3·378	48	5,860	12,690	5·661
2 (b)	Do	.. do	2·919	3·383	48	6,140	13,230	5·907*
						Means	12,960	5·784
3 (a)	Gurukina	.. do	2·909	3·378	48	4,980	10,800	4·820
3 (b)	Do	.. do	2·920	3·385	48	3,100	6,673	2·979
						Means	8,737	3·900
4 (a)	Vuinanku	.. do	2·914	3·387	48	4,455	9,596	4·284
4 (b)	Do	.. do	2·853	3·369	48	4,240	9,432	4·210
						Means	9,514	4·247
5 (a)	Satinwood	.. do	2·914	3·381	48	5,840	12,630	5·635
5 (b)	Do	.. do	2·916	3·375	48	6,890	14,930	6·665
						Means	13,780	6·150
6 (a)	Milla ..	.. do	2·912	3·376	48	6,780	14,710	6·564
6 (b)	Do ..	.. do	2·919	3·363	48	6,790	14,810	6·612
						Means	14,760	6·588
7	Hauthai	.. do	2·873	3·274	40	4,000	7,793	3·479
8	Mandora	.. do	2 859	3·287	40	7,060	13,710	6·125
9	Ubberiya	.. do	2·886	3·299	40	5,285	10,090	4·505
10	Jawenna	.. do	2·868	3·282	40	4,154	8,068	3·6(2
11	Dawata (1)	.. do	2·875	3·275	40	5,560	10,815	4·83
12	Margosa	.. do	2·865	3·286	40	5,921	11,480	5·125
13	Lunumidella (1)	.. do	2·842	3·266	40	2,890	5,720	2·55
14	Walukina	.. do	2·814	3·259	40	4,490	9,014	4·024
15	Ranai (1)	.. do	2·868	3·273	40	5,410	10,565	4·71
16	Chomunti (1)	.. do	2·861	3·231	40	7,210	14,485	6·46
17	Suriya ..	.. do	2·859	3·262	40	5,913	11,660	5·206
18	Jak (2) ..	.. do	2·872	3·270	40	3,500	6,839	3·053
19	Del (1) ..	.. do	2·871	3·284	40	4,806	9,307	4·155
20	Halmilla (1)	.. do	2·844	3·090	40	6,995	15,450	6·898
21	Suriya Mara	.. do	2·869	3·238	40	7,322	14,600	6·518
22	Nedun (1)	.. do	2·850	3·059	40	7,130	16,040	7·161

* Broken by shearing and tenison.
(1) Broken by tearing on tension side.
(2) Split diagonally along the grain.

TABLE V.— DEFECTIONS OBSERVED IN THE BENDING TESTS,

No.	Deflection.	Centre Load, Pounds. 0	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500	6,000	6,500	7,000
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1 (a)	Increment of ...	0	0·078	0·078	0·074	0·072	0·064	0·084	0·028	—	—	—	—	—	—	—
	Total	0	0·078	0·156	0·230	0·302	0·366	0·450	0·478	—	—	—	—	—	—	—
1 (b)	Increment of ...	0	0·096	0·078	0·034	0·122	0·010	0·082	0·086	0·176	—	—	—	—	—	—
	Total	0	0·096	0·174	0·208	0·330	0·340	0·422	0·508	0·684	—	—	—	—	—	—
2 (a)	Increment of ...	0	0·092	0·086	0·074	0·080	0·082	0·068	0·086	0·100	0·290	—	—	—	—	—
	Total	0	0·092	0·178	0·252	0·332	0·414	0·482	0·568	0·668	0·958	—	—	—	—	—
2 (b)	Increment of ...	0	0·119	0·089	0·060	0·132	0·070	0·074	0·056	0·124	0·140	0·276	0·268	0·332	—	—
	Total	0	0·119	0·208	0·268	0·400	0·470	0·544	0·600	0·724	0·864	1·140	1·408	1·740	—	—
3 (a)	Increment of ...	0	0·100	0·080	0·068	0·092	0·060	0·100	0·116	0·132	—	—	—	—	—	—
	Total	0	0·100	0·180	0·248	0·340	0·400	0·500	0·616	0·748	—	—	—	—	—	—
3 (b)	Increment of ...	0	0·111	0·080	0·080	0·076	0·112	—	—	—	—	—	—	—	—	—
	Total	0	0·111	0·191	0·271	0·347	0·459	—	—	—	—	—	—	—	—	—
4 (a)	Increment of ...	0	0·140	0·108	0·098	0·148	0·142	0·200	0·188	0·734	—	—	—	—	—	—
	Total	0	0·140	0·248	0·346	0.494	0 636	0.836	1·024	1·758	—	—	—	—	—	—
4 (b)	Increment of ...	0	0·140	0·132	0·116	0·130	0·138	0·164	0·680	—	—	—	—	—	—	—
	Total	0	0·140	0·272	0·388	0·518	0·656	0·820	1·500	—	—	—	—	—	—	—
5 (a)	Increment of ...	0	0·100	0·070	0·086	0·084	0·074	0·094	0·100	0·082	0·138	0·146	0·214	—	—	—
	Total	0	0·100	0·170	0·256	0·340	0·414	0·508	0·608	0·690	0·828	0·974	1·188	—	—	—
5 (b)	Increment of ...	0	0·086	0·074	0·040	0·140	0·066	0·060	0·072	0·072	0·076	0·100	0·114	0·080	0·180	—
	Total	0	0·086	0·160	0·200	0·304	0·370	0·430	0·502	0·574	0·650	0·750	0·864	0·944	1·124	—
6 (a)	Increment of ...	0	0·096	0·092	0·078	0·080	0·076	0·082	0·040	0·142	0·062	0·152	0·092	0·150	—	—
	Total	0	0·096	0·188	0·266	0·346	0·422	0·504	0·544	0·686	0·748	0·900	0·992	1·142	—	—
6 (b)	Increment of ..	0	0·084	0·082	0·082	0·080	0·060	0·080	0·070	0·068	0·094	0·102	0·104	0·200	0·234	—
	Total	0	0·084	0·166	0·248	0·328	0·388	0·468	0·538	0·606	0·700	0·802	0·906	1·106	1·340	—
7	Increment of ...	0	0·100	0·060	0·092	0·068	0·112	0·068	0·120	—	—	—	—	—	—	—
	Total	0	0·100	0·160	0·252	0·320	0·432	0·500	0·620	—	—	—	—	—	—	—
8	Increment of ...	0	0·058	0·027	0·033	0·032	0·026	0·056	0·026	0·037	0·052	0·053	0·048	0·057	0·099	0·376
	Total	0	0·058	0·085	0·118	0·150	0·176	0·232	0·258	0·295	0·347	0·400	0·448	0·505	0·604	0·980
9	Increment of ..	0	0·055	0·043	0·042	0·042	0·055	0·049	0·060	0·049	0·073	0·072	—	—	—	—
	Total	0	0·055	0·098	0·140	0·182	0·237	0·286	0·346	0·395	0·468	0·550	—	—	—	—
10	Increment of ...	0	0·052	0·048	0·036	0·039	0·055	0·038	0·070	0·064	—	—	—	—	—	—
	Total	0	0·052	0·100	0·136	0·175	0·230	0·268	0·338	0·402	—	—	—	—	—	—
11	Increment of ...	0	0·072	0·058	0·080	0·035	0·073	0·082	0·050	0·132	0·121	0·207	0·505	—	—	—
	Total	0	0·072	0·120	0·200	0·235	0·308	0·390	0·440	0·572	0·693	0·900	1·405	—	—	—
12	Increment of ...	0	0·072	0·060	0·063	0·065	0·070	0·063	0·091	0·084	0·112	0·090	0·262	—	—	—
	Total	0	0·072	0·132	0·195	0·260	0·330	0·393	0·481	0·568	0·680	0·770	1·032	—	—	—
13	Increment of ...	0	0·110	0·090	0·128	0·153	0·293	—	—	—	—	—	—	—	—	—
	Total	0	0·110	0·200	0·328	0·481	0·774	—	—	—	—	—	—	—	—	—
14	Increment of ...	0	0·043	0·057	0·045	0·053	0·052	0·070	0·050	0·075	—	—	—	—	—	—
	Total	0	0·043	0·100	0·145	0·198	0·250	0·320	0·370	0·445	—	—	—	—	—	—
15	Increment of ...	0	0·086	0·074	0·088	0·082	0·058	0·072	0·082	0·108	0·150	0·158	—	—	—	—
	Total	0	0·086	0·160	0·248	0·330	0·388	0·460	0·542	0·650	0·800	0·958	—	—	—	—
16	Increment of ...	0	0·050	0·050	0·052	0·028	0·053	0·054	0·055	0·039	0·071	0·050	0·128	0·130	0·180	0·270
	Total	0	0·050	0·100	0·152	0·180	0·233	0·287	0·342	0·381	0·452	0·502	0·630	0·760	3·940	1·210
17	Increment of ...	0	0·096	0·052	0·082	0·082	0·065	0·073	0·115	0·071	0·122	0·192	0·234	—	—	—
	Total	0	0·096	0·148	0·230	0·312	0·377	0·450	0·565	0·636	0·758	0·950	1·184	—	—	—
18	Increment of ...	0	0·105	0·080	0·068	0·079	0·066	0·082	0·080	—	—	—	—	—	—	—
	Total	0	0·105	0·185	0·253	0·332	0·398	0·480	0·560	—	—	—	—	—	—	—
19	Increment of ...	0	0·075	0·050	0·032	0·067	0·040	0·061	0·040	0·063	0·072	—	—	—	—	—
	Total	0	0·075	0·125	0·157	0·224	0·264	0·325	0·365	0·428	0·500	—	—	—	—	—
20	Increment of ...	0	0·067	0·033	0·065	0·045	0·055	0·053	0·053	0·049	0·060	0·065	0·080	0·195	0·210	—
	Total	0	0·067	0·100	0·165	0·210	0·265	0·318	0·371	0·420	0·480	0·545	0·625	0·820	1·030	—
21	Increment of ...	0	0·045	0·045	0·060	0·040	0·055	0·035	0·042	0·058	0·035	0·061	0·044	0·070	0·058	0·107
	Total	0	0·045	0·090	0·150	0·190	0·245	0·280	0·322	0·380	0·415	0·476	0·520	0·590	0·648	0·755
22	Increment of ..	0	0·042	0·049	0·038	0·039	0·048	0·041	0·053	0·046	0·040	0·054	0·072	0·058	0·090	0·205
	Total	0	0·042	0·091	0·129	0·168	0·216	0·257	0·310	0·356	0·396	0·450	0·522	0·580	0·670	0·875

TABLE VI.—CO-EFFICIENT OF ELASTICITY FROM BENDING TESTS.

No.	Name.	Locality.	Range of Stress. Pounds per square in.	Elastic deflection. per 100 pounds load in inches.	Co-efficient of Elasticity. Pounds per square in.	Co-efficient of Elasticity. Tons per square in.
1 (*a*)	Sapu	Ceylon	0 to 7,551	0·0146	1,126,000	502·3
1 (*b*)	,, ...	do	0 to 8,078	0·0145	1,125,000	502·0
2 (*a*)	Panah Ka ..	do	0 to 12,690	0·0162	1,519,000	678·1
2 (*b*)	,, ...	do	0 to 13,230	0·0171	1,431,000	638·6
3 (*a*)	Gurukina ..	do	0 to 10,800	0·0160	1,542,000	688·2
3 (*b*)	,, ...	do	0 to 6,673	0·0174	1,403,000	625 9
4 (*a*)	Vuinauku ..	do	0 to 9,596	0·0254	961,600	429 2
4 (*b*)	,, ...	do	0 to 9,432	0·0262	967,200	431·7
5 (*a*)	Satinwood ..	do	0 to 12,630	0·0173	1,419,000	633 6
5 (*b*)	,, ...	do	0 to 14,930	0·0144	1,712 000	764·3
6 (*a*)	Milla	do	0 to 14,710	0·0155	1,592,000	710·8
6 (*b*)	,, ...	do	0 to 14,810	0·0152	1,639,000	731·4
7	Hauthai.. ..	do	0 to 3,000	0·0166	955,900	426·7
8	Mandora ..	do	0 to 6,000	0 0084	1,872,000	835·4
9	Ubberiya.. ..	do	0 to 4,000	0·0099	1,596,000	712·5
10	Jawenna ..	do	0 to 3,000	0·0089	1,783,000	796 0
11	Dawata	do	0 to 3,500	0·0126	1,257,000	561·3
12	Margosa.. ..	do	0 to 4,000	0·0142	1,109,000	495·0
13	Lunumidella ..	do	0 to 1,500	0·0218	739,000	330 1
14	Walukina ..	do	0 to 2,500	0·0100	1,646,000	734·7
15	Ranai	do	0 to 3,500	0·0155	1,028,000	459·0
16	Chomunti ..	do	0 to 5,000	0·0100	1,651,000	737·2
17	Suriya	do	0 to 4,000	0 0159	1,014,000	452·6
18	Jak	do	0 to 3,000	0 0160	995,600	444·4
19	Del	do	0 to 4,500	0·0111	1,418,000	632·8
20	Halmilla ..	do	0 to 5,000	0·0109	1,749,000	780·7
21	Suriya Mara ..	do	0 to 5,500	0·0095	1,736,000	775·0
22	Nedun	do	0 to 5,000	0·0090	2,180,000	972 9

TIMBER SEASONING BY ELECTRICITY.

We extract the following from the *Engineer*:—

During the last few years considerable attention has been given to the invention of new processes for treating timber. The latest aspirant to fame is a process and apparatus which claims to give to timber properties which time alone has so far been able to produce. It is a French idea, and has, we are informed, met with considerable success in Paris, where works have been established to treat timber on a large scale. The Nodon-Bretonneau process involves the expulsion of the sap and its replacement by a solid matter, insoluble and aseptic. This is effected by placing the material to be treated in a vat containing a lukewarm solution made up of borax, 10 per cent.; resin 5 per cent; and ·75 per cent. of carbonate of soda. While in this bath, and electric current of about 100 volts pressure is caused to pass through the timber. The currents sets up what is termed lectro-capillary attraction, and drives out the p by the introduction of the solution. This treatment lasts from six to eight hours generally, after which the wood is subjected to a further treatment of a few hours' duration in a warm bath to allow of thorough permeation of the entire section. It is then removed and dried under cover by air currents, a process which is said to take from fourteen days to a couple of months, according to the density and thickness of the material. The inventors claim that not only is a considerable saving in time and expense in the drying of timber effected by this process, but that certain classes of wood, such as maritime pine, which have not hitherto been readily saleable owing to the large amount of moisture they contain, can by its use be readily deprived of the sap. The expenditure of electric current is said to be 600 watts per cubic metre per hour for five hours. The Electric Timber Seasoning Company, Victoria-street, Westminster, is introducing the system into this country, and a model apparatus has been fitted up at the work of Messrs. Johnson and Philips, Charlton Junction.

TEA PESTS AND BLIGHTS.

(BEING CHAPTER X. OF DR. GEO. WATTS' LARGE BOOK.*)

As a matter of convenience I have accepted the word "Pest" to denote Insect and other Animal Enemies, and the word "Blight" to refer to Fungal and other vegetable Parasites of the Tea Plant. While convenient the restrictions indicated for these words are of course open to criticism.

In the preceding chapters I have endeavoured to represent certain aspects of the cultivation of the plant that seem to me to call for more careful investigation, with a view to reforms. To my mind there exists sufficient presumptive evidence to justify the opinion that certain misapprehensions and defective methods of procedure have originated constitutional weaknesses that may be said to constantly predispose the plant to actual disease. In other words to render the depredations of its enemies and parasites more alarming than they might be otherwise. I have, therefore, advocated that such reforms as may be found desirable and practicable, should necessarily accompany more specific efforts to battle with the pests and blights.

In the foregoing remarks, at one or two places, I have already pointed out that the brief term of my explorations and the facilities of observation and investigation afforded, do not justify any attempt being made to deal with the pests and blights in a strictly scientific manner. It may be remarked that there are perhaps a dozen enemies of serious moment. The others, while occasionally doing considerable injury, are, nevertheless, of a local and accidental character. To solve the life histories of the dozen serious pests and blights, might take several years' patient study. To discover means of dealing with them would occupy much time and necessitate detailed and elaborate experiments.

SOURCES OF INFORMATION AND ASSISTANCE.

In presenting the observations which I now propose to offer, it may be as well to explain the chief sources of information and assistance which have been drawn upon in the study of the pests and blights of the tea plant:—

1st.—The Journals and Proceedings of the Agri-Horticultural Society of India, more especially from 1865 to 1885—the period of greatest interest by the Society in the subject of Tea Pests.

2nd.—Special publications on the India Tea Industry, including the annual Reports of the Indian Tea Association from 1882 to 1896.

3rd.—Newspaper correspondence from 1873 to present date, more especially the letters which appeared originally in the *Tea Gazette*, but which may now be conveniently consulted in the *T a Cyclopædia* and the *Tea Planter's Vade Mecum.* I have only incidentally referred to Ceylon newspapers for information, but the *Tropical Agriculturist* has been found of great value in confirming or correcting information regarding India.

4th.—The Indian Museum Notes, more especially Mr. E. C COTES' Account (*in Vol. III.*) of the *Insects and Mites which attack the Tea Plant in India.*

5th.—The invaluable aid of Mr. W. T. THISELTON DYER, Director of Kew Gardens, London, and of Mr. GEORGE MASSEE, Cryptogamic Botanist to the Herbarium of Kew, for two reports on certain fungal blights collected by me. Through the kindness of the Director General, Medical Department, I have been favoured with a proof copy of Dr. D. D. CUNNINGHAM's forthcoming paper "On Certain Diseases of Fungal and Algal origin affecting Economic Plants in India;" in that paper three of the diseases of the tea plant have been dealt with and consequently drawn upon very largely by me.

The liberal assistance of Sir GEORGE KING and of Dr. D. PRAIN of the Botanical Gardens, Calcutta, for helping me with the determination of the plants collected during my tour in Assam. This every now and again has been of value in connection with the present report as, for example, in giving the names of the plants on which certain tea blights were found in the jungles.

The very great assistance, most generously afforded, by Mr. E. E. GREEN, the distinguished Entomologist of Ceylon, who has for many years identified himself with the study of the tea pests, and has in consequence discovered and investigated the life histories of a large number of very obscure species. Mr. GREEN has not only examined and reported on a complete series of the insect pests collected by me, but has in return presented a most valuable set of the pests collected by him in Ceylon. As types of the species he has named these have proved invaluable. Similarly I am much indebted to Dr. A. R. S. ANDERSON, Officiating Superintendent of the Indian Museum, for having examined the doubtful specimens referred by me to the Museum for determination, and to Mr. EDWARD BARLOW, the Assistant in charge of the Entomological Collections of the Indian Museum, for having very kindly worked with me during the time which I spent in comparing my specimens with the Museum sets.

6th.—But a debt of gratitude is more especially due to the large circle of planters whom it was my good fortune to meet during my tours, and from whom I obtained much valuable assistance. Added to all these sources of information I may mention the files of correspondence of the office of Reporter on Economic Products which have been freely drawn upon, and, lastly, the results of my own personal explorations.

The account to be given below, therefore of each species of pest or blight will be made, as far as possible, to embrace the entire available information. Stress will be laid on the effort to trace out the locality and date of first appearance, of each of the more important enemies of the tea plant, from the belief that particulars of that nature may very possibly be found of value in future investigations. I am fully conscious, however, that defects will be discovered, and can only hope that the present review of information may stimulate greater attention being given, more especially through the planters themselves once more, making the technical journals of the day the channels of recording their observations and opinions. The apathy that has existed, for the past score of years, in the matter of exchanging ideas, largely accounts, I am afraid, for the want of progess. Interest may be said to have been first prominently aroused in the subject of pests and blights by the late Mr. S. E. PEAL's paper on "Mosquito," or, as he loved to called it, the "Tea Bug." Prior to the appearance of Mr. PEAL paper it had been vaguely designated "Blight," and was viewed as a mysterious visitation. Mr. PEAL's showed that it was caused by an insect. Immediately there arose the enquiry as to methods of extermination. From that date one discovery after another followed quickly, until for twenty years or thereby the Journals of the *Agri-Horticultural Society* and the public newspapers of Calcutta teemed with letters and detailed reports on the pests and blights of the tea plant. Gradually, however, the subject seems to have lost interest, perhaps, through the discovery of new methods of cultivation and manufacture, that gave handsome returns in spite of the ravages of these enemies of the industry. Left thus to themselves they have multiplied and extended until attention has been forced once more to the question, which twenty years ago was discussed and pigeon-holed, by those most interested, *viz.*, the desirability of securing scientific assistance.*

In presenting this compilation of available information I may as well explain that I shall deal *first* with the Pests, and *next* with the Blights. Under Pests (Insects) I shall, as far as possible, follow the classification and the scientific determinations given in Mr. COTES' *Insects and Mites which attack the Tea*

* We republish this by request, because Dr. Watts' book is out of print.—ED. *T.A.*

* See Proposed Scheme, Journ. Agri-Horti. Soc. Ind., Vol. V, N. S. Proc., 24th Aug. 1876; 23rd Nov.; 21st Dec.; 19th April 1877; 23rd Aug.; Vol. VI, Proc., 18th Dec. 1879; Scheme Abandoned, 22nd July 1880.

Plant in India, It may, however, serve a useful purpose, if I attempt to indicate:—

(*a*) The insects described in the Indian Museum Notes (including Mr. COTES' special paper) as actually found on the tea plant in India. (The pests of this section will for the most part be found dealt with in Mr. COTES' *Insects and Mites, etc.*)

(*b*) The insects found on the tea plant in Ceylon, and which persumably may in the future be found in India.

(*c*) The insects discovered by me in addition to (*a*) and including also those which prior to the date of my explorations have been treated under the position (*b*) above.

These particulars will be brought out by the letters (*a*), (*b*) or (*c*) being placed alongside of the serial given to the species dealt with. My object in so doing is to exemplify once more the very remarkable fact that the pests and blights of the tea plant are rapidly becoming diffused over the world's areas of tea cultivation. A large percentage of these insects have never been seen by entomologists, except on the cultivated tea plant, though many are common enemies to both tea and coffee. It need hardly be repeated that these very striking circumstances point unmistakahly to cultivation having produced the conditions necessary for the appearance and distribution of these pests, the more so since the wild tea plant has been found to bear but a small percentage of these pests. (*Conf. with paras. 11 also 44 to 49*).

As a matter of convenience, I shall quote (at the end of the paragraph of references under each species) the resgistration numbers assigned to all pests collected by me and, when preserved in fluid, shall quote also the numhers engraved on the bottles or tubes in which they have been stored. These numbers, it will be understood, are given for Museum purposes only, and are of little interest to the general reader, except as indicating by their absence pest and blights of which specimens have not been procured and of which contributions would, therefore, be very acceptable.

COLEOPTERA.

THE BEETLES.

In this Order of insects both the grub and the perfect beetle may injure crops. The maggots or grubs are sometimes devoid of legs, hut more frequently have three pairs of jointed legs—one pair on each of the three segments of the body near the head, and a pair of sucker-feet near the anal extremity. The chrysalis looks like a deformed beetle, curled up and motionless. The perfect insect or beetle has an upper pair of hard wing-cases, called the *elytra*, and below these a pair of large membraneous wings that fold underneath the wing-cases.

There would seem to be five well-known species of beetles found on the tea, with perhaps three or four more that might be regarded as occasional enemies. The Cockchafer, or White Grub, in its larval stage eats the roots of the plant, and in its mature form would appear to devour the leaves as well. Then there are at least four species of leaf-feeders, that often do considerable damage to the crop when prevalent. Lastly, a wood-borer found in Ceylon, but not as yet in India. In Sibsagar district I came across a a longicorn grub which is perhaps a by no means an uncommon tea-borer, though, so far as I can discover, it has not as yet been described.

I. (*A.*) LACHNOSTERNA IMPRESSA, *Burm.*

THE COCKCHAFER OR WHITE GRUB.

REFERENCES.—*Tea Cyclopædia, 44*; *Notes on Tea in Darjeeling, 54*; *Tea Planter's Vande Mecum, p. 105*; *Bamber, Chem. and Agri. Tea, 242; Ind. Mus. Notes, Vol. I, 59*; *Vols. II., 149; III., 3, 122; Cotes, Ins. and Mites on Tea Plant in India, 5-7.* (*Reg. No. 21, tubes Nos. 261 and 233.*)

HISTORY.—The first mention of this beetle, as an enemy to the tea plant, so far as I have been able to discover, is contained in a letter by a Darjeeling Planter (1874) which will be found reprinted in the *Tea Cyclopædia.* The author of *Notes on Tea in Darjeeling* (1888), gives it the vernacular name of *Kumla.* Mr. BAMBER says, "it occnrs in all the tea districts," but does not tell us whether he had actually found it in Assam. Moreover, he makes the somewhat puzzling remark, "with the aid of lamps collecting the grubs at night when out to feed, would probably prove a satisfactory method for lessening their numbers." So far as I am aware the grubs of this beetle never under any circumstance come above ground and have no occasion to do so since their food consists of the young roots of the plant. Mr. COTES remarks that it appeared in vast numbers in Darjeeling in 1891 (*vide* letter from Messrs. DAVENPORT & Co., October 1891, *Ind. Mus. Notes, III.) 3*). "Its prevalence in other years," Mr. COTES adds, "is shown by the fact that in 1883 no less than 2,695,000 individuals were collected and destroyed in the public gardens, Darjeeling (*vide Ind. Mus. Notes, Vol. I., 59*). But Mr. COTES makes no mention of its being fonnd in Assam. It was collected hy me in a few gardens of the Sibsagar District, more especially at Khumtai and Ligri Pukri. Mr. CROLE (*Tea Text-Book, pp. 84 and 222*) incorrectly gives the scientific name of this beetle to the cricket.

DEPREDATIONS.—Like most of the predatory Melolonthin beetles this species lives in its larval stage on roots. The eggs are laid in the ground. From these the white grubs escape and very possibly attack the roots of weeds in the first instance. Ultimately they penetrate to the depth at which they are ahle to discover the roots of the tea plant and these they devour. Mr. COTES suggests that the eggs are likely to be laid about the heginning of the rainy season in Northern India. "How long is spent by the grubs in the ground before they become full grown we do not know, hut tbe fact that the European species *Melolontha vulgaris, Fabr.*, spends more than three years in this stage, while the American species, *Macrodactylus subspinosus, Fabr.*, spends the greater part of one year, leads to the supposition that an equally long period may be required in India." (*Cotes.*) A tea-planter, whose opinion will he found quoted below under the paragraph on "Remedy." thinks the Indian white grnb may live in the ground for two or tbree years. At all events these grubs never come to the surface until after they have passed into the pupal stage, when in due course they emerge as the matnre or copper-brown-coloured beetle.

At Khumati on the 7th of April I witnessed this insect making its eseape from the ground and fonnd several of the mature beetles apparently eating the leaves of the plant. A large assortment of grubs in all stages of growth were sent me in December 1895 from another garden in the Sibsagar District. These were turned up while heavy hoeing, and the manager very properly thought that they had better be picked out. He accordingly sent me a selection and desired to be informed if they were insects reported hitherto to injure the tea. These larvæ I submitted to the Entomological Department of the Indian Museum, as there seemed to me to he at least two, if not three species. The reply obtained was to the effect that "the larger grubs are the larvæ of a Melolonthin beetle probably belonging to the genus *Lepidiota*, and the smaller are apparently the immature forms of *Lachnosterna impressa.* The mud ball sent is the pupal cell of a *Copris* beetle." Mud balls or nodules, of the size of a large hen's egg, are frequently thrown up from the ground, during the hoeing of tea gardens, when the soil consists of a fairly heavy clayey loam. They are commonly seen on the faces of road cuttings and may easily be mistaken for the mnd cells of queen white-ants. On being broken open they will be found to contain a grub of a brown colour that may sometimes be 2 to 3 inches long. The nodules are stratified and closely compacted, the inner layer being sometimes of a darker colour than the outer layers.

APPEARANCE OF THE BUSH.—When beetles of this family attack tea, the plant at first is seen to

have lost its vigour. The buds often become *banjhi* and as the ravages of the beetle advance the leaves droop, turn brown and finally the bush appears as if killed, and it may actually be so. The appearance in fact is very similar to that when a wood-borer is at work (such as *Zeuzera coffeæ*), with this difference, that the whole bush appears to be suffering instead of one portion of it only, as is generally the case with borers. From what has already been said of this beetle, it will be understood there may be very little evidence of its ravages for months, while the grubs are steadily sapping the life of the plant and not one plant, for, as a rule, the beetle, if present, invades a considerable area, so that a whole plot of tea may be seen to be injured and clumps of bushes killed. When this occurs, the bushes if dug up will very often be found to have the roots invaded by fungi, and the inference is sometimes drawn, though incorrectly, that the fungus is the cause of the destruction. When bushes are seen to die in the manner indicated, it would be a good plan to have a healthy bush, near to those killed, dug up and carefully examined. It may then be seen that the fungus is only saprophytic, that is to say, a species that attacks dead, not living, plants, and that the real cause of the death of the bushes is the white grubs that may then be found feeding on the living roots.

REMEDY.—So far no cure has been discovered, except to dig up the grubs and kill them. But to check the multiplication of the pest it is necessary to catch and destroy the beetles. For this purpose children, armed with insect-collecting nets, would be found most valuable, when incited through the offer of a reward for the number captured. The planter whose letter first drew attention to this pest, tells us that he offered a reward to his coolies, when hoeing the land, of one pice for every 30 grubs collected. In consequence the coolies dug more than their day's task, so that the collection of the grub practically cost nothing. He informs us, however, that "to clear 15 acres cost in pice R108—giving two lakhs of grubs which filled two hogsheads. The eggs from which these grubs sprang must have been laid some two or three years before, and most likely they have quietly been doing great mischief. I am in the habit of buying the jungle—not all over the land, but in small holes, here and there, where convenient. This I found a great trap, for the grubs left the tea trees to attack this rotting vegetation and so were easily collected." The author of *Notes on Tea in Darjeeling* gives somewhat similar informatien, though he adds certain additional facts. The grub, he says, is "generally found in very rich soil, or where manure has been put down, or much jungle has been buried. This is fairly destructive to young cultivation and seed-beds, and eats off the roots of the young seedlings before they harden up, in some case killing off nearly every plant in young cultivation. Only remedy digging up. Plants attacked by *Kumlas* generally die slowly, first getting yellow at top and gradually dying down. Never fill in a vacancy thus caused without digging the insect up." Mr. COTES tells us that in Ceylon, on coffee estates "where Melolonthini larvæ at one time proved very troublesome, the only method of treatment that seemed to have been at all successful was digging out the grubs by hand." Speaking of the efforts made to extirpate an allied insect from the vines in Europe, bisulphide of carbon is said to have been used with success. Miss E. A. ORMEROD'S *Text-Book of Agricultural Entomology*, pp. 80, 89-93, will be found to give many useful hints regarding Cockchafers. Mr. SAUNDERS ("*Insects Injurious to Fruits*") gives some valuable particulars regarding a species of *Lachnosterna* said to be injurious to the cherry, plum, and other such trees. During the day the beetle remains in repose, but at night becomes active, and, if numerous, rapidly defoliates the trees. They are best collected by placing a sheet below the bushes, during day time and then shaking when the beetles fall into the cloth, and may be collected in large numbers. He then adds that where the beetles are found abundantly the grubs may be expected to remain for some years to come since the larvæ eat the roots during a protracted period of existence. The presence of this beetle even if it does not eat the tea leaves is a very dangerous prognostication of future injury, and it should, accordingly, be collected and destroyed as much as possible.

2 (A) DIAPROMORPHA MELANOPUS, *Lacord.*

THE ORANGE BEETLE, sometimes called PEAL'S BEETLE.

REFERENCES.—*Journ. Agri-Horti. Soc. Ind., Vol. II. n. s. Proc., Nov. 17, 1869, page ix; Vol. IV (n. s.) Proc., 19th Sept. 1872*, xl; *Feb. 27th, 1873. p.* vii; *April 24th, 1873, p.* xxii; *Vol. V., Proc., 27th Aug. 1874, p.* xlvi.; *Vol. VI. Proc., 24th July 1879, p.* xxii; *(Samples from Moran), identified by F. Moore, Proc., 25th Sept. 1879.* xxx; *S. E. Peal, in Tea Cyclopædia, pp. 35-36; Notes on Tea in Darjeeling, 52: Bamber, Chem. and Agri. Tea, p. 242; Indian Mus Notes, Vol. I., 106; II., 154; Cotes, Ins. and Mites on Tea Plant, p. 7; The Planter, June 20th, 1896; Crole, Text-Book, p. 222.*

(*Reg. No. 75, tube Nos. 62 and 272.*)

HISTORY.—It would appear that Mr. E. L. EDGAR, of Cossipore Tea Estate, Cachar, was the first to draw attention to this beetle. He then wrote, that it had only appeared this year (1869) in any numbers. We next hear of it in 1872 from Moran in Sibsagar District, Assam. Both samples were sent through the Secretary, Agri-Horticultural Society of India, to Mr. F. MOORE, who identified them as being *Dia promorpha melanopus*. Mr. PEAL sent samples of it to Mr. WOOD MASON along with such notes and coloured drawings that Mr. WOOD-MASON undertook to write for the Agri-Horticultural Society an account of the insect, which promises, apparently, he never fulfilled, as I have failed to trace a paper by him. Mr. PEAL himself, however, contributed some interesting particulars in the form of an article on Tea Pests that will be found in the *Tea Cyclopædia*. The subsequent historic facts are soon told. It was reported from Darjeeling by many writers, and Mr. COTES says, "The species is a common one in India."

DESCRIPTION.—A small orange-coloured beetle with the hard pitted wing-cases; head slightly darker coloured than the body; belly pale coloured. Size about ⅜th inch in length.

DEPREDATIONS.—This very troublesome little beetle is one of those examples of an insect having left its own natural food and taken to the tea. Its life history does not appear to have been traced out, but Mr. COTES says, "From what is known of other species of the same family, it may be expected that the eggs are laid upon the leaves, that the larvæ are active little creatures which feed upon the foliage, eventually transforming, in some sheltered corner, into stationary pupæ from which the beetles ultimately emerge. These points, however," he adds, "require corroboration."

Mr. W. J. FLEET sent me, from Salonah, Nowgong, samples of this beetle on the 27th June 1897, which he collected on the 17th April, but had observed the beetle subsequently up to date of his letter. The winged insect was collected by me at Nigiriting on the 1st of May, and in the Sibsagar District some weeks earlier. I had a large supply sent me from Sonada, Darjeeling, in June 1897. The first two letters announcing the discovery of this pest make no mention of the date of appearance of the beetle, but these letters were published,—the one on the 17th November 1869, the other on the 19th September 1872.

It is curious that no writer makes mention definitely of the date of appearance and disappearance of this pest. The above facts have been mentioned to show all that is known on these points. It may, therefore, be presumed that its period of depredation extends, say, from the beginning of April to about the end of August. One point there seems to be no doubt about. The insect does not lay its eggs on the tea, nor do the larvæ feed

on tea. It is only the mature beetle so far that has been seen on tea. I questioned the late Mr. S. E. PEAL on this point carefully, and he assured me that it certainly did not breed on tea, but, in his opinion, lived its early life on *ulu* grass (*Imperata arundinacea*).

Regarding the manner of its depredations there can be no doubt. Mr. EDGAR, its original discoverer, says, "These insects scrape the green stem below the Pekoe or Pekoe-Souchong leaf, sometimes below the souchong leaf if the flush is quick grown, and the stem soft. They scrape or eat a place on it from half an inch to one and a quarter inch in length and from just touching it to three-fourths through. According to the depth they go, so soon do the two or three leaves above tumble over and wither. Should they multiply, they will be very destructive to new flushes." The Assistant Manager of Moran Company, Assam, in his letter even goes more fully into the subject. He says "So serious is it that I estimate a loss of at least a maund of tea from this flush alone, which I am now plucking, and the loss on the entire year must be very serious." "The insect eats or gnaws only a small portion of the stem of the young shoot, which, whenever the sun touches it withers, droops, and in about a day falls off and then the shoot looks just as if it had been plucked; so that to discover the entire depredations of this little pest, the bushes have to be examined once or twice every day." Mr. S. E. PEAL's original account of this pest is also worthy of being quoted, since it throws some additional light on the methods of procedure adopted by this insect. "Naturally," he says, "it is a grass, eater, and may be found in considerable numbers where larger grasses abound in the open. It has a habit of alighting on the tips and flies rather slowly, resting under the curved-over tips of the *ulu* grass. These insects are at times found in threes or fours, and rest there in the little shade afforded. In attacking tea, they generally eat away portions of the green stem of the shoot that is just fit to pluck; the shoot falls over, withers, dies, and turns black and dry. If this beetle is at all common, considerable damage is done, and a garden or patch of tea presents a brown, withered appearance. As the portion eaten out of each stem is not large, a single beetle may ruin half a dozen shoots as one morning's work."

The author of *Notes on Tea in Darjeeling* says, "This is a small reddish yellow insect, which always runs up if cow-dung has been put down, and sometimes on new extensions, probably from the same cause. This beetle seems to attack heavy pruning or young tea more than pieces. It bites the shoot low down, and the shoot then withers and rots away. If there is sun-grass near the tea, the beetle goes to the grass, instead of the tea."

Mr. BAMBER did not evidently give much attention to this pest as he devotes only some two lines to it and says, "at present the damage done has been small." Mr. COTES (*Insects and Mites, etc.*) gives no particulars as to its depredations, but refers to the *Indian Museum Notes, Vol. I., p. 106*, where it is stated that specimens had been received from Mr. S. E. PEAL in 1885. A Darjeeling correspondent in *The Planter* says, "Often when reading articles on tea blights I have been surprised never to have seen the 'Orange beetle' mentioned." "I have often seen a dozen or more of these beetles on one bush, and every bud lying over dry and making the bush look almost as though withering up at first sight. Another peculiarity about them is, that they only seem to go for the Assam *jats*, and are scarcely ever seen on a China bush, evidently preferring the more succulent shoot of the Assam bush to the less juicy one of the China."

The fact of this insect showing a decided preference for the Assam tea is a point of considerable interest. This I had recorded in my diary and found, when in Assam, that Mr. PEAL and others had made the same observation.

REMEDY.—In consequence of our ignorance of the early history of this insect, only the one cure is open for consideration, namely, to collect and destroy the beetle. This Mr. F. MOORE recommended over 20 years ago, and nothing further has been brought to light. Mr. PEAL was of opinion that far from *ulu* grass being a protection (as suggested by the author of *Notes on Tea in Darjeeling*) it is the chief cause of the mischief. While walking through one of the Moran Company's gardens Mr. PEAL stripped the long blades of *ulu* grass through his hand and demonstrated to me thereby the day habit of the insect. But while Mr. PEAL speaks of the insect accomplishing its ravages in the morning, I found the insect in the Golaghat Sub-Division most active late in the afternoon. It is thus probable that it feeds both in the morning and in the afternoon.

A planter whose letter originally appeared in the *Tea Gazette*, says, "I have had thousands of bushes damaged by this insect, and find it pays 'hand over fist' to give coolies so much for catching the little pests, say a pice for fifty. By so doing I have succeeded in destroying as many as 20,000 in the day." Mr. PEAL says, "eight or ten well-made butterfly nets, depth, say 18 inches, and diameter of mouth 1 foot, ring or hook of stout brass wire, bent, soldered and inserted in 4 feet high bamboo handles. These in the hands of as many smart boys will bring down the numbers very rapidly. If at all plentiful, a boy can easily 'bag' 300 beetles per hour, and where not much of a pest, I have taken several times myself at the rate of 250 per hour. A few days of this and the nuisance will abate very perceptibly."

LADYBIRDS BEETLE MISTAKEN FOR THE ORANGE BEETLE.—I desire in passing to warn those, unfamiliar with the appearance of the Orange Beetle, not to be too hasty in coming to the conclusion that any small orange-coloured or red beetle, found on tea, is the pest here dealt with, or "at all events has no business" on the tea and had, therefore, better be removed. While visiting a garden in the Sibsagar District, the manager informed me that some ladybirds that I had caught and was examining were PEAL's Beetle. I assured him he was mistaken, and that the ladybird was one of the planter's best friends. It was no good my protesting that he was mistaken, for "some years ago they had caught that very insect by the thousands daily." Of course this was a case of mistaken identity. The insect to which he alluded, as having been collected, I found subsequently was the orange beetle right enough. The ladybird beetle is almost circular in outline and of a bright red colour with a few spots on its wing-cases. The orange beetle is a narrow elongated insect with a somewhat large and curiously truncated head, as if cut off abruptly. The wing-cases are of one uniform orange yellow colour throughout and seem as if some one had dabbed them all over with the point of a needle—the surface of the wing-case being pitted. The wing-cases of the ladybird are perfectly smooth and polished.

The larvæ and even the mature insect of the ladybird beetle are carnivorous and feed for the most part on the black aphis (*Ceylonia theæcola*), and I believe also on the larvæ of the mosquito and green-fly. I have watched them repeatedly devouring the black aphis, and been surprised that colonies of these curious aphides were not alarmed by the appearance among them of so formidable an enemy. They seem undisturbed and await their turn of destruction perfectly unconcerned.

The ladybird does not injure the tea in any way and should most certainly be encouraged, on no account destroyed, through the mistaken notion of its being the orange beetle.

3. (*A.*) ASTYCUS CHRYSOCHLORUS, *Wied.*

THE GREEN BEETLE.

REFERENCES.—*Indian Museum Notes, Vol. III., 99, 126; Cotes, Ins. and Mites, etc., 8.*

HISTORY.—I have given this insect the name for Green Beetle as a simple and characteristic description Mr. Cotes tells us that it "was sent to the Indian Museum in April 1892 from a tea garden in Cachar, where it was supposed to have been the cause of some injury to the bushes. It was said to strip the young leaves off the tea shoots."

REMEDY.—Nothing further can be said than has already been mentioned in connection with the orange beetle. The insect should be collected and destroyed whenever seen. As with all others so with this species, it may be said, that the sooner the pest is attacked the better. It is, however, unfortunate that we have to confess ignorance of the actual life history of this beetle.

4. (*C*) ASTYCUS LATERALIS, *Fabr*,

(*Reg. No. 102, tube No. 131.*)

HISTORY.—Messrs. BALMER LAWRIE & Co., on the 3rd of June 1897, were good enough to forward to me a few beetles that had been sent to them from the manager of the Hukanpukri Division of the Jokai Company's estates. Mr. E. RAMSDEN in forwarding the specimens reported that they had been found on one-year-old plants. They had come during the night in thousands and simply stripped the bushes. Fortunately they were easy to catch. My reply identified the insect as a species of *Astycus*. Subsequently, however, on re-examining the specimens, I came to the conclusion that it might possibly be a species already identified by entomologists. I accordingly sent the samples to Dr. ANDERSON, of the Indian Museum, and he was good enough to inform me that the name of the insect was as above (*A latesralis*). It is a much smaller beetle than *A chrysochlorus* is of a dark brownish black ground colour, with a distinctly green metallic tinge. The chief difference to the non-professional eye may be said to be that *A. Chrysochlorus* is about ¾ of an inch in length and is of a bright pale green colour, while *A. lateralis* is about half an inch long and of a dull metallic green.

REMEDY.—There is nothing further to remark on this point than has already been said regarding *A. chrysochlorus*.

5. (*C*) ASTYCUS ? *sp. nov*.

(*Reg. No. 101, tube No. 72.*)

HISTORY.—A black beetle with a metallic green tint, is not uncommon in Assam as a tea pest. At first I took this to be *A. chrysochlorus*, but, on comparing at the Museum my specimens with the beetle from Cachar, I agreed with Mr. BARLOW that it must be regarded as a distinct and possibly an undescribed species. In point of size it is intermediate between *A. lateralis* and *A. chrysochlorus*, but in colour is more like the former than the latter.

I was shown specimens at Amguri, by Mr. BUCKINGHAM, which he had collected some time prior to the date of my visit. The insect had not appeared very severe but was known all over the Sibsagar District. It came one year, gave considerable cause for anxiety, and then disappeared for a number of years, perhaps to re-appear when least expected.

DEPREDATIONS.—At Dirpai, North Lakhimpur, on the 8th July, I found a colony of this beetle doing much damage to some 10 to 12 bushes all near each other in one portion of the garden. The beetle commences on the margin of the leaf and eats downwards towards the midrib. When about half way down it commences on a new place, so that great ugly holes are cut out of the leaf.

REMEDY.—Same as for the other beetles dealt with under this genus.

6. (*B*) XYLEBORUS FORNICATUS, *Eichhoff*.

WOOD-BORING BEETLE.

REFERENCE.—*Indian Museum Notes, Vol. IV., p. 57 Plate V., Fig. 2.*

HISTORY.—This curious little beetle has been found in Ceylon to riddle the tea stems. Specimens were sent to the Indian Museum on the 20th January, 1897, by Mr. E. E. GREEN, and were forwarded to Mr. W. F. H. BLANDFORD, who identified the pest as the beetle above named.

DEPREDATIONS.—Mr. G. ALSTON, Superintendent of Craighead, Nawalapitiya, who first drew Mr. GREEN's attention to this new tea pest, wrote that it appears mostly in patches. "Most of the trees show no outward sign of the pest, except when almost every branch is attacked, when they turn rather yellow and stop flushing. Young trees about two years old, before they are topped, often snap off at the spot where the borers have made holes for their entrance or exit. Strong vigorous trees in good soil seem to be very little affected by it, and threw out good red wood even from badly bored stems. On the other hand. poor plants on ridges or poor soil seem to naturally feel the effect of it quickly, though in no case have I seen a tree *killed* by it. Isolated branches die off, but new branches come out in their place. As a rule, you can only tell an attack tree (except in the case of poung plants, when the stems snap off) on pruning it, when the holes in the wood are very apparent. It (the beetle) does not attack the cut surface after pruning, but makes its entrance through the back. In the case of young red wood it very generally goes straight down the pith; in older brances, I have often seen the wood riddled as if a charge of snipe-spot had been fired into it, with only one or two minute holes in the bark for exit or entrance. And yet in the case vigorous trees they seem to thrive notwithstanding. Since 1893 the pest has spread very much and become more general, though I cannot say that I see much difference in the fields that were attacked then." The plate quoted above is an excellent one but if the reader possess a copy of Miss ORMEROD's useful little *Text-Book of Agricultural Entomology* he will find (*p. 100*) an illustration of the very closely allied species *X. despar* which shows the ravages of the European species on the plum.

REMEDY.—It would be dangerous to suppose that because strong, healthy, well-nourished bushes seem little affected by this pest that there is no occasion to take steps to secure its eradication. Should it appear in the Indian tea areas, every effort should be at once made to stamp it out. Improve the vigour of the plant by manuring, deep drainage and other means. Lop off and burn all affected parts. If found in a small compact area I personally should, however, prefer to fire the plot. In my experience this is by far the most effectual remedy with all diseases that occur over fixed and limited areas, more especially if the diseaae is recognised and the firing can be accomplished early in Spring. All over the plot dry straw should be placed within and through the bushes so as to secure rapid combustion. The embers should be at once cleared away from the bark of the main stem. After the fire has burned out, the bushes should then be pruned and all charred portions removed. The Spring shoots may be delayed a few weeks, but in exceptional cases only will the bushes be killed, unless the firing be done late in the season.

LII.—Other Beetles Reported as attacking the Tea

7. CURCULIO TANYMECUS.

In the Journal Agri.-Horticultural Society of India *Vol. VI. n. s. Proc., 24th July 1879*, mention is made of a beetle sent to the Society by Messrs. WILLIAMSON, MAJOR & Co., "as doing much mischief to the tea bushes in the Munguldye Company's plantations." The specimens were forwarded to Mr. A. GROTE and ultimately submitted to Mr. F. MOORE. The reply appears in the Proc., of the 18th December, 1879. "The green beetle sent to you by the Munguldye Company is a *Curculio* allied, as *Moore* thinks, to *C. tanymecus*, but these beetles ordinarily bore into the stem and branches of plants and do not meddle with their leaves." I am unable to trace the name *C. tanymecus*. There is a genus of beetles known as *Tanymecus* but *Gemninger* and *Harold* make no mention under *Curculio* of a species *C. tanymecus*.

It is somewhat significant that the pest alluded to, in above correspondence, should apparently have disappeared while two species of *Astycus* (that are by no means remote from *Curculio*) should have taken its place as leaf-defoliators in Assam.

8. Two other as species of beetle have been sent to me by Mr. FLEET, injurious to tea, *viz.*, *Criocris impressa*

and *Odies bipunctata.* I have obtained no particulars regarding these beetles, and mention them purely in order to suggest further enquiry.

9 Grubs of *Lepidiota* and of *Copris* have been mentioned above (*p.* 184) as having been sent from a tea garden, but in addition I have before me now a third grub, *viz.*, that of a Longicorn beetle (*Reg. No. 103*) which has been reported as doing much injury to the tea. The Longicorn (CERAMBYCID) beetles are mostly dangerous wood-borers.

A TREATISE ON TEA.*

A scientific dissertation on what tea-planters vulgarly call tea-bugs does not promise to be of absorbing interest. For a moment a flutter of hope is raised when the savant opens with an allusion to his *explorations* in the not un-mapped district of Kangra, and we congratulate ourselves he is about to invest it with some of the fascination that temporarily hangs over, say Klondyke. But from Kangra to Klondyke is a far cry, and the prospect of exciting adventure is quickly dispelled when the reader dips into the leaves of Mr. Watt's volume on *Tea Pests and Blights*, vainly seeking the cheerful powers of description that enlivened Fortunes books about China and its tea districts, and discovering only a tome full of peculiarly dry facts. The book will with difficulty interest tea-planters, a body of men who, as all the world knows, invariably fall asleep over their *Pioneer* after dinner, and are not to be appealed to by any form of literature excepting tea broker's disparaging reports and valuations on their samples, and, occasionally, perhaps a printed news letter from their own district that pokes fun at their daily life and habits.

And yet, notwithstanding, the entire absence of light and sweetness in its pages, Mr. Watt has written a book that deserves much commendation and will repay intelligent study. Tea holds the fifth place of precedence in the roll of Indian exports, and any work that helps the industry to understand itself better is deserving of cordial recognition. The literature of tea, both ephemeral and in volume form is sadly flaccid stuff. Since the *Indian Tea Gazette*—a periodical which did a vast deal of good, and diffused an immense amount of valuable practical information in its day—expired from lack of support from those it tried so hard to serve, the tea industry has not been adequately represented by any journal worthy of the name. As for Gold Medal Essays and fugitive works on tea planting, which our forefathers were guided by a quarter of a century ago, they have long and rightly been consigned to the limbo of the obsolete.

If we have a fault to hint at in Mr. Watt's book it is that it is too scientific for our taste, and that he is a little apt to cavalierly pooh-pooh practice when he is laying down theory. This mere especially in the first portion of the volume, which is devoted to the treatment and cultivation of the tea plant, and interests us far more than the too technical second part, with its staggering array of scientific Latin names in blocktype. Why cannot surgeons and scientists drop Latin? Fancy any sensible man calling a *janwar* an *Aspidiotus Cyanophylli* when he can damn it off hand, succintly and suitably as a "scale-bug"? Conceive a tea planter whose one aim in life is to pull off a five maund per acre crop and get an eight anna average for it, seeking inspiration in three hundred dragging pages plentifully be sprinkled with scientific designations similar to the above. It is we presume for his exclusive benefit that the book is published by what he has recently apostrophised as "a kind and powerful Government." If so we hear it is not "popular" enough for its purpose. There is too much of the economic study in it: it is too prolix to be perspicuous; and as a practical *vade mecum* it wants more one-syllable words.

On the other hand we willingly admit that Mr. Watt has written a learned and exhaustive treatise on *Tea Pests and Blights*, as he who runs may read. Those who suffer from these pests will do well to wrap a wet towel round their heads (their own heads), and refer to Dr. Watt for information and advice. They shall learn in his book all about mosquito, green fly, red-spider, aph s (a single individual of which can, if unchecked, be the ancestor—Mr. Watt informs us—of 10,000,000,000,000,000 of its own species in three month's time, the unprincipled monster!) and several other protoplastic organisms some of which might come, perhaps, as not an unmixed curse to planters behindhand in their outturn, who, peradventure would on occasions welcome their occurrence with the enthusiasm they accord to the three benevolent hailstones, which timely constitute a storm and an excuse for reducing estimates by twenty thousand pounds. Certes there are som e pests and blights described by Mr. Watt in very minute detail whose life history, however much it enthrals the pedant, can have but nominal interest for the planter, notwithstanding the portentous hints of possible calamity that Mr. Watt lets drop *anent* some of them in language solemn enough for the bubonic plague.

Take the caution to Kangra for instance. It is a district which "may be said two have two pests of any consequence. Neither should be viewed lightly, since it is possibly an accident, more than anything else, that they have not yet assumed gigantic proportions." These two pests are a scale-bug and a basket-worm, and we venture to assert that during the last forty years they have not lessened the Kangra aggregate tea crop of say, 60,000,000 by six thousand, we had almost witten six hundred, pounds of tea. Forty years of consecutive "accident" should set Kangra planters fairly at their ease in regard to *Aspidiouts Theæ* and *Amatissa Consorta.*

Apropos of Kangra tea pests we may mention an incident about the red spider and its occurrence in the Valley which may be new to Mr. Watt. Referring to the necessity of studying the habits of this pest more closely, he writes, "Experiments should be performed in every district. Why should we, for example, be unable to say where the red spider hibernates?" Taking this as a test it may be observed that about fourteen years ago the red spider was introduced into Kangra Valley by a planter who imported some high *at* tea seed from Assam. A few months after the seed arrived a ten acre plot of tea in his garden developed red spider in its acutest form, and absolutely stopped flushing in mid-season. That planter's feelings were quite too harrowing to describe, He believed he had not only ruined himself; but his innocent neighbours by introducing the veritable tea plague into the district. He saw himself handed down to the after ages as the villain who killed the Kangra tea industry. His courage failed him to confess his crime. He kept mum. Never a word said he. He lived in guilty but silent dread, hypocritically pretending to enjoy his pegs, awhile he hugged his horrible secret in his breast. The winter came. The red spider hibernated. Where? Presumably on the Better Land—the land from which there is no return, for it certainly never appeared again in his garden. To this hour no one but that planter knows that fourteen years ago ten acres of tea were for a single season red spider stricken in Kangra Valley, and that happily the pest failed to resurrect the following spring. Its exploration of Kangra involved it in the fate that awaits those who intend to explore Klondyke. And it is in the light of this illustration that we think Mr. Watt takes some of his pests and blights a little too seriously Ignorance and idlenesss are far more dangerous foes to successful tea planting and the shareholders of tea companies than all the plant microbes Mr. Watt warns us against. With ignorance Mr. Watt seeks to battle in his first nine chapters, in which he discusses the treatment and cultivation of the tea bush. His very pertinent remarks on the selection and improvement of tea seed may be cordially commended to

* *The Pests and Blights of the Tea Plant, being a report of investigations conducted in Assam, and to some extent also in Kangra."* By George Watt, M.B., C.M., F.L.S., C.I.E., Reporter on Economic Products to the Government of India.

Calcutta agents and merchants, who sell the expensive article, in the hope that their consciences may be pricked. The chapters on pruning and picking tea bushes are full of theoretical wisdom, and will suggest practical experiments that may lead to valuable results. But it must always be born in mind that nature is over fond of sports and eccentricities. Every one who has daily and carefully made a study of the gradual development of a first flush on a pruned tea bush, will have been startled scores of times by seeing buds coming away from spots where theory and Mr. Watt's diagrams ignore them. Incidentally we may say that we totally disagree with Mr. Watt's dictum that a *banji* bush (*i.e.*, one whose tea shoots have prematurely opened out and ceased growing) should not be plucked. He attributes *banji* "to the want of energy in the entire plant," and prescribes rest. In our experience it is more often due to bad pruning, drought, wind, cold, and even excessive rainfall without compensating sunshine, than to want of stamina in the bush. In such cases it is of absolute and vital importance to pluck *banji* leaf; for it is an indisputable fact that an unplucked *banji* bush will be sulking in idleness, when its picked neighbour alongside is in the full fig of a new flush. Similarly we do not agree with Dr. Watt that continued cropping must necessarily exhaust and wear out a bush. We know of plantations forty years old and more, that are yielding larger and better crops to-day than ever they did before. This is due to improved cultivation, and better, though more frequent plucking. The older the bush the larger the root, and it is root power that gives leaf. If due provision is made to obtain a healthy leaf-bearing surface, and sufficient stimulant allowed in the shape of high cultivation, we would infinitely rather own a plantation of sixty year old bushes, than one of six year old bushes.

There are several other points we had marked for criticism from the practical point of view, but they are too technical to be treated with any chance of interesting. But we may briefly state that although Mr. Watt considers "the presence of old wood in the stem (of a tea bush) must be injurious to the planter's aims and object," the practical planter, who seeks to turn out a good liquoring tea, knows for a certainty that to do so *plenty*, of old wood in the body of the bush is essential. And finally, we cannot agree with Dr. Watt that the *sau* tree (*Allizzia Stipulata*) is always beneficial to tea. In Kangra at this moment there are many patches of bushes growing under *sau* trees which in this season of drought have actually not flushed at all, whilst outside the limit of the malign influence the surrounding plants have yielded their ordinary crop.

As a book of scientific research and theoretical teaching Mr. Watt's work is quite the best at the disposal of the tea industry. We should be sorry not to see a copy on every planter's book-shelfs: but we should be more sorry if the planter had not some sound practical experience of his own, by the light of which to study it.

INDIAN TEA FOR PERSIA, ARABIA, TURKEY AND EGYPT,

INTERESTING CORRESPONDENCE.

Messrs. W. S. Cresswell & Co., the well-known Tea Brokers of 10, Hare Street, Calcutta, have sent us the following very interesting correspondence:—

Dear Sir,—In December last, we wrote to the British Consuls in Persia, Arabia, Turkey and Egypt, to enquire into the state of the tea trade there, thinking that the replies would be interesting to merchants and planters in this country. We enclose what replies we have received, which will show you that there is still room for furthering the consumption of Indian teas outside Europe, 42 per cent, of the teas sold in Calcutta, are taken for ports outside Great Britain. Only 6½ per cent. of the Indian teas sold in Mincing Lane are taken for outside markets. With another 200,000 chests sold in Calcutta, the outside markets would develop considerably more than hitherto, and instead of only 42 per cent. being taken, the consumption would be nearer 60 per cent. and the London market greatly eased by the supply being brought nearer the demand, unless something be done to regulate these supplies, we shall soon go back to the old fancy price of 4½d. for common kinds. The position at present is a very strong one, *why not make an effort to keep it so?*

BRITISH CONSULATE, BAGDAD, TURKEY; *23rd January* 1899. No. 13.

To Messrs. W. S. CRESSWELL & Co., 10. Hare Street, *Calcutta*.

GENTLEMEN.—I have the honour to acknowledge receipt of your letter, dated the 5th December 1898, in which you make certain enquiries regarding the tea trade in this country. I enclose a memorandum, which contains the several questions in your letter under reply and the answers thereto.

With reference to the remark in your letter that all teas sold in the Calcutta market are absolutely free from any impurities, it seems probable that the native merchants who buy the tea in Calcutta or Bombay adulterate it before export so as to be able to lay it down in Bagdad at a low cost.—I have the honour to be, Gentlemen, Your most obedient servant (Sd.) P.J. Melvill, *Major, Acting British Consul-General, Bagdad.*

MEMORANDUM.

Question.—Is it possible to find out how much tea passes through Turkish Arabia, and to what destination and whether it be China or Indian or both? *Answer.*—It is impossible to obtain entirely reliable figures, but it may be said that the average quantity passing annually through the Bagdad Custom House during the past three or four years has been nearly 5,000 cases of, say, 100 lb. each, say, 500,000 lb. Some 80 to 90 per cent. of this tea goes to supply the markets of North-West Persia. The great bulk of the tea imported is Indian and is known in the trade as "Calcutta" tea; only a small quantity (perhaps 5 per cent.) comes from China and Java.

Question.—Do the people of Turkish Arabia drink much tea, if any, and what do they have to pay per. lb. for it? *Answer.*—The people of Turksh Arabia generally are not tea drinkers. This is clearly shown by the fact that, of an annual import of some 5,000 cases, about 750 cases are sufficient to supply the wants of Turkish Arabia, of which Bagdad is the emporium. The present wholesale price of the description of "Calcutta" tea most freely sold in Bagdad is about Grand Seigneur Piastres 11¼ per Constantinople oke (2·83lb.) equal at exchange of G. S. Piastres 115 per pound sterling on London to about 8¼. per lb. *Question.*—Could you procure a sample of tea selling in your city, also letting me know how it is packed, size of boxes, etc.? *Answer.*—A small sample of the "Calcutta" tea selling about G. S. Piastres 11¼ is enclosed.

The tea is usually packed in cases weighing 80lb. to 110lb. the net weight being marked on the case. The tea is enclosed in leaden wrappers in a wooden case with a covering of skins and gunny. It is sometimes also packed in a strong tin case with wooden boards at the ends, bound with two iron hoops. The tea in these cases is usually in bulk, but sometimes it is packed in 1lb. tin boxes bearing a label with an attractive design with usually the name of the native importer in Arabic or Persian.

Question.—Do you think there is room for further development in this particular trade? *Answer.*—The trade is at present worked very cheaply by native merchants having agents in India. It seems to be increasing, but there would appear to be no room for a sudden development in this particular trade. It is *possible* that, with the present low prices of Indian teas, there may be a gradual change in the habits of the people of Turkish Arabia, that is, they may, after a time, come to drink more tea and less coffee. At the same time lower prices nearly always mean larger consumption, and, and if the trade in Calcutta

can put a tea on the Bagdad market at a less price than that quoted, the trade will probably expand. The market here requires cheapness before quality.

Question.—Is there any import tax on tea? *Answer.*—On tea sold for consumption in Turkish Arabia the duty is 8 per cent *ad valorem*. If, however, it is sold for export direct into Persia, the duty is a transit one of 1 per cent. only. In the latter case, of course, the price paid here by merchants buying from the importers for the Persian market is proportionately less· *e., g.*, as against piastres 11¼, quoted above the quotations, if selling for Persia, would be about piastres 10½ (Sd.) P. J. Melvill, Major, *Acting British Consul-General, Bagdad.*

BRITISH CONSULATE, SMYRNA, TURKEY; *14th January*, 1899.

To MESSRS. W. S. CRESSWELL & Co. 10, HARE STREET, *Calcutta.*

SIRS,—In reply to the queries contained in your letter of the 5th ultimo, I have to state as follows:—

1. In 1897 about 168,500lb. of tea were imported at Smyrna, estimated value about £10,900, for local consumption. It was chiefly blended tea, *i. e.*, China and Indian teas mixed.

2. Natives of this country do not drink much tea, coffee being the beverage consumed instead. *The demand for tea is, however, increasing every year.* Price paid is from 2s. 6d. to 3s. (retail, per lb.)

3. One solitary sample is not likely to prove of much use, but can be procured and sent if really desired and freight prepaid.

The article sold here is packed in chests tin foil. of 56lb. or in tin boxes of kilo 1 kilo=2·20lb, and its fractions ½, ¼ and ⅛. These last are imported by the French Colonial Company.

4. *There is decidedly room for a further development in this trade.*

5. The import duty on tea is 8 per cent. *ad valorem.*

6. I think it would be unadvisable to attempt too large a business at first as the country is not a rich one, and, as stated above, the national taste is on the side of coffee, which is consumed in great quantities.—I remain, Sir, Yaur obedient servant, (Sd.) H. A. CUMBERBATCH, *Consul.*

BRITISH CONSULATE, TRIPOLI, NORTH AFRICA; 15*th January*, 1899.

DEAR SIR,—In reply to your enquiry, dated the 6th ultimo, addressed to Tripoli, Arabia, I beg to inform you that the import of tea averages between £4,000 and £5,000 a year, the bulk of which is purchased here for export to the Soudan by the trade caravans proceeding south to Wadai, Kano, Sokoto, etc.

The qualities are as follows:—

Son Mec	... ½ chests 0 3 10 at France	2 10 per kilo.
Ditto	... ...	... 1 90 ,,
Young Hyson...	..	.. 1 70 ,,
Ditto	.. ..	.. 2 0 ,,

Small quantity of Indian tea in chests of 1 0 4 at 1s. 4d. to 2s. per lb. (all sales at 4 months date.)

Packing.—Light wooden cases, lined with leadfoil, matting and canvas covering. The caravan trade being on the decline, I do not think there is room for further development. The local consumption is small; the import duty is 8 per cent. *ad valorem.*—Yours faithfully, (Sd.) T. S. JAGO, *Consul General.*

BRITISH CONSULATE, SALONICA, TURKEY; 16*th January*, 1899.

To MESSRS. W. S. CRESSWELL, & Co., *Calcutta.*

GENTLEMEN,—In reply to your letter of 5th December last relative to the importation of tea in this province, I am instructed by Her Majesty's Consul General to communicate to you the following information supplied to him by a firm of merchants here.

The importation of tea, mainly of Indian origin, amounts to 200 or 300 original cases in the season. The greater part of this is for consumption here and some for other parts of the province.

The use of tea is not general among the population, but appears to be extending with fair rapidity.

I send you separately four samples of the qualities known here.

Tea is always packed in the original cases.

The import duty is 8 per cent, as on all goods admitted into Turkey, and the price is from 2s. 3d. to 2s. 10d. per lb. according to quality.

Should you wish for any further information I should recommend you to apply to the merchants referred to above, Messrs. Jenny and Vock, a Swiss firm of Commission Agents occupying a good position here, who have expressed their willingness to enter into communication with you.—I am, Gentlemen, Your obedient servent, (Sd.) W. J. HEATHCOTE, *Consular Assistant.*

USCUB; TURKEY IN EUROPE; 22*nd January*, 1899.

To W. T. CARTER, ESQ.

DEAR SIR,—I received your letter of 7th December last (as also the one addressed to Monastis, I being in charge of both districts), and I have made some inquiries as to the consumption of tea here.

The annual consumption in this Vilayet (Kossova) is about 1,500 okes (an oke is 2 1-5b.)

Except for a small quantity of Russian tea, nearly all the tea consumed comes from Asia Minor. It arrives at Constantinople or Salonica in cases of 50 kilogrammes each. In those towns it is repacked in tins of 1 oke, ½ oke and ¼ oke sent to Uscub.

The price at Constantinople or Salonica of the tea in general consumption here is 30 piastres the oke (110 piastres=fst. 1) and it sold here at 50 piastres the oke.

The Russian tea is sold in packets of 100 grammes at 5 piastres the packet.

I should say that probably the tea consnmed here and said to be from Asia Minor is the same as you speak of as sold to Persian Gulf or Trebizonde merchants.

Hoping that this information may be of use to you.—I am, Sir, Yours faithfully, (Sd.) CHARLES S. SAMPSON. *H.M. Vice-Consul.*

H.B.M. VICE-CONSULATE, VAN, TURKEY-IN-ASIA; 22*nd January*, 1899.

SIR,—In reply to your letter of inquiry regarding the sale of tea in province, I beg to inform you that all tea imported here comes from Constantinople merchants.

It is said that these merchants import in large cases from India, but the tea is remixed and packed at Constantinople before forwarding into the interior.

It is packed in small fancy tin boxes containing from 25 dirhems to 3 okes each box. 400 (dirhems=1 oke=2⅜lb.)

One of the small boxes is forwarded as a sample. Inferior teas are in small canisters 4 to 6 inches high. Occasionally rectangular tin boxes 13 by 9 by 10 inches are used.

It must be remembered that all goods to this province must come by pack transport chiefly from Trebizonde, sometimes from Alexandria. It might be possible, however, to open a more direct trade with Van through Bagdad and Mosul; the caravan distance from Bagdad and Constantinople is about the same.

Since ten years ago people, both rich and poor have begun to drink more tea, and until three years ago the trade was increasing. The disturbances three years ago have much impoverished the country and there is no money to buy much besides bread and the absolute necessaries of life. This year there are fears of a partial famine. The import last year to Van was 3,000 okes or 8,250 lb.

The present political situation is by no means clear, and there is no room at present for any further development of the trade.

The import duties are all paid in Constantinople. There are none here.

There are three kinds of tea imported here.—

(1) 80 paistres an oke	...	6 shillings a lb.
(2) 40 ,,	...	3 ,, ,,
(3) 20 ,,	...	1s. 6d. ,,

Samples of each are enclosed in the sample box.

As far as I can judge, all these have but a very remote connection with the actual tea plant.

Tea is not usually sold by the oke, but in the fancy boxes such as the one I send, which, filled with the second quality, is sold for 12 piastres or 2s. 6d.

A canister 2½ feet diameter and 3⅛ feet high full

of the worst quality is sold for 3½ piastres or 8¾d.

A canister 4 feet high and diameter of second quality is sold for 5 piastres or 1s. ½d.

If the condition of the country should improve *I should think there would be a good demand for tea here.*

The bagdad, Mosul-Van route would be the best, as the middlemen in Constantinople would be saved.

A central agency at Bagdad with sub-agents at Mosul, Bitlis-Van and Diarbekr ought to do a good trade in cheap tea of a good quality.

The people are not at all satisfied with the stuff represented in the present samples—I am, Yours, faithfully, (Sd) F. R. MAUNSELL, *Capt. R.A., H.B.M., Vice-Consul.*

BEIRUT, TURKEY, 25*th January*, 1899.

SIR,—I am directed by H.B.M's Consul-General to reply to your questions regarding tea in your letter of the 7th ultimo.

6,000 okes—15,000 chests tea passes annually through Beiruit. Destination—Beirut, Damascus, Jaffna, and Jerusalem receive an equal quantity.

Tea is not a national beverage, foreign residents consume the most. The quantity imported is drunk.

Indian teas, price 7d. to 9d per lb. China teas, 4 to 7 per 3lb. packets. China teas packed in 10 or 20lb. chests. Indian teas in 20 to 80lb. chests. The import duty is 8 per cent *ad valorem.*

There is little chance of developing the Trade—I remain, Yours very faithfully, (Sd.) J. E. CROW.

BRITISH CONSULATE, ANGORA, TURKEY, 27*th January* 1899.

DEAR SIR,—The following few particulars which in accordance with the request contained in your letter of the 5th ultimo, I have obtained respecting the consumption, etc., of tea in the town of Angora and immediate district are, I trust, what you require, I should, however, state by way of preliminary that as no official statistics whatever are procurable, the estimate given of the amount consumed must be regarded as at best approximate only.

The answers to your questions are as follows:—

1. No tea passes through the province of Angora, such as is imported being used in the district itself. The tea, I am informed, is of Chinese origin and comes through Russia to Constantinople, from which town it imported here by rail directly.

2. The annual consumption of tea in Angora and district is estimated to amount to 2,500 okes (the oke being taken at 3¾lb.) of a value of some £500, which would give an average price of 4s. an oke or about 1s. 5d. per lb.

As you will see by the above figures, Angora can hardly be said to contain a tea-drinking population. Nevertheless I am told that during the last three or four years there have been signs *that the article has been gradually gaining ground, and that the families who formerly drank nothing but coffee are now replacing it by tea.* The same, though to a less degree, may be said of the Turkish peasants among whom the custom has been introduced by immigrant Circassians from the Caucasus.

3. I enclose four samples of the tea sold at Angora with price per oke of 2¾lb. attached, and I would ask you to note that the sale of the quality marked No. 3 at 3s. 6d per oke, or about 1s. 3d. per lb., amounts to 90 per cent. of the total consumption.

As to the method of packing, etc., I am informed that the tea is forwarded to the export houses at Constantinople in wooden chests contain from thirty to thirty-five okes (82-85lb.) each. From Constantinople it is sent to the dealers here either in these same boxes or in tins containing from ½lb. to 6lb. each, according as the order may have been, wholesale or retail. I enclose mark on the chests which contain quality No. 3 at 3s. 6d. per oke. I may add that the wholesale buyers at Angora are allowed 91 days for payment by Constantinople firms, the Turkish lira, moreover, being accepted at 112 piastres, whereas it is taken in the market at only 108 piastres.

3. The import duty on goods entering the Ottaman Empire is 8 per cent, *ad valorem.* There is no octroi at Angora.

4. With regard to your question whether there is room for further development in this particular trade, I can only say that while. as already stated, there has been an increase during the past few years in the consumption of tea, this increase has only been very gradual and is likely to continue to be such for some time. In other words, British teas if introduced would have to compete with the Chinese article for a share of the rather modest annual consumption now existing, and what chances of success they might have I can of course offer no opinion, as it would depend on the taste of the consumer. In any case I am informed that the article introduced should be of the same quality or a little superior to the sample which I have numbered 3 and of a slightly lower price, say, 1s. 1d. per lb.

As regards method of doing business, I do not see how the present system, *viz.*, of obtaining the article through the large import houses of Constantinople, could be changed, for even if a dealer here were to attempt to enter into direct relations with, say, an Indian firm, he would have to employ a commission agent at Constantinople to clear the customs for him and forward the goods on. I can of course supply you with names of Angora grocers (there are no exclusive tea dealers) if desired, but it would appear to me that the better course under present conditions would be to apply to some old established firm English for preference, at Constantinople who would undertake to push the sale through agents here and who would be in a better position than I am to say what the chances of a sale might be.

I should add that the figures which I have given above only apply to Angora and immediate district. There are two other centres and the province, *viz.*, *Caesarea* and *Yazgat*, at which the estimate annual consumption amounts to some £500, respectively.

The port through which Caesarea obtains is tea is, I am told, *Mersina* in the Mediterranean; that for Yuzgat *Sumsoun* on the Black Sea. If desired I will endeavour to obtain samples of the teas used at these two places with prices and particulars attached as in samples endorsed in present letter.

I am, dear Sir, Yours very faithfully, (Sd.) H. S. SHIPLEY.

H.B.M. CONSULATE, DAMASCUS, TURKEY, 30*th January*, 1899.

GENTLEMEN,—With reference to your letter of the 7th ultimo asking me to give you information about the consumption of British-grown tea in this province I have to inform you that about 100 boxes of Indian tea are consumed yearly in Damascus and district, each box containing from 100lb. to 132lb. Of China tea the yearly consumption is so small that it is hardly worth mentioning, perhaps 2 or 3 boxes similar in size to those in which Indian tea is imported.

The habit of tea drinking is *undoubtedly growing in this city* and the few towns which are comprised within the limits of the province, but as the greater part of it (the province) is inhabited by Bedouins, Druses, Circassians, and other wild and semi-civilized races to the great majority of whom tea is a novelty as well as a luxury, its consumption is necessarily very restricted.

I am forwarding to you by this post four different samples of tea, being the kinds for which there is most demand here, of which the prices (wholesale) range as you will see from 9d. to 1s. 1½d. per pound. The wholesale price of China tea, on the other hand, ranges from 1s. to 4s. the pound.

As regards packing, I am given to understand that the boxes, which, as stated above contain from 110 to 132lb., are tin lined.

The import duty on tea, as on all other articles imported into the Ottoman Empire, is 8 per cent. *ad valorem.*

The further development of the trade is not likely, considering the rough and uncivilized character of the majority of the inhabitants, to be either rapid or extensive. On the other hand, it is undeniable that such consumption of tea as exists has made very rapid strides *in the towns* of late years.

Moreover, thanks to British enterprise and capital, a Railway is now in the course of construction which will connect St. Jean d' Arc, Haifa and Damascus, and so tap a considerable tract of country which no railway has hitherto reached, so that the demand for luxuries, such as tea so considered in this country, *will undoubtedly increase in the future.* On the other hand, it should be remembered that coffee, though dearer than tea is *the* beverage of the country, while the latter is not. And even those who are most accustomed to the drinking of tea only indulge in the habit during the winter or cold months all through the summer and the autumn they drink coffee as being, so it is held less heating. Nevertheless the habit of tea drinking is *certainly growing* though chiefly confined at present to the towns. I am, gentlemen, Yours faithfully, (Sd.) W. S. RICHARD, *H. M. Consul.*

CAESAREA, TURKEY; 31*st January*, 1889.

MESSRS. W. S. CRESSWELL & Co., *Calcutta.*

DEAR SIRS,—I do desire to make a work on tea now I will give information on this work.

In our province the merchants sell much tea by boxes or by pounds, but now usually by pounds.

Our province people can pay for a pound, *viz.*, four hundred drams, for a good one from fifteen to sixteen piastress.

In Turkey there is import tax on tea, the merchandise which come from foreign countries import tax is 8 per cent.

If you make trade with us I hope that other merchants cannot sell as us. I hope you give answer to my letter. There is nothing to read for this time. Yours truly, (Sd.) Y. ZAMBAKJIAN BROTHERS.

My address is this:

Y. ZAMBAKJIAN BROS., (CAESAREA), KASIRI, TURKEY, ASIA.

JERUSALEM, TURKEY, 11*th February*, 1899.

W. CARTER, ESQ., CALCUTTA, *India.*

DEAR SIR,—In reply to your letter of the 5th ultimo I beg to state that the tea imported into Palestine is for the most part of an inferior quality, and is consumed by the Jewish population and Russian pilgrims.

The consumption, however, of tea in this country is *on the increase*, the natives having of late years taken to tea drinking, but as a rule they are indifferent to the quality. The price generally paid for the ordinary, kind is at the rate of 1s. to 1s. 3d. per pound retail sold in ¼lb. packets and it is a blend of China and Indian tea (sample No. 1.)

The Europeans and better class of the inhabitant, consume generally Ceylon tea or Orange Pekoe which are retailed at 1s. 6d., to 2s. 6d. per pound and is sold in bulk and in 1lb. packets (sample No. 2.) I forward samples by post.—I am, dear Sir, Yours faithfully, (Sd.) JOHN DICKSON. *H.M. Consul.*

KHARPUT, TURKEY, 17*th February*, 1899.

MESSRS. W. S. CRESSWELL & Co., *Calcutta.*

GENTLEMEN,—In reply to your note of the 7th December last asking for information respecting the tea trade in this province I beg to forward the following particulars:—

The amount of tea used in the province during the year is about two thousand okes (the oke being nearly equal to 2¾lb., distributed as follows:—

Kharput and the neighbourhood ...	700okes.
Malatia district	700 "
Arabhia	500 "
Egin	100 "

As regards the country of origin of tea imported into this province, I am informed that about 75 per cent. is Chinese tea, the remaining 25 per cent. being Indian of better quality than the China tea and higher in price.

The quality of the tea used is for the most part very inferior, only about 10 per cent. being fairly good.

The import is obtained entirely from Constantinople, there being no direct trade with China or India.

At that port tea, like other imports from foreign countries, is subject to a duty of 8 per cent. and in addition to this an interprovincial duty of one per cent. is levied on its introduction into this province.

Owing to the defective condition of the means of communication in this part of the Empire the cost of transport is very heavy and trade is thus greatly hampered.

Under these circumstances, and in view of the poverty-stricken condition of the province, there is but little hope of any great expansion of the trade taking place at an early date.

The tea as it comes from Constantinople is packed in comparatively small tins holding only a few pounds each.

Prices vary twenty-eight piastres (=4s. 8d.) the oke to fifty piastres (=8s 4d.)—I am, Gentlemen, Your most obedient humble servant, (Sd.) I. FRANCIS JONES.

HER MAJESTY'S LEGATION, TEHERAN, PERSIA; 18*th February* 1899.

MESSRS. W. S. CRESSWELL & Co., 10, HARE STREET. *Calcutta.*

SIR,—I have received your letter of the 2nd December 1898 regarding the prospect of the tea trade in Persia.

I am making enquiries at the various trade centres, and will inform you of the results. Owing to the extreme slowness of communication in this country, I fear it will be some months before I can send you full information; but you shall have it as soon as possible. The import tax on tea is 5 per cent *ad valorem.*—I am, Sir, Your obedient servant. (Sd.) H. M. DURAND.

BRITISH VICE-CONSULATE, MOHAMMERAH, PERSIA; 24*th February* 1899.

SIR,—In reply to your letter of 2nd December regarding the tea trade in this province, I have the honour to inform you that the import of *tea is increasing and is likely to increase.*

The tea is Indian, Ceylon, China and Japan and is shipped by British steamer from Bombay.

The imports for the past three years were as follows:—

Year.	Landed at Mohammerab	Reshipped to Karun	Transhipped India to Karun Ports.
	Cwt.	Cwt.	Cwt.
1896	191½	65	301
1897	191	133½	240
1898	388½	82½	797½

The second column should be deducted from first to show local consumption.

The following varieties are sold in Mohammerah Bazar at retail price given.

[*Exchange*, Krans 35=Rs. 10.]

1. Java tea, 200 tins of about a pound, at Krans 150.
2. Calcutta tea, Krans 10 per 6lb.
3. Ceylon tea, Krans 11 per 6lb.
4. White China Tea (Pekoe), Krans 5 per lb.
5. Khaldar (Java Pekoe), Krans 14 per 5lb. tin, or Krans 30 per 1lb. tin.

Indian and Ceylon is either loose or in packets packed in cases of 100lb and 200lb. Paper packets generally bear a label in Persian giving the name of some Persian trader either in India or here.

Samples are enclosed of above.

Import dues of tea if owned by Europeans 5 per cent *ad valorem* once and for all.

Tea imported by Persians pay no customs at Mohammerah, but an octroi of Krs. 0·025 per lb. package, with other charges including literature coming to about seven krans per case. If re-shipped it pays customs on shipment and at other places in the interior.

Through native cargo pays customs at Shushter Krans 12·75 per mule load of 2 large or 4 small cases,) it is liable to further dues at other places beyond Shuster.

The British India and the Bombay and the Persia Steam Navigation Companies issue through Bombay B L from Bombay to Nasri and Shushter on the Karun.

A mule road from Nasri (Ahuaz) to Ispahan is now being construoted and will probably lead to further trade with the interior by the Karun ronte.—I have the honour to be, Sir, Your most obedient servaut (Sd.) W. McDONALL, *H. B. M. Vice-Consul, Mohammerah.*

BRITISH CONSULATE, ISPAHAN, PERSIA, *26th February* 1899.

DEAR SIR,—Your letter of 2nd December to Her Majesty's Representative, Yezd, has been forwarded to me heré, tbe Yezd district being in my charge, I, however, have no ageut at Yezd, and am not in correspondence with anyone there to whom I can apply for the necessary information.

I do not believe that there is much chance of increasing the tea trade of the place, it is entirely in the hands Parsi merchants, who have there agencies in Bombay, who work it, you may be sure, for all that it is worth. I see by referring to my report of 1896 No. 1662, Circular report, that during the year 1895-96 the importation was 2,800,000lb. whereas in 1891-92 6,000,000 (six millions) was the figure. The closing of the Russian markets in the north was the cause of this great decrease.

With regard to this market in

1892-93	4,844	Boxes were imported.
1894-95	4,479	do
1896-97	3,117	do
1897-98	6,314	do

The major portion of this tea is Indian, about 1-10 may be taken as China, that is, the tea which finds most favour with the Ulima. Small consignment also come from Java from time to time. The supplies which come here are for the local market and the sonrrounding districts. I cannot find that any goes north. There is not very mnch tea drunk the people are poor aud cannot afford to expend mnch on what to them is luxury.

Indian tea costs from Krans 32 to 40 per manshah,
China tea do do 70 to 110 do
Krans 3·50=one rupee, 52 krans=£1 and 12·60 lb.=manshah.

China tea is packed in big boxes, each containing 4 small boxes weiging about 28 lb.

Indian tea is packed in boxes lead foil, each containing about 100lb. I have seen it also in 1 lb. packages. This came from Kangra Valley. Also I have seen it in wood boxes, each box containing four tins of 20lb, of tea. These have come from Calcutta

There is an import tax of 5 per cent. on all tea brought in by Europeans.

I do not think that there is room for any development of the trade. European merchants here, who have connection with India, have tried the market and have not found it responsive.

If I can give you any further information I shall be glad to do what is in my power.

I am, dear Sir, Yours faithfully, (Sd.) J. R. PREECE.

HER MAJESTY CONSULATE ERZEROUM, TURKEY, 4th *March* 1899.

DEAR SIRS,—Tea can be sold bere for about £5,000 to 6,000 stag. per yard in Erzeroum only. But as there is ground to sell also tea for the north of Persia, for this year tea will be consnmed for £10,000.

Either for our city or for Persia Indian teas are nsed; but a little quantity of China white tea. The people of our province *drink much tea*, and from year to year the consumption is growing.

Per this mail I send yon ten samples of tea in fine packages to show you the qualities which are sold in our country. No cheap teas are wanted, especially for Russian buyers, for Tabrig, too. Only small quantity of better qualities is wanted for Erzeroum and for Tabrig, this at 10-10½d. per lb. in Calcutta. Per the next mail I will send you samples of those nice teas, too.

Note that all the teas for this conntry must be flowery (fair appearance.) Black teas are never wanted here.

Tea is coming us per chest of 1001-10lb., but the qualities up to 6d. per half-chest of about 50lb., net. Chests must be strong, and wrapped by strong Hessian cloth, and all round chest iron rings. Boxes of 10lb., 20lb., 30lb. net flowery are selling also in large quantity.

By experience I know that there is room for further development in this particular trade.

As for all goods the tax on t a is 8 per cent., which I pay at Trebiyonde. But if transit for Persia no tax to pay in Turkey.

All tbe teas shipped from Calcutta to Trebizonde are 90 per cent. for Erzeroum trade. But the Persian FUTH ship also for Trebizonde about 10,000 to 12,000 chests, half-chests (from Calcutta) all for Tabriz (Persia, this year. Except FUTH the remainder are for our city. Trebizonde is not but a simple port for tea.

I tested always that the weights of London are exceeding in lbs. For instance a chest of tea sent us from London for 100lb. was weighing here 101·102 lb. net. But Calcutta weights besides are not exceeding in their weights have represented a deficit of 1-2lb. per each chest.

Sugar bags—28 × 48=2½lb. red or blue border—are selling in large quantity in this country.

As Indian teas are of British growth, I will try to sell teas hereafter on a large, scale, having already developed business in the north of Persia because Persians like very much Indian teas with long but nice leaves and flowery.—I remain, dear Sir, Yours faithfully, (Sd.) P. H. H. MASSAY, *Lieutenant-Colonel.*

P. S.—Herewith list showing the prices of samples.

I will poiut out to you that sometimes it happens that we receive from Calcutta a nice sample of 20½ chests shipped for us. When the goods arrive I find that 10-12 half-chests are the same as the sample but the remaining eight half-chests are of ordinary quality and not the same.

ERZEROUM *le, 4th February.*
Calcutta price, Erzeroum selling prices.

		Chs.	d. per lb.	P. per ocg.
F.P. No.	162-174	3½	4¾	22½—13½
c				
,, ,,	199-205	7	4	9¼
,, ,,	187-196	10	4¼	9½
,, ,,	252-253	2	3¼	9
,, ,,	11-57	47½	6¼	13¼-15
,, ,,	78-101	24	4¾	12½
,, ,,	317-340	4½	8¼	18
,, ,,	851-880	30½	tipy 8½	18¾
,, ,,	881-900	20	,, 7	15
E. P. C. Ceylon tea		7½	35 Cts.	12½-13½

An Ocg. is equal to 2¾lb.

Trebizonde expedite has to receive one shilling of commission for each chest.

Tax 8 per cent. on the price fixed in Trebizonde Custom Honse.

Carriage from Trebizonde to Erzeroum about 2d. per ocg. per the back of horses or per oxen-carts. 18s. 2d. make 100 gold Piastres.

From Trebizonde to Tabriz tea is going per caravans of camels. They pay for carriage about 2¼ piastres (about 5½d.) from Trebizonde to Tabriz for each ocg.

In Persia the tax on tea is about 5 per cent.

THE EUCALYPTUS IN BRITAIN.

It seems to me pertinent to enquire—is there any future for Eucalypti in England at all, and will they do good there? I have known persons who would emulate the credulity of the monks in the virtues which they attribute to these strange Australian trees. A broken Eucalyptus-bough or a few leaves were in their opinion sure to be a defence against influenza and other things—but all this is for the most part beside the mark. In England, as elsewhere, they might be very serviceable for drainage purposes if only they would live, but that seems problematical in the highest degree, and for nothing else is it worth while to take much trouble about them. In your impression of December 3, I remem-

ber reading the following passage: "Eucalyptus Globulus.—I quite agree with 'J. H. D.' in his remarks as to the rarity or difficulty of growing this plant; here, we have plants 16 or 18 feet high that have withstood five winters without the slightest, protection, &c. In my opinion the principal cause of failure to grow is planting them too soon, &c." The writer, who is evidently alive to the difficulty that surrounds the whole matter, is full of hope that it may be somehow overcome. I am sure, I do not wish to daunt him in any degree, but with regard to E. Gobulus I am persuaded that it has not a constitution which is sufficiently hardy for England. It is a great favourite wherever it get on well because it makes a great show so quickly, and my friend the Trappist monk calls it A1, because it gives him no trouble at all; but that is a different thing from the way in which Cavaliere Palice speaks about the same matter. He does not say that Eucalyptus Globulus can be trusted in all places and positions, but he maintains exactly the reverse, and he puts E. resinifera at the head of the whole of them, because it is more reliable than the rest. And this, so far E. Globulus is concerned, I have seen over and over again in the Isle of Wight. It goes on well, say, for seven or eight years or more, and then a more than usually hard frost comes, and ever tree is destroyed.

I remember twenty (or twenty-five years ago receiving a letter from a friend who had a fine place at Westridge, near Ryde, and his asking me to go to him at once. He certainly was not addicted to botany or to the cultivation of trees and plants at all, but, somehow, E. Globulus had found its way into his garden, and had attained to a great size; he was very proud of his tree, but he could not make out the buds, and one spring very unexpectedly, and very suddenly, so far as the owner was concerned, it broke out into blossom, and was a pretty sight to see. I really do not know what this gentleman imagined had taken place. The knob-like buds he had esteemed to be seed-vessels, so far as he had thought about them at all, and the difficulty in his mind was, what then had succeeded them? and he was very slow to believe that his Eucalyptus was blossoming. But that tree gave rise to many false hopes in the Isle of Wight. If E. Globulus could behave like this, and grow so tall, and blossom so luxuriantly, what more could be required? It would certainly take to the Isle of Wight, and the Isle of Wight might have a new possession of great value about which no doubt need be entertained. But what really took place? E. Globulus was planted in fairly large quantity in and about Ryde, and everything went on swimmingly for a series of years. Near Trinity Church in Ryde there were some very large specimens indeed, there were one or two in St. John's Park, the same (I think) in the grounds of Isle of Wight College, certainly one or two in my own garden, and nobody dreamt of any ill coming to them; all boded so well. But tho frost of 1881 made short work of the hole lot, and for sometime there was not a Eucalyptus in the place that was worth speaking of. Now they are coming up again in some plantations and gardens, and they look very promising, but the promise will only last till the mercury in the thermometer goes below a certain point, and the whole thing will be over. This sort of occurrence is by no means peculiar to the neighbourhood where I live. I asked a lady who is a visitor to Rome this winter, and who lives at Falmouth, how it fared with her about this matter, and her answer was, they get on well for five or six years, and then a hard forest come and every Eucalyptus is killed. I have even heard of a fine tree at Bournemouth, which stood the climate there for seventeen years, and at last was cut off. They may do permanently in other places about which I know nothing at all, but the Scilly Isles give the only exception I can think of to a universal rule. [Fota, Mr. Smith-Barry's place near Cork.—ED.]. I may, however, say, that I know nothing about the west coast of Scotland, and how they fare there.

The question, therefore, about them is this. Is any one species so much more hardy and so much more slow-growing than the others as to afford solid ground for hope?

I remember myself hearing some time ago of two names of Eucalypti. I think they were E. Gunni, E. coccifera and another, and these were said to promise quite well for the future in point of hardiness, but I do not know how the promise was fulfilled—it can do no harm if a third one be added to the list—it may prove a failure, like so many others; but E. resinifera has a very good character here, which should not be overlooked.

I would only just add, that I have brought a good supply of seed of E. resinifera from the Trappist Monastery, and I shall not myself want a tithe of it. I will readily send some of it to any one who applies for it to me on my return home to St. John's Ryde, which will be, so far as I can tell at present in the month of April next. H. *Ewbank (Rev.) Rome, Christmas Eve*, 1898. [E. resinifera was figured in our columns, with a descriptive article from the late Dr. George Bennett. See *Gardeners' Chronicle*, August 3, 1872, p. 104. E. coccifera, at powderham Castle, Devon, has often been figured in our columns. See February 7, 1891. We should be pleased to hear the present height of that specimen. The tree a Kew which gets hurt by frost is E. Gunni. E. urnigera is the tree grown at Whittingham, East Lothian. See *Gardeners' Chronicle*, June 30, 1888. We may also refer to an article on February 7, 1891 as containing a summary of our knowledge of these plants, as grown in the open air in this country, ED.].—*Gardeners' Chronicle.*

THE TEA CAMPAIGN.—The *Madras Mail* has some pungent remarks to make in criticism of a local paper thus:—India to act for herself. Now, if Ceylon has had less advantage than India out of co-operation up to the present time, why should she wish to continue a system that is unfavourable to herself; if more, then why should India take the bait that is put before her? As for the "futility" of South India acting independently, we can only say that, in our opinion, a scheme might easily be drawn up that would be within South India's means, and that would give a better return in proportion to the money laid out than the past efforts of either the Planters' Association of Ceylon or the Indian Tea Association have done. This is a bold assertion, perhaps, but, at least, the above efforts have done little for this part of India. The idea that Ceylon and Indian teas can be grouped together, and offered as if they constituted but one series of qualities, appears to us to be fallacious. There is as wide variety between some Ceylons and other Indians as between any Ceylon or Indian and any China teas. South Indian teas are, generally speaking, totally distinct from Assams or Darjeelings, at any rate from the higher grades. Such South Indian teas, as have been offered in the London market lately have been described as "useful sorts." That is what is wanted all the world over, and if South India makes it known in other markets than London that she has *useful sorts* to offer, she will reap the benefit of increased competition among buyers. Whatever our Colombo contemporary may say, we see no reason why India should make terms with Ceylon in respect to tea compaigns in America or elsewhere; and we specially deprecate the idea of South India placing herself in the position of the little streetboy, who steals a free ride at the back of a passing cab. She should push her on wares, not hang on to Ceylon or India's coat-tails.—As for the "Times of Ceylon" remark about "political feeling in Russia against India," our contemporary has so completely misunderstood our reference to political considerations as to try to put the boot on the wrong foot! If our contemporary will but consider that there is no Consular representative of Russia in India, and if he will try to ascertain or to guess the reason, he may possibly comprehend our statement that "political reasons obstruct progress" in regard to a direct line of steamers from Calcutta to Odessa, in rivalry with that which carries cargo from Colombo to Odessa.

FACILITIES FOR MAKING GOOD TEA :—VI.

It is perhaps, a good sign that even the new districts declare that better tea might be made with better soil; for although the declaration may be regarded as a confession of universal poverty of soil, we prefer to look on it as a recognition of the truth, too often forgotten, or ignored, that the soil requires to be liberally treated if it is to yield of its best. What if our soil as a whole is poor? It has yet shown its suitability for the profitable cultivation of tea; and it is far better to know its deficiencies and to supply them, by the aid of agricultural chemistry, than to live in a fool's paradise, or deliberately to conceal facts in a way to imperil a great industry, while injuring individual interests permanently. It is in that view we welcome the declaration from Maskeliya that the "want of richness in the soil" is the great drawback to making better tea. The up-to-date planters of a progressive district are not the men to make a declaration like that, and then to fold their hands and expect the soil to improve under contemplation. No; it will be their endeavour to give the soil what it lacks. With the jât of the bushes "fairly good," they will not be discouraged by the knowledge that the soil is "rather inferior, generally speaking"; and we are not surprised at the conclusion that manuring should be resorted to, to keep the bushes in heart, and enable them to bear the constant plucking to which they are subjected all the year round, though doubt is expressed if direct profits are realizable through manuring "with present prices." But that was written early in October; and since then prices have advanced; while there is reason to hope, with the growing demand, especially outside the United Kingdom, for Ceylon tea, that prices will not run down again to the lowest point reached last year. The factories are, as a rule, well-provided with withering room, machinery and motive power; and that must be a great help in the endeavour to produce good tea; while, with the labour force ample, and pruning practised with the wisdom which avoids severity on the one hand, and postpones the use of the knife too long on the other, nearly all the facilities for making good tea are present. The prices which Bunyan and Ovoca estates fetched only a few days ago in the open London market, proclaims the high position which Maskeliya enjoys as a tea district, and only confirms the correctness of the reply to our circular which claims that the soil, despite its deficiencies and its appearance, grows tea well, though large yields and high quality cannot be expected in combination, and that the climate and the rainfall further contribute to the popularity of the district for residential and agricultural purposes.

In Bogawantalawa, among the drawback to making better tea, are mentioned coarse plucking, want of care in plucking, and deficient withering space. The jât of tea varies on different estates, but on the whole it is fairly good. The soil, too, similarly varies —estates which had grown coffee being more or less worn, while the soil on others is good. The district, we are surprised to learn, is a stranger to manuring—the cost of transport, we fancy, proving an obstacle; but confidence is expressed that the application of manures would be of advantage. Withering space is declared to be decidedly deficient on some estates, and so with machinery; but most estates have sufficient motive power, except during a severe drought when water power fails. Like almost every other district, Bogawantalawa has had labour enough, and more than enough, during the past year; but matters, we suspect, are different now. Severe pruning is held accountable for reduced prices, though the yield has been increased by severity; but in some cases fields have been spared a taste of the knife too long; and in such cases it is claimed that flavour has been maintained. Is it not the case that pruning too long neglected must be generally followed by severe handling? And does not the bush suffer from such treatment? It is no uncertain claim that is preferred on behalf of Bogawantalawa—that it is well adapted for tea; and, given good factory accommodation and other aids to manufacture, its teas should be as flavoury as those of any other district of a like elevation. False economy in plucking and in manufacture is held responsible for disappointing prices on some places.

NOTES FROM OUR LONDON LETTER.

LONDON, May 5, 1899.

The

KLANANG PRODUCE CO., LD.,

of which I sent a forecast last mail, issues its prospectus this week. The share capital is £20,000, divided into 20,000 one pound shares, and the present issue is £13,500, of which 7,500 fully paid-up shares will be issued to the vendor in satisfaction of the purchase price, and 7,800 shares at par are now offered for subscription payable 2/6 on application, 2/6 on allotment and the balance as required. Mr. F. H. Wiggin, of Ceylon and Woolstone, Cheltenham, is Chairman, and the three gentlemen mentioned last week, viz., Messrs. Ed. Walker, Jas. M. Caine and David K. Michie, of Ceylon, are directors; bankers, the National Bank of India; solicitors, Messrs. Murray, Hutchins, Stirling and Murray, 11, Birchin Lane, E.C.; Secretary, Mr. A. M. Currie; offices, 17, Philpott Lane, E.C. The Company is formed to take over, carry on and develope the Klanang and Beaumont estates in the Federated Malay States of Selangor. Klanang is planted with 206 acres of coconuts and Liberian coffee, five acres of cacao, 14 months old; four of coconuts alone, half being in bearing; and 4½ acres are to be planted with tea, for tea seed; while from 1,705 to 1,924½ acres remain at present, jungle reserve. On Beaumont there are 90 acres of Liberian coffee, two years old; 148 cleared and drained, but not yet planted, and 156½ to 394½ still in jungle. Coconuts grow well and are extremely productive in the Klanang district, and it is intended to pay special attention to that product, but coffee, rubber, ramie, etc., will all probably be included in the cultivation and development of the Company's estates. The two estates have been valued by Mr. E. V. Carey, who put the Klanang estate at 47,645 dollars, and the Beaumont property 11,008.50 dollars.

CEYLON TEA IN AMERICA.

REPORT FROM MR. R. E. PINEO.

It was neither my purpose nor intention, in a previous communication, to point out, or even suggest, improvements on past methods. My object was to awaken and concentrate interest in the arduous undertaking of making our tea better and more widely known to the general public of the United States.

The "Thirty Committee" has announced its purpose to continue the campaign in America, and has voted six thousand pounds for 1900, to further exploit and endeavour to gain greater recognition for our staple in the United States of America. It should be the study and aim of the "Thirty Committee" to solve this one knotty question, *i.e. how can the consumer be most quickly and effectually reached, and, when captured, permanently retained?* This query covers the whole ground, and embraces every feature connected with the crusade.

It now remains for me to make known how, in my opinion, the consumer is to be secured, and, of equal moment, thereafter *held!* This can only be accomplished by working *through* and *with* the *retailer*, who should be assisted, in every reasonable way, by the Commissioner. Help the retailer by advertising in the local papers and by demonstrations. The retailer will then have an incentive to doing good work, as he is the only proper medium between the wholesale dealer and the consumer, whose aid should be invoked.

Once you have succeeded with, and gained the energetic assistance of, the retailer, the result is certain to be satisfactory; the consumer will be secured, and the wholesale dealer will be forced to keep and provide the retailer with everything he wants.

The representative in America of the "Thirty Committee" should be constantly on the move and work systematically. For example, let him visit Boston and every town having a population of 10,000 and upwards in the New England States; then take up the Central, Western, Pacific, and Southern States in the order named.

In each city or town let him seek out a few of the most prominent, progressive retailers, obtain their co-operation, assist them in locally advertising, and show them how best they can make attractive, popular demonstrations.

SPECIAL, LOCAL ADVERTISING.—The representative should seek and act upon the advice of the retailer, and select such mediums as he—the retailer—may recommend. In some localities, more especially where the town may be the centre of a large agricultural district, the local weekly should be availed of, as every agriculturist uses tea, and reads everything—including advertisements—that appears in his weekly newspaper.

GENERAL ADVERTISING.—Monthly magazines that are read by the masses like "Muncey's" and the "Cosmopolitan," can be occasionally, used to great advantage, and there are also a few of the weekly papers that could be profitably utilised.

DEMONSTRATIONS.—One of the most successful and permanently profitable entertainments given by me was in connection with a bazaar held in aid of a large hospital, by the society ladies of Brooklyn, and what made it attractive and *remembered*, was the fact that about a dozen of the handsomest young women, daughters of society leaders, appeared in Tamil costume and served tea. The Bazaar was a huge financial success, and the costumes and tea formed the subject of many a chat long after the whole thing was closed.

Now the representative should be furnished with at least a dozen washable, rich Tamil costumes, including a goodly show of native jewellery—and when making demonstrations in a shop, should engage a couple of handsome coloured women to appear in this costume and serve visitors with tea. This would prove a drawing card, and, in the smaller cities, a powerful attraction. Where it was found a Church festival or a bazaar was in progress, the feature that made the Brooklyn affair so telling, might be introduced. It may be thought that anything done as herein mentioned, would be a slow, tedious operation, and take too long a time; but I maintain that it is the only method that will give lasting results at a minimum cost, seeing that the wholesale dealer cannot be relied upon to create a demand for an article that is not called for by the retailers, hence the latter's support must, in the first instance, be secured and his efforts assisted and fostered. The retailer is, therefore, the *one* person whose goodwill and aid should be sought, husbanded and promoted. Let the retailer work energetically, hopefully and successfully, and you have made a friend and coadjutor of the wholesale dealer or jobber. The method herein outlined may appear to some silly, childish and imperfect, and unworthy of consideration, but—frequently—simple, direct methods lead to the greatest successes.

Later on I may, perhaps, refer to Canada and Russia. R. E. PINEO.

MINOR PRODUCT REPORT.

CROTON SEEDS.—Offered 69 packages. Sold 0. All the offerings at the drug auctions today were bought in at from 50s to 70s.

CITRONELLE OIL.—Very quiet privately and quoted at the same figures. For today's auctions 2 drums were catalogued, but had been sold when reached.—*B. & C. Druggist*, April 28.

CINCHONA.—At the London auctions on Tuesday only odd lots of low percentage bark found buyers at a decline of about 25 per cent to 30 per cent on last sales' rate, the unit value being 1¼d per lb, against 2½d at the previous sale.

CEYLON.—Lederiana, original stem chips. 8¾d; poor red orginal chips 2¼d and 3½d per lb for fair.

The bark sold to manufacturers on Tuesday represents 60,000 oz. or thereby of quinine sulphate. They were low quality barks. It will be noted that the firms who generally buy most largely were on this occasion small buyers, because they declined to pay the prices asked by the sellers for the higher quality barks. The sales scarcely form a criterion for the quinine speculator, and these matters must wait next week's auctions at Amsterdam. There the total quantity of quinine sulphate in the bark to be offered equals 19,450 kilos (680,750 oz). The manufacturing bark contains an average yield of 5 52 per cent, against 5·26 per cent in March, and 5·21 per cent for the ten auctions of 1898. How the sales will go is a knotty problem. The Java shipments last week were nil (so it is said). Meanwhile the arrivals in Amsterdam are large, no fewer than 1,410 packages having arrived by one vessel this week.

LEMON OIL.—There has been a large amount of business done during the past ten days, and as large orders are available, holders are this week slightly easier at 3s to 3s 9d, c.i.f., according to quality and brand.

QUININE.—The course of this article has again been downward, and fruitless attempts were made by speculations to bolster up the market on Friday and Saturday last, but on Monday the improvement was lost, small sales being made for August delivery at 1s 4d, and there were buyers for May delivery

at 1s 3½d per oz. On Tuesday, in consequence of the disappointing bark sales, the market remained inactive, with sellers at 1s 4d and buyers at 1s 3d for August delivery. Wednesday brought a further decline; a sale of 8,000 oz. of Zimmer's brand at 1s 1½d per oz. actually took place, and the two leading German brands, which have been the subject of so much speculation, dropped to 1s 2½d spot and 1s 3d August, but we heard of no sales at these figures, and by the afternoon prices had recovered by ½d there being no eager sellers. Today the market again is quiet.

SPICES have continued very dull all the week, and at the public sales on Wednesday there was little disposition to purchase. Zanzibar cloves steady, but quiet, at 3⅜d per lb for delivery. There were none offered at auction, but some good Ceylon, slightly mixed headless, sold at 3⅞d to 4d, and dark mixed at 3½d per lb. Cinnanon sold at 5½d per lb for hard fifths, at 5½d for dull quillings, at 6⅝d for broken, and at 2¼d for common bark. All the Singapore and Penang Pepper in sale was bought in, but quotations remain the same as our last report. Long pepper partly sold at 38s per cwt, fine bold black Mangalore sold at 8¾d per lb, and Ceylon white at 81 per lb.

ANNATTO SEED.—Good bright West Indian seed was limited at 2½d per lb, another lot sold at 1½d.

KOLA.—Boldish mouldy West Indian realised 2½d per lb, while fresh and good 6d was wanted. Small African quarters were bought in at 4d per lb. Privately retail sales of fresh West Indian have been made at 6d per lb.

CITRONELLA OIL.—Privately there have been retail sales in tins at 1s 0¼d to 1s 0½d per lb spot; drums are offered at 1s.

VANILLA.—At today's auctions only a moderate quantity offered, and chiefly sold at steady prices as follows:—Mauritius, good bold chocolate beans, 9 inch 32s; 8 to 8½ inch 26s 6d to 28s; 7½ to 8 inch 26s; 7 to 7½ inch, 24s 6d to 25s; 6 to 6½ inch 21s to 23s 6d; 5 to 6 inch 23s to 23s 6d per lb. Seychelles: 7½ to 8 inch 24s 6d; 6 to 7 inch, 24s; 6 to 6½ inch, 23s 6d; 5 to 6 inch, 19s. Tahiti were all bought in at 10s per lb.—*Chemist and Druggist*, April 29.

INDIAN TEA AND TEA SHARES.

Tea shares have been rather in the background during the week, says the Calcutta correspondent of the *Pioneer* writing on May 13, as there was considerable doubt of prices being maintained at the opening sale yesterday. There apparently was a want of pluck among buyers, resulting in a good many of the lots which were offered being withdrawn for shipment direct to London. I hear, too, that there was a tendency on buyers' part to divide the larger parcels, in this way preventing the competition which teas offered at auction are supposed to obtain. I am glad to hear that two firms at least among the brokers are determined to discourage amalgamation of this kind among the buyers. It is well known that this clubbing together to keep down prices exists to a great extent among the blenders and vendors of the ten-penny tea canisters in London; and, as Messrs. W. S. Cresswell & Co. remark in their tea report of yesterday, although "the position is an exceptionally strong one, unless tea is handled more judiciously than hitherto, we shall soon see prices collapse and fall back to their old level." Prices realised at yesterday's sales were in many cases 30 per cent higher than the opening sale of last season, but in spite of this there has been little movement in tea stocks today, and prices are lower all round than they were last Saturday.

OUVAH COFFEE COMPANY, LIMITED.

Report presented to the fourth ordinary general meeting of the Company held at No. 5, Dowgate Hill, London, on Tuesday, the 9th May, at noon.

The following accounts are now presented to shareholders, viz.:—

Balance sheet made up to 31st July 1898.

Profit and loss account for crop 1897-98.

The receipts from the sale of produce were as under:—

		£	s	d
Tea from the Company's own estates	708,500 lb.			
Tea made from bought leaf	106,247 ,,			
Total	814,747 ,,	26,421	2	10
Coffee 375 cwt. 0 qr. 23 lb.		1,842	2	2
Cocoa 185 cwt. 0 qr. 19 lb.		611	6	1
Cinchona 17,963 lb.		200	15	8
Sundry sales in Ceylon		64	17	11
Total receipts		£29,140	4	8

The total expenditure in Ceylon and London for the year amounted to £25,366 5s 1d, and deducting this from the value of the produce a profit is shewn in the year's working of £3,773 19s 7d, to which has to be added the balance of £396 7s 10d, brought forward from last year. After deducting income tax the total at credit of profit and loss is £3,909 4s 9d.

An interim dividend of 1½ per cent was paid on the capital of the Company on 23rd November 1898, which absorbed £1,500 of the above sum, and the Directors now recommend that £2,000 be applied to the payment of a final dividend of two per cent, making 3½ per cent for the year, and that the balance of £409 4s 9d be carried forward.

Owing to drought experienced during the latter months of the financial year the estimated crop of tea was not secured, the yield from the 1,618 acres in full and partial bearing being 438 lb. per acre against 475 lb. per acre in the previous year. The market also ruled very low, and our tea realized 7·78d per lb, against 8·08d for the preceding season.

The small coffee and cocoa crops sold at an average of 98s 2d and 66s 1d against 91s 1d and 55s 1d respectively, and the cinchona realized an average of 2·68d per lb.

The cost of tea planting and upkeep of 523 acres of young tea not in bearing is included in the year's expenditure, and a sum of £2,037 6s 0d spent on factory extension has been held up in the balance sheet.

The tea crop for 1898-99 is estimated at 750,000 lb. So far the season has not been favourable, and pluckings have been small, but with a return of favourable weather our Estate Manager considers that the estimate can yet be secured. It is highly satisfactory, however, that prices influenced by short shipments from Ceylon and by an increased home and foreign demand, have hardened considerably since the commencement of the year, and it is generally considered that we are not likely to see a return to the very low values current last year.

Coffee prospects are better for the coming year. The crop is estimated at 3,000 bushels, against 1,882 bushels secured last year, and if this is realized it will materially swell the year's profits.

Only 23 acres are being planted with tea this season, a small area in comparison with the plantings of recent years. This will considerably relieve expenditure and release profits for dividend purposes.

The acreage of the Company's property is now as follows :—

Tea, over 5 years old		1,545	acres
,, planted November-December	1894	153	,,
,, ,,	1895	159	,,
,, ,,	1896	151	,,
,, ,,	1897	133	,,
,, ,,	1898	23	,,
Area under tea		2,164	,,
Area under coffee and cocoa		442	,,
Area under fuel		367	,,
Forest patna and waste		515	,,
Total area		3,488	acres

The Directors regret to report the death of their esteemed colleague, Mr. Norman Stewart. They have filled up this vacancy on the Board by the appointment of Mr. J. G. Wardrop, who retires from office on this occasion, and, being eligible, offers himself for re-election.

PRODUCE AND PLANTING.

Tea and Coffee in America.—The New York correspondent of the "Grocer," in calling attention to the consumption of coffee and tea in the United States, gives a table comparing the percapita consumption of the two products in beverage form in 893 and 1898, which is as follows:—

	1893.	1898.
Coffee ..	14.00 ..	19.46
Tea ..	8.00 ..	5.46

From this it will be seen that the consumption of coffee has greatly increased, while that of tea does not grow. He says; "Probably the coffee returns are too high, as all deliveries from licensed warehouses are counted as consumption, whereas the quantity held in unlicensed warehouses is much larger than was customary in 1893, when the import cost was 7d, against 3¾d in 1898. The tea figures are also misleading, as the withdrawals were unusually heavy in 1897 owing to heavy imports to escape the tax. Making allowance for these facts it appears, unmistakeably, that the use of coffee has largely increased. The reason is not hard to find, as coffee is retailed at 5d per lb. up to 1s 6d. A pound of coffee at 5d makes two gallons of beverage, while one pound of tea paying 5d duty, and selling at 2s per lb. at retail, makes six gallons of beverage costing about 4d per gallon, or 1½d more than coffee. It is claimed that one pound of Ceylon and Indian tea will make sixteen gallons of beverage, which statement we will not dispute; but Americans will not learn to properly brew British-grown tea, insisting on using as large a quantity as they have been accustomed to of China or Japan sorts, and hence they do not take kindly to the heavier body and sweetish flavour of Ceylon and India. The preference is decidedly for a blend, and in this way there is a constantly enlarging demand for Ceylon and Indian tea. But the Americans are partially fond of coffee, and last year imported 851,691,084 lb., or nearly double the imports in 1880, '81, '82. The imports of tea average about 95,000,000 lb. for the last five years, while in 1880, '81, '82 they averaged over 75,000,000 lb.

Groundless Alarm.—Clearly there were some apprehensions on the subject of the Budget and the tea duty. Between the end of March and April 13th no less than 14,860,778 lb. were taken out of bond mainly as a precaution against any possible increase in the duty. This is 9,076,368 lb. more than was taken out during the same period in the previous year.—*H. & C. Mail*, May 5.

THE INDIAN TEA ASSOCIATION.

The opinion of the Assam Branch Association that it would be injudicious to discontinue our efforts in America, came too late to be of any use says *The Planter*. Mr. Buckingham's memo. expressing his opinion that the Assam Branch should strengthen the hands of the General Committee by protesting in the strongest terms against the discontinuance of the work in America, was confirmed by a subsequent letter, dated 20th April, recording that the Committee of the Assam Branch concurred in the opinions expressed in the memorandum. Unfortunately, Mr. Buckingham had to be informed that it was not open to the General Committee to take any further action in the matter, as it had been decided at a meeting of the London Committee held on 31st January, without reference to India, that operations in America should be discontinued. In his letter of 3rd February, Mr. Tye, the Secretary of the Association in London, had stated that the Committee were unanimously of opinion that the time had arrived for discontinuing the work, and had accordingly instructed Mr. Blechynden to bring his mission to a termination. Mr. Tye further stated that Mr. Mackenzie, the representative of Ceylon in the United States, had also informed his Committee that the work in America could well be brought to a speedy terminatian. So, for good or ill, the matter is settled, and those interested in tea can only sit and wait the result of the action of the London Association, which has practically been universally condemned in India and Ceylon.

We have some news at last of what is being done with reference to the Paris Exhibition. The London Committee has made arrangements with Mr. E F Langdale to sell Indian tea at the Paris Exhibition on the understanding that the Association should not be responsible for any outlay beyond the sum of £1,000 agreed to be paid to the Royal Commissioners for the space which had been allotted for the representation of Indian tea. Mr. Langdale was well known in connection with work of a similar description, as he had been associated with the Health Exhibition held in London in 1884 in a like capacity. It was understood that in the arrangements to be made Mr. Langdale would follow the lines observed by him at the latter Exhibition, which gave general satisfaction. Mr. Langdale would arrange for the service of Indian tea in the cup, and would make special efforts to render the Court in which it would be served attractive to visitors. So, apparently, beyond being responsible for £1,000 which is to be paid for space, the Tea Association washes its hands of the Exhibition, and leaves the interests of Indian tea entirely in the hands of a private individual, who, most naturally, has his own interests to think of first. However, these interests *may* possible coincide. The London Committee has had under consideration the question of the lines upon which a new Levy should be conducted for opening out new markets other than the American, for the sale of Indian tea. Favourable replies had been received from a few concerns in London to the circular issued by them on the 24th February, in which subscriptions were invited, but it was noted by the General Committee that it was not stated specifically upon what lines the new Levy was to be raised. The reply received to the former telegram sent not making the matter any clearer, it was decided to wire the London Committee again asking for full details of the new scheme for opening out new foreign markets,

as no satisfactory appeal for funds can be made without some knowledge of the programme proposed, and speedy action is essential to success. A remark to this effect was to be included in the telegram to be sent to the Committee of the Association in London.

Another letter from the London Committee in connection with the American Market, was dealt with. Mr. Mackenzie, the Ceylon Commissioner, had recommended the Ceylon Committee of Thirty to continue the work in America for two or three months only in 1,900. The decision of the Ceylon Committee had not, however, been so far received. The General Committee also understood that the balance remaining of the amount raised by the last levy, after the close of Mr. Blechynden's Mission, would be devoted to the continuance of the advertisement issued jointly by the representatives of India and Ceylon teas.

CROSSING OUR TEAS.

WHAT LONDON TEA MERCHANTS ARE CONCERNED ABOUT.

(*Daily Mail Special.*)

The statement made at the meeting of the Whitechapel guardians, and reported in our yesterday's issue, that there was an unexpected rise in the price of tea, was confirmed yesterday in the inquiries instituted by a *Daily Mail* representative.

What the London tea merchants are most concerned about, however, are the bold attempts of foreigners to foist cheap unwholesome teas on the London market.

"The Custom House authorities," said Messrs. Alfred Newby and Co., of Mincing-lane, to a *Daily Mail* representative yesterday, "ought to stop the importation of this foreign stuff at once. It is injurious to the public health, and should never be allowed to come into our market. Here is a sample of tea which we had sent to us from Belgium, the price quoted being 6½d per lb without duty. It is of too long growth, it has been infested with caterpillars, it has a most disagreeable odour, and it would be

A SOURCE OF DANGER

to the public health if it were consumed. It is Oolong tea, and is probably part of a consignment which was rejected by the Belgium people as worthless.

"And now attempts are being made with a a view to putting it on the English markets. If something is not done to check its importation other countries besides Belgium will try to find a market here for the tea which is no good to them.

"This state of affairs arises from the fact that Indian, Ceylon, and China tea has been overbought by the blenders. There was a rumour about Christmas time that the supplies would be short, and since then prices have been gradually rising. Those blenders who foresaw the position bought as much tea as they could while the prices were normal, in order to carry themselves over the season, and, of course, they have made huge profits, one firm, we hear, having made as much as £20,000."

THE NUWARA ELIYA ESTATES COMPANY.

As Mr. A. F. Souter has appealed to us in connection with his criticism of this Company's affairs, we can bear testimony, from personal knowledge, to the adequacy of the explanation tendered in the Directors' Report, of the falling-off of profit from Naseby estate during 1898. With the Factory under reconstruction and enlargement for the greater part of the year, we have been assured by the superintendent—Mr. Battinson—who has just gone on leave, that it was impossible for him to keep up the same careful preparation of the tea,—to secure adequate withering and to do justice in other ways. All that is now at an end, and the Factory, one of the roomiest and best equipped of its kind, in the hill-country, has been in full working order during the present year.

As regards the local management of the Company's affairs generally, we can assure Mr. Souter that, in our opinion, more hard-working, conscientious Manager and Superintendents—from all we have seen and heard—no Tea Company connected with Ceylon can show; while as to the Agents, it is superfluous to say one word. We have great confidence in the future of the Company and in its good management both in Ceylon and London.

CINCHONA IN CEYLON.

It was to be expected that the advance in the price of cinchona bark and the promise of a further rise in the future would set planters in India and Ceylon wondering whether it was worth while to go into the cultivaition of cinchona trees again, or to extend their existing plantations. It appears that in Ceylon operations have actually been begun in this direction, and the *Tropical Agriculturist* prints an interesting letter which it has received as the result of advising the importation of fresh seed from India or Java for the purpose of trying cinchona again in the Ceylon hill district.—*British and Colonial Druggist*, May 5.

CINCHONA IN JAVA.

The unknown quantity to quinine speculators is the condition of the cinchona industry in Java, and whether it pays the planter or not to produce. "Why shouldn't it pay?" asked a sapient person in the Commercial Sale-rooms the other day. "Oak bark sells at £5 a ton, and pays." "Because it is a by-product," added a long-headed broker. "They cut down the oak trees for the sake of the wood." In Java they grow cinchona for the sake of the bark. We have before us a report regarding the plantations there, which gives the latest available information, and from this we learn that the Government has decided on principle to give up the cultivation of cinchona, and transform the plantations into experimental gardens. This will be done gradually, no seedlings being planted in place of the up-rooted trees. The Government plantations are eight in number and to the three of these plantation nurseries are attached for the propagation of seedlings and grafting. The number of trees in the plantations diminished in 1897 by eleven per cent, and, as the reduction will go on at about this rate yearly, it will be eight years at least before the Government ceases to be competing factor. They are eighty-three private plantations in Java, of which fifty-eight are situated in the Praenger province. These show no indication of reduction. The Bandoeng quinine-factory is now able to produce quinine to the extent of 3,500 oz per day, or 2,500,000 oz a year, and the Pandang Aroem works are gradually pulling up. So that there is no intention of stopping Java quinine. Thirty-four cases of the Bandoeng brand were landed at Amsterdam this week.—*Chemist and Druggist*, April 29.

PANAMA RUBBER.

In a report just issued by Mr. Willis, Director of the Royal Botanic Gardens, on Panama rubber (Castilloa) it is stated that the question of which rubber tree to plant with the most favourable prospects of a profitable return has been considerably altered by the discovery of a machine on the principle of the centrifugal cream separator, by which Mr. Biffen has succeeded in preparing almost pure caoutchouc from any which (*latex*) which contains it. The question milk tree gives the greatest yield of caoutchouc has still to be answered; but, Mr. Willis says, there is great probability if not almost certainty that it must ultimately be answered in favour of Castilloa. Private planters, he thinks, will hardly find it worth while to establish plantations of Para rubber only. Probably the best thing to do would be to plant out the tree among the tea or other products at considerable distances apart. The trees would then grow to a large size in less time than if kept in plantations of rubber only, and their rubber would form a useful minor product. Those who intended to make plantations of rubber only would do better to use castilloa which yields much more fluid and easily collected milk, but even here no return can be got in much less than eight years. This tree may also be planted out as a bye-product on estates and will probably be found in the end the more favourable of the two. Ceylon seems an unfavourable country for yield though highly favourable for growth of rubber trees.

CEYLON TEA IN AMERICA.

Mr. MacCombie Murray sends us a chatty letter from Philadelphia about his early experiences in "tea"; and he adds correspondence which has appeared in the New York press and which reached us before; but which, now given consecutively, has a special interest, more especially with the addition of our correspondent's notes.

But the curious fact to us is that neither Mr. Martindale, Mr. Murray nor any of the other writers in this Tea discussion stumbled on the proper answer to the objection raised, that while Ceylon and Indian teas might do very well for the rainy, damp climate of England, they were unsuitable for the dry, electrical climate of the American States. The objection is that our teas have too much tannin for the latter condition. Now, apart from the fact that the proportion of tannin drawn off into cups of tea can be regulated by the time given to the infusion —what do Messrs. Martindale, Robertson, and others of our American cousins say to the case of Australia, with its far drier and more electrical climate than any to be found in the States? Here are the Australians—a nation of athletes, beating the English at their favourite game of cricket—drinking tea (mainly Ceylon and Indian) at the rate of 7 lb. per head per annum! Where are the bad effects? Does their experience not prove that tea is just the beverage for the people of the United States from New York to San Francisco, New Orleans to Chicago and Philadelphia to Denver? If our American cousins only took to tea, up to 2 lb. per head per annum, they would benefit themselves and tea growers everywhere!

PANAMA RUBBER (CASTILLOA).

(Royal Botanic Gardens Circular: issued by Mr. Willis, Director.

In Circular No. 4 of this Series the cultivation of Para rubber was dealt with somewhat fully. It was pointed out that there is not very much suitable land in the Colony on which this cultivation was likely to prove really successful. The growth, cultivation, and yield of trees were considered, and a prospect of a moderately remunerative return in favourable places for the cultivation was shown to exist. Since the time of publication of these statements, however, the question of which rubber tree to plant with the most favourable prospects of profitable return has been considerably altered by the publication of the discovery of a machino for the preparation of rubber from the raw milk of the tree. By the aid of a machino on the principle of the centrifugal cream separator, Mr. Biffen has succeeded in preparing almost pure caoutchouc from any milk (*latex*) which contains it. This is done in a few minutes at a very small cost, and the resulting product is almost free from impurity, and does not decay or smell like the ordinarily-prepared raw rubber. The best rubber hitherto sent into the market contains at least 10 per cent. of impurity, and many kinds contain as much as 30 to 40 per cent. The importance of this discovery is manifest. The chief advantage of Para and Panama rubbers, as at present prepared, is their great freedom from impurity, due largely to the composition of tho milks, and partly to the methods of preparation. Under the new conditions, however, this advantage is lost, for the machine will prepare from the poorest and most impure milk a rubber superior to the best Para now on the market. The first question therefore before the would-be grower of rubber trees is now no longer. "Which tree gives tho best result as to quantity and quality combined?" but rather, "Which tree gives the greatest yield of caoutchouc?" The former question had been practically answered for Ceylon in favour of the Para rubber (*Hevea brasiliensis*). The latter has still to be answered, but there is great probability, if not almost certainly, that it must ultimately bo answered in favour of *Castilloa*, and hence the publication of this Circular in which it is proposed to deal with the whole question so far as present existing data allow of conclusions. The tree has been so little cultivated in the East that reliable data in sufficient numbers are not to be had, and it is hoped that the publication of this paper will induce those who may have experimented with this tree to communicate the results of their work.

Another important bearing of the discovery abovementioned must also be pointed out. At present the best natural rubbers obtain about 4s per lb. in the London market. When the machine-prepared article first comes upon the market it will doubtless obtain a higher price than this, but this will not long be the case. Inevitably the price of the best machine rubber will fall to about that of the best natural of today, while the latter will only fetch perhaps 3s per lb., and the poorer grades will also fall in price correspondingly. For profitable cultivation, that is, the machine methods must be used. Now, for this purpose it is necessary that the milk be collected in vessels and not allowed to dry on the tree. We have seen in dealing with Para rubber that in Ceylon, at any rate, the milk is very thick, almost like syrup. It quickly coagulates, and in all cases a lot of it dries on the tree. Before the recent discovery this mattered less, for this scrap rubber would sell for 1s 6d to 2s 6d per lb. Now, however, as we have just seen, this price is likely to fall by 1s or more. This will materially alter the figures of return given in the last paragraph of the circular referred to. Instead of the average price being 2s per lb it is more likely to be 1s 6d, and this will reduce the yield per acre to R112 say. This reduces the margin of R100 there given to R62, leaving considerable uncertainty as to whether the cultivation is likely to pay at all well enough to be worth attention from European planters, who would prob

ably find the trees yield much better in the Straits or America. *Castilloa* milk flows very much more freely and does not soon coagulate, so that the same objection does not apply to it. Practically the whole of the milk from a tree can be collected without any difficulty from coagulation beginning in it.

The practical corollary of these remarks, so far as Ceylon is concerned, is this. Para rubber will do fairly well at low elevations in certain districts, though probably at the best it will never do so well as in the Straits Settlements or America. Owing to the introduction of the machine methods it will in future be necessary to collect the milk in vessels. Now, the Para rubber tree when tapped at a girth of 2 feet, as recommended in the previous Circular, does not lend itself to this condition, much of the rubber dries on the tree. It will thus be necessary for planters either to content themselves with the old process, thus getting a lower average price for their product, or to wait till the trees get to a larger size, say in fifteen years on the average. It follows from this that private planters here will hardly find it worth while to establish plantations of Para rubber only. Probably the best thing to do will be to plant out the tree among tea or other products at considerable distances apart. The trees will then grow to a large size in less time than if kept in plantations of rubber only, and their rubber will form a useful minor product. The tree is a handsome tree when well grown apart from others, and might well be used as shade for roads or as an ornamental tree.

Those who intend to make plantations of rubber only would do better to use *Castilloa*, which yields much more fluid and easily collected milk, but even here no return can be got in much less than eight years. This tree may also be planted out as a bye product on estates, and will probably be found in the end the more profitable of the two. Ceylon seems an unfavourable country for yield, though highly favourable for growth, of rubber trees. Consequently, only the very best localities should be chosen for planting.

BOTANY.—*Castilloa* is a genus of the family *Moraceæ* (often included in *Urticaceæ*), and belongs to that section of the family which includes the jak and breadfruit (*Artocarpus*), the upas (*Antiaris*), the milk tree (*Brosimum*), and the many plants of the genus *Ficus*, which include among others the Bo and the Assam rubber (*F. elastica*). The genus has two or three species. Of these the most important is *C. elastica*, Cervantes, the Ule of the Spaniards, which is found wild in Mexico from lat. 21° southwards, in Guatemala, Honduras, San Salvador, Costa Rica, and Nicaragua: it also appears to occur in north western South America. It grows to a large tree having been measured of 180 feet in height and 15 feet in girth. The growth is rapid. When young the tree grows rapidly upwards, and forms a number of short lateral branches, which after a time drop off, being detached from the trunk by a peculiar joint, whose surface resembles a piece of coral. The bark is rather soft and thick. The leaves are large and oblong. The flowers are borne when the tree has reached some considerable size and has begun to form permanent branches. They are monœcious, male and female on the same branch, enclosed or embedded in a top-like common receptable, which is covered externally with small leaves. This subsequently forms a somewhat fleshy fruit, containing numerous small seeds about ½ inch in diameter, with white papery seed-coats. Besides this species there is a second, the Caucho of the Spaniards, found near Darien (Panama) and elsewhere. This is the tree which we have in Ceylon, and it appears probable that it is a different species, *C. Markhamiana*, Markham (not Collins), but the point requires further study. In its native country this forms an important source of rubber. It appears to be a smaller tree than the true *C. elastica*. The details of the description of these species may be found in the paper by Hooker mentioned in the list of literature below.

HISTORY IN CEYLON.—The *Castilloa* rubber was introduced into the colony about the same time as the Para, and through the same agency. A Wardian case of plants arrived in 1876 from the Royal Gardens, Kew, and the plants were put out at Henaratgoda and Peradeniya. They grew well at both places, but especially at Henaratgoda, and were increased by cuttings. They began to flower in 1881, and in the following year a few seeds were ripened. About 1886 the growth became less rapid, and since then has been very slight, the soil in the gardens being shallow, and at Henaratgoda not well drained at a little depth. A large number of young plants were sent to India and many were planted in Ceylon, but, compared with Ceara and Para rubbers, *Castilloa* is very rare in the Colony, and very few estates possess any appreciable number of trees. Samples of rubber prepared here have been sent home for valuation, and have received very favourable reports.

CLIMATE AND SOIL.—The tree ranges, as we have seen, over a large tract of country, but the conditions for its successful growth seem much the same everywhere. It inhabits a warm, steamy climate, like that of the lowcountry of south-west Ceylon, and is very rarely found above 1,500 feet. The most common situations are in alluvial soil at the sides of valleys or on low ridges. It needs deep soil, with plenty of water, but does not thrive where the soil is swampy, nor in places where there is not good drainage at the roots. It is probably partly for this reason that the growth at Henaratgoda so soon became slow, for the land there is flat and only twenty feet above the level of the sea. At Peradenya it is on better drained land, but the soil is very shallow.

The tree prefers a steamy climate, but will do where this is interrupted by a dry season of two or three months, as in south-west Ceylon. It grows best where the temperature never falls below sixty degrees at any time.

The most promising localities for the cultivation of this tree would probably be found in the neighbourhood of Rambukkana, Kitulgala, Balangoda, and other districts in the foot hills of the south-west, and perhaps also in similar districts of the Bintenna country to the east of the mountain range, and in lower Madulsima, Passara, Monaragalla &c. It should be planted in sheltered places near streams, but with good drainage at the root. To plant above 2,000 feet is not advisable, and it would be better to plant below 1,000. The rainfall should not be below seventy inches, and should be well distributed. The tree affects drier localities on the whole than Para rubber, and so the two cultivations need not interfere with one another, as the Para tree will grow in the wetter places.

The tree grows best in a deep, warm, loamy soil. In its native country it is said to send its roots very deeply into the soil, and not to be a surface feeeder. In the gardens at Henaratgoda, however, it sends out great roots at the base like the Assam rubber (*Ficus elastica*), growing out to considerable distances along the surface and projecting above it. One root was measured running along the surface for 30 yards, and where it finally became invisible it was three inches in thickness. This phenomenon at Henaratgoda may be largely due to the quality or lack of drainage of the lower soil, but it seems common in other places where the tree is grown in the Colony, and will limit its use as a shade tree, for which purpose it has often been recommended in other countries. If used as shade, it would perhaps do better with tea than with most of our other cultivated crops. In better soil and position than what has hitherto been tried, however, it may very likely strike deep roots, in which case other crops could be more easily cultivated between the rubber trees, *e.g.*, plantains or even cacao.

CULTIVATION.—The seed should be sown as soon as obtained in a well-prepared nursery. They should be sown an inch deep, and about 8 inches apart, and lightly covered with a little vegetable mould. They must be kept lightly shaded, and watered when the surface of the ground is dry. In ten or twelve months the young plants will be 2 feet high and ready for planting out.

Cuttings may also be taken; those from lateral branches do not grow well, and have a tendency to

grow more or less horizontally, so that main shoots must be used. When cut back the main stem produces buds from the axils of the leaves, and these may in turn be used as cuttings, and so on. Cuttings should be at least 3 inches long, with a basal portion of old wood, and perhaps 12 inches is better, as described for the case of Para rubber.

The young plants should be planted out during rainy weather in prepared places. Holes should be dug and filled with well-prepared sandy, loamy soil. If the plantation is to consist of trees of *Castilloa* only, they may be put at about 12 feet apart, or perhaps better a little closer. If other products are to be cultivated between the rubber trees, the distance must be much greater. The young trees must be shaded for a time, and probably it would be best if they were lightly shaded for two or three years till they reached a height of 20 feet or so. This might be effected by planting them, for instance, on land already bearing such light shade trees as are used for cacao. On parts of estates where the canker has rendered it needful to cut out the cacao it might be well worth while to try the *Castilloa*. The ground should be kept clear of weeds and the trees watered in dry weather of long duration, until they reach sufficient size to take care of themselves.

RATE OF GROWTH.—The tree grows fairly rapidly at first, and soon reaches a height of 10 or more feet. From the annual Administration Reports of this Department the following extracts have been made with reference to this subject. In 1878 the original trees were two years old, from time of planting out as cuttings; some were 16 feet high, and 16 inches round the base of the trunk. In 1880 the largest tree at Henaratgoda was 17 inches in girth at a yard above the soil. In 1882 the largest tree there was 46 feet high, and 26 inches round at a yard above the soil. In 1884 its girth was 32½ inches; in 1886, 38 inches; and it began to show signs of less rapid growth, so that it only reached 40½ inches in 1888, 42½ in 1890, and 43¼ in 1892. Up to about the tenth year, therefore, at any rate, the tree may apparently be counted upon to grow well; and even though the subsequent growth is slow, the yield of rubber seems to increase considerably. After reaching a girth of about 2 feet or 2 feet 6 inches the trees may probably be tapped for milk. Comparing the above measurements with those given in the circular on Para Rubber, it will be seen that *Castilloa* is distinctly slower in growth of the two and probably a plantation of Para rubber would reach the girth of 2 feet (average) in two years' less time than one of *Castilloa*.

TAPPING.—The tree should not be tapped till it reaches a girth of at least 2 feet. This should be attained in a period of perhaps nine years on the average, and it would be better to wait for two years more if possible till a girth of perhaps 2 ft 6 in is reached After the eighth year there would probably be a fair number of trees in the plantation ready for tapping, and of course the number would increase every year till all were sufficiently large for the purpose.

The milk of this tree flows much more freely than that of *Hevea*, so that one cut seems to drain a much larger area of the stem of its milk. The native methods of tapping are mostly very wasteful, and also often cause the death of the trees. Sometimes the method described under Para rubber, by cutting V incisions at frequent intervals, is used, and so far this seems to have been the only one used in Ceylon. We have found that the milk here runs so freely a that simple sloping cut is sufficient, and that there is no need to make the V. If this method is used the cuts need not be so close together as in *Hevea*; they may be 3 or 4 feet apart instead of 1. Sometimes the whole tree is cut down and incisions made in the bark as it lies on the ground. Other methods are to cut spiral groves round the tree for some distance up, or to make a main channel on one side of the stem with lateral cuts leading into it. These methods are almost sure to kill the tree, at any rate after a few years, and only the first-mentioned, the mothod of simple incisions, should be used with cultivated trees.

Further details of methods will be given in succeeding Circulars of this Series. The general principle recommended is to attach four or five tin cups at distances of a few feet apart up the tree. Single oblique incisions are made, one above each cup, and the milk is collected and washed into a vessel with a tap at the bottom. Probably the best machine would be a glass churn with tap at base, fixed so as to revolve about a horizontal axis. The milk is left to stand, when it separates into a cream containing all the rubber, and a beery, fluid below, which is run off by the tap. The cream is mixed with water, churned, left to stand, and the process repeated. The rubber is thus obtained almost pure in three washings, and the cream is poured out to dry on a porous surface, when a thin sheet of perfectly dry and almost pure caoutchouc is obtained in a short time.

YIELD.—Till further experience has been gained we do not know how much tapping is advisable in *Castilloa*, nor how much it will stand. The trees in the Island, so far as tested, yield very well, but it would be premature to draw any general conclusions. A few trees of about three feet girth gave an average of 5 ounces of rubber each from one day's tapping. Probably three or four tappings might be done every year without serious injury, but this remains to be investigated. The amount of rubber is not much larger than in Para trees of similar age, but it was collected from a quarter of the number of incisions, thus very much reducing the cost of its collection. It must also be remembered that this rubber was perfectly dry, whereas the driest rubber prepared by the old methods contained 10 per cent. or more of water.

The cost of opening plantations of rubber will be found in the preceding Circular. The probable return in the case of *Castilloa* is larger than in the case of Para, and its cost of collection is less, so that the cultivation of this plant as a bye product in favourable localities may be recommended to planters. Neither kind of rubber can be safely recommended as a principal product. Those who wish to plant it on a large scale would probably do better in countries further east.

LITERATURE.—The following books and papers, among others, relating to *Castilloa*, may be consulted in the Library at Peradeniya. The initials and figures indicate their place in the Library:—

Hooker, Sir J. D., and Dyer, W. T. T., on the *Castilloa elastica* of Cervantes, and some allied rubber-yielding plants, Trans. Linn. Soc. Series II., Vol. II., p. 209, 1885 .. .. .. G 1

Morris, D, Cantor Lectures on the Plants yielding commercial Indiarubber, 1898 .. M 6

Morris, D., The Colony of British Honduras, pp. 74, 80 .. .. .. P 6

Seeligmann, G., Lamy, and Falconnet, Le Caoutchouc et la Guttapercha, Paris, 1896 .. .. M 6

Foreign and Colonial Office Reports:
F. O. Misc., 1894, No. 322 (Colombia) }
Do 1895, No. 385 (Mexico) } .. F 4

Kew Bulletin of Miscellaneous Information, December, 1887 .. .. J 3

Trinidad Bulletin, August 1898, p. 115 .. B 3

Tropical Agriculturist: Feb. 1883, p. 682; November 1884. p 301; March 1885, p. 697, &c. .. .. .. I 1

JOHN C. WILLIS,
Director, Royal Botanic Gardens.
Peradeniya, April 7th, 1899.

THE PARA RUBBER TREES are described as doing splendidly in the Kalutara district and there ought to be a fine show all over the place in a few years.

COOLGARDIE EXHIBITION AND CEYLON TEA IN AUSTRALIA.

We publish elsewhere a chatty letter from M. Joubert, the General Manager of the Westralian Exhibition. The testimony he bears to the success of the Ceylon Tea Court will be gratifying to the "Thirty Committee" and to planters and merchants generally. We leave the further portion of the letter to speak for itself: we might have sent it on to the "Thirty Committee," but saw no hope of any practical result in that quarter, because M. Joubert must understand that a tea trade between Ceylon and the several Australian Colonies has already been established,—that from a beginning of a few thousand lb. in 1881—the year of the Melbourne Exhibition—we have now got to shipping 13 to 15 million lb. to Australasia. There is, of course, plenty of room for expansion still, seeing that Australasia is credited with requiring altogether 28½ million lb. (*vide* Estimates in our "Handbook and Directory"); but the development of the Ceylon trade is now left entirely to our mercantile agencies, save in so far as the Tea Cess Fund (our tea planters' money) may help to establish a Tea Court at any local Exhibition, as has been done at Coolgardie.

Nevertheless, M. Joubert's wide family and business connection surely offers a tempting opportunity for establishing a successful Australian agency in Ceylon tea and we have, therefore, the more readily, given publicity to his letter on the chance of a Colombo tea exporting house without an Australian Agent, putting itself into communication with our correspondent. To forward the realization of his present wishes is to promote the interests of Ceylon tea; and we, therefore, trust that M. Joubert may be successful in hearing from a Colombo merchant, or proprietary planter, how a business may be established to cover the wide extent of colonies indicated in his letter.

FREIGHT AND COMMISSION CHARGES ON TEA PURCHASED IN CALCUTTA.

We (*The Indian Planters' Gazette*) enclose three *pro forma* documents:—viz.

(1) Shipper's Invoice;
(2) London account sale;
(3) Relative account-current;

which purport to deal with parcels of 100 chests of tea purchased in Calcutta at 5½ annas per pound, shipped at freight £2-10s per ton, and covered at exchange 1s 4d; buying and selling commission at 1½ per cent. These, it will be noted, are the exact factors upon which our tables were based. The account sale shows the sale of this tea in London at 7¼d, the equivalent shown in our table against a cost of 5½ annas, and the account-current discloses a difference of £1-12s or about ¾ per cent. over the whole transaction—a point that is unappreciable when it is borne in mind 8,000 lb. of tea is dealt with. The charges shown in these examples are actuals.

PLANTERS' STORES & AGENCY CO., LTD,
Calcutta, 10th May, 1899.

SHIPPER'S INVOICE.

No.

TELEGRAPHIC CYPHER.

Invoice of 100 packages of tea marked and numbered as per margin, shipped by the Planters' Stores and Agency Co., Ltd., Calcutta, per steamer "City of Perth" for London for account and risk of the concerned and consigned to order. Freight at 50s.

Draft at 3 months sight through National Bank of India, Limited, for £203-13-1 at Ex. 1s 4d.

			R	As.	P.
No. 1/100, 100 chests pekoe Souchong ..	8,500 lb.	5/6	2,921	14	0

CHARGES.

	R	As.	P.			
Brokerage at 1 per cent ..	29	3	6			
Taking delivery, Marking and Shipping at 5 per chest ..	31	4	0			
Insurance on £220 at ⅜ per cent less 10 per cent at Ex. 1s 4d ..	11	2	0			
Policy Stamp ..	0	6	0			
Stamp Bill of Landing & Bill of Exchange ..	2	0	0			
Postage, Petties and Telegrams ..	10	0	0			
Bill Brokerage at ⅛ per ct.	3	13	0			
Commission at 1½ per cent.	45	2	3			
				132	14	9
				R3,054	12	9

E. & O. E.

Calcutta, 10th September, 1895.

ACCOUNT SALE.

Account sales of 100 packages of tea ex "City of Perth" at Calcutta sold by Messrs. Jones & Co on account of the concerned.

	Nett lb.		£	s.	d.
100 chests Pekoe Souchong ..	8,500				
Less draft ..	100				
	8,400				
Less loss in weight, say ½ lb. per chest ...	50				
	8,350	at 7¼d	252	4	1

LONDON CHARGES.

	£	s.	d.	£	s.	d.
Freight on 100 chests at 50s per 50 c. ft. say 10 tons ..	25	0	0			
Interest on ditto 108 days ..	0	7	4			
Warehouse charges average 3s 4d per £ ...	16	13	4			
Interest on ditto 90 days ..	0	4	1			
Customs Weight Notes and Warrants ..	0	12	6			
Public sale expenses ..	0	12	6			
Brokerage at 1 per cent ...	2	10	5			
				46	0	2
				£206	4	8

RELATIVE ACCOUNT CURRENT.

THE CONCERNED IN ACCOUNT WITH THE PLANTERS' STORES AND AGENCY CO., LTD.

Calcutta.

	£	s.	d.
To Cash—Bill due	203	13	1
To Stamping Marine Policy Fire Insurance, London ..	0	8	0
To Selling Commission in London at 1½ per cent	3	15	7
Total ..	£207	16	8

LONDON.

	£	s.	d.
By Proceeds of sale as per account			
Sales shown	206	4	8
By Balance	1	12	0
Total ..	£207	16	8

E. & O. E.

London, 10th November 1895.

MINOR PRODUCTS REPORT.

London, May 4.

Cinchona Bark has dropped twenty-five per cent today in Amsterdam. Quinine, which has been the victim of the conflicting reports of Java bark shipments this week, has been, on the whole very quiet.

Coca Leaves.—Quiet. Huanuco kind is neglected at 1s. For Truxillo there are inquiries, and business is likely to be done at 10d. The string of Ceylon leaves offered at the last auction have all been sold, 10d being obtained for all but the dark damaged leaves.

Cinnamon.—Quills are about half-pence better this week in anticipation of the small sale at the end of the month. Firsts are quoted 10d to 10½d; seconds, 9¼d to 9¾d; thirds, 8¾d to 9d; and fourths, 8½d. In the spice sales yesterday 13 bales of Ceylon were sold without reserve at 6¼d to 6⅝d; while 25 bags of chips were bought in at 3½d. During the three months—January, February and March 1899—331,217 lb of quills and 563,345 lb of chips were exported from Ceylon.

Cinchona Bark.—From details of the exports of this article from Ceylon which have been published it appears that of the 150,080 lb of bark exported, from January 1st to March 28th 121,250 lb went to the United Kingdom, 28,797 lb to America and 33 lb to France.

Fixed Oils.—Coconut: Ceylon, spot, £25 10s to £25 15s.—*British and Colonial Druggist*, May 6.

Cinchona.—The Ceylon shipments from January 1st to April 11th were 168.770 lb, as compared with 201,273 for the corresponding period of 1898. Since the auctions last week sales of 400 to 500 bales are reported, at an advance of ⅛d on the unit then paid. There have been nibbles for the soft Colombian bark, but no business has transpired. The exports of bark from Java for April were 996,000 Amst. lb against 850,000 last year, making a total for the four months of 3,021,800, against 3.225,000 Amst. lb last year. The shipments this year have been :—January 5098,00; February 539,000; and March 977,000 Amst. lb.

Cardamoms.—A fair amount of business is passing in Mysores privately at the rates paid in auction.—*Chemist and Druggist*, May 6.

INDIAN AND CEYLON TEA.

CIRCULAR TO ALL PRODUCERS AND IMPORTERS OF TEA.

The following circular has been issued by the Secretaries of the Indian Tea Association (London), and the Ceylon Association in London :—

We are instructed to forward to you the enclosed memorandum on the proposal to abolish the draft allowance on teas sold at public auction in London, and to invite your support. We are desired to point out that it is greatly to the interest of producers and importers that the proposal should be carried into effect, and to add that it has the unanimous approval of the Committees of the Indian Tea Association (London), and the Ceylon Association in London. If you see your way to support the proposal, we shall feel obliged by your returning to either of us as soon as possible the enclosed form duly filled up.—Ernest Tye, Secretary, the Indian Tea Association, London. Wm. Martin Leake, Secretary, the Ceylon Association in

I/We, the undersigned grower or importer of Indian Ceylon, Java, or China teas, hereby agree that any teas I/we may put up for auction at public sale, in London, on and after a date to be hereafter determined by the Joint Committee of the Indian and Ceylon Association in London, but not before July 1 next, shall be sold on the express condition that no allowance for draft be made to the buyer.

This I/we agree to carry out, provided the Joint Committee of the two Associations receive in their opinion sufficient support to ensure the adoption of the proposal.

[Here follows name of firm, proprietor, or company and quantity represented of Indian, Ceylon, China and Java teas.]

MEMO. AS TO ALLOWANCE OF 1 LB. DRAFT ON TEA SALES.

1. The profit on tea cultivation having reached such a narrow margin it became imperative on the grower to curtail every item of expenditure in India and Ceylon to the very lowest limit, and in consequence many forms of allowances which were common in better times have of necessity been abolished.

2. It has now unfortunately become necessary for the grower to extend this pruning down to unnecessary charges and allowances on his teas in London, and the most obvious of these is the allowance of one pound draft per chest or half chest.

3. This allowance has long been looked upon by the grower as an unwarrantable tax upon his teas, and it is held that the time has come for it to be abolished.

4. During last year there were imported into London :

		Chests.	Half-chests
From India	..	1,286,998	285,664
„ Ceylon	..	831.406	316,090
		2,118,404	601,754

and the allowance on these from draft alone amounted to 27,20,000 lb.

5. And this is not all; for, by the present system of weighing by H.M. Customs, a turn of the scale is given in the buyer's favour on the gross weight and another on the tare weight. Each of these may give the buyer a maximum advantage of 15·7 oz., so that the two together average close on 1 lb. of tea per package, exclusive of draft.

6. Taking then the two forms of allowance (namely, draft and weighing) together, the buyers on these figures received 5,000,000 lb. of tea more than they paid for.

7. Without raising the question of an alteration in the system of weighment there is no reason why the draft allowance should not be abolished. It is a survival from times and conditions which no longer prevail, and it is not exacted in countries other than Great Britain, to which India and Ceylon supplied last year 560,000 chests.

8. In 1890 all draft allowance was abolished on cured provisions and cheese, the same has been done in the case of bark and other articles, and the same should be done now in the case of tea.—*H. and C. Mail*, May 5.

SIR A. MACKENZIE AND THE TEA PLANTERS.

Sir Alexander Mackenzie's thrice unfortunate aspersions on the tea-garden managers have aroused much indignation and no wonder. Although in giving evidence before the Currency Commission the ex-Lieutenant-Governor does not say in so many words that the manager are for the most part incompetent, he groups his answers in such a manner as to leave his hearers no alternative inference. Yet when we read on, we find that his grievance really is that "the conditions of profitable cultivation have changed." Surely that is not the manager's fault. Machinery has come in, says Sir Alexander, and with it the practice of amalgamating a number of

gardens under one management. The management that is called for under these conditions is expert and "it is hard to get." And yet one heard of large numbers of experienced tea planters who were to be met in Calcutta last cold weather looking for work in vain. That fact scarcely bears out Sir Alexander's petulant remark. Of course it is very annoying to be a shareholder in a company which does not pay a dividend upon the season because its manager has been dismissed, but, after all, surely that is a very small fact from which to argue the general laziness or stupidity of a large body of gentlemen. Sir A Mackenzie complains that the pampered tea planter picks up his experience "at the cost of the shareholders." There is a very general impression among those who know that he picks it up too often at his own,—*The Englishman.*

FACILITIES FOR MAKING GOOD TEA.—VII.

Dealing with two replies dating from Dikoya, one from Agrapatana, and one from Kotagala, we find the drawbacks to making better tea considered from different standpoints. One Dikoya planter, while holding the ignorance and carelessness of tea makers and coolies who try to hurry through their work, responsible for much, considers the teas now produced far superior in make to those turned out, say four years ago, and that it is only over-production and combination among buyers which has stood in the way of better prices. The other is unable to detect any special cause, though jât, soil where previously under coffee, rush of leaf, and neglect of pruning followed by severe cutting down, play their part in keeping down the quality. Agrapatana thinks the failure of buyers to give value is the great drawback to making better tea, as the district possesses great advantages; while Kotagala pleads unseasonable weather, want of accommodation and machinery in some places, and want of attention in others, as hindrances to improvement. On jât there is nothing new to record, as there is the usual variety, though as a whole all the districts have fair working bushes varying from good and medium to inferior in the first plantations. In soil, Dikoya is content to claim medium, but generally good for tea; while Agrapatana rejoices in decidedly good soil, and Kotagala regards its soil as not generally poor, though parts of most estates are worn. Mr. John Hughes' letter should draw special attention to the impoverishment of soil which immediately attends heavy and continuous showers, and the necessity of providing safeguards against avoidable loss, whether of soil or its more valuable constituents. While one Dikoya planter unequivocally declares in favour of manuring, the other insists that a dose of manure which shows good results exhausts itself in two years, after which the bushes suffer if the dose be not repeated; and with prices under 8d. per lb. there is very little profit in manuring. But may not the profits disappear altogether without manuring? From Agrapatana comes the warning that manuring, to do good, must be scientific, and in that description is not included "the usual castor-cake and bones," on which, however those who have tried the combination generally report favourably. Kotagala adds its testimony in favour of manure, as both improving and profitable where the soil is not too much worn, and where neglect has not continued too long. Then it is a question of "Will it pay?"

In regard to factories, one Dikoya resident declares that most estates are deficient in withering space and that prices are seriously affected in consequence, through Visiting Agents, with no practical knowledge of the details of work, opposing extensions which the working Superintendent feels to be essential. The other Dikoya planter takes a different view, holding that most factories have ample room for nine months of the year, but the space is found insufficient generally during the rush in April and May. The question is, we suppose, whether additional expenditure will be justified by the saving of the loss that insufficient withering space leads to; but the latest invention will, perhaps, effect a revolution, and those who saved in buildings may yet rejoice! In Agrapatana there is no deficiency in withering space; and the sufficiency is specially mentioned as an explanation of the high average prices the District obtains; and Kotagala, too, finds that the want of space has been supplied in recent years. Dikoya is, generally, well supplied with machinery (save in respect of sifters and roll-breakers), and also with motive power, except during the dry season; and Agrapatana and Kotagala, too, are generally satisfied with the equipment of their factories. The labour force has been ample in all three districts—Kotagala experiencing that pleasure after five or six years. Dikoya holds two views of pruning—one that it is neglected too long, and then the knife is applied with too great severity, the other that poor jâts must be severely dealt with to yield paying flushes; but V.A. s are said to worry the bushes with too early plucking, to ultimate injury of the estate. While Agrapatana has not suffered from severe pruning, Kotagala complains of much too severe handling after prolonged neglect. From Dikoya and Agrapatana the unanimous verdict is that both soil and climate are most suitable for tea, the only drawback being that many of the earlier plantations had to be pushed on without reference to jât, and with undue regard to economy in consequence of the collapse of coffee. The results in such cases are sadly apparent now. This is a drawback from which Agrapatana evidently has not suffered; but Kotagala is burdened with land which had been for long years under coffee, and such cannot be expected to yield large returns.

COCONUT PALM CULTIVATION.—Cultivators of coconut palms in the Straits Settlements, who have been troubled by beetles and by "the effects of sugar estates on coconut plantations," will read with interest the letter of "W.J." elsewhere, as one of our most experienced Ceylon planters. In answer to his enquiries as to nature of soil, multiplicity of beetles, &c., we shall be glad to hear from any one having a knowledge of the conditions in Selangor and other divisions of the Straits Settlements.

CEYLON TEA IN AMERICA.

THE WORK OF PIONEERS.

(Reminiscences by an ex-Ceylon planter J M.M.)

Philadelphia, April 1899.

I have taken a *pioneer's* interest in many things during my life, but no interest has cost me so much as *Ceylon tea*, and yet I turn with an apparently undying interest to Ceylon tea with every good wish for its success—I may say—indigenous to the 'make up' of my being. My position is that of the bird that flies with the wind (or, for a change, against it) *free*. I am not financially interested (in my work) and I am happy. I take a bird's eye view of the Tea Trade in the United States of America, and in doing so, quietly consider Why's and Wherefore's, look at things as I see them *generally* without bias. To take wing to Ceylon (I wish I could) I, in my dreams effect a mode of my own for quick transit. How much, do planters (so many of them my old friends, I see by the Directory) hear what resident planters have to say about America? *How* much from "late" planters *now resident* here in America as merchants? How *very little* do they hear from the retailers of Ceylon tea who sell your tea to the American people! I *hope* to do *some* good in *this* respect. I am known today, in Philadelphia, the moment I introduce myself—not only to tradesmen or tea men, but to Philadelphians generally as "the man who hung about 13th Market and Arch Street in four different stores. for five years—shouting out (metaphorically writing) about Ceylon Tea to an unresponsive public! Five out of six (to whom I may thus introduce myself) answer. "What? Were you under St. George's Hall"? "Yes, in the dreariest depths of basement." I can always answer! My signs were large, and demonstrative—being on a level with the eyes of the "passer by"—(please note "passer by") but they all seem to have passed by once at least—and remember my store.

My saddest recollection in connection with this store is that of our dear old friend from Aberdeen—via 20 or 30 years in Ceylon,

JAMIE GARIOCH.

He wrote me from Canada when he was stranded and I was in no position at that time to ask him to join me; but he turned up, and for about a year represented me in my store. Good, kind-hearted old soul, but dying on his feet. I suppose everyone who knew him, knows that he finally landed on his native heath, Aberdeen, and died at peace with the whole world among his friends. Little do those who have not cast their lot in a country like this realize what it is to "get left" in life, particularly in old age, after leaving Ceylon. Not until they have experienced such a position can they possibly imagine what lifeless and ambitionless existence means.

Another good old Ceylon man was represented there, viz.:

VERE MILLINGTON,

a good, cheery, kind and true-hearted man as ever lived. I have always looked upon him as the actual impersonation of "Mark Tapley"—and if any living being enjoyed and could repeat Dickens—Vere Millington was the man. He served me in the midst, and through the midst, of my troubles. I only learned to appreciate him after I thought he was torn bone from bone—dead and gone—annihilated by misfortune and mishaps. But after I had buried him, through false information from friends, he turned up serenely, not only able to walk, but through having to carry an overweight of avoirdupois actually (what shall I say?) unable to walk, or nearly so. The laugh was there and the happy temperament seemed to bear up all the weight he could gather from the flesh and all the sorrows he could glean from the d—l. There is a man who did me personally great service, never yet repaid, but was and is now more than appreciated. He was, in this country, a plucky fighter under the most trying circumstances, kept his head level, "kept a stiff upper lip," met misfortune with a merry laugh, and when at last dropped some 20 feet on to an asphalt floor from wheels revolving like lightning of heavy electric engines stripped of his clothes, half-a-dozen bones broken and in a generally mangled condition, unconscious, he wanted to know where they were taking him to, and why they didn't get him his clothes and let him go home to his wife as a decent although unfortunate man! I cannot, of course, remember exactly what he did remark, but what he said was to this effect! I saw him and his good wife on the last visit they made, and they were both looking great. I have lost their address in England, and can't write; but would be glad to know how. His property I heard (from himself) was doing him all that was necessary for a livelihood, and no one is happier to know it than the writer.

As I write, I have received letters from three prominent firms in Philadelphia, representing tea (retail). They speak for themselves. I expect others as time goes on, and will gradually afford you matter from which you may eventually be able to arrive at a consensus of retailers' opinion, representing finally an undebatable philosophy regarding Ceylon Tea in America.

CEYLON AND INDIA *vs.* CHINA TEAS.

November 9th, 1898.—Editor, "Journal of Commerce and Commercial Bulletin," New York.—Dear sir,—I note with interest a letter upon "China vs. Ceylon Teas" in your paper of even date. Only a very few years since I was a believer in the theory that Ceylon and Assam teas were too strong, too rich in tannin—"too rich for our blood"—in fact in this dry electrical climate of ours, but I could well understand the high favor which these teas met with in England because the wet damp climate with its raw benumbing cold, in the winter months (that characterizes the major portion of the weather in England, Ireland, Scotland and Wales) demands just such a nourishing, such a "grateful and comforting" drink as can alone be obtained from a cup of rich, full-bodied and fragrant Ceylon or Assam tea.

In fact in my various visits to the mother country I was so captivated with their "two shilling" teas, for instance, that I would bring some home with me for my own table, but I fancied that they did not taste nearly so well here as they did in England, which was probably due to the difference in climatic conditions; but the taste for them grew upon me and I finally began to experiment with them in our various blends which we sell so largely throughout the United States—at first gingerly and mincingly,—fearful of making mistakes, but as popular approval in the shape of increased sales and enthusiastic commendations followed upon each increase of the proportions in which we used them in the "blends" we have finally reached a point that we never dreamed of, and that is to say that very nearly half of the stocks of black teas which we now carry in our warehouses is of Ceylon or Assam growth. Nor can this be called a matter of partiality either, because we find that their use now in our blends is imperative, we could not well discontinue them if we would.*

* This is precisely the principle that I advocated 12 or 13 years ago, and find endorsed by the retail trade of today—what follows is merely a repetition of my old arguments.—J.M.M.

If any dealer doubts the value of our experience in this respect, let him start say with an addition to any of his black or mixed teas, of 10 per cent. of good Ceylon or Assam tea, then let him bide result, and when popular approval does surely show itself, let him then gradually increase this proportion, until he has say a third of good Ceylon, a sixth of Congou and the balance of Foochow oolong, and let him note the pleased looks of his customers as they come back for more of "that very same tea" which they got before—"it was just splendid."

We candidly admit that the mixture of these teas in our "Caricol Blend" has more than trebled its sales and that not alone in territory (like the coal regions of Pennsylvania where a heavy-bodied tea is always in vogue) but in all parts of the country, in the far west where pan-fired and basket-fired Japans are the rage, and in the South where Chinese greens are used largely, as well as in New England where the people are partial to straight Formosa oolong, so that I am sure the time has come when the Chinese and Japanese tea growers may well look with apprehension upon their vanishing trade, not alone in England but in America as well —Yours truly, THOMAS MARTINDALE.

[No statement of facts could be clearer or more truthful than the above—and I anticipate an answer to the similar effect from every grocer who favors me with a written expression of his opinion regarding the value of Ceylon tea as a staple article in America.—J. M. M.]

November 15, 1898.—Editor, "Journal of Commerce and Commercial Bulletin." New York. Dear Sir,—Replying to Mr. A. R. Robertson's criticism upon my letter of November 9th, which he good naturedly assures your readers "is not captious," permit me to say that in writing to His Excellency Li Hung Chang, as I did two years ago, it was not because my predilections were so strongly in favor of Chinese or Japanese teas; but it was in protest against a pictorial form of advertising then used by the Ceylon and Assam Planters' Association, which I believed was not only hurtful to the China and Japan tea trade but to the Ceylon and India teas as well, and which form of advertising I am rejoiced to see has been dispensed with.*

I have always maintained that it was questionable policy for a business rival to attack another, either in public or private, or for an advertiser to try to advertise his own business by ridiculing or humiliating his rival, and this from my point of view was what the representatives of "machine made" teas were doing, when under their direction a lot of scenes were published, showing almost nude Chinamen, reeking with perspiration, standing over the firing-pans, firing tea; the scene showing likewise an occasional pig running in and around the firing room, by way of variety. Now granting that this picture was true to life, would it not breed in the imagination of nervous and refined men and women a feeling of repugnance to all teas, as it would surely raise in their minds an element of doubt as to the cleanliness of any teas, machine made or hand made?

Mr. Robertson wants to know if a cup of good congou Oolong or Formosa may not be as "grateful and comforting" to us in our dry climate as the Ceylon or India teas are to the tea drinkers in the cold wet climate of England. I unhesitatingly reply, "Yes." † In fact I think that Ceylons or Indians "straight," (that is by themselves) are too rich in tannin; too full bodied for the lovers of tea in America, while they re "just the thing" over there. But my argument in their favour is as to their use in connection with other teas; that they will improve and "bring up" almost any teas that they are blended with. [Why didn't Mr. Martindale write this 12 years ago? Too late *now*—so far as I am concerned.—J. M. M.]

Mr. Robertson suggests that the marvellous success which we have met with is pushing our "Caricol" blend of tea, may be the result of the clever advertising it has received. This might be so as initial orders, else why spend money for publicity; but when the "*repeat*" * orders, begin to come in and keep on coming year after year, then it shows that it is the inate merit of the article itself that is doing the work.

I believe with Mr. Frank Munsey of magazine fame, that the man who tries to give the public the most and the best for its money will always win over the man who tries to make the most out of the public and give the least he can. The public day by day through the redundancy of newspaper, circular and poster publicity is becoming more enlightened and more critical; and while advertising may build up a trade, it can never hold it if absolute merit is lacking in the article advertised.

In this connection it strikes me as strange that members of the tea trade in this country do not advertise more than they do.† I venture the assertion that $20·00 is spent in England in advertising and pushing teas to every single dollar that is spent here. Everywhere in the British Isles, you are confronted with tea publicity in some shape, form or other; even the theatre is not free from it, as witness this from one of Colley Cibbers characters—Lady Gentle: "Tea, tea! thou soft, thou sober, sage, and venerable liquor; thou innocent pretext for bringing the wicked of both sexes together in a morning; thou female tongue-running, smile-soothing, heart-opening, wink-tipping cordial, to whose glorious insipidity I owe the happiest moments of my life, let me fall prostrate and adore thee!"—Respectfully yours,
THOMAS MARTINDALE.

Philadelphia, Dec. 7th, 1898.

To the Editor, "Journal of Commerce and Commercial Bulletin", New York City.

Dear Sir,—As Mr. E A Willard states in his letter, published in your paper of December 3rd, that "he will not answer the parties seeking to advertise their particular brands through the medium of correspondence in your columns' and as I am the only man so far who has mentioned a particular brand in this correspondence, I must take it, that I am the one whom he will not answer: may it not be that the position I take in this controversy cannot be answered, or rather refuted? And that is, that the mixture of a certain portion of Ceylon or India teas with a blend of other teas, is invariably beneficial; in fact, Mr. Willard seems to admit this when he says, "That Ceylon and India teas have some merit and are desirable in blending, is true" therefore I may take it for granted that my position is unassailable, even if in order to clinch my point I was compelled to mention the "Caricol Blend."

Mr. Willard seems to object (with some show of temper too, by the way) to the fact that India and Ceylon teas are expensively and extensively advertised, "that hundreds of thousands of dollars are being annually spent" in advertising India, Ceylon and Japan

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* Here again I agree. To picture *Tea* as subject to such methods of preparation in *any* country, is injurious to tea of *all* kinds. To build upon the wrongs of others as a means of raising ourselves is poor principle and to have recourse to illustrating the vilest methods of tea manufacture or preparation as an advertisement of the legitimate and actual treatment accredited to *all* countries where tea is known to be cultivated is surely open to criticism, and ought to be stopped by legal enactment.—J. M. M.

† What have I argued from first to last?—J. M. M.

* The *repeat* orders form the principle of successful issue.—By the gradual treatment of China and Japan tea drinkers to a taste for *body* in the liquor. Ceylon can eventually swamp the demand for the others and establish the demand for *itself* in its purity.—J. M. M.

† The tea houses in America do, as a rule, advertize, but what? Not the tea on its own merits, but what kind of present goes with the pound! That is what I see everywhere, and the people are fools in this respect. They do not dare criticise the quality of the tea even if they can, for they know the answer they would get "what can you expect, with such a present?"—J.M.M.

teas by "foreigners." Is it a crime or an offence against society that "foreigners" should spend their money in such a lavish manner to advertise teas which the gentleman himself admits "are desirable in blending?" Will it not rather strike the candid reader that may be in some manner the gentleman's interests or holdings of other teas may be jeopardized in their value? Not only by the successful advertising these "foreigners" indulge in but also by its results in increasing the consumption of a tea which he would have us believe (on the authority of two English doctors) will produce "intoxication." If this should be the underlying reason of the objections, the gentleman raises against Ceylon and Indian teas, the logical conclusion is that he himself ought to start in and advertise "the purity and more delicate flavor of Chinese teas" with the same vigor and persistency that these "foreigners" show in their methods of "making publicity."

I entirely agree with Mr. Willard, however, in regard to some of the "extravagant statements" used by these "foreigners" in their advertisement, and I have always maintained that certain pictorial advertisements which they have used are calculated to discourage the drinking of teas of any kind, and as a case in point I note in Mr. Blechyndnes reply to Mr. Willard in your paper of the 6th, the claim which he makes as to the use of night, soil as a fertilizer by the "Mongolian tea planters" while the statement may be, and undoubtedly is possibly true, yet such a story in a public point is bound to breed disgust in the minds of tea-drinkers who may say "well how do I know but what such fertilizers are used upon all the tea plants. I'll be hanged if I'll drink any tea at all. I'll drink plain hot water first." And I also agree with Mr. Willard that the quality of China teas imported here, has improved very much during the past two years, and yet I must disagree again with him, when he states that Chinese teas are so much purer and of better flavor than Ceylon or India teas. If this were so, why don't the rejections by the tea inspectors show it to be so. There have been over a million pounds of China and Japan teas (mostly the former) rejected by the tea inspectors, since the new inspection law went into effect, and as far as my recollection goes, not a single chest of Ceylon or India tea has been rejected in all that time. What stronger proof of their purity and flavor can be asked for?—Respectfully yours,

THOMAS MARTINDALE.

February 10, 1899.

Editor, "Journal of Commerce", New York.

Sir,—It would seem from the various letters which appear from time to time in your Journal in connection either with the Tea Inspection Law or the war duty of 10 cents, that the Tea Trade as a whole is a marvel of inconsistency, (may we not rather say inconstancy).

The Inspection Law was championed and lobbied through congress by the leading members of the trade, and loud was the acclaim of these same men when it was put into operation.

The next thing that the tea men wanted was a duty and letters by the thousand were sent to Congressmen and Senators pleading with our legislators to place a duty upon tea. Whether this movement was undertaken to benefit the holders of large stocks of tea or for motives tending to benefit the public good will never be known, but the fact that the duty was advised and requested by some of these very men who now "kick" against the pricks, which are caused by the Inspection Law and the duty as well.*

It is unquestionably true that both causes combined have resulted in the nearly total disappearance through the channels of consumption of all the old teas with which the market has been burdened for so many, many years, and it is safe to say that probably in no country in the world can so little poor tea be found as at the present time in the United States. What a startling contrast this is to the condition of the Tea trade a short five years ago, when it was loaded down with mountains of trash without character and without any vivility or actual worth save that of making bulk. The writer recollects vividly that in purchasing the general stock of a wholesale grocer who was declining business after a busy career of over a half century, that his stock of tea upon examination was found to be absolutely worthless. The tea lead which encased it had become oxidized and had separated into little globules of lead which was sprinkled through the tea. The owner stated that he had purchased it during the war at a cost of over two dollars a pound, and he sorrowfully said, that he really "hated to part with it. It had been with him so very, very long." It was sent to the auction-room and was bought by those who cared less for quality than they did for price, at seven cents per pound, but today if a man were hunting for that same sort of stuff in any fair sized quantity he would have difficulty in finding it, even at two dollars a pound, as the country is now practically clear of all such trash.

The duty and the inspection law having brought about this happy condition of affairs, the "inconstant leading tea men" now commence to make lamentations against the enforcement of the inspection law, and turn their tearful eyes to Congress for a repeal of the duty, else they say the poor people will stop drinking tea and will drink coffee only; that the price has already gone beyond the poor man's purse, etc., etc. Yet only this week in the city of Philadelphia, a blend of teas was offered at 33 cents in forty-three stores with the choice of a can of tomatoes, corn or peas thrown in as an inducement to buy the tea.

I went into a little grocery store on Wednesday of this week to wait for a street car, and while there, out of curiosity, purchased a quarter of a pound of their cheapest tea, for which I was charged eight cents.

The best known blend of tea now before the country (the "Caricol Blend") is being retailed at 34 cents per pound in the East and West and North and South, so that the poor man cannot yet have suffered very much from either the operation of the Inspection Law or the duty, and the chances are that the competition in trade will continue to give him a pound of good, pure, wholesome tea at from thirty-four to thirty-eight cents for years to come, which in actual merit will be worth two pounds of such stuff as but a short year ago he bought for the same price but with a glass, or a cup and saucer or a chromo thrown in. He does now surely lose the chromo and the glass dish and the piece of china, but he gets what he did not get before—good tea, which instead of driving him to drink coffee as a substitute, will make him a more liberal user of tea than ever, because it may be that he never knew before what a cup of good tea really was, and the "cup that cheers but not inebriates" will then become his daily solace, his comfort and his necessity.

THOMAS MARTINDALE.

* The imposed duty of 10 cents per pound has done *good*, and further litigation as to protection against refuse is better. The U. S. A. is year by year presenting a more substantial field for the Ceylon planters to claim as their special interest. A word to the wise ought to suffice!—J. M. M.

INSPECTION OF THE PEARL BANKS.

The following report by Capt. Donnan, Master Attendant, has been placed at the disposal of the press:—

Master-Attendant's Office, Colombo, 14th April.

Sir,—I have the honour to report my return to Colombo on the 13th instant from an inspection of the Pearl Banks on west coast, lying off Arippu, Karaitivu, and Chilaw.

2. The banks examined off Arippu were the Cheval Paar, Southern portion of the Periya Paar, Moderagam Paar, Kerai, outer Vankalai Paar, Kallatidal Paar, Kondache Paar, and Jaggenboon Paar.

3. Large beds of young oysters from 3 to 6 months old were found on the Periya Paar and

on the outer Vankalai Paar, but no oytsers whatever were found on any of the other banks. The few small patches of young oysters that were found on the east side of the Cheval Paar last year have entirely disappared.

4. The banks examined off Karaitivu were the Dutch Moderagam, Kaaraitivu Paar, Alantua Paar, and Muttuvanatu Parr. No oysters were found on the Dutch Moderagam, Karraitivu Paar, and Alantua Paar. The Muttuvaratu Paar, which was so promising two years ago, I regret to report, failed completely. During the two days employed in going carefully over this bank only 120 oysters of ½ to 3½ years old were found, so that practically the 72 millions of young oysters estimated to be on this bank in March, 1897, have completely disappeared. I had to report last year of a very large reduction in the number of oysters on this bank, but I then hoped that the oysters left, being older and stronger to resist attacks of fish, would remain on the bank and come to maturity. The only evidence found of the cause of the disappearance of some of the oysters was that of a few of the empty shells sent up by the divers having a piece broken off them, large enough to have caused the death of the oysters, and it seemed to me that the pieces had been bitten off the shells by some fish. There were not, however, many of the empty shells damaged in that way. Out of a total of 55 picked up there were only 5 damaged, the remaining 50 were perfect, and showed no sign of the cause of the death of the oyster. The bulk of the oysters, however, must have been removed from the bank entirely otherwise, many more empty shells would have been found, and therefore, the cause of their removal remains a mystery. It is probable, however, that they might have been removed entirely by large fish such as skate, which would crush the shells in their mouth, and swallow the fragments of shells along with the oyster. I have found the stomachs of rock fish, of 10 to 15 lb. in weight, that have been caught on a bed of young oysters, full of fragments of the young oysters' shell and if such fish swallow the oyster shell, it is very probable that larger fish able to crush the shell of older oysters would do likewise.

5. The banks examined off Chilaw were the Udapankane Paar, Muttundi Paar, Jakempiddi Paar, Kanukupany Paar, Chilaw Paar, Manatty Paar and Ungul Paar. No oysters, however, were found on any of these banks.—I remain, sir, your obedient servant,

(Signed), J. DONNAN, Master Attendant.

To the Hon. the Colonial Secretary.

CEYLON TEA COMPANIES: SCOTTISH CEYLON—PROPRIETARY—RAGALLA.

We publish reports of the annual general meetings of the above Companies, the latter of which alone declared no dividend.

In the case of the Scottish Ceylon a slight falling-off in results had been reported, and the rise in exchange had added £500 to the expenses of production. The average price, too, was 3½ cents down from that of 1897; nevertheless the Company was able to pay a satisfactory final dividend of ten per cent. But for the inconsistency of the seasons, apart from other causes, it would doubtless have been appreciably higher.

In the Ceylon Proprietary Tea Estates Co. the rise in exchange was responsible for a £900 increase in cost of production, while on the other hand the Company's prices had kept level with those of the previous year. The Chairman, however, stated his opinion that they were still below what they should be. With from 220 to 250 acres of young tea not yet in bearing, the declaration of four per cent dividend was creditable enough.

No dividend from the Ragalla Company was something of a surprise, when the news reached us by cable. Kelburne, the Chairman has now said, had been their disappointing property owing, first, to the rapid failure of the old coffee on the estate, and then to the shade from the coffee-trees hindering the growth of the young tea which was put in. Reference was made to Mr. W. L. Strachan and his report, which we have already published and which showed that in the Ragalla Group there was a fine possession which would rise superior to the handicapping incubus of Kelburne, more especially if the latter began to lose that character. Though no dividend was paid, it was satisfactory to learn that the capital account would in all probability be closed with the expenditure of £600 for the current year, unless a Pelton Wheel were installed, costing in all, £500. For this Company the dawn seems at hand.

CEYLON TEA IN CANADA.

STRONG MARKET REPORTED.

We publish a cutting from the "Montreal Daily Star," kindly sent us by a friend now visiting the Dominion, in which a remarkably strong market for tea is stated to have been the "feature of the grocery trade" during the last week in April. So much so that local dealers in Montreal had, at the date under notice, April 26th, shipped to London packages of tea at under 10d per lb. to the number of 1,600! Accordingly the local demand for low priced teas became for them very difficult to meet and prices had risen in consequence. It is further remarked that as China is not producing so much as hitherto, Ceylon and India blacks having driven out the Celestials' and as the former have been 11 millions lb. short of requirements, the deficiency cannot be remedied for some time; the Indian and China markets not opening till about the end of May, "while the small supply from Ceylon will hardly be noticed."

We are surprised at the later statement; but surely in view of such contingencies as that reported, it is, or rather it was, a mistaken policy for Ceylon producers to starve the London market, when there has been such a call for assistance that away West Canadian dealers have had to help in the supply and have been driven into a corner to meet local demands. Rises of 40 or 45 per cent are no doubt pleasing enough as results, but a little less of the starvation policy should increase sales immensely. We refer specially to the low-grade teas, concerning which we see that fears are entertained in the Dominion that the Indian and China may not reach them till September or October. Meanwhile Ceylon should be able to some extent to step into the breach with some brisk and substantial shipments.

THE WEATHER AND CROPS.

THE effects of the trying drought, which almost all parts of the Island experienced during the first quarter, have not quite disappeared yet, so far as the Export Tables are an index. We are now in the last week of the fifth month; and the Chamber of Commerce tables, made up to the 23rd May, which we published for our *Overland* edition and issued as a Supplement afford an interesting and instructive study. The form, in which we publish the Export Tables, enables our readers to see at a glance how the leading exports at the end of every week compare with the quantities sent away for the corresponding period of the three previous years. The tea shipped this year, so far, is 43,836,320 lb., and is for the first time, we believe, in 1899 ahead of the quantity shipped last year; and that only by about 220,000 lb., while it is still short of the exports to 23rd May in 1897, which reached 44,782,326! We know no reason for the falling-off, except the drought at the beginning of the year, coupled to a small extent with the frost in the highest districts. The last ground which has been already made up, gives promise of the realization of estimates for the year—though it is too early to prophesy confidently, or to revise the estimate. Coffee, curiously, has outstripped last year by nearly 1,000 cwt., albeit the quantity sent away is a miserable 6,344 cwt.; but the drought which told so disastrously on tea flushes was precisely what would bring out a blossom on coffee; and who knows but that the season may literally bear fruit next year, and help to swell the exports of the now despised berry? Cinchona, too, exhibits a leaf, with 336,700 lb exported, which is about 50,000 lb. in excess of last year, and 3,000 lb. in excess of 1897. The rise is probably due, rather to the upward tendency of quinine early this year, and the slackness in tea plucking and manufacture which set labour free for barking, than to any increase in the acreage under cinchona, or any greater attention to cultivation. Cocoa, 20,555 cwt. exported, is 5,400 short of last year, but the fall may be explained by the rule of alternate big and small crops. This year is 5,000 cwt. ahead of 1896 and 1897. So that the chances are against disease having had been much to do with the outgoing crop. Cardamoms, which are not immediately affected by drought, are ahead by about 18,000 lb., of last year when 202,021 lb. were sent away, but only 8,300 lb. in advance of 1897.

It is on low-country products, however, that the drought has told with the greatest severity. Only 583,339 lb. of quilled cinnamon have been sent away, or nearly 200,000 lb. less than last year, 300,000 lb. less than in 1897, and 150,000 less than in 1896! The deficiency in manufactured bark—which is available only when the weather favours a free flow of sap, without which "peeling" is at a standstill—has, however, been more than covered by excess in chips—generally coarse bark which does not peel, and which can be harvested (scraped off the sticks) all the year round. The 942,777 lb. of chips exported represent an excess of 370,000 lb. over last year, 400,000 over 1897, and 600,000 over 1896! Whether this immense quantity will tell on the prices of quilled bark is doubtful as fine bark is put to special uses for which chips are not suitable: and the deficiency in quills is really heavy. The prices now ruling confirm these doubts. The hand of the drought is to be seen in all the products of the coconut palm; for although oil shows a slight increase of 3,200 cwt., as compared with last year, previous weeks showed a deficiency, and the increase now recorded is scarcely proportionate to the growth of the palm industry, nor is it sufficient to compensate for the falling-off under other heads. Thus, in copra, which showed such splendid possibilities last year, there is a falling-off this year of 17,000 cwt. from the 114,435 of 1898. Desiccated coconut, in which there had been a steady progressive increase year by year, after the leaps and bounds of the earlier years of the new industry, exhibits a fall of 300,000 lb. as compared with 1898, and almost the same figures as 1897. In coconuts there is a fall of 200,000; and in poonac of 36,000 cwt. The two heaviest crops of nuts for the year have yet to be picked; but there is no reason to believe that these will be larger than the corresponding crops of the last two years. It is feared they will be smaller. If so, prices must go up, as the demand for copra is steady, and is generally stronger in the latter part of the year. The drought we have gone through will tell on the early crops of next year, too,—another reason why prices should be maintained, or even rise.

A product which shows a decided advance is one that is not grown, but dug up. We have sent away 210,280 cwt. of plumbago, against 161,255 cwt. last year, 123,398 in 1897, and 129,267 in 1896.

ASH OF CINNAMON BARK.—A fair amount of adulterated powdered cinnamon has been found in commerce in Germany, recently. Examination of a large number of samples of the pure drug have showed that the maximum quantity of ash should be five per cent, with not more than one per cent of silica.—From *B. and C. Druggist*, for May.

SALT AS A PLAGUE PREVENTIVE.—E. A. H. writing from Nice to the *Times of India*, expresses confidence in salt as a plague-preventive, and ascribes the immunity from sickness which he had enjoyed, during 35 years' residence in India, to a liberal consumption of salt with food. Even if the cheap and common condiment is not a direct preventive, there can be no doubt that an adequate use of salt goes a good way to sustain health; and it is the weakly ones who are susceptible, not alone to plague, but to all diseases. In this connection, it is interesting to learn that "further experiments are this summer to be made in the German Army with the object of ascertaining the exact value and sustaining power of sugar Two companies of two regiments from different army corps are to make long marches, and the more intelligent men will be provided with pure sugar and with pastilles of sugar to which coffee or lemon will be added, and which will be dissolved in the water which will be carried in tins by the men. Comparisons will then be made and the results reported upon."

NEW COMPANIES.

UKUWELA ESTATES CO., LD. (61,745).—Registered April 26th, with capital £17,000, in £25 shares (378 6 per cent. cumulative preference), to acquire the Ukuwela and Bowatte estates, in the Island of Ceylon, to adopt an agreement with F. G. Ambrose, and to grow, export, import, and deal in tea, coffee, cocoa, and other produce.

The subscribers are:	Shares
T. J. Lawrence, 165 Fenchurch St., E. C., merchant	1
W. H. Ambrose, Bartholomew House, E.C., stock broker	1
D. MacBrayne, jun. 17 Royal Exchange Square Glasgow, insurance broker ...	1
W. R. Kermac, 180 Piccadilly, W., stock broker	1
A. J. Walker, 12 St. Andrew's Mans, W. Kensington, stock broker	1
F. G. Ambrose, 165 Fenchurch St., E.C., tea planter	1
W. Harwood, 31 Lombard St., E.C., solicitor	1

The number of directors is not to be less than two nor more than five; the first are F. G. Ambrose (chairman and managing director with £250 per annum), H. L. Anley, W. B. Anley and J. P. B. Anley; qualification £250; remuneration £50 each per annum. Registered office, 165 Fenchurch St., E.C.

SELANGOR RUBBER CO., LD. (4,237).—Registered at Edinburgh, April 29th, with capital £20,000 in £1 shares, to acquire from C. R. Paterson and W. W. Bailey certain lands and concessions in the district of Klang, Selangor Straits Settlements, and to carry on the business of rubber, tea and coconut growers, planters, farmers and importers. The subscribers are:

	Shares.
T. Gallie, 11 Bothwell St., Glasgow, West India merchant	1
C. Paterson, Ayton House, Dowanhill, Glasgow, tea planter	1
J.G. Rodger, 1 Claremont Gardens, Glasgow, gentleman...	1
E. Rodger, 1 Claremont Gardens, Glasgow, gentleman	1
T. Birminsary, 105 W. George St., Glasgow, merchant	1
H. Moncrieff, 45 W. George St., Glasgow, writer	1

The number of directors is not to be less than 3 nor more than 5; the first are T. Gallie, T. Johnston, H. Neilson and C. Paterson; qualification £250; remuneration as fixed by the co. Registered office, 44 W. George St. Glasgow.

SEFWI RUBBER CO., LD. (61,835).—Registered May 1st, with capital £1,000 in £1 shares, to adopt an agreement with F. Dawkins, and to acquire, own and work any rights relating to rubber and mahogany in Africa or elsewhere. The number of directors is not to be less than 3 nor more than 7; the subscribers are to appoint the first; qualification £100; remuneration as fixed by the co. Registered by Segar Bastard and Co. 56 Cannon St, E.C.—*Investors' Guardian*, May 6.

TEA IN CANADA.

REMARKABLE SCARCITY.

(From the MONTREAL *Daily Star*, April 26.)

MONTREAL SELLS LONDON A LARGE ORDER—A STRONG MARKET.

The strength of the tea market is undoubtedly the feature of the grocery trade this week. It appears that the Ceylon and Indian crops are about eleven million pounds short of the requirements and this shortage has had the effect of sending prices of grades under ninepence a pound up about 45 per cent. in the London market during the past few weeks.

Messrs. W D Stroud & Sons' say that Ceylon and Indian teas which were sold down at 5 ½d a pound two months ago cannot now be had at less than 8½d. Formerly, low grades sold to the trade here at 12½ and finest at 40c. while today the lowest cannot be had under 16½c. and the fine qualities bring 45c.

Reviewing the situation Mr. Stroud states that to show the excitement existing in the London trade, teas which blenders would not entertain at all two months ago sell quite freely today at 8d a pound.

In order to obtain sufficient for their requirements, London dealers have been sending even to Montreal for samples of all kinds of black under 20c a pound and local dealers have already shipped them some 1,600 packages.

Local dealers have now great difficulty in getting low price teas to meet the demand, and as a consequence of the scarcity, prices of some qualities have gone up 40 per cent. in the past three weeks. Green teas are also firmer.

One of the reasons given for the scarcity was that Ceylon and Indian teas have been gradually driving out the China blacks, and as China has not been producing the quantity heretofore produced, there are no stocks to take the place of the shortage in the other kinds. It also appears that the shortage cannot be relieved for some time as the China market does not open till about the end of May, and the Indian around the same time, while the small supply from Ceylon will hardly be noticed. As the best qualities are picked first it is not thought that the low grades will reach here before September or October.

PRODUCE AND PLANTING.

THE NEW SEASON FOR CHINA TEA.—The opening of the Hankow market, once an event of importance in Mincing Lane, has of late years chiefly concerned Russian and other foreign buyers. From time to time there are mysterious rumours to the effect that one of these days we shall see what we shall see in regard to China teas, but at present the indications of any remarkable increase of interest here in the doings at Hankow are few. Nevertheless, China tea has its uses in the London market, and the "Grocer," in commenting upon the opening of the new season in China, points out certain features of the demand, which are of general interest to the trade. It says: "Although operators here evince little interest in what is going on in Chinese teas, pretending that the dealers do not want them, and that the said teas are only asked for and drunk by epicures, connoisseurs, and old ladies of the aristocracy yet it must be owned that lately a more than average share of attention has been given by the blenders who have been sticklers for 'price' tea of common quality suitable for their special purpose, when there has been an unexpected and prolonged dearth of Indian and Ceylon descriptions of the lower class."

A "HUNGRY MARKET."—"This is a fact which should not be lost sight of when forecasting the probable future course of the tea maket in general, for in times of scarcity all nice distinctions of quality and degrees of reference are silently dropped and fanciful pickings and choosings of favourite growths have to make room for rough-and-ready purchases of whatever ill-assorted teas may chance to be on offer. It is very well to say as we have often heard it said recently, that many of leading wholesale men will not touch China tea while there is any Ceylon or Indian leaf to be had instead and even then it must always be 1d per pound under the lowest grades of British-grown teas. But circumstances, fresh in the recollection of the trade, have somowhat exploded this idea, and is proved by the revival of the demand that has been experienced for China tea at a certain figure, accompanied, as it has

been, by a considerable advance in value during the last few weeks, whilst the whole tendency of the London market is, if anything, still towards higher rates. The severely reduced stock in London, whittled down, to 71,129,450 lb. in contrast with 82,251,100 lb. on May 1, 1898, is sufficient proof of the poverty of the present situation in respect of not having at command an adequate and immediate supply of suitable teas for home consumption; and it can hardly be doubted that, when the new Monings arrive about the end of June, they will come upon what is significantly called a 'hungry market.'"

THE TEA DUTY.—Last night in the House of Commons, during a discussion of the Budget Bill, Mr. Broadhurst boldly moved to reduce the tea duty by one half. The Chancellor of the Exchequer pleaded that that involved the loss of a sum of between a million and a half and two millions. He really could not face such a contingency. On a division the amendment was negatived by 246 votes against 125, so that there need not be any further discussion about the tea duty outside the House of Commons for a time at least.—*H. and C. Mail*, May 12.

FACILITIES FOR MAKING GOOD TEA—VIII.

One letter from Nuwara Eliya, and two from the adjoining little district of New Galway, may well be considered together. The two last are agreed that the chief drawback to the outturn of a better average tea, is the rush of leaf during March, April and May generally; while Nuwara Eliya complains of the lack of "detail factory supervision," by which is meant, we suppose, that higher intelligence than that of the ordinary tea-maker is wanted in the factory, if full advantage is to be taken of soil, climate and elevation—all of which favour the manufacture of high-class teas. While the jât in New Galway is medium and the soil the same, Nuwara Eliya, being of more recent planting, undertaken when experience had taught the need of the utmost care in the choice of bushes, claims a decidedly good jât, with a soil which, though not uniform, is generally above the average. There are no worn out estates in these districts; but patches in the steeper and more exposed parts are giving way; and for these grevilleas are recommended, equally useful for firewood and for timber. From New Galway, we have one opinion absolutely in favour of manuring if prices kept up, and another favouring manure, if large yields are wanted, but prophesying a poor quality of tea. Why the tea which follows the application of manure should be poor, we are not told; but we thought that notion had been exploded by widespread experience. If not, it would be interesting to find out which manures are prejudicial to quality, and then to trace out the causes by the aid of scientific analysis. Nuwara Eliya, on the other hand, favours manures where transport is easy, but does not think the district requires refreshment just yet.

Nuwara Eliya commits itself to the declaration that all its estates are deficient in withering room, though factories on the whole are well supplied with machinery, and also with motive power, so far as water is concerned. New Galway, though in a more guarded manner, gives expression to the same complaint, one writer noting the deficiency of withering space in wet weather, and the other declaring that more accommodation would be a decided advantage in the best flushing months and in wet weather. Some estates in this district are deficient in machinery, but the motive power, being water, is always available. From all three planters we have testimony of the abundance of labour, and one specially notes the advantage it offers in permitting of careful plucking even in the months of biggest flushes. While New Galway tells us that there has been but little of severe pruning so far, the general opinion favouring light pruning once in two or three years; Nuwara Eliya insists that severe pruning must be resorted to once in nine or ten years, after three or four light prunings. In neither district has pruning been too long neglected; but while the pruning at first, of bushes planted on virgin soil, was practised once in three years, every other year is the rule now. Nuwara Eliya claims to be the most suitable district for tea in the whole Island, and New Galway declares that there are thousands of acres of forest in the locality, equal to any in Ceylon; but these are not available at present. It looks forward to the time when, lowcountry estates having replaced their tea with some more suitable and more profitable product, the Government will see the wisdom of removing present restrictions, and offering alternate blocks of 500 acres to public competition, above the present elevation limit Though we ourselves look forward with hope to that time, we cannot agree in the wholesale condemnation of the lowcountry. But for its teas, Chinas would be once more in the ascendant; and, while there is a certain demand for low-grown teas, their remunerativeness cannot be questioned. And has there been any offer to beat that which has been made for the property of a lowcountry Company, whose shares stand at a premium of 300 per cent, and which has been declaring dividends of 25 per cent with astonishing regularity? *Per contra*, one of the letters from New Galway, while claiming that soil and climate are exceptionally good, laments the failure of the bushes in the vigorous appearance which characterized them some years ago; and it desires the aid of experts to ascertain the cause of the decline. We trust the explanation will suggest the remedy, and that upcountry and lowcountry estates alike will continue to contribute to the general prosperity by their teas of distinctive flavor and body.

RUBBER PREPARATION.

India-rubber preparation or separation, with all the improvements which are "in the air," is likely to be an important question for many Ceylon planters for some time to come. Mr. Willis has been telling us a good deal that is new and he and Mr. Parkins are likely to give us a good deal more erelong. Meantime, we have an interesting communication today from Mr. Hart of Trinidad in criticism of a paper by Mr. Biffen, which we copied into our monthly periodical some months ago. Everything

bearing on the subject of rubber separation and coagulation is of interest to us at this stage of the industry in Ceylon, and we are obliged to Mr. Hart for writing so freely on the subject.

TEA ON SALE OR RETURN.

At the Southwark County Court before his Honour, Judge Addison, Q.C., on Monday, the British and Benington's Tea Trading Association, Limited, of Southwark-street, sued Mr. C W Burton, a grocer, carrying on business at Hemsby, Norfolk, to recover £2 13s 2d, for tea supplied. The Association was represented by Mr. Philcox, and the defendant by Mr. Foakes.—Mr. Alfred Soopes, plaintiffs' traveller, said he took an order from the defendant for 45 lb, of tea, which was to be exchanged within two months for other tea if it could not be sold. The Association did not return any money. Defendant sold a portion of the tea and sent on the money, but said he could not get rid of the remainder. He was offered other tea in its place, but he refused to accept it and returned what he had in stock. It had not been accepted and was then in the possession of the railway company.—Mr. Foakes said that defendant had the tea on sale or return. He gave it a good trial but found it would not sell. He returned what he had left after four and a half months and sent on the money for the little he had sold. There was a distinct agreement between the defendant and his wife and the traveller that the tea should be had on sale or return. There was a certain inducement held out to purchasers which was that they would receive an article for domestic use in purchasing a quantity of the tea.—His Honour: I know; they give a present with half a pound of tea. That is very common—Mr. Foakes: Yes, but it seems to throw some doubt on the quality of the firm's tea, because if they sold a good article they would not require to give presents with it.—His Honour: That is not so with the Association. They do it to oblige ther customers—to enable your clients who sell tea in a village to get rid of it. But the question here is as to sale or return. I have never heard of tea being sold in that way, although I have heard of Sir Walter Gilbey doing business on sale or return with regard to wines. That was how he made his large fortune by supplying wines on sale or return. But sale or return business is one ordinary firms will not touch; it is fatal to their interests. (To the traveller): Are there any large firms in the tea trade who deal with grocers on sale or return.—The Traveller: Yes, there are. I know of cases where it is done.—Mrs. Burton said she gave the order for 45 lb. of tea at £4 2s 6d to the traveller, and it was confirmed by her husband whom she consulted with at the time.—His Honour: What was the arrangement entered into?—The traveller said we could have the tea on sale or return. There was no time specified as to when the tea should be returned if it was not sold.—His Honour: Are you sure it was sent to you on sale or return?—Yes, sir, or I should not have had it.—His Honour: What sort of tea was it?—No better than I sell at 1s 4d a lb.—His Honour: Why didn't it sell better?—I don't know; we pushed it.—His Honour: It is no reflection on the tea to say that it would not sell. There is a great deal of fancy in regard to tea. At one time people made a great fuss about Ceylon, but now they have come back to China after trying Indian.—Witness said that some very nice presents were sent with the tea, but customers wanted certain articles which the first customers had chosen, and would not buy the tea unless they could get them. That was one reason why it did not sell well, but she could not order another parcel just to get certain presents—His Honour: Did you give a present with each lb. of tea?—No, every ¼ lb. at 6½d.—His Honour: What! a quarter of a lb. of tea and a nice present for 6½d.! Have you ever bought from other people on sale or return?—Yes, the Ceylon Union Company, and I kept some of that tea seven months. I returned some I had had two years, and then I was allowed 5 per cent. discount.—Mr. Burton gave corroborative evidence.—His Honour said the defendant and his wife were more likely to remember the terms of the contract than the traveller who, in his zeal to do business, might have pushed the tea upon them on sale or return, and have forgotten he did so. He believed the defendant was supplied with the tea on sale or return, and therefore gave judgment for him with costs.—*Grocers Journal*, May 6.

INDIAN AND CEYLON TEAS.

The following letters appeared in the *New York Herald* of April 6th and 7th with reference to the lecture given by Dr. John Goodfellow, Ph.D., F.R.M.S. and published in that newspaper, on tho 31st March, attacking Indian and Ceylon teas:—

Your article and correspondence on the subject o tea have amusing sides to teamen, as well as being liable to mislead your intelligent readers in this country.

Dr. Goodfellow's remarks undoubtedly applied to black tea, in the manner in which it is used in Great Britain, as in the lecture which formed the basis of your reporter's interview, he stated "that green teas contained more tannin than black teas." I would ask your attention to these facts:—There are 90,000,000 pounds of tea imported into America from China and Japan: less than ten per cent is China black, the balance is green and Oolong, with the exception of what comes from India and Ceylon, and which is known as "pure black" tea, no colouring matter being used in these countries.

In his remarks he emphasised the statement "that green teas contained more tannin than black teas, also more of the aromatic all," which he thinks "acts with a narcotic effect on the higher brain." It is quite apparent that between the teas available to American consumers, green and black, his recommendation would be for the pure black teas. The remarkable increase in their consumption all over the world is the best indication of their merits.

As regards the healthfulness of India and Ceylon teas, it is a matter of common knowledge that this was the solo beverage on which Lord Kitchener's army made its victorious campaign.

Concerning the healthfulness of tea, of which there seems to be some diversity of opinion, the following extract from a recent English paper is of interest:—Sir William Jenner, who died at the age of eighty-three years, had been Her Majesty's physician for upwards of thirty years. He retired from the Queen's service in 1893 owing to failing health. Throughout his busy career the physician's sole stimulant was tea. He drank it with his luncheon, he took it in his carriage while on his round of afternoon consultations, he drank it again at dinner, and tea was taken as a nightcap.

The great thing is to make tea properly, give it a short steep, and pour off the leaves, and it will not harm an infant, while it will stimulate strong men, doing the hardest of physical or mental work.

IMPARTIAL IMPORTER.

In your issue of March 31st you publish a very interesting article under the caption "Tea Drinking in all its Phases." The article in question, expressing as it does the views of Dr. John Goodfellow, Ph.D., F.R.M.S., naturally attracts more than passing attention.

In England practically nothing but black teas are used, and Ceylon and India tea has supplanted the China and Japan varieties. Now as to the effect of tea on the health of the public, Miss Florence Nightingale in her "Notes on Nursing" makes these comments:—"There is nothing yet discovered which is a substitute to the English patient for his cup of tea; he can take it when he can take nothing else, and he often cannot take anything else if he has it not. The only English patients I have ever known refuse tea have been typhus patients, and the first sign of their getting better was their craving again for tea."

India and Ceylon teas are black teas, and, as Dr. Goodfellow says, they are stronger than China teas. As a matter of fact, one pound of the former will make from two to four times as much liquid tea as the same quantity of China or Japan leaf. Assuming for argument sake that Ceylon and India tea contains more tannin than China black tea and as it takes from one-half to two-thirds less of the former than of China tea to make an equal quantity of liquid tea, is it not obvious that a cup of Ceylon-India must necessarily contain much less tannin than a cup of China tea?

Further, as Ceylon and India teas are unquestionably stronger and require a shorter steeping or infusion than China teas, and Dr. Goodfellow has laid down that the active desirable principles in tea are readily dissolved and the undesirable principle (tannin) dissolves more slowly, is it not also evident that tea which is prepared with short steeping is more hygienic than that which takes a long infusion to make a liquid sufficiently strong to satisfy the ordinary tea drinker?

TEA DRINKER.

THE DISTRIBUTION OF INDIAN AND CEYLON TEA.

In an interesting article in a recent number of the *Times of India*, dealing with "Some Facts about Indian Trade," we observe some suggestive facts on the exports of tea. During the past three years, the quantity exported from India has risen between 8 and 9 million lb.—from 148 millions to 157, to deal with round numbers. During the same period we have advanced from 11 to 12 million lb., that is from 108 millions to 119. Our big neighbour congratulates itself, as we do ourselves, on the growing quantities which find buyers outside the United Kingdom; and with good reason. Without a growing demand for our teas from all parts of the world, a fall in prices is inevitable —more correctly a further fall, as the downward tendency which producers have had to face during the past decade is primarily traceable to the supply having outrun the demand. The increased consumption in the United Kingdom cannot account for the whole of the growing output of British-grown teas. Other markets are essential; but it is curious that, while the Indian exports to Great Britain have steadily advanced during the past three years at the rate of about 2 million lb. annually, our own exports, after having leapt from 94 million lb. in 1896 to 99 millions in 1897, fell back to 96 million lb. last year. The decrease affords no ground for regret, as its explanation is, not any weakening of the popularity of our teas in the mother country, but a growth in direct shipments hence to countries which formerly drew almost all their supplies through London. A comparison of the figures in the table published by our Indian contemporary, with those in a table we have compiled, will show how much stronger has been our advance in other countries than that of India. The following is the table from the *Times of India*:—

	1896-97. lb.	1897-98. lb.	1898-99. lb.
To United Kingdom	135,456,884	137,655,857	139,245,995
,, Russia ..	457,634	689,271	500,889
,, United States ..	784,962	929,704	1,413,624
,, Persia ..	1,993,823	1,464,394	3,456,791
,, Turkey in Asia	1,981,197	1,336,970	2,598,281
,, Australia ..	6,155,895	6,792,654	6,306,135
,, Other Countries	2,078,066	2,582,967	3,948,957
Total ..	148,908,461	151,451,817	157,470,672

Our own compilation is as follows:—

	1896. lb.	1897. lb.	1898. lb.
To United Kingdom	93,936,361	98,930,059	96,133,833
,, Russia ..	246,233	439,349	2,714.003
,, United States ..	718 600	830,873	2,180,188
,, Australia ..	11,062.832	13,258,456	15,126,891
,, Other countries	2,177,386	2,595,830	3,614.166
Total ..	108,141.412	116,054,567	119.769,071

Persia and Turkey in Asia find no place in our Export tables, though Turkey (in Europe), from very small beginnings, took over 73,000 lb. last year; but India is a growing customer of ours with 924,000 lb., 986,000 lb. and 1,091,000 lb. the last three years. It will be seen at a glance how far ahead we are of India in Exports to Russia, the United States and Australia, and what strides we took last year in all three. On re-exports our Indian contemporary writes:—

Another branch of the tea trade seems to be in need of greater elucidation—that dealt with in the returns of re-exports of foreign merchandise. We received last year 3½ million pounds of tea from other countries, principally from Ceylon and China. Of this quantity 2¼ million pounds was re-exported, almost entirely to Persia. Presumably the bulk of these re-exports found their way into Russia. But the re-export trade in tea is in a very different position from that which it occupied in 1896-97, when we received for re-exportation over six million pounds from China alone.

NINE YEARS OF TEA IMPORTS INTO CANADA.

CONSUMPTION 4 LBS. PER HEAD PER ANNUM.

Imports of tea into the Dominion during the fiscal year ending June 30th, 1898, were 19,954,565 lbs. valued at $2,721,189.

In quantity, this is the smallest since 1893, when the figures were 18,034,897 lb.

The imports of tea into Canada during the nine years ending June 30th, 1898, were as follows:—

	Quantity in lb.	Value in. $.
1898 ...	19,954,565	2,721,189
1897 ..	24,317,104	3,310,348
1896 ..	22,667,535	3,252,133
1895 ..	20,610,733	3,115,025
1894 ..	20,459,530	3,039,928
1893 ...	18,034,897	2,975,452
1892 ...	22,593,619	3,650.940
1891 ..	18,042,043	2,981,415
1890 ..	18,451,378	3,073,643

The decline in the importation for 1898 cannot be ascribed to a falling off in the consumption of tea. It was undoubtedly due to the heavy purchases which were made during the previous year in expectation of a duty for revenue purposes being placed upon that commodity. Heavy stocks was the natural concomitant, which, in turn, caused a decline in importations. Consumptive requirements are limited, and, when one year the market is over-supplied, it is only to be expected that the next will be characterized by more cautious buying. Notwithstanding the decline, however, the average for the past two years exceeds that of the previous two, the average for 1897-98 being 22,135,834 lb., against 21,639,134 lb. for 1895-96.

The present fiscal year promises to witness another large importation of tea, the quantity brought in during the nine months ending March last being valued at $2,965,068. The monthly returns from which the figures for the past nine months are gathered do not give the quantities. In value, it will be noticed, the figures exceed those for the 12 months of 1898. The monthly average for 12 months of 1898 was $221,765, and for 1897 it was $226,425. For the nine months of this year it is $328,345

The fact that teas are costing more than in 1898 would in itself help to swell the value of the teas imported; but when the full returns have been issued, it will doubtless be seen that there is an increase in the quantity as well as in the value, particularly in view of the smallness of spot stocks in Canada in first and second hands.

It may, perhaps, not be uninteresting to note that the tea imported in 1877, 22 years ago, exceeded in value the imports of tea during any one of the past nine years given in the above table. In regard to quantity, however, the conditions were the very opposite, there only being 13,575,657 lb imported. Indirectly these figures show the difference in the price of the tea imported in 1877 and 1898 respectively, the cost being 25·90c. per lb in the former year and 13·63 in the latter, a decline of over 47 per cent.

Taking the population at 5,000,000 in 1890-91, and at 5,500,000 in 1897,98, the average consumption of tea in Canada per head during the former two-year period was about 3·64 lb and during the latter 4·02 lb.—*Canadian Grocer*, April 28th.

FACILITIES FOR MAKING GOOD TEA: BOGAWANTALAWA.

The information collated in our recent articles on this subject does not seem quite correct, to a correspondent whose letter is before us—more especially on the subject of MANURING. "The district, we are surprised to learn, is a stranger to manure," we are assured, is not correct. Seven estates could be named that have been manuring regularly for the last four years at all events—and six other estates that have either tried manure, and not gone on with it, or have just begun manuring and intend to go on with it. In regard to "Plucking" we are told that a good many planters have gone in for coarser leaf, because they find it has paid best, and is not so trying to the tea bushes: and "two or three estates which "have been most careful about their leaf: "and whose plucking has been the most "costly, are now getting hardly any better "prices than those that have gone in for "coarser leaf, and cheaper working." Again, we are assured that though "Withering Space" may be deficient in a few cases, as a rule the Bogawantalawa factories are as well found in this respect, and in machinery, as in most districts. No doubt, in every district one could find some estates that, for various reasons, are not as "up to date," with manufacture, and factory accommodation, as they might be, and especially so on estates that are not all in bearing yet; and the same, of course, applies to some estates in Bogawantalawa; but only to a few. Altogether, the summary we gave does less than justice to this fine district, and so we give prominence to the above corrections.

COOLIES FOR ASSAM.

REVISION OF IMMIGRATION RULES.

A set of revised rules under the Immigration Act for regulating the importation of coolies into the tea districts of Assam have now been published by the Chief Commissioner of Assam to remedy the defects existing in the matter of sanitary conditions, transit, food and clothing of emigrants, which were brought to light by the investigations of Lieutenant-Colonel R. Neil Campbell, who, in consequence of a severe outbreak of cholera on the river steamers which formerly were exclusively used for the transit of emigrants to the various districts of the province, was specially deputed to enquire into the matter. The new rules have been drawn up on the lines of those recently issued by the Government of Bengal, who took action after consultation with the Local Governments concerned, the Chamber of Commerce, and the Tea Associations. On the railway routes from the Recruiting Depots the adoption of a system of telegraphic advices will enable the authorities to prevent congestion of traffic, and a further improvement is the restriction of traffic to the two main routes, one *via* Naihati and Goalundo, and the other *via* Katihar and Jatrapur.—*Pioneer*, May 28.

THE FLORIDA VELVET BEAN.

For the past year or two—says the Editor of the *New South Wales Agricultural Gazette*—a great deal has been written about this extraordinary plant. Mr. Geo. W. Hastings, an orange-grower in Florida State, thus sums up his experience of it in one of the leading American papers, and in view of the introduction of the bean to this Colony his words may be of interest:—

"The cultivation of the velvet bean up to the present time has established the following facts:—For the extreme south, it is the greatest forage and humus producer yet discovered. North of central Georgia, only in exceptionally long seasons will the seed mature. North of the Ohio River, it will make large growth of vine and leaves but will not come to bloom.

"It is a great fertiliser for orange groves, but its use is not advisable after the groves come into bearing, as the vines are a habitat of the pumpkin (stink) bug, and on the decay of the bean this pest goes to the orange, puncturing the fruit, and causing it to fall.

"As a rule, the velvet bean is not the equal of red clover or the cowpea, either for seed or forage, north of the Gulf States. For forage and fertiliser it has no equal in the barren sandy lands of the South, where the seasons are long enough for the crop to mature before the coming of frosts."

COFFEE NOTES FROM RIO.

The coffee crop of Nicaragua, which is now being gathered, is reported as yielding only about one-half the usual quantity of berries.

Our advices from one of the interior coffee districts of S. Paulo are to the effect that the growing crop is well grown and of better quality than last year.

A gentleman who was through the new coffee district as far as Ribeirão Preto last week, says the coffee plantations are in splendid condition and are loaded with fruit. The crop will be a very large one. Commenting on an estimate in the papers of two millions bags, one gentleman in that locality said it was more likely to be six millions. Ten years ago the country was quite new and few coffee trees were to be seen; now said our informant, the whole country is covered with splendid coffee orchards and trees are just reaching their best bearing age.—*Rio News*.

TEA IN AMERICA.

NEW YORK, April 26.

Invoice trading quiet and jobbing demand light. Low grades—in fact, all grades—rule steady, with greatest firmness in the lower qualities.

The English market is very firm, and all teas under 9d are in active demand, while better grades of Indian and Ceylon are irregular. The London deliveries in March were 13,149,228 pounds Indian, 7,310,692 pounds Ceylon, 352,170 pounds Java, and 2,558,122 pounds China—a total of 23,370,212 pounds, against 22.807 862 pounds in 1898. From June 1 to March 31 the deliveries were 224,008,936 pounds, against 218,197,969 pounds in 1897-98. Stock, April 1, 84,769,343 pounds, against 94,580,033 pounds at same date last year.—*American Grocer.*

DR. JOHNSON AND TEA DRINKING.

The following interesting note appears in a recent number of "Notes and Queries":—The use of tea being restricted by its costliness (generally from 3*l.* to 6*l.* a pound) to a limited number of persons, it became a very fashionable drink in the times of the later Stuarts,* and some of this feeling remained in the Doctor's time. Tea was then virtually a monopoly of the East India Company, and the tax upon it varied from 50 per cent. upwards. Hence the loss of our great American colony; hence too, from the exigencies of its price, the minute size of the Johnson teacups still to be seen at Lichfield. Neither was Johnson remarkable for his capacity in tea-drinking. Bishop Gilbert Burnet drank twenty-five cups in a morning, and the poet Cowper was also addicted to frequent libations of tea, in and one of his letters to Hill puts on record an adroit serving-man

"raising the teapot to the ceiling with his right hand while in his left the teacup, descending almost to the ground, received a limpid stream, frothing and foaming on reaching its destination into a roaring syllabub,"—

evidently a waiter, who would have regarded with contempt a modern (air-valve) self-pouring or motionless teapot.—R. B. Upton.

CONDITION OF THE BALATA MARKET.

The output of Balata in Venezuela is on the increase, while that in the Guianas is declining. As an indication, the following comparison may be made of the total arrivals at Rotterdam for the past two years. Though the totals do not vary much for 1897 and 1898, but the percentage received from Venezuela in the latter year was more than double that of the former. The figures denote pounds:

	Surinam sheet.	Venezuela block.	Total.
Arrivals, 1897	337,370	160,600	497,970
Arrivals, 1898	168,960	349,360	518,320

The United States minister to Venezuela reports to his government that up to date Balata has been the main product from the lands of the Orinoco Co., Limited, an American corporation with $30,000,000 capital, who have begun the development of Venezuela, having headquarters at Santa Catalina, on a tributary of the Orinoco.

The *Deutsche Gummi-Industrie* (Dresden) in its issue of March 20 printed this report from Rotterdam: "We would call your attention to the fact that the price of Balata, which has been very low for the past two years, threatens to rise to a very high point. The production in Surinam during the past season was, as is well-known, materially lessened, and will be still more lessened during this season. Reliable reports inform us that the principal *concessionaires* have engaged only one-half of their former employés for this season, and that the smaller producers have been compelled to stop altogether, owing to unprofitable prices. The arrivals of sheet Balata [Surinam], which showed a decrease already in the past year, do not promise any increase for this year. The production of block Balata, on account of the favorable weather conditions in Venezuela during the last season, was very good; how it will fare in the present season and how it will be affected by prices, can at present not even be conjectured. The consumption of Balata, like that of India-rubber and Gutta-percha, is continually increasing; its cheapness and easy working qualities have in a great measure led to the invention of new compounds likely to create additional fields for its usefulness. Stocks are at present very small. As regular imports cannot be expected until the middle of April or the beginning of May, it would be advisable to secure the needs for the present season without delay."

* Pepys first partook of it 25 Sept., 1660: see also an article on 'Tea-drinking' in *Temple Bar* of April, 1898.

LIPTON, LIMITED.

THE FIRST REPORT TO THE SHAREHOLDERS.

The report of the directors of Lipton, Limited, for the period ended March 11 last states that the profit earned by the company since its incorporation amounts to £217,620, from which has to be deducted the following amounts already appropriated: Interest on debenture stock to March 11, £17,795; interim dividend on preference shares up to September 30, 1898, £22,063; interim dividend on ordinary shares for first half-year, at the rate of 10 per cent. per annum, paid October 15, 1898, £44,018; dividend on preference shares for half-year ended March 31, £25,000; total, £108,877; leaving a balance of £108,743. The directors recommend this balance should be dealt with as follows: To reserve fund, £45,000; in payment of a further dividend on the ordinary shares for the second half-year ended March 11, 1899, at the rate of 12 per cent. per annum (making, with the interim dividend, 11 per cent. for the year), £59,351 leaving a balance to be carried to next account of £4,391. The sum of £44,261, being profits, less interest to vendor, earned prior to the incorporation of the company, has been placed to capital reserve account. The trade done by the company during the past year has been very satisfactory and progressive. The shareholders will have observed that the sale of wines and spirits has been added to the business. This new department has involved very considerable expenditure, which has been charged to revenue. Many impediments and difficulties had to be overcome; but the directors are pleased to be able to report that the department is now in full working order, and they have every confidence it will become one of the largest and most important branches of the business. The directors have obtained 220 licenses in connection with the company's branches throughout the country. The extension of the cocoa factory has now been built, and is being fitted up with the requisite mchinery. The additional factory connection with the preserve works is also nearing completion, and the directors anticipate it will

be ready for occupation and in full working order for the new season's trade.—*H. and C. Mail*, May 12.

NO DIRECTORS RESIGN.

An official contradiction reached the *Daily Mail* on Saturday May 6, to the effect that there was no impending resignation from the board of Liptons, Limited. At the same time, it was admitted that considerable friction had taken place while discussing the dividend, and that one of the directors went so far as to threaten to resign if his views were not adopted. His opinion, we believe, was that a bigger dividend should have been paid. However, the ultimate declaration was the result of unanimous concord, so that we shall probably hear no more of the matter. It is hoped that the meeting will be held on Thursday, May 18th.

PRODUCE AND PLANTING.

THE POSITION OF THE TEA INDUSTRY.—After the doleful rumours about the tea industry current six months since, the majority of the recently-issued reports of companies are not so depressing after all. There have, of course, been disappointments, but things might have been much worse. On the whole, the season's working may be expected to show better results than was at first anticipated. Messrs. Gow, Wilson, and Stanton, who give a list of the dividends announced in their circular, point out that the average price of teas, notwithstanding some recent weakness, is well above what it was at this time last year. Here are some recent results: Alliance Tea Company: Final of 4 per cent, making 7 per cent for year; £300 depreciation; £500 forward. Assam Company: 12½ per cent for year. Borokai: Accounts show a debit of £223. British Assam: 8 per cent for year, and £128 forward. Cachar and Dooars: 3 per cent. for year; £386 forward. Ceylon Tea Plantations: 15 per cent. for year; £5,000 reserve; £5,000 depreciation; £3,908 forward. Ceylon Proprietary: 4 per cent. for year; £121 forward. Carolina: An interim of 2 per cent. Darjeeling: 5 per cent; £884 from reserve Darjeeling Consolidated: 5 per cent. preference dividend to December, 1898. Doom Dooma. 12½ per cent. for year; £4,986 forward. Eastern Assam: Five shillings per share; £2,098 forward. Galaha. 4 per cent for a period of eighteen months; £1,000 to reserve; £173 forward. Highland: 5½ per cent; £125 written off new clearings; £70 forward Imperial Ceylon: 4 per cent.; £42 forward. Indian Tea of Cachar: 1½ per cent.; £118 from reserve fund. Jhanzie: 5 per cent. for the year on the ordinary shares, and the proportion payable on the contributory shares: leaving £301 to carry forward. Lebong: 10 per cent. for year; £2,000 from reserve; £297 forward. Mazdehee: Reports show a deficit of £681. New Sylhet: Preference dividend paid, and £18 forward, Nuwara Eliya: 6 per cent.; £300 sinking fund; £2,000 estates purchase account; £1,609 forward. Poonagalla: 4 per cent.; £164 forward. Ragalla: Preference dividend paid; £64 forward. Scottish Ceylon: 10 per cent. for year; £456 forward. Standard Tea Company: 15 per cent. for year; £1,000 depreciation; £644 forward. South Wanarajah: 5 per cent. on ordinary; £400 written off; £56 to reserve. Sunnygama: 3 per cent. for year; £95 forward. Sylhet Company: Nil.

GIFTS WITH TEA.—The gift system in connection with the sale of tea has been carried to such lengths that there is no room left for astonishment as to the nature of the devices employed. But presumably these schemes pay or they would not be persisted in. "The Grocer" gives an extract from a circular issued on the subject, which runs:—"On behalf of my mother, the widow of the late——, I am pleased to inform you, in reply to your note, that she regularly receives her pension of 10s. weekly from ——as stated on the bills. My mother had been taking ¼lb. of tea weekly when my father died last——, and immediately upon receiving evidence of the death and regular purchase of the tea the first cheque was sent, and since that time a cheque for 10s. has arrived every Saturday morning. My mother is over seventy years of age, and we can never be sufficiently thankful that her remaining years are thus rendered independent. The family would never have allowed her to want; but, still, this 10s. of her own gives her many little comforts, and she often says, 'Thank God for——and Co.!'"—*H. & C. Mail*, May 19.

THE OUTLOOOK FOR COCOA BUTTER.

At the monthly auction sale of cocoa butter in London on Tuesday last the eighty-five tons of Cadbury's which were brought forward realized an average price of fourteen pence and one halfpenny per pound, which is a slight advance over the price paid at the April sale. On the same day at the Amsterdam sale, some seventy tons of Van Houtens and a few tons of miscellaneous brands were secured by puchasers at figures that averaged the equivalent of about twenty-six cents in American money, a trifle less than was paid at April Amsterdam sale. What caused the advance in London is not yet known, the cables simply giving the prices paid.

For the first three months of this year bulk butter was in very strong shape, under the influence of a heavy consuming demand. Indeed, some holders confidently looked for a 40 cent market, and that their hopes were not realized was probably due to the large offerings at the monthly sales abroad. About the beginning of last month the demand eased off, and this, in connection with continued heavy offerings of butter at the auctions, has tended to weaken the market to the extent that the majority of holders would sell at least one cent lower than they were willing to do thirty days ago. The quotation for bulk in the local market today is thirty-one to thirty-three cents, according to the brand and holder. No advance in these quotations can be expected until Autumn, unless the price of cocoa beans should violently increase or an abnormal demand for butter set in during the Summer months, neither of which is likely. On the other hand, a tagging market until August or September next is not improbable, in view of the fact that the consumption of chocolate is at its lowest ebb during the hot water. Stocks of both domestic and foreign in this market are in strong hands, but are not small, and most confectioners seem to have already anticipated their limited wants for the next month or two-Cakes in twelve pound boxes, for druggists' use, are at present ruling firm at a slight advance over bulk, but may be expected to follow the latter in any price fluctuations which occur.—*Oil Paint and Drug Reporter*.

BOGAWANTALAWA AS A TEA DISTRICT.—Referring to our editorial of recent date, a Bogawantalawa planter writes:—"As a matter of fact I fancy this district is very much up-to-date with manufacture and manuring. We nearly all have good cool fermenting rooms and get good flavour; but our teas are *thin* in the cup! We lack the body they get in the Agras, for instance. I fancy our soil is not so good, and when *thin* flavoury teas are not in demand, our prices all come down with a rush, as they have done just lately. And the finest have fallen far more lately than the medium, owing to the heavy fall in fine to finest broken orange pekoes,"

PLANTING NOTES.

TEA CULTIVATION AND MARKET.—An experienced planter writes:—"I see your evening contemporary in one of his leaderettes writes that our old tea bushes are more sensitive to changes of weather than young. Well, that is quite opposed to the general opinion. When the bushes have their tap roots well down the trees are less sensitive to such changes than in the young state of growth. The Colombo market is very sensitive to adverse circumstances. Let the London market go down ½d, it will go down three cents. A scarcity of freight is also made an excuse of buyers slowing off Except for Australia and direct shipments to Continent, the Colombo market is not to be relied on."

PRESERVATION OF RUBBER TREES IN THE CONGO FREE STATE.—The Government of the Congo Free State, with the object of preventing the threatened destruction of the indiarubber trees in that country has promulgated a decree by which it is provided that for every ton of rubber yielded annually, there shall be planted not less than 150 trees. A bureau of control of rubber forests is created, and is charged with the enforcement of the decree of 1892, which prohibits the gathering of rubber in any other mode than through incisions in the bark. Infractions of this new decree, which bears date of January 5th, 1899, are punishable by a fine up to 10,000 francs (£400) or imprisonment. Employers and directors of corporations are held personally responsible for the acts of their subordinates. Guide books for the cultivation of rubber are furnished by the District Commissioners on request, and agricultural inspectors will be placed temporarily at the service of private owners. —*Journal of the Society of Arts*, May 5.

RUBBER IN BRITISH NEW GUINEA.—In the discussion on Sir Wm. MacGregor's paper before the R. C. Institute, Mr. H. A. Wickham said :—

With regard to the resources of the Possession, I may mention that for thirty years I have had experience in tropical work, and I must state, even with so little time at my disposal, that, in my opinion, the most promising product likely to be of commercial value from New Guinea is india-rubber, particularly of the Para variety. In this I speak advisedly because so far back as the '70's, under the initiative of Sir Joseph Hooker, I introduced this variety for the Government of India with satisfactory results In fact nearly all tropical products are capable of being grown in the Possession of British New Guinea. In no tropical country with which I am acquainted have I seen so many varieties of sugar-cane, and so many indigenous varieties of banana. Tobacco of very fine quality is grown, and there is a native ginger superior to any grown even in the Western tropics. The cotton, also, is very fine, and there are some fibre plants of excellent quality. These things indicate the nature of the country and the climate and its more promising prospective sources of revenue. Especially would I most strongly urge those in administration to offer every possible facility and inducement for the introduction of the *Hevea* (or Para) indiarubber, which could now be readily brought down by short passage through uniformly warm latitudes. A short time since, passing through the Straits Settlements, I saw trees in the second and third generations from my originals from the valley of the Amazon, looking thoroughly well and at home, and loaded with ripe seed. The *Castiloa* of Mexico and Honduras, and the *Ceara* and the *Ficus* rubbers would find suitable localities but why use other than the best as now to be obtained?

GENERAL TEA AND INVESTMENT COMPANY, LIMITED.—Registered on May 2, by R Plews, 24, Rood-lane, E.C., with a capital of £10,000 in £1 shares (5,000 six per cent. cumulative preference.) Object, to acquire, sell, and deal in the shares, stocks, and securities of tea and other companies. Table A mainly applies.—*Financial News*.

CINNAMON SALES IN LONDON.—The auction sale of cinnamon, which took place in London, resulted as follows :—

Quantity offered	.. ..	800 bales.
Quantity sold	.. ..	700 bales.

The tone for cinnamon is good and the demand is also good. Cinnamon of an ordinary quality is from ½d. to 1d. per lb. higher. Fine cinnamon and finest qualities are from 1d. to 2d. per lb. higher.

"TEA-MAKING WITHOUT WITHERING ROOM" comes, unfortunately, a little too late in the history of the Ceylon tea enterprise, when nearly every estate has its well-found Factory. Pity Mr. Davidson's patent was not realized ten years ago! It is pointed out, however, that leaf bought at Kadugannawa at six cents a lb. might, during the recent hot weather, be well withered before it reached Colombo. We are shortly, however, to take advantage of Mr. Macguire's offer to inspect the machinery and the whole process of tea-making at the Sirocco Works.

SCARCITY OF RUBBER.—As may be imagined, the universal demand for cycles has caused a similar demand on rubber in its raw state with the result that the export of this material from the Gold Coast has become so valuable to the country that the Government is paying special attention to its growth and cultivation. Hitherto the natives, in their eagerness to collect as much rubber milk as possible, have been in the habit of cutting down the trees, instead of only gashing them, so in order to prevent this waste only those natives holding licences from the Government will in future be allowed to work.—*Pastimes*.

TEA MANUFACTURE IN THE CAUCASUS.—The Russian *Official Messenger* gives some interesting details of the attempts that are to be made in the Caucasus to develop the local tea industry. A tea factory has been started by the authorities near Batoum, and machinery of the latest type, as used in India and Ceylon, has been ordered from London. The paper states that Russians prefer Chinese teas to those from India and Ceylon, and accordingly every effort is to be made to produce an article as much like the former as possible. With this view experts have been invited from Central China to assist and advise the local grower.

TEA?—OR MANURE?—A well-known Colombo buyer sends "A specimen of fine (!!) tea plucking, which is certainly a credit to the estate concerned." "This choice lot," he remarks, "is to be offered in next sale and is certain to be bought by natives and eventually hawked in our harbour under some such description as 'specially selected pure Ceylon tea.' It certainly is tea, but it ought never to have left the bush, or, if plucked, it should have been buried as manure. Where is the Health Officer? The tea may fetch 5 to 10 cents per lb. It requires an expert (in manure) to value such stuff." For ourselves we may say we have never seen such coarse-plucked half-fired rubbish.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899 :—" I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30.

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangiberia rubber and second to Para rubber.

Castilloa Elastica (Panama or Central American Rubber).—Seeds and Plants supplied; price and particulars as per our Circular No. 32.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; seeds.

Santalum Album (Sandlewood).—The cultivation and felling of the tree is entirely under Government monopoly in India, Sandlewoods to the value of over £100,000 being annually exported to various countries from India. The cultivation of this useful tree is now receiving increased attention in other countries; seeds and plants.

Eucalyptus Marginata (Jarra).—Large quantities of this most valuable timber are being annually exported from Australia to London and various parts of the world for street paving and other purposes. Price of seeds on application. 7,846 pieces of Jarra timber has already arrived for Ceylon use.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Kolanut, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world.

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899 :—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price List of Seeds and Plants of Fruit Trees now being prepared and will be ready shortly.

Agents in London :—MESSRS. P. W. WOOLLEY & Co., 33, Basinghall Street.
Agent in Colombo, Ceylon :—E. B. CREASY, Esq.

Telegraphic Address :
WILLIAM, VEYANGODA, CEYLON.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
HENARATGODA, CEYLON.

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Correspondence.

To the Editor.

RUBBER—ITS CULTURE AND PREPARATION IN TRINIDAD, &c.

Botanical Department, Trinidad, April 24.

To Editors "Tropical Agriculturist."

GENTLEMEN,—I note a reprint in *T.A.* which would probably have escaped notice, had I not been a reader of your periodical. As it was noted in your publication, it is due to you that I should send my reply to you also, and I trust therefore you will give the enclosed insertion, and Mr. Biffen is, I know, a friend of your Mr. Willis.—Yours faithfully,

J. H. HART.

RUBBER COAGULATION AND SEPARATION, &c., &c.

SIR,—In the *Tropical Agriculturist* for March 9th, I find an article by Mr. R. H. Biffen, copied from the "Journal of the Society of Arts," treating on the above subjects.

The writer exhibits a tendency to decry similar efforts as his own, and he uses extracts from the *Trinidad Bulletin* in a way to mislead those who have not that publication in hand; as he refrains from quoting the authorship of the articles. He should have told his readers that Dr. Ernst of Caracas was responsible for the statement he quotes as being "incorrect," and not the editor of the *T.B.* as he leaves it to be inferred for reasons of his own.

After discussing the value of rubber prepared in various ways, Mr. B. jumps to the conclusion that Dr. Ernst is wrong in stating that "smoked rubber is impregnated with impurity," and decides the fact by the prices realised by certain qualities on the larger markets for this class of produce. Now! I happen to have an estimate of rubber prepared without smoking *(Hevea)* given by respectable dealers on those same markets, who valued it as being quite equal to the best smoked rubber, so that a reliance upon this method of estimating quality is proved unsafe, and it may well be that, later on, when buyers have become accustomed to it, pure rubber will sell at higher prices than the smoked product.

Equally unsafe is Mr. Biffen's statement that the juice of the Moon-flower is "alkaline," for I have a qualified analyst's certificate that fresh juice sent by me was found "slightly acid." Equally fortunate is Mr. B.'s assertion that Castilloa *latex* will not coagulate by the addition of acid, as it has been found to coagulate by the addition of acetic acid (Biffen in Ann. Bot. pp. 165 et seq).

The point of Mr. Biffen's conclusions in his article in the Annals of Botany is "that the cause of coagulation must be looked for in the medium in which the rubber particles are suspended," but unfortunately for this theory it has been abundantly proved that not only can rubber be coagulated when the albumenoids are removed, but a better class of rubber produced.

An attempt follows to ridicule the statements as to the character of land suitable for various rubbers, and accuses us of "slight confusion" in the *Trinidad Bulletin*. As a matter of fact the statements are quite sound, and the confusion only exists in the writer's brain. *Hevea* will grow well in places never inundated, notwithstanding the fact that it is found in places regularly flooded, and this can be proved by trees growing in Trinidad, which have been found to stand drought with impunity, and have never been flooded.

I can well afford to pass without irritation the remark made on my supposed "re-discovery" of a method, for the method differs so much from that described by older writers, that it cannot be placed in the same category. It is a method of washing, in it is true, but a very different method to any formerly described, in fact may well be compared to the washing of the steam laundry as contrasted with that of the peasant at the river side.

Notwithstanding what is said by "Le Caoutchouc" (p. 6) rubber prepared by this process is of the highest quality, as it is found possible to rash it quite free from *corps étrangers*.

Mr. Biffen claims that his machine separates the rubber particles by centrifugal action, but the real fact is, they are brought to the surface by *centripetal*, not centrifugal action.

The insertion of the word (*sic*) might also have been readily avoided by the writer, had he noted that the word "or" should have been substituted for the word "and."

I now come to a remarkable statement where Mr. Biffen says that research work should tend "to prepare rubber free from the other constituents of the latex." How this is to be reconciled with the previous *dictum* of the Annals of Botany is not quite clear. It there says "The action of centrifugal force effects the separation of the rubber, and from the failure of the processes usually employed, involving the use of chemical re-agents to bring about the clotting of the separated and washed rubber particles, we must infer that *the cause of the coagulation must be looked for in the medium in which they are suspended.*" Again we are told that "the coagula in forming gather up the rubber particles" . . . . "in the same way as the white-of-egg gathers up particles in suspension when clotted for the purpose of clearing jellies."

It must be concluded therefore that Mr. Biffen has abandoned the position he formerly took up, and is now devoted to the task of removing those very constituents he formerly stated were essential to coagulation, but which he at the same time proved could be dispensed with, for he told us that they could be "brought into a solid mass by pressure, by heating and by evaporation (Ann. Bot. p 168). Why does he use the words "brought into a solid mass"? and not the word coagulation?

Mr. Biffen records his success in preparing rubber by a physical process. He started by requiring albumenoids for coagulation, but now he is recommending separation by a physical process; and has adopted what is actually the basis of the hydro process, which he facetiously accuses me of having rediscovered. I might with equal propriety ask him whether he re-discovered the Babcock machine. If I re-discovered! so has he. I separate by water, he by physical methods, but I dry by evaporation! so does he. His rubber is free from impurities! so is mine. His method requires a machine, so does mine. Again his rubber is free from smell, so is mine, and large quantities can be prepared in a day by simple apparatus, while it would take a powerful engine to drive the machine to get through a similar quantity by centrifugal action. The quality of my rubber is equal to that prepared by other physical processes, as a voucher for which I am quite prepared to submit samples for test and the "*merits or demerits of the system*" do not rest with me, but with those who can judge of its value by actual practice; Mr. Biffen states the contrary.

Mr. Biffen repudiates statements made in Trinidad, but no one has asked him to be sponsor for them. He must however allow me also to repudiate the points conveyed by his remark that "a copy of his machine was exhibited without his consent or knowledge." As a matter of fact the machine was no "copy," any more than his primary effort was a "copy" of the Babcock; but was of different construction, and a vast improvement upon his model, as he knows, for drawings of the improvements were placed in his hands. The "Babcock" machine was never patented, and there are consequently many modifications of it, among which are the forms under discussion which can hardly be called inventions, for such adaptations are being made daily all over the world, for the separation of materials of different densities.

I may be liable to a protest from Lefebre for pirating his ancient washing method, I may perhaps expect a raid from Central American Indians for

having improved on their use of the juice of the Moon-flower; or I may be called to account forusing a modified form of butcher knife for sticking a rubber tree; but I hardly thought I should be held responsible for having with others used the principle of the "Babcock" machine.

There is a point which I would commend to Mr. Biffen's attention, and this is the special character of the Rubber globules of *Castilloa*. Perhaps if he examines them he may find the cause of the rupture which is evidently the real cause of coagulation. This rupture can be caused in various ways, and he who succeeds in causing it in the simplest and most economical way will have solved the question of the preparation of Castilloa rubber, be it by a physical or *non*-physical process.

April 21st, 1899. J. H. HART, F.L.S.

TIMBER TEA CHESTS COMPANY, LIMITED.

(The Colindia.)

22 Fenchurch Street, London, May 5.

DEAR SIR,—I am directed to enclose for publication a report just received from the Colonial Tea Warehouses, bearing upon the condition of the Colindia chests arrived from Ceylon. Last mail we handed to your London correspondent copy of the brokers' report. We are now shipping the chest in large numbers as the orders are coming in most satisfactorily.—Yours faithfully,

THE TIMBER TEA CHESTS Co., Ltd.

T. W. Ricksby, Secretary.

Copy of letter from Colonial & Granite Wharves, London E.

Re—93 chests tea marked "Belgravia" ex "Staffordshire" 2nd inst., packed in the new "Colindia" packages.

We have received and weighed 90 of the above and as requested a careful examination of the condition (external) has been made.

The packages are sound and intact, not a leakage showing anywhere, the nails and clamps being quite firm, there are a few splinters, showing signs of a heavy weight having being dropped on packages but in no case any damage occurred, and we feel quite justified in stating that this is the best package of its kind we have yet handled.

We find the gross weights are exactly even all the way through, not varying by a single pound and this with an even tare is of great importance as it will enable us to turn out the full net weight.

We understand that one chest not yet to hand has been roughly handled in ship which necessitates cooperage before we receive it, this package we will write to you about later.

Another consideration with these new packages is, that they need not to be opened for the Brokers' inspection but simply bored; which practically leaves the chest as it arrived.

"THE JUNGLE CROW."

Hakgalla, May 7.

DEAR SIR,—It is a fact that the "Jungle Crow" nests and rears its young in the trees in this garden. Yesterday morning a young one was found at the foot of a large *Araucaria* tree. It had apparently got out of the nest before it could fly properly, and one of the coolies caught it.

I sent my son up the tree to find the nest, which he did in the thickest part near the top. The nest was rather untidy. The bottom part was of twigs, something like a rook's nest, with lots of dirt like "wormcasts" among them. It was oval in shape, with a sort of hood on one side, and lined with leaves. The young one makes a noise like a young owl. It eats lizards and frogs, but rejects beef.

I think there were two young ones, as I several times heard the same sort of noise as the one we caught makes; but it was concealed in the tree, and I have not been able to catch sight of it. The old jungle crow was fidgetting about all day and seemed much troubled at the loss of her young one.—Yours truly,

W. N.

THE WESTRALIAN EXHIBITION AND CEYLON TEA IN AUSTRALIA.

Coolgardie, Western Australia, May 8.

DEAR MR. EDITOR,—The Ceylon tea-room has, as, I anticipated, done an immense deal of good. It has opened the eyes, not only of West Australians, but of many of our visitors, to the fact that these colonies, where tea is consumed in such enormous quantites, have been and are *poisoned*. It has been my hobby for many years—and your dear old senior and I had many talks about this opening up of the Australian trade. The time has come to do it. I have written by this mail to Mr. Lane and I want you to help me in carrying out the scheme.

I am tired of Exhibition work—this is my jubilee one; 50 Exhibitions! I have my youngest daughter married at Fremantle, a son in Perth, the others—seven—scattered over the eastern colonies—all doing well. I would pitch my camp in Perth, have a depôt here, and through my sons open up others in Melbourne, Adelaide, Sydney and Brisbane. The great thing is to have in Ceylon some expert to mix or blend the teas so as to ensure a constant supply of *one* sample of each grade—cheap, medium, good, and superior—being four prices—the first, of course, will command a huge sale.

The great and more important matter is to be able to rely on a supply: that the demand exists there is no doubt, and that we could soon increase the present trade I am confident, provided it be done systematically and well.

I would gladly undertake this and even forego the offer I have to go to the Paris Exhibition of 1900. As I said I am tired of Exhibitions. I need rest, but not idleness. This tea racket would suit me, and if the tea planters are willing I am "on the job." So satisfied am I of success, that I am willing to be paid by results, if they will guarantee *working expenses* as a first call on profits, of say £200 or £250 a year. Colombo is only a few days from here. I might, if need be, take a run across. But it is hardly worth while encountering even one day's *mal de mer* and I am an awful bad sailor.—Yours very truly,

JULES JOUBERT,

General Manager, West Australian Exhibition.

ANALYSIS OF COPRA (KERNEL OF COCONUT PALM).

City Analyst's Office, Colombo, May 17.

DEAR SIR,—In reply to your French correspondent at Reunion, who wished to have a fuller analysis of copra than he found in my Manual of Chemical Analyses, I have not had occasion to make any fuller analysis; but as coconut poonac is simply copra after the greater part of the oil has been expressed, the composition of the latter can be calculated from the analysis of the former. If we regard a good sample of copra as containing 67 per cent oil, and taking the moisture at about the average of 6 per cent, the composition of copra would be represented as follows:—

COMPOSITION OF COPRA.

	Per cent		Per cent
Moisture ...	... 6·00	Carho-hydrates ...	15·21
Oil ...	..67·00	Woody fibre ..	2 11
Albumenoids	... 6·69	Ash	2·99
		Total	100·00

The nutrient ratio, and the nutrient value, of copra such as above, calculated in the usual way, would be 127·3 and 189·4 respectively.—Yours truly, M. COCHRAN.

"FACILITIES FOR MAKING GOOD TEA."

London, May 19.

SIR,—Your notes on the above subject are very interesting.

The ventilation of the subject of manufacture and the procedure in different districts will have the advantage of undoubtedly improving the quality in many places. The majority of planters in India and Ceylon have made up their minds, "*let's hope*" to sacrifice quantity to quality, and every effort should now be made to put a good class of tea on the market and not to be alarmed at the bogie of the cheap teas that are to be shipped from China.

With regard to withering accommodation, very few factories are in a position to keep their leaf properly thinly spread for more than a couple of days when there is a rush of leaf coming in —so that the leaf has to be made into tea ready or not—and the result is inferior tea. A neat and compact withering process is a great desideratum—and if not too expensive would pay for itself on a large factory in one season. One of the greatest deficiencies is in rolling power.* It is quite accepted as a necessity in India to roll the leaf thoroughly twice for 15 to 20 minutes each time according to the condition of the leaf. The last rolls take place after oxidation—and the leaf is taken straight from the roller to the driers—yet, how many factories are there that can carry this rolling out thoroughly on a heavy day? Tea-rolling machines are now made much cheaper than formerly and requires but little driving power, so that there is but little excuse for any factory not to be provided with ample rolling accommodation, which is such an important process in manufacture. A new system of drying tea by steam has many advantages, especially for final firing and packing. J. H. H. K

* A rolling machine for every 100,000 lb. of tea made as stated by your correspondent, is an absolute necessity.

CEYLON TEA IN AMERICA.

Kandy, 23rd May.

DEAR SIR,—If Mr. Pineo is not on the "Thirty Committee," do not you think he should be asked to stand. His vast experience in America in pushing our staple, added to his well-known business capabilities, should prove of the utmost value to our local men.—Yours faithfully,

TEA

[We think Mr. Pineo is admirably qualified to serve, if he is willing.—ED. *T.A.*]

INDIAN "GREEN TEAS."

SIR,—One can scarcely take up a commercial paper without coming across complaints from Consular reports and elsewhere of the fatuous, and to themselves ruinous, stubbornness of *home* manufacturers in refusing to manufacture and pack their wares to the wants and requirements of foreign buyers. It almost seemed as if "this hidebound Toryism refusing to stretch an inch until it burst," was entirely confined to the home manufacturers; but judging from a letter of Commissioner Mr. Mackenzie, the Ceylon planter also considers himself the best judge of what his customers ought to take! On page 804 of the May issue of the *T. A.* occurs the following para:—

Greens.—In Mr. Blechynden's report to his Committee he says about *unfermented teas*:—"Some samples of these Oolong teas made in India were sent me early this year. They were found so suitable for the market, and firms were so ready to give immediate large orders that I have had to revise my opinion. I now believe that there are certain districts in India, where Oolong teas of a character to command a ready sale can be made, and if such teas are produced *there is practically no limit to the business that could be done*," *etc.* Those Indian greens, I mentioned in my letter of the 14th were picked up at once.

DIMBULA TEA PLANTER.

[Our correspondent should quote the rest, namely:—

Unfortunately there were only a few hundred cases, whereas thousands could be sold. These could be sold easily, whereas our blacks *for price* are unsaleable being too dear. An Importer bought some Ceylon greens lately. He has twice told me the people to whom he sold them could not get rid of them—as they were good and pretty, but different from the kinds used here. These people have *now* wired to him to reserve for them any other similar Ceylon greens he could get.

Mr. Mackenzie's letter is dated March 20th last: have there been favourable sales of Ceylon Oolongs in New York since then?—ED. *T.A.*]

MANURING COCONUTS.

DEAR SIR,—Mr. Beven's report on this subject in your paper of April 19, is both interesting and instructive. I beg Mr. Beven to give us the following information.

1. Of the trees experimented, how many are there to the acre?
2. Are there any vacancies?
3. Are there any young plants in those vacancies?
4. If so, how old are those plants?
5. How much does the manure cost to reach the estate?

6. How much does it cost to put it to the trees?
7. Do you plough or hoe down the manure?
8. In hoeing or ploughing how deep do you go?
9. How far from the root of the tree do you begin hoeing and ploughing, and to what breadth do you do it?

—Yours truly, COCONUTS.

COCONUT PLANTING.

Franklands, Veyangoda, May 24.

DEAR SIR,—In answer to "Coconut" 's letter in last night's issue of the *Observer* I have pleasure in supplying the further particulars he asks for. I may mention that most of the information he wants was embodied in a previous report I sent to Messrs. Freudenberg & Co.

(1) 75 trees to the acre; (2), (3), (4), refer to my report, published in the *Observer* of the 19th ultimo, I now deal with the first and second plots of the five mentioned.

Plot No. 1:—In (A) 32 trees were manured. Besides these there are eight plants—from two to five years old—which were not manured. No vacancies. In (B) 33 trees were manured. Two three-year plants were not manured. One vacancy unfilled. In (C) 32 trees were manured. Two three-year old plants were not manured. In (D) 35 trees were manured. Two plants from two to five years old were not manured.

Plot No. 2:—In (a) of the 72 trees manured, six were not in bearing. Ten vacancies are occupied by plants ranging from two to four years old: these were not manured. In (b) 75 trees were manured, of which eleven trees were not in bearing. Besides these there are 15 plants from two to four years of age, which were not manured.

(5) The transport from the Veyangoda Railway Station to the estate costs 50 cents per cart, if outside carts, less if estate carts, are used. The usual load a cart carries on this road is 17 cwt.

(6) The average cost of digging in the manure round a tree is 1·4 cents per tree.

(7), (8), (9) My mode of application is:—The manure is spread evenly round the tree, three feet away from the trunk, then dug in—three mamoties in width—to a depth of from nine to twelve inches, after which the soil immediately round the trunk is loosened to a depth of two inches. Finally, the fallen branches are cut up and placed over the portion dug in: mulching.—Yours truly.

A. KARL BEVEN.

COCONUT PALM CULTIVATION IN THE STRAITS:

May 26.

DEAR SIR,—I have read with much interest, in the *Selangor Government Gazette* of 5th May, which you kindly sent me, the "Notes on the effects of Sugar Estates in Coconut plantations." As there are no sugar estates in Ceylon—the small areas of canes at Baddegama near Galle are, I believe, grown at intervals of several years, rotation of crops being the rule—it cannot be determined what effect growing sugar canes would have on coconut estates in the vicinity. So long as the megass is burnt, and the decaying nobs of the canes dug out and burnt, I cannot imagine what possible effect it can have one way or another. What strikes a Ceylon coconut planter at once is the enormous number of rhinoceros beetles there must be in Selangor and other Straits Settlements, and the great havoc they commit, compared with the, comparatively speaking, small number in Ceylon and their practical harmlessness. What is the cause of their great numbers, and why are they so edstructive in the Straits? Can the beetle be of a different species with different habits from the Ceylon one? The conditions for the breeding of the beetles—stable and cattle-shed refuse, and heaps of decaying vegetable matter—must be pretty much the same in both countries, so those alone cannot account for the larger numbers in the Straits. I am inclined to think that the land in the Straits is richer in humus and vegetable matter and thus affords more food for the grubs. I see that they are said to be worse in "bakan" land; what is "bakan"? I gather that whatever it is, it is very rich in vegetable mould, and in this, of course, the grubs thrive. Why the rhinoceros beetle should have acquired different habits and become more destructive in the Straits than it is in Ceylon I am not in a position to say; perhaps different local conditions, and variation, by natural selection, for its preservation? In Ceylon the rhinoceros beetle rarely attacks coconut plants before they are two to two-and-a-half years old, and then all the mischief it does is to work its way down to the tender portion of the centre leaf which it eats into till stopped by the hard midrib. When the leaf opens out it looks a little ragged and that is all: it never kills a plant. So little harm does it do to the coconut plant that for many years I have ceased to have them killed, deeming that the spearing does more harm to the plant than the beetle! It is possible that cases may arise, but I have never yet seen one, where a field of young plants may be badly infested with the beetles when, of course, it would be necessary to kill them with the barbed spear; but care should be taken when so doing to tamper as little as possible with the plants. Long may the rhinoceros beetle in Ceylon be as inoffensive as he is at present, and may he never develop the destructive propensities of his relative in the Straits Settlements. Our enemy is the dreaded red beetle, and against it we wage vigilant and constant war. W. J.

ORCHIDS IN FLOWER AT THE ROYAL BOTANICAL GARDENS, PERADENIYA.

June 1.

DEAR SIR,—Local admirers of orchids may be interested to know that the following species may now be seen in flower in these Gardens:—

Renanthera coccinea ("Chinese air plant").—A climbing epiphytal species, native of Cochin China, and said to be introduced to Peradeniya in 1884. A plant of this which was last year placed against a Cassia tree near the Orchid House has thriven well since, being now 7½ ft. high, and forms a striking object on account of its deep crimson inflorescence. The latter is a flattened form of panicle, nearly 3 ft. long, spreading horizontally, and bearing about 130 flowers. Flowers erect, about 3 inches in diam.; petals and dorsal sepal narrow and strap-shaped, orange-red spotted with crimson; lateral sepals large, oblong-spathulate, wavy, lobed at the base, dark-red ground, with blood-red blotches which appear velvety and raised; lip (labellum) small, 3-lobed pale yellow, red-tipped, inner side streaked with dark red, stem cylindrical, sending out numerous aerial roots which attach themselves firmly to the supporting tree. Leaves oblong, four to five inches, leathery and stiff. The flowers last for several weeks unless damaged by wind or rain.

Cattleya maxima var. *Peruviana.*—One of the several varieties of a species which represents a genus almost unrivalled, both for beauty and size of flowers. The genus is indigeuous mostly to Central America and Brazil. Flowers very handsome, each 6 inches across; petals and sepals of a rich lilac colour; lip large, with crisped and sinuate margins edged with a paler line, the inner side variegated with violet-red veins, with a pale yellow band in the middle.

Dendrobium nobile.—One of the most beautiful of orchids when in flower, native of China. Flowers 3 inches in diam., in pairs, produced towards the ends of the stems, each pair being opposite to a leaf; thus the green flacid leaves are effectively intermingled with the flowers. Sepals and petals white at base, merging into rosy-pink at the tips; lip large, cup-like, white, tipped with rosy-pink, and blotched in the throat with purple-crimson. Pseudo bulbs 1½ to 2ft. long.

Dendrobium atroviolaceum.—This is now in flower here for the first time, the plant being only introduced last year through Messrs. Sander & Co., of St. Albans, England. Though not strikingly showy, it is a distinctly handsome species. The petals and sepals are creamy white, tinged with yellow and dotted with purple; lip 3-lobed, the side lobes dark violet coloured on the inside; the front lobe being striped with the same colour on a green ground.

Miltonia Warscewiczii, var. *Weltoni.*—An epiphytic orchid from Peru. Inflorescence a panicle, issuing from base of pseudo-bulbs, about 2½ft. long, rather slender and drooping. Flowers nearly 2 inches in diam., petals and sepals very similar, light brown with much crisped margins, white at the tips; lip large, flat, almost circular, undulated, maroon, fringed with pale grey, blotched with yellow at the base and with a shining spot of chocolate colour in the middle, the underside being marked by a semi-circular grey ring.

Eria armeniaca.—This is perhaps the most showy species of the genus, nearly all the others being considered more curious than beautiful. Growing in the forks of a shrub, it sends out several stalks of racemose inflorescence from the base of the short and flattened pseudo-bulbs, each stalk about 15 inches long. The large bright orange red bracts at the base of the flowers are the showy part, the flower itself being rather small and of dull greenish brown colour.

The following among others may also be seen in flower; Dendrobium Jenkinsii; D. moschatum; D. cretaceum; D. sanguinolentum; D. fimbriatum, var. occulatum; Phalænopsis amabilis; P Parishii; Epidendrum ciliare; Lycaste candida, var. Lawrenceana; and species of Oncidium.—Yours faithfully,

H. F. MACMILLAN.

CEYLON "THIRTY COMMITTEE."

CEYLON TEA IN AMERICA.

Kandy, June 9.

SIR,—The enclosed letter from Mr. Mackenzie to Mr. Lane is forwarded for publication as of some general interest.—Yours faithfully,

A. PHILIP.
Secretary, Thirty Committee.

London, May 17.

DEAR LANE,—I have yours of 4th. I have already written to you, mentioning the very sum you suggest as what should be spent in America next year. It would be chiefly in subsidies and demonstrations, as we could not also keep up the advertising with that amount.

When writing to you about what I saw in Germany, I forgot to mention that the indefatigable Yankees have got hold of the banks of the Rhine. Sailing down, one sees huge wooden placards, on the most prominent points of the famous "Castled Crags" with "Eat Quaker Oats" in very large white letters "Nothing is sacred from the sapper" may well be applied to the Yankee. I could not help wishing it were "Drink Ceylon Tea." An investigating Committee has been appointed in the States to enquire into Food Adulteration: some of the evidence is startling. Cheap as coffee is, it is manufactured in large quantities of flour paste, &c., pressed by machinery into the shape of coffee beans. I send two notices with our advertisement on the subject. I have arranged for a large advertisement to appear when tea is examined, provided ours are found pure. In one of the cuttings sent, you will see something about the green colouring matter used in some tea. I enclose one of Finlay, Muir's Seeta Ceylon advertisements. Also a letter addressed to the ladies of Canada by the Blue Ribbon Co. (Galt & Co.)—one of those firms specially induced to help us in Canada last year. I also send you in separate envelope a list of the papers in which they are advertising and copies of the advertisements which are striking. They have sent me a huge box of newspapers with the advertisement, for which I had to pay 10s cartage, &c. One likes to keep an eye on all our friends, and this was their crushing reply to a suggestion from me, that I would like to know what they were doing.

I send also a lot of our advertisements and those of others from recent Canadian Grocer papers, as you said lately in one of your letters that you took an interest in them.

Read the articles in *New York Herald* showing how politics come into every thing, and the lengths in robbery, &c., one may go provided he has a strong political friend.

There is an immense number of things one has to watch, follow and keep in touch with. This is more difficult now, that Blechynden is no longer on the spot and working with us. I may have to go over in June, but I won't unless actually necessary, as I do not wish to put the Committee to the expense. In July and August we will, as last year, practically stop, although correspondence is incessant However, there will be neither salary nor travelling expenses.

I am giving our allies the hint, that "Ceylon" must now be the prominent feature, as "India" has ceased subsidising—although still assisting in advertising.—Yours truly,

(Signed) WM. MACKENZIE.

SIR,—In its Editorial of the 30th ultimo, in *re* "Our Staple and Foreign Markets," the "Times of Ceylon" suggests matter, both seasonable and comprehensive, for thoughtful, deliberate consideration, and all interested in our staple should give heed to it.

My object in now addressing you is for the purpose of again begging that greater concentration of effort be given to the markets of the United States where ground has been broken, but not yet thoroughly cultivated, and from which only a small harvest can, at this stage, reasonably be expected.

The Acting Secretary of the Indian Tea Association declares the operations in America "have admittedly been successful."

This satisfactory outcome is the result of work inaugurated and executed by Mr. Blechynden, who is deservedly entitled to great credit for satisfactory labour performed prior to, and during the opening of, and also subsequent to, the closing of the Chicago Exposition.

Mr. Blechynden was wise to study American methods, quick to accept ideas that gave promise of aiding him in accomplishing his designs; and the success he achieved was, in a measure, due to his power of assimilating what he felt would bring satisfactory results.

Ceylon is now to be congratulated on gaining the active aid and experience of Mr. Blechynden, as his services have been secured by the shrewd, progressive firm of Messrs. Whittall & Co., of Colombo, whose interests he will guide and advance in America.

The plan for the expenditure of the money voted for next year has not yet been disclosed to the public; but it will, doubtless, be largely on lines laid down and recommended by Messrs. Blechynden and Mackenzie, who, it is to be hoped, will not base their plans on a system of subsidies, which system can only be entered upon when guarded by conditions so stringent that no firm of high and honourable standing will care to accept. At best, this system is a poor make-shift affair, vicious in its bearings, and susceptible of great abuse, and ending—usually—in dissatisfaction, loss and calumny.

It may be accepted and recognised as a fact that both the American and Canadian consumer give the preference to Ceylon pure teas, andtake to them more readily than to the teas of India, which are, however used in larger proportions than Ceylon's for blending with and fortifying inferior teas of other countries

My contention is that Ceylon has done but little more than tickle the ground in the United States, and that more aggressive work is demanded; while no thought of decreasing our efforts should—for a moment—be entertained.

A population of 75,000,000 people, increasing steadily and rapidly, cannot be reached without a protracted and vigorous siege. The people who drink tea are not those who dwell in large cities, but they who live in the smaller towns, villages, and country, many of whom use it three times a day, while the majority of them never saw Ceylon tea! How is it proposed to get at this class? The retailer is the only medium that can be used, and he is the one to be helped. If, when granting a subsidy to a wholesale man, it can be arranged that a portion, at least, goes to the retailer,—the latter will have an incentive and will, probably, do good work; otherwise he will have nothing to gain, and much cannot be expected of him. A plan for reaching the real consuming class was submitted by me, but its very simplicity has, most likely, caused it to be received with disfavor, and yet the plan is a good one and can be elaborated and improved upon and made more workable.

Canada is not nearly conquered; but it is fast coming into line.

The lower or Maritime Provinces use nearly six pounds of tea per head per annum, whereas the upper Provinces only consume about three pounds.

The merchants of the Maritime Provinces have begun an aggressive campaign and our interests will be actively advanced by them, but, in the Upper Provinces, and in the Great North West, where large numbers of Russians are now settling, much remains to be done, and this work, we hope, will be conducted, with spirit and energy, by the merchants, who, however, should be assisted in every possible way,that may be considered advisable.

In Mr. Renton's guiding hands we can confidently and safely leave our interests in France, Germany, Austria, Italy, and the lesser kingdoms of the Continent; but in Russia we have much to do, and our efforts should be largely directed to securing a reduction in the duties on tea, so as to bring our tea within the reach of the masses of the people. This must, of course, be done by the aid of the Imperial Government, and through the devious, delicate channels of diplomacy; but it is a matter of vast importance to Ceylon, and hence should be constantly kept in view.

In order to reach the acme of success Ceylon must continue to agitate, be aggressive and, in some form, advertise. Now the principal objects to be striven for in advertising are to attract, impress, convince and convey to the mind something that will long be remembered. Having these matters constantly before us, we must study just what kind of advertisement will be best suited to our purpose, and what mediums shall be used to reach the people we want to capture.

Nowhere is the act of advertising studied with greater fidelity and assiduity than in the United States, where men make it a vocation and give their undivided attention to it, and where they are a highly paid and absolutely necessary part of every establishment that seeks the purchasing public.

Advertising that brings results must be bright, alert, aggressive and constant, and its main object as before stated, should be to attract and so impress the reader's mind that he will remember it. No ordinary advertisement will do this, nor will a lack of persistent effort ever lead to success. Jumping or making a spurt and then easing off will not accomplish anything permanent, and this leads me to conclude my little say by imploring the "Thirty Committee" not to contract, but, on the contrary, to expand and increase its efforts in the United States, where a rich and satisfactory harvest may in time be secured, if cultivation of the ground be persistently conducted and uninterruptedly maintained.

Pears' soap has made a world-wide reputation and can be found in every first-class drug store in the World, and yet its owners go on increasing their advertising expenditure and effort every year, and that, too, in all parts of the globe. In the United States, the Royal Baking Powder Company—long established—spend something like a million dollars a year in advertising and making demonstrations, and yet no Grocery would think its stock complete without this article. Baker's cacao has been known for nearly a century, but the Company spends more and more money every year in advertising, and at the principal Food Exhibits in the country this cacao can be found in its attractive booths. The managers of these profitable concerns know that without constant, increasing advertising effort their business would decrease in volume and in amount. "Our own and only" Lipton's furnishes us with an object lesson, and where can a shrewder or more successful advertiser in modern, up-to-date business methods and management be found?

If we want to succeed we must advertise, and if we advertise it is our bounden duty to learn how, when and where to advertise. Circulars are mediums of waste land, no one in America heeds them. Advertising in the plethoric Sunday papers issued in the large cities of America is absolutely futile, and the same assertion is fairly applicable to the dailies—hence these mediums should all be rigorously excluded from any proposed plan.

As auxiliary to and part of my plan of demonstrations, which may be classed as one form of advertising, Cave's lecture on the buried cities of Ceylon, with its attendant paraphernalia, could be utilized and delivered before Lyceums, Lecture Rooms, and Church Vestrys, where the tea drinking class do mostly congregate during the long evenings of winter; then Ceylon tea would become popularised and known far and wide. Many other forms of useful advertising might be enumerated, but enough for my present contention has already been said.

When we have succeeded in placing 25,000,000 lb. of our tea in the markets of America, then, and not till then, can we lay back and let the merchant, in place of the grower, advertise Ceylon tea.

If, Mr. Editor, you consider this little pipe of mine worthy of space in your valuable journal, please give it room—you will know what to do with it should it, in your opinion, be of doubtful interest to your readers—and if it will in a feeble way arouse the planters, for whom it is primarily intended, some good may emanate from its little wail.—Yours, &c.,

R. E. PINEO.

PROGRESS IN NORTH BORNEO.

Kandy, June 9.

DEAR SIR,—The following facts relative to progress in Borneo are interesting:—The increase in value of Imports 1898 over 1897 is over half a million of dollars; Cloth shows an increase of $88,631; Treasure $81,016; Machinery and Vessels $69,430; Opium happily

shows only an increase of $15,504; Spirits and Wines unhappily $35,601. The above shows that British North Borneo or the New Ceylon is going forward.

As to Exports, if we exclude Tobacco, there has been an increase in the general trade of $267,064 in 1898 over 1897. As regards tobacco, new ground is being taken up, and this discrepancy will probably rectify itself by next year.

Timber shows an increase of $96,427; Cutch, a very progressive industry, $35,706; Gutta and Rubber, $61,700; "Seed" and Mother of Pearl, $20,700; and Copra, quite a new feature, $10,695.

To take the increase of Exports and Imports in the last decade, we find the following to show the "forridness" of New Ceylon:—

1888—Imports...	$1,798,620	Exports ...	$701,433
1898— do. ...	$2,419,087	Do. ...	$2,881,851
Increase ...	$620,467		$2,180,418

To instance another feature in the prosperity of the Colony, one steamer alone, of 7th May, brought for the tobacco estates 182 free Chinese and 425 contract coolies.

I send you herewith a comparative statement of Foreign Exports and Imports during the years 1897 and 1898.—Yours truly,

W. D. GIBBON,
Ceylon Agent, British North Borneo Govt.

CASTILLOA RUBBER.

MAJOR GORDON REEVES' OPINION.

Ratnatenne, Madulkele, June 10.

SIR,—I have not been experimenting again with tapping Castilloa, as I do not wish to injure the seed crop;—though possibly, tapping would tend to increase this as in the case of mangoes, peaches, etc. The tapping which was done to obtain the samples I sent to Liverpool, was carried out in average showery weather. Some Para trees were tapped at the same time, and the superiority of the Castilloa as regards *yield* at once became apparent.

The quantity of dried rubber obtained, or rather the quantity which we took from three trees as a sample, was about 1¼ lb.; doubtless, a good deal more could have been taken, but we did not want more. A tree seven years old may, I understand, be tapped five or six times a year. What we did prove was the fact that, under the same meteorological conditions, on that particular estate, Castilloa yielded *much* more readily than Para, and we at once acted on that discovery. I am sorry I cannot give more definite information as regards yield at the present moment, beyond the fact that Castilloa with us is by far the easier of the two trees to get a yield from; and, probably, therefore, the best yielder of rubber. But we intend to carry out exhaustive experiments later on; and you shall have a memorandum of these and of the results.—Yours, &c.,

E. GORDON REEVES.

CEYLON "THIRTY COMMITTEE."

CEYLON TEA IN RUSSIA.

SIR,—I herein enclose copy of letter received from Mr. Rogivue reporting on the progress made in the sale of Ceylon tea in Russia and also adverting to what is being done in Switzerland.—I am, sir, yours faithfully,

A. PHILIP,
Secretary to the "Thirty Committee."

A. Philip, Esq., Secretary to the "Thirty Committee," Kandy, (Ceylon).

Moscow, 1/13 May, 1899.

DEAR SIR,—I duly received your favor of the 27th February for which I thank you, also your Committee for their kind allowance of £40 towards the cost of my advertisement-cards, in the form of Ceylon views, which I have distributed over Russia. I now beg to inform you that I have this day taken the liberty to draw these forty pounds sterling upon your goodselve at ten days' sight, to the order of Messrs. P. R. Buchanan & Co., London, which I shall thank you to kindly honour on presentation. As regards the progress of Ceylon tea in Russia, I am of opinion that the last Newspaper Advertisements directed by Mr. Christie, under my supervision, have done a great deal of good and the fact that more of Russian Firms' Tea buyers are establishing themselves in Colombo, and that the direct exports of tea from Colombo to Russia are increasing yearly in large proportions, also that the import of Ceylon tea in Russia, through London, and Germany is also increasing steadily,—is the best illustration one can get of the progress the article is making in this country. ——— is right enough when he says that Ceylon Tea is largely used for blending with Chinese Teas, but he is decidedly in error when he affirms that the Russians don't drink Pure Ceylon Tea. Almost all tea merchant in Russia is now selling Pure Ceylon Tea in packets, and I am not afraid of venturing to say that a few millions of pounds are now likewise (pure) sold and consumed yearly in Russia. The bulk of the trade, it is true, being however for blending purposes, because the Russians do not care any more for the weak and tasteless China Tea they are getting now. I was lately in Switzerland when I had the pleasure of meeting my old friend; Mr. Bremer of Messrs. George Steuart & Co., Colombo; he was greatly interested with the work I am doing there for the introduction of Ceylon Tea in Switzerland: where (at Morges on the Lake of Geneva) I have opened an Agency of Rogivue & Co., Limited, for the sale in chests and packets of *pure* Ceylon Tea, which is now gaining great favour in that country. Mr. Bremer will be able to inform your Committee about my exertions in pushing the article there, and he gave me to understand that the Thirty Committee would gladly support me and reimburse me a part of my expenditure for advertisement which I am doing on a pretty large scale by the way of Newspaper publications, fine placards with Ceylon views, Cards, Pamphlets, and samples of Pure Ceylon Tea distributed *gratis* all over the country.—I am, dear sir, yours faithfully,

(Signed) M. ROGIVUE.

TEA PICKING.

[TO THE EDITOR OF THE "PLANTER."]

Coonoor, May 29.

Sir,—I should like to know if the following record pick of tea leaf has been beaten on these Hills. The field is one planted in 1889 with plants from our own seed, off indigenous single plants. The plucking fairly fine, viz., two leaves and a bud. The field had its first low prune in July last only. The individual figures for fifteen pluckers are as follows:—58, 37, 50, 58, 60, 60, 60, 46, 55, 63, 64, 54, 48, 56, 59. The 68 was picked by a little Badaga girl, named Gunghee, who is about ten years old only. I do not pick by contract, but give small rewards now and again for merit. I have never, in my eighteen years on these Hills, had any better picks! The total into the factory for the day was 3,350 pounds, beating the previous highest record by 350 pounds. But for a heavy downpour of over an inch, lasting over an hour, the pick would have been far larger.

THOS. BROWN.

[Have any Ceylon planters larger figures to show?—ED. *T.A.*]

FACILITIES FOR MAKING GOOD TEA—IX.

From Uva, we have a letter from Passara and one from Madulsima, both of which indicate satisfaction with the quality of tea now produced—the former district recognising no existing drawbacks to good manufacture, and the latter holding that its teas are equal, and in many cases superior, to what used to be turned out when prices were at their highest—the estates themselves being in better condition than ever before. In both divisions, the jât is generally good with very little that is inferior; while the soil too answers to the same description, there being no worn-out estates, most of them having been newly planted, and evidently not needing manure, as the answer from Passara to the question whether manuring would improve the tea and be profitable, is a simple "no." While Madulsima admits some deficiency in withering accommodation, Passara, where the factories are all new, considers the accommodation sufficient; and both divisions are blessed with factories well-equipped with machinery, and with abundance of motive power. In pruning, too, they have not suffered either from neglect or severity, regular and systematic use of the knife being the rule. Being blessed with well-distributed rainfall, Passara claims to have one of the best tea climates in Uva; but there is very little land left in the hands of Government for extension; while Madulsima, with its teas as good as ever they were, holds the London market alone responsible for low prices.

From the Southern low-country we have a letter from Neboda, which finds the weather the chief drawback to the manufacture of better tea, as the effect of successive wet days is to prevent successful withering, and a letter from Bentota which complains of insufficiency of withering accommodation which however, is being steadily remedied. From both districts we learn there is no inferior tea—the jât being very fair, middling to good. Though the soil may be generally poor, or appear so, it contains a lot of iron or other constituents which the tea bush affects; while where rocks abound the soil is rich. There are no exhausted estates, in the sense of those which will not repay cultivation; but both letters agree that manure would improve the tea and make it more profitable—one, with the qualification that much depends on the manure chosen and on the methods of application. Without deficiency of withering accommodation being specially noticeable, three or four wet days disclose insufficient space; but otherwise factories are generally well-equipped. In Bentota the motive power is ample, but Neboda cannot express itself satisfied in the absence of an alternative to provide for a breakdown. The labour was sufficient at the time when the replies to the Circular were written last October, but as a rule it was otherwise. In early days the pruning was both too severe and too frequent, but there has been a great improvement lately; and there has been no neglect of pruning which though it may affect returns, is believed to be helpful to the bush. As a low-country tea district, Bentota leaves little to be desired, but it is idle to expect up-country characteristics in the tea produced. The same remark applies to Neboda, whose reflections on climate and altitude are worth reproducing:—

"The essentials in tea-making are good leaf and good withering. The districts which have the climate best adapted to provide these must make the best tea. The gradation from best to lowest quality depends on the degree to which districts possess the climate that will supply these essentials. It is difficult to suppose that anything can remedy the natural drawback of adverse climatic conditions. Thus it may be feared that chemistry must begin when the weather leaves off. Useful, though its labours may be (and we would hope that it may supply us with many hints to guide us towards better manufacture), it is clear that the tea districts are tied and bound to conditions which, in the main, settle once for all their degree of suitableness for tea cultivation. Parts of Dimbula may be taken as supplying the best conditions. From that starting point you can go through the list, each supplying its weather-gauge for quality and quantity. Too dry, too wet, too irregular—each with its debit and credit of bad and good, all short of the standard: some from worn-out soil as an additional handicap, hopelessly so. This district, judging by their tests, is far from the bottom of the list, and should be 'suitable' for tea for a long time to come."

TEA BLIGHT—CACAO—RUBBER.

(From the Cryptogamist in England.)

INTERESTING NOTES FROM MR. CARRUTHERS.

Writing to us on May 19th, Mr. Carruthers is good enough to send us the following interesting notes:—

"I noticed in all the Ceylon papers that that report of my inspection of a tea estate for the presence of fungi—printed 'there is *just* one disease', instead of 'there is *first* one disease' which made it read rather foolishly in my mind.

"I was sorry you considered the report unworthy,* but I was requested to go and report, and on a few hours' inspection I couldn't gain or impart more information than I did. I know Dr. Watt's publications *re* tea and other blights—he only compiles these things. Massee of Kew works at them and the dry or pickled specimens don't give the best material for work: consequently the 'grey blight' and many other fungi have never been investigated and only one stage of their lives described—their life history is unknown. I have here material which I collected, which I hope will enable me to give a more complete account of them, but have as yet had no time to look at it.

"I have heard no word as to the Commission on Agriculture. I suppose it has come to some conclusions. [Not yet: still sitting.—Ed. *T.A.*]

"Just now I am trying to get the Nectria from the Ceylon cacao to grow on apple trees here, as I want to prove it as a distinct physiological species from N. ditissima, the apple canker here. I have some experiments at Rothamsted and here.

"I have been approached with a view to my visiting Mexico to report on rubber es-

* We felt that Mr. Carruthers had not done justice to himself or to the blight he was called on to deal with: it is a matter that will require careful consideration on the part of experts.—Ed. *T.A.*

tates there, and if I go I shall make a détour to some of the West Indian Islands, if I can afford it, and see their cacao there, and may have some information for you.

"I was reading a pamphlet on Vanilla culture in the Seychelles, published recently by the U.S. Department of Agriculture,* and will write some notes and send them by next mail if I can: you may find them of interest to your constituents.

"It is a healthy sign to my mind that at home just now the two most important questions interesting the nation are the preservation of the 'day of rest'—one day in seven—and the battle against Romanising and ritualistic tendencies in the Church. The Sunday *Daily Mail* has given way before the weight of public opinion and stopped issue."

MALARIA: MAJOR RONALD ROSS ON.

The following is the text of the Report lately submitted by Major Ronald Ross, I.M.S., on his special investigations into malaria parasites:—

I have the honour to address you, on completion of my term of special duty for the investigation of malaria, on the subject of the practical results as regards the prevention of the disease which may be expected to arise from my researches: and I trust that this letter may be submitted to Government, if the Director-General thinks fit.

MOSQUITOES AND MALARIA.

It has been shewn in my reports to you that the parasites of malaria pass a stage of their existence in certain species of mosquitoes, by the bites of which they are inoculated into tho blood of healthy men and birds. These observations have solved the problem—previously thought insoluble—of the mode of life of these parasites in external nature. My results have been accepted by Dr. Laveran, the discoverer of the parasites of malaria; by Dr. Manson, who elaborated the mosquito theory of malaria; by Dr. Nuttall of the Hygienic Institute of Berlin, who has made a special study of the relations between insects and disease; and, I understand, by M. Metchinkoff, Director of the Laboratory of the Pasteur Institute in Paris. Lately, moreover Dr. C. W. Daniels of the Malaria Commission, who has been sent to study with me in Calcutta, has confirmed my observations in a special report to the Royal Society; while, lastly, Professor Grassi and Drs. Bignami and Bastianelli of Rome have been able, after receiving specimens and copies of my reports from me, to repeat my experiments in detail, and to follow two of the parasites of human malaria through all their stages in a species of mosquito called the Anopheles Claviger. It may, therefore, be finally accepted as a fact that malaria is communicated by the bites of some species of mosquito; and to judge from the general laws governing the development of parasitic animals, such as the parasites of malaria, this is very probably the only way in which infection is acquired, in which opinion, several distinguished men of science concur with me.

In considering this statement, it is necessary to remember that it does not refer to the mere recurrences of fever to which people previously infected are often subject as the result of chill, fatigue and so on. When I say that malaria is communicated by the bites of mosquitoes, I allude only to the original infection. It is also necessary to guard against assertions to the effect that malaria is prevalent where mosquitoes and gnats do not exist. In my experience, when the facts come to be enquired into such assertions are found to be untrue. Scientific research has now yielded so absolute a proof of the mosquito theory of malaria that hearsay evidence opposed to it can no longer carry any weight.

* Quoted in *Tropical Agriculturist.*—ED. *T.A.*

PRACTICAL REMEDIES.

Hence it follows that, in order to eliminate malaria, wholly or partly from a given locality, it is necessary only to exterminate the various species of insect which carry the infection. This will certainly remove the malaria to a large extent and will almost certainly remove it altogether. It remains only to consider whether such a measure is practicable. Theoretically the extermination of mosquitoes is a very simple matter. These insects are always hatched from aquatic larvæ or grubs which can live only in small stagnant collections of water, such as pots and tubs of water, garden cisterns, wells, ditches and drains, small ponds, half-dried water-courses, and temporary pools of rain water. So far as I have yet observed, the larvæ are seldom to be found in larger bodies of water, such as tanks, rice fields, streams and rivers, and lakes, because in such places they are devoured by minnows and other small fish. Nor have I ever seen any evidence in favour of the popular view that they breed in damp grass, dead leaves, and so on. Hence in order to get rid of these insects from a locality, it will suffice to empty out or drain away or treat with certain chemicals the small collections of water in which their larvæ must pass their existence. But the practicability of this will depend on circumstances—especially, I think, on the species of mosquito with which we wish to deal. In my experience, different species select different habitations for their larvæ. Thus the common "brindled mosquitoes" breed almost entirely in pots and tubs of water; the common "grey mosquitoes" only in cisterns, ditches and drains; while the rarer "spotted-winged mosquitoes" seem to choose only shallow rain-water puddles and ponds too large to dry up under a week or more and too small or too foul and stagnant for minnows. Hence the larvæ of the first two varieties are found in large numbers round almost all human dwellings in India; and, because their breeding grounds—namely vessels of water, drains and wells—are so numerous and are so frequently contained in private tenements, it will be almost impossible to exterminate them on a large scale. On the other hand, spotted-winged mosquitoes are generally much more rare than the other two varieties. They do not appear to breed in wells, cisterns and vessels of water, and therefore have no special connection with human habitations. In fact, it is usually a matter of some difficulty to obtain their larvæ. Small pools of any permanence —such as they require—are not common in most parts of India, except during the rains, and then pools of this kind are generally full of minnows which make short work of any mosquitoe larvæ they may find. In other words, the breeding grounds of the spotted-winged varieties seem to be so isolated and small that I think it may be possible to exterminate this species under certain circumstances. The importance of these observations will be apparent when I add that hitherto the parasites of human malaria have been found only in spotted-winged mosquitoes—namely in two species of them in India and in one species in Italy. As the result of very numerous experiments I think that the common brindled and grey mosquitoes are quite innocuous as regards human malaria—a fortunate circumstance for the human race in the tropics. And Professor Grassi seems to have come to the same conclusion as the result of his enquiries in Italy.

WORDS OF CAUTION.

But I wish to be understood as writing with all due caution on these points. Up to the present our knowledge, both as regards the habits of the various species of mosquito and as regards the capacity of each for carrying malaria is not complete. All I can now say is that if my anticipations be realised—if it be found that the malaria-bearing species of mosquito multiply in only small isolated collections of water which can easily be dissipated—we shall possess a simple mode of eliminating malaria from certain localities. I limit this statement to certain localities only, because it is obvious that where the breeding

pools are very numerous, as in water-logged country, or where the inhabitants are not sufficiently advanced to take the necessary precautions, we can scarcely expect the recent observations to be of much use—at least for some years to come. And this limitation must, I fear, exclude most of the rural areas in India. Where, however, the breeding pools are not very numerous and where there is anything approaching a competent sanitary establishment, we may, I think, hope to reap the benefit of these discoveries. And this should apply to the most crowded areas, such as those of cities, towns and cantonments, and also to tea, coffee, and indigo estates, and perhaps to military camps. For instance, malaria causes an enormous amount of sickness among the poor in most Indian cities. Here the common species of mosquitoes breed in the precincts of almost all the houses, and can therefore scarcely be exterminated; but pools suitable for the spotted-winged varieties are comparatively scarce, being found only on vacant areas, ill-kept gardens, or beside roads, in very exceptional positions where they can neither dry up quickly nor contain fish. Thus a single small puddle may supply the dangerous mosquitoes to several square miles containing a crowded population: if this be detected and drained off—which will generally cost only a very few rupees—we may expect malaria to vanish from that particular area. The same considerations will apply to military cantonments and estates under cultivation. In many such malaria cases the bulk of the sickness and may often, I think, originate from two or three small puddles of a few square yards in size. Thus in a malarious part of the cantonment of Secunderabad, I found the larvæ of spotted-winged mosquitoes only after a long search in a single little pool which could be filled up with a few cart-loads of town rubbish. In making these suggestions I do not wish to excite hopes which may ultimately prove to have been unfounded. We do not yet know all the dangerous species of mosquito, nor do we even possess an exhaustive knowledge of the haunts and habits of any one variety. I wish merely to indicate what, so far as I can see at present, may become a very simple means of eradicating malaria.

HOPE FOR THE FUTURE.

One thing may be said for certain. Where previously we have been unable to point out the exact origin of the malaria in a locality and have thought that it rises from the soil generally, we may now hope for much more precise knowledge regarding its source; and it will be contrary to experience if human ingenuity does not finally succeed in turning such information to practical account. More than this if the distinguishing characteristics of the malaria-bearing mosquitoes are sufficiently marked (if for instance, they all have spotted wings), people forced to live or travel in malarious districts will ultimately come to recognise them and to take precautions against being bitten by them. Before practical results can be reasonably looked for, however, we must find precisely—

(a) What species of Indian mosquitoes do and do not carry human malaria.

(b) What are the habits of the dangerous varieties, I hope, therefore, that I may be permitted to urge the desirability of carrying out this research. It will no longer present any scientific difficulties, as only the methods already successfully adopted will be required. The results obtained will be quite unequivocal and definite.

FURTHER INVESTIGATIONS.

But the inquiry should be exhaustive. It will not suffice to distinguish merely one or two malaria-bearing species of mosquito in one or two localities; we should learn to know all of them in all parts of the country. The investigation will be abbreviated if the dangerous species be found to belong only to one class of mosquito, as I think is likely; and the researches which are now being energetically entered upon in Germany, Italy, America and Africa will assist any which may be undertaken in India, though there is reason for thinking that the malaria-bearing species differ in various countries. As each species is detected it will be possible to attempt measures at once for its extermination in given localities as an experiment. I regret that, owing to my work connected with *kala-azar*, I have not been able to advance this branch of knowledge as much during my term of special duty as I had hoped to do; but I think that the solution of the malaria problem which has been obtained during this period will ultimately yield results of practical importance.—*Madras Mail*, June 1.

THE INDIAN SUGAR INDUSTRY.

We have, from time to time, placed before our readers the substance of the grievances of the Indian sugar producers, and we have been able to sympathise with them in the unfair competition created by foreign bounties, and generally to approve the action of the Indian Government in proclaiming countervailing duties to counteract the effect of these bounties. Those who oppose the imposition of the new duties, have taken their stand partly on principle, alleging a violation of free trade, and partly on injustice to the consumer whose sugar has been rendered dearer to the extent of the duties imposed. The obvious answer to the first objection is that it is the bounties which are a violation of free trade, and that the sole object of the duties is to remove from the shoulders of the local producer the burden which is placed thereon by foreign bounties—and thus to promote free trade and equal competition. The consumer will probably be inconvenienced to some extent; but it is only the well-to-do consumer into whose diet refined sugar enters and who can afford to bear the small burden for the benefit of the poverty-stricken agriculturist, who is handicapped in the sale of his canes by the immense quantities of beet-root, bounty-fed sugar which is poured into India from Continental manufactories. A further objection has since been urged, that the duties are intended really for the benefit of Indian refiners who cannot turn out sugar of the quality of French and German sugar. An Indian contemporary publishes information which he has collected at some pains to combat this view, whose energetic exponent has been Mr. Harold Cox, who has declared that the best Indian sugar refineries have hitherto turned out only second-class sugar which cannot come near the article produced in Germany and Austria. The expert to whom the *Friend of India* referred the matter, has no hesitation in declaring the best Indian cane sugar, not only not inferior to the best imported sugar, but actually superior to it. The quantity produced, however, of this superior sugar is small; and the limitation is said to be solely due to the influence of unfair competition involved in foreign bounties. Capital fights shy of an industry which has to compete with unknown forces; and though India cannot just now produce all the first-class sugar for which there is a demand within its territories, it is quite able, with the encouragement offered by countervailing duties, to increase its output of sugar of the finest qualities so as to meet most of

the demand. Indeed, the work of extension had begun, when it was arrested by the enormous imports of bounty-fed sugar; and the Indian producer, more recently handicapped by the rise in exchange, has been further victimised by the proclamation of countervailing duties in America, whence large quantities of sugar were diverted into India! In the interests of the poorer classes of both producers and consumers, therefore, it is absolutely necessary that the cane and date sugar industries should not be allowed to be crushed out, while encouragement should be given to the higher class of refineries, so that they might compete on equal terms with foreign bounty-fed establishments. Whether India can really hold its own in competition with Europe can be ascertained only by the withdrawal of bounties by continental nations, following which the new duties must be withdrawn; but the alleged interests of consumers must not be allowed to inflict hardship on tens of thousands of agriculturists, whose industry, if it is once ruined, it may take years to revive.

RUBBER CULTIVATION IN CEYLON.

There can be no doubt of the practical value of the information which the Director of the Royal Botanic Gardens has put forth from time to time in respect of rubber-yielding trees and their cultivation in Ceylon. Planters who have studied the successive "Circulars," either at first hand or as reproduced in our *Tropical Agriculturist*, must have acquired a great deal of useful information respecting the different varieties of plants and their properties; but we fear they have not been at all prepared for the reversal of fortune which has overtaken the particular rubber-tree which has so long maintained the lead as chief favourite, namely the *Hevea Braziliensis*, or Para-rubber tree. For various reasons detailed in Mr. Willis's latest Circular, Para may be said to be now dethroned, and Castilloa (the Mexican rival), belonging to the same group as our Bread-and Jak-fruit trees, has been erected in its place. We fear a number of planters who went in largely for "Para," following the leading in the earlier Circulars, will be apt to become a little impatient with the expert advice and will be inclined to ask (however unjustly or inappropriately)—

'Tis true you dissembled your love,
But why did you kick us downstairs?

In other words, is it not possible that Para may be a little unduly depreciated, even in the light of the most recent discoveries and inventions, and that though it may be advisable now for all who wish to cultivate rubber to apply for "Castilloa," still that those who have planted out "Para" should "ca' canny" as they say in Scotland, and by no means view their investment as a mistake. In the first place, who can tell what another year,—another revolution of the wheel of discovery and invention,—may reveal. Again and again has the "whirligig of time brought in its revenges," and we may yet see that further scientific as well as inventive progress has restored "Para" to its position of prestige, or at least brought it alongside of "Castilloa." So, while going in as freely as possible for the Mexican tree according to the latest deliverance, let not the clearings or boundaries of the Brazilian variety be neglected. Why even the despised "Ceara," if all reports be true, is likely to come once more to the front, under the new influence of invention and scientific enquiry; and we may have certain gentlemen who went in largely in the "eighties" for the quick growing variety, looking out their clearings, chena-grown as they may be, and once more doing justice to their plantings of ten to fifteen years ago. One such Ceara clearing if not rooted out for tea, should be found in the neighbourhood of Elkaduwa and another somewhere in the neighbourhood of Madawalatenna.

Meantime we have yet to read the details of Mr. Parkin's Report which the Director is said to be preparing for the Press; and even when we have perused and digested this supply of scientific information, it may well be asked, have we arrived at "finality" or even at "definite results?" Has Mr. Biffen, or the home inventors, no further steps to mark? He would be a bold man who would tender a negative to these questions. We must, of course, do the best by the light given to us for the present, and then wait in full expectation of learning more as time rolls on. No doubt, shrewd, observant men among our planters will begin to make experiments for themselves; and the results of these, when published, will provoke a healthy competition in the path marked out by scientific counsel, modified, it may be, by additional experience on the part of the cultivator.

Meantime, the present may be a favourable opportunity for taking stock of the progress actually made in the cultivation of the different kinds of Rubber by the planters of Ceylon, up to the present time: and in an early issue we hope to summarise information already placed at our disposal from a number of districts, bearing on this important practical side of the question.

TEA ON VIRGIN SOIL IN CEYLON.

ITS SUPERIORITY IN FLAVOUR AND STRENGTH.

In our last issue we quoted a Ceylon contemporary's remarks *re* the alleged superior quality which virgin soil gives to tea grown thereon. Statements such as these easily pass into current axioms and acquire the force of tradition if not rigidly examined at the outset. Without negativing the assertion, we should like to examine it closely and discover, if possible, the data upon which it is based. We presume the idea arose in the writer's mind from the fact that Ceylon teas in the early years commanded higher price than they do now, proportionately, and in fact at that time stood above Indians, the reverse being now the case. Generations among Europeans in the East being covered by but a short span of years, it is easy to lose sight of the circumstances in the beginning of things. It is plain to see that the writer of the assertion is not perfectly *au fait* with early tea-planting in Ceylon. He has assumed that tea in that island was originally planted in virgin soil, which our information does not warrant. It was, in fact by no means the case universally.

Tea was originally put down in Ceylon as an experiment by owners of failing coffee plantations

upon old coffee land, by no means virgin land. The coffee was grubbed out to make room for it in some cases, and in other cases the tea was so much in the nature of a tentative effort that the plants were put down between the rows of coffee, and only when the experiment was found a decided success was the latter rooted out. From the very first Ceylon tea was a success on the market; and these teas, grown upon old, exhausted coffee land, in point of quality, were equal to the best. In combating the acceptance of a dogmatic conclusion of this kind without examination, we would not be held to fall into the other extreme. The question requires very careful investigation all round, and valuable information is to be drawn therefrom. We consider, in view of the above considerations, that the absolute necessity of *virgin* soil for the production of the highest qualities of tea is not proved, if indeed the facts do not go to disprove it, since we see that in early Ceylon days tea equal to the best was grown an old coffee land. We think, however, that an investigation of those early days will help Mr. Kelway-Bamber, who is reported to have devoted himself to the problem, towards the solution.

Ceylon estates used to be remarkable for high cultivation and heavy manuring. We remember particularly the original 100 acres on the Mahawatte tea estate (planted on old coffee land), which gave a phenomenal yield of 1,200lb. to the acre of good class tea, used to be described as a perfect manure heap. This would seem to show that well cultivated old land is equal to virgin soil for the production of tea, a conclusion, by the way, which is borne out on other agricultural crops, and would tend to cast a doubt on the statement for which our Ceylon contemporary is responsible, that "More has to be studied than renovating and renewing the soil." In this connection it would be advisable, perhaps indispensable, to collate information as to whether reduced prices for tea and the consequent necessity of cutting down working-expenses have not forced the Ceylon men to lower their standard of cultivation, before drawing a hard-and-fast conclusion that Ceylon tea has fallen off in quality, merely because the tea lands are no longer "virgin." Our own planters would be able to throw more light on this question than we can hope from Ceylon, for the most ancient of the Island tea is very youthful in comparison to thousands of acres in Assam and Darjeeling.

We should be glad to receive opinions and information upon this subject from our own planters, whose experience, as we say above, must be far greater than that of the managers in the comparatively young tea colony of Ceylon. We think this is not a question to dogmatise upon without a vast deal more information being brought together, and that the matter may fairly be regarded as a very open one. At any rate, we think it is far too early for Ceylon to complain of exhausted soil as a cause for the fall in their tea prices as compared with Indian. If the argument should be erroneous, it would be distinctly harmful to Ceylon interests, as leading them away from the true causes to which they should seek to apply a remedy. If true, Indian planters may be excused for looking on Ceylon as resembling Gilbert's precocious infant, who died "a worn out debauchee of seven."—*Indian Planters' Gazette.*

"BRITAIN OF THE SOUTH."

(From a Ceylon Visitor's point of view.)

PONSONBY, NEW ZEALAND, May 11.

I have not forgotten the request you made me just as I was leaving Ceylon that I would drop you a few lines giving my impressions of this Colony, and the matter has been in abeyance only because of pressure of work and because I wanted to allow time for a distinct impression of the general bearing of things over here to be made on my own mind,

CLIMATE IN THIS NORTH ISLAND

is as near perfection as anything mundane can be. During February and March we had most superb weather and in April it was delightful too, though with occasional showers. Now in May (answering to November in Britain) it is cold at night and in the early morning, but warm in the daytime when fine. Very few people have started fires yet. Some fruits, such as pomegranates and persimons, are still on the trees, guavas having just been gathered in; of course, apples, pears, plums and peaches were earlier. The gardens are still ablaze with flowers, chiefly chrysanthemums, cosmos, and camellias, though geraniums, pelargoniums, Japanese anemones and fuschias are in evidence, too. A Ceylon visitor soon finds acquaintances among the plants and shrubs here. The ordinary red hibiscus is in almost every garden, rather dwarf plantain-trees are cultivated here and there though I have never seen them fruiting, palms of various species are seen occasionally, the large white trumpet flower (a double variety, though) grows on bushes as large as those in Ceylon.

THE SOIL

is volcanic. From the road near here, three distinct (but happily extinct) cones are to be seen, and from one point near Auckland, I believe, that fifteen are visible. There must have lively doings here in "the braw days of old."

THE ROADS

are simply execrable. They sadly want a P.W.D. here. Of course, they want good metal too, scoria large volcanic cinders the size of a gallon loaf, not lending itself at all kindly to road-making. Above all, they need the cooly, accustomed to task-work and willing to work for as many pence a day as the labourer here asks shillings.

The scarcity and high-price of

LABOUR

is one of the serious drawbacks to this colony. A charwoman asks four and six pence a day working from 7-30 to 3-30 and getting dinner and tea; she also requires to have the kitchen copper fire lighted for her and the water boiling before she arrives and a pile of firewood sufficient for the day chopped up and heaped beside the copper. As for housemaids, most ladies here seem to think that it is far less trouble to do without them; and certainly in those cases where they cannot be dispensed with, they are very expensive necessaries.

The habit of drudging for themselves into which most people seem to fall into here, though it has its pleasing side as fostering independence, is not without undesirable results as well.

READING

people are very few and far between, and I should say that the intellectual average of the middle class (there is no higher class here) is very far below that of the same class in England. Here and there you meet a man (generally a Scot from Glasgow) who keeps up his reading, but the majority of the people go no higher than an occasional novel hired for two-pence from trumpery "Circulating Libraries" kept by very small book-sellers. The fault is not so much with the people as with the kind of life this country forces upon them. Where men and women get only an hour or so of respite from manual labour of the roughest sort daily, there is little time and less energy for the cultivation of the mind; if books are sought at all in such circumstances, it

is as a relaxation, not as a means of culture. The results of this are beginning to appear. The range of conversation among middle class young men, young men in business in the colonies, is much narrower than that of the same class at home, for the simple reason that the mind runs in a narrower groove. Allusions in sermons and lectures and addresses to characters and situations in Standard Literature, to scientific or historical points, are seized by only the very few; a really good speech would be surer of being appreciated in Colombo or Kandy even, than here in British Auckland. One of the gravest perils threatening the Australasian colonies is this intellectual narrowing and dwarfing that is going on. While in Britain and many of the colonies there is intellectual elevation observable generation after generation, in these Australasian colonies alone there is deterioration; the old settler with just his memories of the old home life, and the remaining vestiges of his interest in the wider life he had at home, is generally intellectually (though often not educationally) the superior of his sons born in the colonies, his intellectual horizon being a wider one. How this will work out in another generation or two who can tell? Nobody who wants to see these colonies well to the fore in the competitions of the future (competitions in which intellect will ever give greater and greater advantage) can contemplate this feature of colonial life exactly with equanimity. Better subsidise Chinese and Indian coolies to come into the colonies and so secure for the average British there a little leisure for mental culture even though the working man's present preposterous wage is reduced a fraction or two, than by the present system pursued to train—for future competition with the home country and America and with other wiser colonies—a generation of well-fed animals with muscles well developed by labour, with power to read, write and count as the result of the really splendid educational system, but with a mind that has no interests beyond the work by which bread is earned. "Man shall not live by bread alone," *cannot*, without soon sinking below the ordained level of man. If man could live by

BREAD ALONE,

using the word in its wider (Scripture) sense, this would be a Paradise, for butcher's meat is very cheap. Beef is about four pence a pound and mutton twopence. This is as near the lowest as it can well be, while still leaving to the public the flattering consciousness that they are paying for it. There are no poor people as far as I can see; I have never seen a hungry-looking face since I landed here; but I have seen sleek dogs passing contemptuously by bits of meat thrown to them from butchers' stalls, which would have been accepted by any of tens of thousands of human poor in England with loud blessings on the head of the donor.

It is a curious experiment commercially that is being tried here, namely, to develop a new country

WITHOUT CAPITALISTS.

I am not in a position to prophesy about the future, but at present everything seems to be languishing for a little more money than the authorities can spend on it. Auckland is a large and commercially flourishing city, but its buildings are poor; its streets, though wide are badly kept, some of the leading thoroughfares having strips of grass in huge tufts disfiguring them at intervals and being yellow with what looks like chaff, but which is the horse manure of months pounded by the horses' feet and scattered by the winds; the footpaths are in many places half covered with asphalt and half left bare; at night you have to stumble about in the streets for the lamps are poor and far apart, and so unusual is anything more than the single-burner street lamp, that the erection of a triple-burner lamp in a suburb has led the "three lamps" at Ponsonby to be known as a land mark all over the city. Auckland might have been a splendid city had there been finances to develope it on the lines on which it was originally laid out, but at present it wears the appearance of a splendid estate which has descended to an impecunious lord; and I am told (I know nothing by experience beyond Auckland) that this is the character of the colony lately. It is a pity that in avoiding the class-legislation of England, New Zealand should have adopted another form of the same thing. How difficult it is to be truly democratic! Democracy is Government by the people for the people, and the capitalist and the brain-worker are as much part of the Demos as is the 'orny 'anded, and legislation that hampers the capitalist in favour of the working man is as contradictory to the true principles of democracy as legislation for the capitalist which disregards the interest of the working man.

CEYLON TEA

is advertised in every street and on every train and omnibus in Auckland and was well to the fore in the recent Auckland Exhibition.

CABBAGE BANANA.

A NEW VEGETABLE FOR TABLE USE.

OUR attention has been drawn to the following extract in the *Florida Agriculturist*, referring to the "Abyssinian Banana" which has been introduced into Ceylon and is growing luxuriantly at Hakgala Gardens. The Superintendent of the National Botanic Gardens, United States, is responsible for stating that the ornamental value of this plant may be eclipsed by its usefulness as an esculent, and so he would call it the "cabbage banana." We are next treated to the following interesting extract from James Bruce's "Travels in Abyssinia to discover the source of the Nile," published in Edinburgh so far back as 1890. Mr. Bruce was a much-traduced writer; but all his statements have since been verified. He wrote:—

"It is said that the Galla, when transplanted into Abyssinia, brought for their particular use the coffee tree and the ensete (banana), the use of neither of which was before known. However, the general opinion is that both are naturally produced in Abyssinia, provided there is heat and moisture. It grows and comes to great perfection in Gondar, but it most abounds in that part of Maitscha and Goutto west of the Nile, where there are large plantations of it, and is there, almost exclusive of anything else, the food of the Galla inhabiting that province; Maitsha is nearly upon a dead level, and the rains have no slope to get off easily, but stagnate and prevent the sowing of grain. Vegetable food would, therefore, be very scarce in Maitsha were it not for this plant. As soon as the stalk of the ensete appears perfect and full of leaves, the body of the plant turns hard and fibrous, and is no longer eatable; before it is the best of all vegetables. When you make use of the ensete for eating you cut it immediately above the small detached roots, and perhaps a foot or two higher, as the plant

is of age. You strip the green from the upper part till it becomes white; when soft like a turnip well boiled, if eaten with milk or butter, it is the best of all foods, nourishing and easily digested."

The "proof of the pudding is the eating thereof"; and accordingly we have been favoured by Mr. Nock with the result of a trial made by him of part of the stem of an Abyssinian banana in the Gardens. He writes:—"We tried some last night and find it very fair, but a trifle bitter. I daresay with practice in cooking and choosing the right part of the stem, it would make a nice change as a vegetable. It is rather rare in Ceylon, but can be propagated to any extent by seeds. As an ornamental plant it is one of the handsomest known."

This banana is a larger and far showier plant or cluster of plants than our ordinary banana. In America seeds were selling at a penny a piece, and the plant is likely to be largely grown as a vegetable. Here it ought to do well in gardens throughout Upper Uva and the higher planting districts generally.

ENEMIES OF THE COFFEE TREE IN B.C. AFRICA.

(*From an ex-Ceylon planter.*)

BORER No. 1

After a coffee clearing gets a year old, be on the outlook for the longicorn beetles, for they emerge from their cavity in the trees of the forest and begin to fly about from the middle of November to the middle of March (practically four months), during which time they are maturing and laying their eggs; and as sure as fate many will find their way into a coffee estate. When they find coffee, as they seemingly do, a palatable food, they live on the bark of the plants, and the female lays her eggs, usually from five to seven in number. From tree to tree she flies and lays only one egg, be it remembered, at the bottom of each tree in the ground (not as is usually supposed on the tree itself) about the size of a small canary seed, dirty-yellow in colour. The egg soon hatches and finds its way, as a very diminutive grub, to the root of the coffee and begins to nibble at the bark just at the collar of the plant. Working its way in it soon has a covering nest protecting it from birds and insects; ants even cannot get at it. In the course of a month or two, the forceps of the grub become strong enough to tackle the wood, which it burrows into and lives upon, till fully matured, boring up or down the tree, turning out saw-dust and keeping its hole open to prevent suffocation till fully matured, taking about six months before turning into the chrysalis stage; during this time he either kills the young tree outright, or damages it so much that it never recovers or makes a healthy tree afterwards. After the first rains in November and December the borer grub flies as a full-fledged beetle and having found a favourite feeding and breeding tree in our coffee estates, sticks to it and again begins egg-laying. Some of my planting friends may say, "Oh, I have found half a dozen borers in one tree." This may be so, but I challenge any planter to produce more than one borer in young coffee under two or three years old. It is when an estate becomes a nursery for the longicorn and several beetles lay eggs at the root of a tree, that a number are found, or the same beetle may lay more than one on the same ground, for it lays six to seven eggs; but this is not likely, for it flies about at night, seldom resting more than an hour or so, on one tree, although it sometimes feeds a whole day on the same tree; I judge from the amount of bark eaten. I feel almost certain eggs are only laid at night and not during the daytime when the beetle is at rest and feeding or basking half asleep on the sunny side of a coffee tree.

So much for borer No. 1. I shall now describe

BORER NO. 2

which comes from the larva of a yellowish white moth with steel bars across its body, not so bright and visible as the Ceylon moth. This moth lays its eggs, usually only one, in a little web on the leaf of a coffee tree about the month of January usually, and the egg soon turns into a borer which finds its way into the coffee tree by means of a puncture it manages to make in tender green wood either in a branch or the stem of the tree and works its way into the pith along the primary and down the stem making air holes as it goes along (also pushing out saw-dust the same as the longicorn grub) till it reaches the root: only working in the pith, be it remembered, till it forms a chrysalis in four to six months' time. This borer is not very destructive, and is easily discovered as the branch or top of the tree it enters by usually dies. I have never found more than one in a tree. Both these borers I have seen in Ceylon—the first called the white borer, and the other the red borer; but the damage done was so trifling that they were hardly known to casual observers. I was always fond of "poochi" catching and have caught many of the same stag beetles and moths in Ceylon.

WHITE GRUB.

This is the most common of all grubs, and perhaps does more damage to young coffee than the borer. The beetle is chocolate coloured, and the grub is white, and curls up when exposed on the surface of the ground. This insect, unlike the borer, seems to propagate all the year round having no set time of year for laying eggs and lying in the chrysalis s age, for I have found grub of all sizes, and beetles, all in the same place, at the same time the farmer busy trimming the fibrous feeding roots of the coffee as fast as they are made.

BLACK GRUB.

This grub is very destructive, especially in vegetable gardens. It comes to the surface at night, cuts off coffee seedlings and rings larger plants at the collar and even goes the length of climbing for a leaf occasionally. In the case of its feeding operations being disturbed by the break of day, it pulls the leaf into its hole underground where it habitually descends to rest during the daytime. I do not think this insect eats the coffee roots like the white grub, but it does a tremendous amount of damage to nurseries and young plants in a new clearing—this I am certain of. The moth of this grub is black with a torpedo-shaped body, prominent eyes, and flies very fast; it appears just at dusk, darting about seeking food in flower gardens and elsewhere and laying its eggs, but how many I do not know, in November and December. The grub lives about six months and then turns into a repulsive looking, glossy chrysalis with a hard shell, sharp-pointed at one end and twists about the sharp end when touched. Black soil rich in vegetable humous is full of this grub and it is seldom found in poor land.

WIRE WORM.

This is the only other grub that attacks coffee to my knowledge: the beetle is small, about as big as an ordinary cleg-fly, and has a habit of pretending to be dead when caught. When turned on his back he lies still for a short time till he thinks all danger is over; then arching his body by drawing together both ends, springs in the air about a yard and lands on his feet and flies. I do not know how long the grub of this beetle remains alive; but in one case long enough, I have known one to kill out an "anona" (bullock's heart) tree three years old—I should imagine about six months. He is not very destructive to coffee (in fact not at all common), but does a lot of damage to fruit trees and vegetables.

STICK INSECT.

This caterpillar cuts off the primaries and tops of coffee plants, and arranges them round its body lengthways, binding them together with a strong, tough web. This house or shell it lives in, stretching itself in and out of it, according as required to enable it to walk about

with its house on its back. It does a lot of damage barking the coffee plants, sometimes ringing them right round, completely stopping the flow of sap; and it should be considered an enemy of our coffee and destroyed. This caterpillar lives from February to June in Nyassaland.

CRICKETS AND LOCUSTS

comprise a very large family indeed; but there are only a few that feed on and do damage to coffee and they are principally the green-backed, handsome fellows with yellow and blue rings round the body. They have stumpy wings and a hard, horny, sword-like beak. I don't think they fly, at least I have never seen them do so. These locusts do a lot of damage barking the coffee and may well be destroyed as an enemy of the coffee tree. Several others of the cricket locust family do some damage by cutting down small plants.

BLACK BUG

I have seen, but only on an individual tree or two; but it never spreads. It appears in February or March and disappears in May and June. This pest, I am of opinion, is kept in check by the lady-bird beetle, which is common in the country and is seen very lively on our coffee bushes at the time black bug appears, and it is well-known it preys upon the bug family.

COFFEE LICE

I have seen covering an individual coffee bush, but like the bug it never spreads, and is probably devoured by some tiger of the insect family.

THRIPS.

During a very dry season it appears about October and disappears with the first heavy thunder-storms towards the end of November or early in December—much damage done by the sun and heat during these two months, might be attributed to thrips. I don't think, however, that much harm can be done to our coffee by this insect, for the short time it is with us (and this only, to my knowledge, on two very dry years) that it can be considered very harmful or dangerous. H. B.

LIVE STOCK AND THEIR IMPROVEMENT.

Few things are of greater importance with reference to the well-being of the natives in certain remote pastoral districts of the island than the improvement of their live stock. To secure this end, Sir Hercules Robinson established a Cattle Commission which had the late Mr. Wm. Smith, of Dimbula, as veterinary adviser, and the late Mr. John Capper as Secretary. Much information was collected and published and a great deal of "castration" was attended to, during the peregrinations of the Commission; but as in so many other efforts towards agricultural improvement, this proved a mere "flash in the pan" without any continuous result. The Cattle Commissioners' Report was pigeon-holed and forgotten, there being no one Department or officer responsible to see the recommendations carried out, or at any rate tested. It is well-known that both in the South (Hambantota), the South-east (the Park country), and in the North-Central and North-Eastern divisions, the natives feed large breeds of cattle; but give not the slightest attention to the quality of their stock. This is, of course, a matter which should be specially attended to by an Agricultural Director, Board, or Department by putting pressure from time to time on the provincial and district Agents. A gentleman, as well qualified as any in Ceylon to write on the subject, favours us with the following results of his observation and experience:—

"One great difficulty about improvement of cattle arises from the natural existing conditions. Take the Vanni (N. C. P. and N. P.), the people rear great herds of cattle as they have so much jungle and pasture lands. The cattle increase naturally and go on increasing until murrain breaks out and sweeps off two-thirds of them. They sell *very few*, partly from religious scruples; partly, because a man likes to say "I have so many cattle." ("*Pecunia*," comes from "pecus"—cattle!) *These cattle are not herded or selected or interfered with in any way.* They cost the owner absolutely nothing. So whatever he *sells* is clear profit without trouble. He *can* get from R20 to R40 for bulls and considers that good enough. So he says "Why should I trouble to rear a better stock?" So he will not pay for the service of (say) a Scinde *Bull.* Again the breed deteriorates because the man who comes round to buy naturally selects the best bull and the foolish villager sells it. Young and weak bulls run with the breed and again the consequence is deterioration, except so far as nature gives the strongest bull the advantage. Here possibly the advent of a Railway may raise the price of cattle when they can readily be taken to market, just as the making of roads raised the price of paddy; (when there were no roads, paddy sold in Nuwara Kalaviya for two-pence a bushel.) But until the market price of beef rises from 15 cents, it would not pay to kill fed-beef and it is doubtful whether even if beef were well paid for, the cattle owners would supply any better animals. Where cattle are run wild on the pasture grounds, you get no good from introducing a *good* bull, as all the other bulls run with the herd.

TEA ON VIRGIN SOIL IN CEYLON.—We do not know if the *Indian Planters' Gazette* is aiming at us in its disquisition on this subject which we quote elsewhere. But we have no hesitation in saying that there is a large and reliable body of experience before us to shew that tea grown on virgin soil in Ceylon has produced a tea greatly superior in flavour, if not in strength, to tea grown on land previously occupied by coffee or other product; and that, as years rolled by, the tea even on virgin soil gave a leaf which did not maintain its original reputation. Perhaps the Ceylon planter who went into this matter most carefully, was Mr. T. C. Owen, of the Knuckles and Kelebokke district,—compiler for us of the "Tea Planters' Manual," but who has now retired and joined the London firm of Messrs. Rowe, White & Co. We recall very distinctly Mr. Owen's statement that, do what he would, he could never recall the delicate aroma which distinguished his teas grown on virgin soil during the first four of five years. His report and the experience generally of other planters in those early days (1883-1890) will be found given in successive volumes of our *Tropical Agriculturist*; and, although allowance may have to be made in some cases for "a virgin soil" a good deal weaker in one district than in others—for instance, in a Northern district as compared with the higher districts around Nuwara Eliya with their stronger and richer soils—yet to keep up tea to its pristine vigour (dare we say, "and delicate flavour"), the soil must be supplied in some way with what it loses through successive, and perhaps heavy, crops of leaf.

TEA ENTERING U. STATES OF AMERICA :

STRINGENT CUSTOMS REGULATIONS.

The Treasnry Department, New York, has just issued Circular No. 51 contained in No. 14, vol. 1, "Treasury Decisions," containing the act to prevent the importation of impure and unwholesome tea and the regulation and standards which take effect on May 1, 1899, excepting in the case of teas shipped from abroad prior to April 1, 1899, which will be governed by the old standards.

Section 2 provides that the examination of teas shall be made by means of samples to be drawn from packages designated by the collector and to be furnished by the importer, and of additional samples to be obtained by the examiner. The importer shall furnish a sworn statement that any samples snbmitted by him to the examiner are drawn from packages designated by the collector and covered by his entry (naming the vessel), and that they represent the true qualities of each and every part of the invoice (including the proportion of dust), and accord with the specifications therein contained. The importer shall submit with his entry a chop list or specification of the several lines included in the invoice, and the collector shall select for examination packages representing the different lines. The examination and report npon snch samples shall be made in accordance with the provisions of section 7 of the tea act.

In comparing with standards, examiners areto test all the teas on these points, namely, for quality, for any foreign matter on the surface of the infusion, sometimes called scum, and for quality of leaf after infusion. Quality shall be ascertained by drawing according to the custom of the tea trade with the weight of a half dime to the cup. In Country Green teas, Imperial Hysons coarse leaf Gunpowders, and extra young Hysons are to be compared with Hyson standards, and all other young Hysons and small leaf Gunpowders with the young Hyson standard. The quality must be equal to standard, but the flavonr may be that of a different district as long as it is equal in sweetness. As an illustration, a Teenkai may be equal to a Moyune, but a distinctly smoky or rank Fychow, or Wencho of sour character, must not be considered as equal to the two first mentioned.

In order to test for floating colouring matter or scum, and also for the quality of infused leaf, a second drawing shonld be made for any floating substance, and after pouring off the water the infused leaf shonld be taken out so as to exhibit the lower side which rested against the cup. Should the mass show a larger quantity of exhausted or decayed leaf, or foreign snbstance than the standard, it shall be considered inferior in quality, and the tea must be rejected. In greens and Japans particularly, the brightness of the leaf should be considered as an evidence of quality.

Should a tea prove, on examination, to be plainly inferior to the standard in any one of the requisites —viz., quality, scum, or quality of infused leaf, it shall be rejected, notwithstanding that it be superior to the standard in some qualifications. All consideration of the appearance or so-called style of the dry leaf shall be omitted.

In the case of Ceylon and India teas, the needle leaf and Pekoe tips shall be separated by passing them together with the dust through a No. 26 sieve of No. 30 brass wire after the tea has been first sifted through a No. 16 sieve. Dust and fannings in Japan teas must not exceed 4 per cent. when tested by a No. 30 sieve of No. 31 brass wire. Before condemning any tea for dust, examiners shall sieve at least two packages.

Examiners should preserve in tin, for one year, samples of all teas examined for future reference in case of complaints, and the Board of General Appraisers should also retain a portion of all samples sent them on appeal for the same object. To this end, examiners should always send the Board samples of at least half a pound, and never otherwise than in tin cans securely labeled.

Statistics showing the quantities of various kinds of less admitted and rejected should be kept at the custom houses for future reference.

In all cases of rejections by examiners, the importer should be notified of the reason for rejection —that is, whether it be on the ground of quality, character of infused leaf, dust, scum, or admixture with foreign substance.

Whenever Japan teas shall be imported hereafter, so made up as to imitate the green teas of China, examiners will compare such teas with the pan-fired standards for Japan teas. Shonld such teas be made up so as to imitate Congous, they will be compared with the North China standards for Congons.

In cases of importations of tea containing an excessive amount of dust, the dust can be exported after sifting and tea admitted to entry if found np to tea standards.—*The Planter*, May 27.

SUIT V. THE AMERICAN CUSTOMS.

The application recently made before Judge Lacombe for an injunction against the Collector of the Port, the Tea Examiner, and the Board of General Appraisers, to prevent the rejection of certain teas which, it is asserted, differ in certain respects from the established standards and yet are equal thereto in purity, wholesomeness, and fitnesss for consumption and quality within the true intent and meaning of the act, has been denied.

It is claimed that the regulations of the Treasury under which rejections are made are illegal; that the true intent and purpose of the act is to prevent the importation of pure and unwholesome tea; that it is ridiculous and unreasonable to suppose that Congress intended by this legislation to permit the Secretary of the Treasury to determine the grade of tea which the American people were permitted to drink; that Congress could not confer upon the Secretary of the Treasury the power to declare what teas should be imported into the United States; that a wrong meaning has been given to the word "quality."

"The purpose of a standard is that there may be a fixed and stable measure by which smaller articles can be tested, but if by the word 'quality' Congress meant to place it in the power of the Secretary, of the Treasury to fix and establish the teas admissible into the United States according to their taste and flavour, then not only is it possible that the widest fluctuations may exist from year to year in fixing of the standards, but the determination of whether teas offered for import are inferior in flavour and taste to the standards so established must necessarily fluctuate with the varying skill or delicacy of taste of tea experts. It needs no argument to show that to subject an extensive trade in a commodity of foreign production which must be purchased many months in advance of its arrival at our ports, subject to the variations of seasons, to entry under such a rule is to imperil all security of trade and to put the merchant under a hazard of loss for which there can be no compensation of gain to any other part of the community. For even if such a construction of the statute were not oppressive upon the importer, it would still be a harsh and unjust rule in its application to the consumer. It would exclude inferior grades of tea, although entirely genuine and wholesome, and would compel the poorer classes of citizens to purchase higher grades of tea presumably more costly and possibly less to their liking. To that extent it would interfere with the natural liberty of the citziens and the choice of commodities which it is the general policy of the law to extend rather than to restrict.

"If this be so the legislation is in the nature of a police regulation, and the word 'quality' is to be read as having regard to the tea as being fraudulent or deceptive or bad. The design of the statute, then, is to exclude 'impure,' 'trashy,' and 'unwholesome' tea.

"This in effect limits the word 'quality' by the purpose of the statute as we have claimed it, and by the words with which it is associated.

"The rejection of teas equal in purity, quality, and fitness for consumption because containing a greater mixture of similar teas broken up into fragments known as dust or fannings is unauthorized by the statute. The regulations provide that in certain standards the percentage of dust or fannings must be restricted to 10 per cent., and in others that the maximum of dust or fannings shall not exceed 4 per cent.

"It is entirely manifest that the inherent substance of the tea is not altered by its being broken into small fragments, nor is there any pretence that it is thereby rendered any less wholesome or fit for consumption. If these teas were properly rejected it must have been because the 'quality' refers not to the inherent substance of the tea, but to its size and packing. We submit that such a construction of the word 'quality' is inadmissible. It is strained and unnatural. It has no justification in the reason of the law or in the plain meaning of the words, and is merely a trade regulation absolutely unauthorised by the statute.

"The regulations require the rejection of teas not equal to the standard in flavor or cup quality, although equal to the standards in every other particular, and the defendants have applied and are applying that rule.

"The defendants having prevented the importation of teas which the plaintiff is entitled to import within the true intent and meaning of the act and threatening to continue to do so, should be enjoined from such unauthorized acts."—*American Grocer*, **May 3.**

REPORT ON THE DEPARTMENT OF LAND RECORDS AND AGRICULTURE, MADRAS.

The latest Report on this Department (1898-9) has reached our hands. The operations on the agricultural side of this Department are of interest to us just at this time when the question of establishing a Department of Agriculture in Ceylon is on the *tapis*. It will be remembered by some that the Ceylon School of Agriculture, as first established by Mr. H. W. Green, was to a great extent, modeled on the plan of the Madras College, while the contents of his "Primer of Agriculture for Ceylon Schools" was also compiled mainly from a work written by the Principal of that College. Whether the fact of the Colombo School having been established on the model of the Madras College explains an element of demerit or not we cannot say; but it has happened that not long ago the latter, like the former, was the subject of much adverse criticism. We note, however, in reading through the Report under review that a more liberal and up-to-date system of administration has superseded the old order of things in Madras, and we earnestly hope that the same change for the better will, before long, mark the progress of official, agricultural work in this island. For one thing, we are glad to find under the head of "Scientific and National Enquiry under Imperial Control," that Geological Surveying is going on apace in the Presidency, and we read of the examination of such minerals as corundum, iron ore and mica, with a view to developing the mineral resources of the country. The rest of the work of the Department falls under the heads of Meteorology; Botany (the examination of various vegetable products—edible and otherwise—from an economic point of view); Entomology; Chemistry (chemical examination of soils, plants, manures, etc.); Statistics (Agriculture); Veterinary (Animal Diseases, Breeding); Cryptogamy (fungoid diseases); besides the Control of Agricultural Education (including dairy farming), Agricultural publications, the holding of Shows, etc. We expect that in all these matters, the proposed Department or Board of Agriculture in Ceylon will find ample scope for work, to be undertaken, it is hoped, in the same liberal spirit in which it appears to be carried on by the authorities in the Madras Presidency. We would draw attention to the following reference to the employment of men trained in Agriculture:—

It has long been held in this Presidency that it would be advantageous if the staff of the Revenue, Forest, Educational and other Departments were leavened by men who had received a thorough course of instruction in Agriculture, and of late years this has been specially recognized by placing men who have obtained the diploma in Agriculture on an equal footing with B.A. candidates for employment in the Revenue Department. The report of the Principal of the College of Agriculture, for 1897-98, shows the extent to which this leavening has been effected. The total number of former students of the College who were employed in the Revenue Department at the close of the year was 102, 41 of them being Revenue Inspectors. In the Forest Department under Government, and elsewhere, 43 were employed, and in the Educational Department as teachers of Agriculture, 16, whilst the number engaged in direct connection with agriculture and veterinary practice was 98.

The income of the Madras Agri-Horticultural Society is, we are told, chiefly derived from the Government grant (R4,000). Would that the local Government could see its way to follow this example!

MIDLAND (CEYLON) TEA PLANTATIONS COMPANY, LIMITED.

The following is from the report of the directors:—The directors beg to submit the accounts, duly audited, or the year ending December 31, 1898, which they much regret to say again show results far from satisfactory, owing chiefly to the low prices obtained for Ceylon teas last year. The receipts for the season are £9,074 7s 1d; less working expenses in Ceylon, £7,329; leaving gross profit, £1,745 7s 1d; from which has to be deducted: Debenture interest—6 per cent. per annum on £15,000, £900; interest on loans, £269 7s 2d; fees to trustees, and auditors, and London agents' commission on teas sold, £234 2s 9d; general charges, &c., £75 12s 10d; and the following being also chargeable:—legal expenses in connection with the mortgages, £146 3s 7d; preliminary expenses, one-third written off, 1897, £133 5s 7d; ditto, 1898, £133 5s 7d; manure, cost written off, 1897, £193 5s 2d; rice, loss written off, 1897, £132 13s 9d, produce, over estimate written off, 1897, £34 15s 8d; auditors' fees, written off, 1897, £12 12s; the deficiency is as shown, £519 17s.

It will be seen there is no actual loss on the year's trading, but that the deficiency is caused by previous debits, and the legal expenses in connection with the mortgages to the trustees for the debenture-holders, and to the London agents. In consequence of the year's trading being so unfavourable, the directors have waived their fees, and the London agents, Messrs. M. P. Evans & Co., have made no charge for secretarial work and office rent. The tea sales for the season amounted to 381,940lb, the net average being 5·49d per lb. The rupee exchange was again higher, and averaged 1s 4·20d. The acreages under cultivation are: Over four years old, 938; under two years old, 49; total, 987 acres, and the crop for the current season is estimated at 380,000lb, of which there have been sold to date 29,880lb, at a net average of 7d per lb, a satisfactory advance on last year, and, as the prices now ruling in the London market for Ceylon teas are much higher than they have been for some time, the directors trust they may be able next season to present to the shareholders a statement of a more encouraging nature. It will be noticed that since the date of the last report the working capital of the company has been increased by £2,000 raised in preference shares. The company's visiting agent, Mr. W. R. Tatham, reports in a recent letter that the estates are in good order, and the bungalow and other buildings are in good repair. By his advice the directors have sanctioned a new clearing of thirty-one acres of land lying between Blackstone and Kenilworth, which are well adapted for the growth of tea. Mr. Tatham states that the work of clearing and draining is being carefully carried out by the superintendent, Mr. Campbell. —*H. & C. Mail*, May 26.

PRODUCE AND PLANTING.

THE DRAFT ON TEA.—This question is exercising the mind of the trade, and there is considerable opposition to the proposals for abolishing the draft allowance on tea at public auction in London. In the recent circular issued by the Indian Tea Association of London and the Ceylon Association of London, the signatures of growers and importers of Indian, Ceylon, Java, or China teas were invited to an agreement binding them to refuse the draft allowance to buyers in all tea sales after a fixed date. In an explanatory memorandum circulated with the form of agreement, one of the chief reasons advanced for making the proposed change is that the draft allowance "is a survival from times and conditions which no longer prevail." It is contended by the trade that the draft allowance is certainly a "survival" from old times, and this long-established custom ought not to be lightly set aside. The question raised, the "Grocer" points out, is one of considerable importance, affecting not only the Indian and Ceylon tea trade, but the tea trade in general. Retailers will naturally want to hear strong arguments before they endorse the Indo-Ceylonese proposal—stronger arguments, probably, than those advanced in the quoted memorandum. For example, it is said that what with draft and turn-of-scale allowance, buyers last year received "five-million pounds of tea more than they paid for." Surely that suggestion nullifies itself. People who buy do not usually receive more than they actually pay for, although they may receive more than they nominally pay for. We mean that if five million pounds of tea were handed over to buyers, that fact is large enough to show that their sellers did no more than they were properly expected to do; the prices paid were paid reckoning that fact in with them. Possibly the system of paying for the exact quantity bought may be a preferable one, but such a change as is proposed cannot justly be made unless all the parties concerned have their eyes open, so that the bearing of the change on future buying may be thoroughly understood. The real reason for the change is that set out in paragraph No. 1 in the memorandum namely, "the profit on tea cultivation having reached such a narrow margin." The growers in India and Ceylon have cut down there, and are now wishful to cut down here. We should not have thought the Indian and Ceylon trade had been really so bad as all that, though we can quite understand why cutting down should be attempted if people find themselves, or think themselves, strong enough to do it. According to the "Produce Markets' Review," this draft was not allowed for loss of weight only, but was intended to cover all sorts of other contingencies arising from the nature of the trade, such as the occasional refusal of any allowance for damage, false package, &c., after delivery from the public warehouses. Of course, also buying at original landed weights, the trade accept a great risk when delivery is delayed, as it often is, and they must have some margin in return.

NOT SO BAD AS IT LOOKS.—It might be thought on looking at the figures representing the Imports of Indian and Ceylon tea to the United States and Canada for the first three months of the year that the demand was on the decline in North America. For the corresponding periods in 1897 and 1898 the amounts respectively were 4,460,943 lb. and 3,155,099 lb., while for the first three months of the current year the quantity taken was only 2,935,885lb. The explanation is that in 1897 the imports were unusually large owing to the fear which then existed of an alteration in the tea duty in the States, while the slight reduction in the first quarter of the present year is attributed to the recent high prices.

PLANTING IN BRITISH CENTRAL AFRICA.—The revenue of the Brtish Central Africa Protectorate for the year ending March 31 last exceeded the estimate by several thousand pounds. The rainy season which has just come to a close has been a comparatively healthy one. Very few new planters settled in the Protectorate last year, but the area under coffee is constantly increasing, as also is the bearing capacity of the trees planted during recent years. There has been an increase in the export of rubber, but owing to the frequent bush fires British Central Africa is not an abundant rubber country, and is not likely to become a serious rival to Brazil or West Africa.—*H. and C. Mail*, May 26.

THE INDIAN TEA MARKET:

ANNUAL REPORT AND PROSPECTS.

THE annual report of Messrs. Carritt & Co. deals solely with Indian tea, and the greater portion has been forestalled so far as facts and figures are concerned in the earlier Broking reports. There are, however, a few passages which are worth taking over—for instance:—

The result of the past year's working has again been unsatisfactory to growers. The chief causes are to be found in the sameness of quality of a very large proportion of the crop, the unequal distribution of supply, the concentration of buying power in the London market and high exchange. The consistently low level of value, increased deliveries at home, together with the certainty of a crop practically the same weight as last year, and the uncertainty of a proportionately better price being obtainable, opposed the idea of curtailing outturn with a view to improving quality. The character of the crop, which has largely consisted of ordinary medium quality, has not tended to bring about any appreciable advance in sterling values, though, apart from other features of the trade, it should have been sufficiently good to maintain last year's level. Owing to improved facilities of transport, and also to accelerated services, the crop has reached the market quicker than usual; no adverse influences have temporarily impeded transit or have tended to check the rapid forwarding of supplies.

Next we have an altered condition of the trade dealt with and an evil of some magni-

tude affecting producers is certainly brought to light :—

The effect of a congested supply and the want of a more equable distribution of the crop on the home market has been more than ever emphasised this year. Improved means of carriage have been largely availed of (mainly on account of economy in finance), and tea has been rushed forward at headlong rate, regardless of the inevitable fate awaiting it in London. A more convincing proof of the need of a better regulation of supply cannot be wanted than this year's working affords ; even the law of supply and demand has been suspended by the persistent pouring in of shipments, and any tendency to improved prices has been immediately stifled. The altered condition of the trade and the concentration of buying power in the hands of the comparatively few large London houses make it all the more necessary to feed the markets judiciously, and the absence of this precaution has never been brought home to the seller so acutely as in the past year. The continually depressed market at home and the difficulty in moving up sterling value, in spite of an exceptional position, are in a great measure directly attributable to this drawback, and so long as the annual flooding process supervenes no healthy recovery in values appears probable ; they may slightly improve during the months of diminished supply but only to be forced down again when the weight of tea comes forward. That some effective scheme for ensuring a more uniform supply throughout the year than now exists would prove of enormous benefit to the industry is undoubted, but the difficulties to be overcome appear insurmountable ; it would necessitate a strong combination of producing interests, and restricted dealings would probably be unacceptable to many. But prices have been forced down to such a low level, and the margin of profit to the grower, where it has not disappeared altogether, is so small and uncertain that any active measures with this object in view should receive every consideration.

Ceylon tea shipments, fairly distributed as they are over the year, do not give the same trouble as those from India—concentrated as the latter are—within a few months practically. But how to apply a remedy would puzzle even so great a capitalist and producer as Sir John Muir !

As regards "prospects," Messrs. Carritt & Co. write :—

Prospects for the ensuing season are brighter, and there are indications of a more prosperous year before the trade. That so large a portion of the crop should, under such abnormal conditions as existed during the past year, have been dealt with before any recovery in prices took place in London is instructive, and it is to be hoped that the measure of strength now acquired by producers will not be disturbed. The statistical position would seem to invite a freer supply, which in many cases would mean a coarser system of plucking and a consequent lowering of quality ; under such conditions the outlook is not favourable. The past year's crop was by no means a full one, and with the increased yield during the current season from considerable extensions coming into bearing, there should, under normal conditions of weather be quite sufficient tea to meet home requirements, and also the increasing demands for outside markets. With a large and inferior quality crop, lower prices must be looked for, and any recovery in value (signs of which are now seen) cannot be maintained. As regards manufacture, the foregoing remarks may be some guide in deciding upon the best course to pursue. In the districts planters have been fully alive to the situation, and every effort on their part will doubtless be continued to attain the best results.

PLANTING NOTES.

Coffee.—On the 6th of May one or two suggestions were offered in this journal towards the devising of some means of popularising coffee amidst the millions of possible consumers who will prefer tea for the plain reason that nothing is wanted for that save the boiling of the kettle. It is disappointing to find that not one local planter, hard hit though the industry be, has yet had one idea to rub on another as to this most practical question.—*S. F. Press*, May 23.

Tea in Natal.—The consumption of tea per head in England (notes the *Agricultural Journal*) is 6lb. per annum. The production for Natal is computed at 1,000,000lb. per annum says the *Mercury*. The white population of Natal is 50,000 ; at 6lb. per head the consumption in Natal is 300,000lb per annum, leaving 700,000lb for export. The average retail price for tea in Natal is 1s 5d per lb ; hence £21,250 is spent annually in tea by a population of 50,000.

"Colonia" for April is an interesting number. There are now some ten old students of the Colonial College (Suffolk) as tea planters in Ceylon. One of them notices the coincidence of three of them being connected with the one Company. We quote a paragraph :—

We had a visit during the Term from Mr. Youell Thorne who was back in the old country for a short time. He gave us pleasant accounts of life in Ceylon, and of the *Old Colonials* whom he had met there. Apropos of such meetings, the circumstance referred to by Mr. Beamish, in the Old Students' Column, of three College men coming together on the same estate is certainly noteworthy. Every one will wish the trio long life and prosperity, and a flourishing tea plantation of their own by and bye.

United Planters' Association of the Federated Malay States.—One interested in the Straits asks us if we have seen the Report of the latest meeting of this body "at which Mr. E. V. Carey has been elected Chairman by a large majority,—Ceylon again to the front." A copy of the Minutes or Report has been sent to us direct and it exhibits a good deal of enterprise on the part of the Straits planters. Mr. Carey succeeds another Ceylon man, Mr. T. H. Hill, as Chairman of the U.P.A. The Association is anxious to get an "Agricultural Department" established in the Straits for the general benefit of the inhabitants, and to this end it has been collecting information from the different Colonies with regard to botanical and agricultural departments, making, however, a big blunder in giving Ceylon credit for a general revenue of 19 million £ sterling in place of rupees,—a misprint, of course.—Mr. Coates was thanked for collecting information respecting the cultivation, transport, &c., of coffee in Brazil ; but surely European (and ex-Ceylon) planters in the Straits have little to learn from South America in respect of coffee? The Straits planters are anxious to have a Bonded Store or Warehouse for their produce, in order that their coffee may have time to mature (!) and in the meantime that advances may be obtained,—rather dangerous business for a Government to meddle with. The "labour" question is always a lively one in the Straits, and in a variety of forms it is freely discussed in the present Report.

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS FOR MAY 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Padupola in the Central Province, 32·46 inches, and the lowest at Elephant Pass in the Northern Province 0·14 inch.

WESTERN PROVINCE.

Negombo, Mr. Bucknall (6) ... 8·96
Kalutara Mr Gregson (36) 29·71
Labugama, Mr Bond (369) ... 21·51
Henaratgoda, Mr. Silva (33) ... 16·04

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,500) .. 9·84
New Valley, (Dikoya) Mr. Ward (3,708) .. 24 06
Helboda, (Pussellawa) Not received (3,300) ... —
Yarrow Estate, ... Mr. Peto (3,400)... 13·27
Peradeniya Mr. ... MacMillan (1,540) ... 7·59
Duckwari, Mr. Spence (3,300) ... 6·73
Caledonia, Mr Goork .. (4,273) ... 13·63
Pussellawa, Mr. .. Powell (3,000) .. 15·51
Hakgala, Mr. .. Nock (5,581) .. 8·92
S. Wanarajah Estate, Mr. Tatham (3,700) ... 21 30
St. Andrew's (Maskeliya,) Not received (4,200)... —
Padupola, Mr. Ward ... (1,636) .. 32 46
Mylapitiya, Mr. Fletcher (1,707) ... 1 51

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) . 2·73
Jaffna Mr MacDonnell (8) 2·36
Mankulam, (N. Road) Mr. Walker (167) .. 1·85
Elephant Pass, Mr. .. Silva (7) .. 0·14
Vangalachettykulam, Not received (179) ... —
Point Pedro, Mr. Pararachasinghe (24) .. 1·61
Jaffna College, Mr. Cooke (9) ... 1·83
Kayts, Mr. Kretser ... (8) .. 1·98
Kankesanturai, Mr. ... Adams (10) . 1·67
Pallai, Mr. Silva (24) .. 2·00
Murlkandy, (North-Central Road) Mr. Silva — 1·00
Nedunkeni, Mr. Sanmukam (122) ... 3·57
Chavakachcheri, Mr. Silva (16) ... 0·98
Udupiddi, Mr. Hastings (35) ... 2·03
Marichchukaddi, (14) Not received ... —
Murungan, Mr. Blechingberg — 4·06
Vavuniya Mr. Walker (318) 6·65

SOUTHERN PROVINCE.

Ella Vella (262) Mr. Adams 13·50
Kekauadura, (150) do 12·28
Denagama, (286) do 11·90
Udukiriwila Mr. Lourensz (235) ... 5·99
Kirama, Mr. Ismail (260) 7·04
Hali-ela (200) Mr. Adams 16·10
Tissamaharama, Not received (75) ... —
Matara (15) Mr. Adams 11·40
Dandeniya, (157) do 12·20
Urubokka, (890) do 14·70
Elagala, Not received (121) —
Tangalla, (94) Mr. Bartlett 5 87
Mamadola, Mr. Cade — (56) ... 4·30

EASTERN PROVINCE.

Irrakkamam, (42) Mr. Bower 1·62
Devilana, Mr. Vanderstraaten (136) Nil
Sagamata, Mr. Bower (40) ... Nil
Ambare, do (65) 0 65
Kanthalai, Mr. Carte (150) 0·52
Allai, Mr. Carte (95) Nil
Rukam, Mr. Vanderstraaten (120) .. Nil
Periyakulam, Mr. Carte (20) ... Nil
Chadaiyantalawa, Mr. Edge (57) ... 2·11
Kalmunai, do (12) 0 38
Rotewewa, do (30) 0·21
Lahugala, do (70) 2·00
Naulla, do (30) 0·50
Andankulam, Mr. Carte (41) ... Nil
Manalpuddy, Mr. Vanderstraaten (21) 0·40
Maha-Oya-Tank, Mr. Vanderstraaten (190) Nil

N.-W. PROVINCE.

Magalawewa, Mr. Sooprayan (176) ... 5·45
Maha Uswewa tank, Mr. Crabb (160) ... 5·21
Tenepitiya, Mr. Simmons (8) ... 10·65
Batalagoda, Mr. Parker ... 6·06

N. C. PROVINCE.

Kalawewa, (268) Not received
Maradankadawala, Mr. Carson (443) ... 5·65
Mihintale, Mr Silva (354) ... 5·41
Horowapotaua, Mr. Silva (217) ... 3·38
Madawachchiya, Mr. MacBride (285) ... 4·36
Topare, (200) Not received ... —
Minneriya — Mr. Eves 3·92

UVA PROVINCE.

Bandarawela, Mr. Tocke (4,380) ... 5·41
Haldummulla, Mr. Viramuttu (3,160) ... 3·95
Kumbukan, (446) Mr. Emerson ... 1·03
Koslanda, (2,258) Mr. Emerson ... 3·37
Tanamalwila, Not received (550) ... —

SABARAGAMUWA.

Ambanpitiya, Mr. Caldicott (729) 10·05
Pelmadulla, Mr. Jeffery (408) 18·48
Kolonna Korale (Hulanda-oya) (203) Not Received —
Avisawella, Mr. Jeffery (105) 17 95

Ceylon Rainfall.

S. G. O. METEOROLOGICAL OBSERVATIONS FOR JANUARY 1899.

We append the total fall of rain from which it will be seen that the highest fall was at St. Martins, Rangalla, 55·86 inches, and the lowest at Orange Hill, Ragama, 1·55 inches.

Colombo (40) 6·98
Ratnapura (84) 4.04
Puttalam (27) 10·44
Anuradhapura (295) 5.19
Mannar (12) 2·53
Jaffna .. 2·11
Trincomalee (12) 7·25
Batticaloa (26) 14·75
Hambantota (50) 10·95
Galle (48) 5·52
Kandy (1,654) 8·54
Nuwara Eliya (6,188) 12·62
Hakgala, Nuwara Eliya (5,581) 6·74
Badulla (2,225) 16·51
Vavuniya (317) —
Kurunegala (381) 7·12
Maligakanda, Colombo Mr Johnson (70) 3·93
Agricultural School Colombo, Mr. Rodrigo 4·43
Wilhelmina Puttalam, Mr. Ratnayeke (131) 9·38
Horakele Estate, Chilaw, Mr. Beven (50) 5·72
Chilaw Kachcheri Chilaw, Mr. Koch (10) 5·69
Franklands Estaee Veyangoda, Mr. Beven 2·25
Orange Hill, Ragama Mr. Bassey (20) 1·55
Henaratgoda Gardens, Henaratgoda, Mr. de Silva (33) 3·71
Kotua Godella, Rambk'a 4 02 Mr. Windus (580)
Eadella or Liberia Estate Polgahawela 5·72 Mr. Kynaston (475)
Geekianakanda, Neboda 8·43 Mr. Corrie (200)
Polgahakanda, Neboda 8·12 Mr. Bury (500)
Labugama, Hanwella, 5·35 Mr. Samarakone (369)
Rayigam, Horana, Mr. 9·65 Hanan, (0)
Kanangma, Avissawella 6·12 Mr. Cooke (200)
Dunedin Estate, Avissawella, Mr Bayley, (400) 6·09
Digalla Avisawella, Mr. 3·95 Tottenham, (400)
Pambagama, Avisawella. 3·39 Mr Bridgman (600)
Avisawella Estate Avisawella Mr. Byrde 250 4·04
Yatideriya, Kegalla, Mr. Fairweather ... 6·29
Mahawalatenna, Balangoda Mahawalatenna R.M. ... 4·80
Agrsland Estate Balangoda Mr Boyd (2,115) 3·72
Maduwanwala, Rakwana, Maduwanwela R.M. (750) 6·10
Anninkanda, Morawaka, Mr. Woodhouse (1,400) 8·34
Panilkanda, Morawaka, Mr. James (1,900) 1·82
St John Del Rey, Bogawantalawa, Mr. Glanville (4,300) 2·96
Friedland, Bogawantalawa Mr. Rammell (5,200) 5·21
Campion, Bogawantalawa, Mr. Gidden (4,840) 4·71
Blair Athol, Dikoya, Mr. Lane (3,641) 5·88
Annfield, Dikoya, Mr. Knight (4,700) 5.01
Maskeliya Hospital, Maskeliya Mr. Oorloff (1,200) 4·02
Hope Estate, Hewaheta, Mr. Bagot (5,000) 22·47
Coldstream Estate, Watawala Mr. Jones (3,800) 4·61
Holmwood Est., Agrapatana, Mr. Bosanquet (5,240) 3·78
Sandringham, Agrapatana Mr. Orchard (5,200) 4·15
Gingran-oya, Kotmale, Mr. Cox (3,800) 6·86
Labookelle, Ramboda, Mr. Stone (5,000) 12·88
Dunsinane, Pundalu-oya, Mr. Metcalfe 4,800 6·77
Sogama, Pussellawa, Mr. Eustace (3,500) 8·61
Kurundu-oya, Maturata, Mr. Owen (5,150) 26·87
Kabaragalla, Maturata, Mr. Maclean (4,200) 20·94
Maragalla Estate, Moopana, Mr. Betts, (2,200) 18·01
Moopana, Hospital, Moopana (Mr. Thomasz) (600) 14·24
Madulsima Hospital Lunugala Dr. Velhecan (2,600) 15·78
Meeriabedda, Haputale, Mr. Dupuis (3,600) 8·88
Udahena Estate, Haputale, Mr. Coombe (4,500) 10·98
Post Office, Bandarawela, Mr Rodrigo (4,035) 9·52
Callander, Ohiya Mr. Green (5,125) 10·42
Mariawatte, Gampole Mr. Salmond (1,600) 5·51
Orwell Estate, Gampola Mr. Taylor (1,800) 5·06
New Forest, Deltota, Mr. Wardrop (3,500) 13·34
Rajawella, Estate, Teldeniya Mr. Sinclair (1,500) 9·62
Lower Spring Valley, Badulla Mr. Rettle (3,650) 21·94
Gourakele Estate, Badulla, Mr. Hope (1,200) 17·96
Monsagala Estate, Badulla, Mr. Deaker (4,500) 20·87
Ledgerwatte, Badulla Mr. Rettie (4,000) 30·86
Dea Ella Estate, M'walatenua Mr. Vanderslolt (800) 10·41
Sembawatte Estate, N'pitiya Mr. Roe (1,600) 5·05
Gammaduwa, Estate, Rattota Mr. Westland (2,400) 40·04
Kobonella Estate, Rangala, Mr. Pole (3,300) 44·25
St. Martins, Rangala, Mr. Wyllie (3,600) *55·86*
Crystal Hill, Matale, Mr. Van S'rex (1,400) 15·79
Vicarton Estate, Matale Mr. Carrie (3,250) 19·43
Matale Mr. Tisseverasinghe (1,208) 13·08
Wariapolla, Matale, Mr. Dickenson (1,200) 13·51
Dambulla, Mr. Siline amby (400) 18·49
Kotta Estate, Pallai, Mr. Todd (13) 1·90
Mantota Hospital, Mannar, Mr. Ratnampilla (17) 1 69
Buttala Hospital, Buttala, Mr. Bulner .. 11·54
Police Station, Hatton Police Constable Miskin (4,141) 4·58
Nilaveli, Trincomalee, Mr. Abraham, .. 8·99
Delwita, Kurunegala, Mr. Neame (490) 10 82
Woodside, Uragalla Mr. MacMahon (3,000) 26·44
Gillardstown, Wattegama Mr. Hardy (2,500) 14·96

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers.
Agra Ouvah Estates Co., Ltd.	500	—	950
Ceylon Tea and Coconut Estates	500	—	500 n'l
Castlereagh Tea Co., Ltd.	100	97½	100
Ceylon Hills Estates Co., Ltd.	100	—	30
Ceylon Provincial Estates Co.	500	500*	500
Claremont Estates Co., Ltd.	100	15	..
Clunes Tea Co., Ltd.	100	—	95
Clyde Estates Co., Ltd.	100	—	90
Delgolla Estates Co., Ltd.	400	—	150
Doomoo Tea Co., of Ceylon, Ltd.	100	65	—
Drayton Estate Co., Ltd.	100	135	—
Ella Tea Co., of Ceylon, Ltd.	100	50	50*
Estates Co., of Uva, Ltd.	500	—	350
Gangawatta	500	.	—
Glasgow Estate Co., Ltd.	500	962½	—
Great Western Tea Co., of Ceylon, Ltd.	500	642½	640
Hapugahalande Tea Estate Co Ltd.	200	..	250
High Forests Estates Co Ltd	500	550	550
Do part paid	350	385*	—
Horekelly Estates Co., Ltd.	100	..	90
Kalutara Co., Ltd.	500	..	400
Kandyan Hills Co Ltd.	100	—	47½
Kanapediwatte Ltd.	100	—	90
Kelani Tea Garden Co., Ltd.	100	...	65
Kirklees Estates Co., Ltd.	100	140	—
Knavesmire Estates Co., Ltd.	100	..	77·50
Maha Uva Estates Co., Ltd	500	—	575
Mocha Tea Co., of Ceylon, Ltd.	500	—	700
Nahavilla Estate Co., Ltd.	500	—	500*
Nyassaland Coffee Co. Ltd.	100	..	90
Ottery Estate Co., Ltd.	100	110	—
Palmerston Tea Co., Ltd.	500	..	425
Penrhos Estates Co., Ltd.	100	100	110
Pine Hill Estate Co., Ltd.	60	—	50
Pitakanda Tea Company	500	1,000	—
Putupaula Tea Co., Ltd.	100	..	100 n'l
Ratwatte Cocoa Co., Ltd.	500	350	500
Rayigam Tea Co., Ltd.	100	50	...
Roeberry Tea Co., Ltd.	100	55	60
Ruanwella Tea Co., Ltd.	100	...	75
St. Heliers Tea Co., Ltd.	500	505	—
Talgaswela Tea Co., Ltd.	100	—	32·50
Do 7 per cent. Prefs.	100	70	..
Tonacombe Estate Co., Ltd.	500	—	450
Udabage Estate Co., Ltd.	100	..	65 n'l
Udugama Tea & Timber Co., Ltd.	50	..	10
Union Estate Co., Ltd.	500	300	—
Upper Maskeliya Estate Co., Ltd.	500	..	500
Uvakellie Tea Co., of Ceylon, Ltd.	100	...	70
Vogan Tea Co., Ltd.	100	90*	—
Wanarajah Tea Co., Ltd.	500	1100	1150
Yatiderlya Tea Co., Ltd.	100	—	375

CEYLON COMMERCIAL COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers.
Adam's Peak Hotel Co., Ltd.	100	..	60
Bristol Hotel Co., Ltd.	100	..	85
Do 7 per cent Debts.	100	102·50	—
Ceylon Gen. Steam Navgtn. Co., Ltd.	100	195	—
Colombo Apothecaries Co., Ltd	100	125	125*
Colombo Assembly Rooms Co., Ltd.	20	..	12·50
Do prefs.	20	..	17
Colombo Fort Land and Building Co., Ltd.	100	80*	..
Colombo Hotels Company	100	—	280*
Galle FaceHotel Co., Ltd.	100	—	167·50 n'l
Kandy Hotels Co., Ltd.	100	80	87·50
Kandy Stations Hotels Co.	100	..	40
Mount Lavinia Hotels Co., Ltd.	500	..	400
New Colombo Ice Co., Ltd.	100	—	162
Nuwara Eliya Hotels Co., Ltd.	100	35*	35
Public Hall Co., Ltd.	20	15	—
Petroleum Storage Co.	100	-	—
Do 10 % prefs.	100	35	40
Wharf and Warehouse Co., Ltd.	40	82·50	—

* Transactions.

LONDON COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Seller
Alliance Tea Co., of Ceylon, Ltd.	10	8¾—9	—
Associated Estates Co., of Ceylon Ltd.	10	..	6½—7
Do. 6 per cent prefs.	10	..	10—10
Ceylon Proprietary Co.	1	..	12·6—15¼
Ceylon Tea Plantation Co., Ltd.	10	..	26½—27
Dimbula Valley Co., Ltd.	5	—	6—6½
Do prefs.	5	—	5½—6 xd
Eastern Produce and Estates Co., Ltd.	5	..	6½—6¾
Ederapolla Tea Co., Ltd.	10	..	8—9
Imperial Tea Estates Ltd.	10	..	6½
Kelani Valley Tea Asson., Ltd.	5	..	5—6
Kintyre Estates Co, Ltd.	10	.	8½
Lanka Plantation Co, Ltd.	10	4½	..
Nahalma Estates Co., Ltd.	1	.	½—1
New Dimbula Co., Ltd. A	10	..	22-23
Do B	10	..	20·21
Do C	10	..	15—20
Nuwara Eliya Tea Est. Co., Ltd.	10	..	10¼
Ouvah Coffee Co., Ltd.	10	..	5½—6¼
Ragalla Tea Estates Co., Ltd.	10	..	10½
Scottish Ceylon Tea Co., Ltd.	10	..	15
Spring Valley Tea Co., Ltd	10	..	5-6 nom.
Standard Tea Co., Ltd.	10	..	12½—13
Yatiyantota Ceylon Tea Co., Ltd.	10	—	7¼
Yatiyantota pref. 6 o/o	10	..	9¼—10

BY ORDER OF THE COMMITTEE.

Colombo, 23rd June, 1899.

RAINFALL RETURN FOR COLOMBO.

(Supplied by the Surveyor-General.)

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897	1898	Av. of 29yrs.	1899
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch	Inch	Inch	Inch.	Inch.
January ..	0·81	1·45	7·39	5·42	0·62	5·00	2·92	3·81	2·32	3·09	6·98
February ..	4·36	2·81	5·32	2·36	0·52	0·81	0·35	1·68	1·98	1·90	2·78
March ..	5·34	9·43	1·52	5·15	7·44	1·84	5·64	3·66	4·21	4·92	0·88
April ..	14·27	5.93	13·92	20·39	12·51	9·34	5·93	10·97	22·81	11·47	6·66
May ..	6·48	17·65	3·00	10·32	3·00	10·09	9·31	8·30	5·80	11·89	17·73
June ..	1·87	9.79	6·62	11·01	11·32	13·99	8·37	10·14	10·94	8·34	7·61*
July ..	3·32	4·59	1·10	2·20	1·72	0·52	2·85	5·24	6·15	4·49	
August ..	0·73	1·65	1·86	1·01	0·86	0·92	6·35	9·09	0·97	3·77	
September	1·50	4·42	1·14	1·99	0·78	4·09	10·99	4·58	6·90	5·13	
October ..	13·33	35·28	12·24	5·59	20·81	30·36	16·78	4·71	20·60	14·57	
November..	12·32	18·37	5·86	18·10	14·63	5·83	19.81	11·66	17·38	12·80	
December..	8·47	7·66	0·86	·13	3·25	9·44	11·76	8·89	3	6·45	
Total..	72·80	119·03	60·83	89·67	77·46	92·23	101·06	82·7	103·11	88·82	42·63

* From 1st to 27th June 7·61 inches, that is up to 9·30 a.m., 28th June.—ED. *C.O*

HOW TO CHOOSE ORANGES.—The sweetest oranges generally have rusty-looking coats. An English expert says:—"Pick out the dingiest in the box, and you will get the best." Another test is weight. The heaviest oranges have the thinnest rinds. Thick-skinned fruit is apt to be dry inside. A slight freezing on the tree causes this condition in otherwise fine fruit. The "kid-glove" oranges are the two varieties grown in Florida from stocks respectively brought from China and Tangier. The Glen Retreat orange of Queensland is a very fine-skinned heavy orange, and is amongst the best, if not the best of our mandarins.—*Queensland Agricultural Journal.*

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo, June 27th, 1899.

EXCHANGE ON LONDON :—Closing Rates: *Bank Selling Rates* :—On demand 1/4 to 1-32; 4 months' sight 1/4 1-32 to 1-16; 6 months' sight 1/4 1-16 to 3-32.

Bank Buying Rates:—Credits 3 months' sight 1/4 5-32 o 3-16; 6 months' sight 1/4 ¼ to 9-32; Docts 3 months' sight 1/4 3-16 to 7-32; 6 months' sight 1/4 9-32 to 5-16.

Indian Bank Minimum Rates 5 o/o

Local Rates: 1 o/o to 2 o/o Higher.

COFFEE :—

Plantation Estate Parchment on the spot per bus—R13.00

Plantation Estate Coffee, f.o.b on the spot per cwt R74·00

Liberian Parchment on the spot per bus—none

Native Coffee f.o.b per cwt. R43·50 Scarce and nominal

TEA:—Average Prices ruling during the week—Broken Pekoe per lb. 43c. Pekoe per lb. 36c. Pekoe Souchong per lb. 33c. Broken Mixed and Dust per lb. 26c.—Averages of Week's sale.

CINCHONA BARK:—Per unit of Sulphate of Quinine per lb 7½c. 1 o/o to 4 o/o

CARDAMOMS:—Per lb R1.85

COCONUT OIL:—Mill oil per cwt. R13.75

Dealers' oil per cwt. R13.75; Coconut oil in ordinary packages f.o.b. per ton R312,50

COPRA:—Per candy of 560 lb. R45.00

COCONUT CAKE:—(Poonac) f.o.b. (Mill) per ton, R80.00

Cocoa unpicked & undried, per cwt. R46.00

Picked & Dried f. o. b. per cwt. R47.50

COIR YARN.—Nos. 1 to 8 { Kogalla R17.25 / Colombo R16.00 }

CINNAMON :—Nos. 1 & 2 only f.o.b. 65c.

Do Ordinary Assortment. per lb 57c.

EBONY.—Per ton.—Govt. sales 30th June.

PLUMBAGO:—Large Lumps per ton, R1000

Ordinary Lumps per ton, R850

Chips per ton, R650 Dust per ton, R450

RICE.—Soolye per bag, R7.35 to 7.68

„ per bushel, R2.85 to 3.05

Pegu & Calcutta Calunda per bushel. R2.90 to 3.00

Coast Calunda per bushel, R2.95 to R3.10

Mutusamba per bushel R3.35 to 3.75

Kadapa and Kuruwe, per bushel—None.

Rangoon, raw 3 bushel bag. R9.37 to 10.00

Coast Kara per bushel R2.90 to 3.00

Soolai Kara per bushel R2.80 to 2.85

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, June 27th, 1899.

COFFEE :—

Estate Parchment :—per bushel	R11·00 to 12·00	scarce
Chetty do do	R8·00 to 9·00	scarce
Native Coffee do F. O. B per cwt.	R35·00 to 40·00	
Liberian coffee:—per bushel	R3·50	
do cleaned coffee:—per cwt	R22·50	
Cocoa unpicked:—per cwt	R40·00 to 42·00	
do cleaned do	R42·00 to 46·00	
Cardamoms Malabar per lb.	R1·10 to 1·30	
do Mysore do	R1·60 to 2·00	

RICE :

Soolai per bag of 164 lb. nett	R7 35 to 7·68	
Slate or 1st quality:—per bushel	R2·95 to 3.05	
Soolai 2 & 3rd. do do do	R2·85 to 2·95	
Coast Calunda	R2·95 to 3·10	
Coast Kara	R2·90 to 3·00	
Kazala	R2·80 to 2·85	
Muttusamba Ordinary	R3·35 to 3·75	
Rangoon Rice per bag	R9 37 to 10·00	
Cinnamon. per lb No 1 to 4	R00·57	
do do 1 to 2	R00·64	
do Chips per candy	R90·00	scarce
Coconuts Ordinary per thousand	R35·50 to 37·50	
do Selected do	R36·00 to 38·50	
Coconut Oil per cwt	R14·12½ to 14·25	
do do F. O. B. per ton	R282·50 to 285·00	

POONAC :—

Gingelly per ton		R85·00 to 90·00
Coconut Chekku	do	R75·00 to 80·00
do Mill (retail)	do	R75·00 to 80·00
Cotton Seed	do	R60·00

POONAC.—

Copra per candy		
Kalpitiya	do	R45·50
Marawila	do	R43·00 to 44·50
Cart Copra	do	R40·00 to 42·00
Satinwood per cubic feet		R2·00 to 2·25
do Flowered	do	R5·00 to 6·00
Halmilla	do	R1·90
Palu	do	R1·00 to 1·12
Ebony per ton		R75·00 to 175·00
Kitul fibre per cwt		R30·00
Palmyra do	do	R8·00 to 17·50
Jaffna Black Clean per cwt		none.
do mixed	do	R12·00 to 13·00
Indian	do	R8·00 to 13·50
do Cleaned	do	R10·00 to 17·50
Sapanwood per ton		R47·50 to 52·50
Kerosine oil American per case		R6 25 to 6·50
do bulk Russian per tin		R2·75 to 2·90
do Sumatra per Cases		none
Nux Vomica per cwt		R2 00 to 3·50
Croton Seed per cwt		R38·00 to 40·00
Kapok cleaned f o b do cwt		R24·00 to 25·00
do uncleaned do		R8·00 to 9·00
Plumbago per ton, according to grade	Large lumps	R500·00 to 900·00
	do	R400·00 to 850·00
	Chips	R200·00 to 650·00
	Dust	R100·00 to 450·00

CEYLON EXPORTS AND DISTRIBUTION. 1899.

COUNTRIES.	Tea. 1899 lbs.	Tea. 1898 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cinchona Branch & Trunk lb. 1899. lbs.	Cinchona Branch & Trunk lb. 1898 lbs.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips lbs.	Coconut Oil. 1899 cwts.	Coconut Oil. 1898 cwts.
To U. K. ..	47740778	47992114	4764	..	4764	320835	310984	23503	198639	215746	424037	49422	41577
„ Austria ..	4749	6812	1	...	1	..	...	...	..	...	105926	851	4124
„ Belgium ..	8883	6110	61	..	61	...	...	151	58	47260	87360	404	903
„ France ..	52491	34805	165	..	165	33	18794	3	..	42066	1750	..	4008
„ Germany ..	196843	150287	19	..	19	..	..	...	16860	131921	319551	401	5567
„ Holland ..	4670	6846	..	.	...	..	..	..	...	...	...	..	..
„ Italy ..	8089	2450	..	.	...	..	...	...	20	48300	100320	205	..
„ Russia ..	1700164	1198555	24	..	24	...	...	..	..	..	...	..	..
„ Spain ..	5800	20150	..	..	..	...	...	..	..	113400	12600	..	..
„ Sweden ..	23746	18534	..	..	...	..	...	...	4036	500	..	206	...
„ Turkey ..	10202	10391	1	..	1	..	..	...	..	...	..	..	..
„ India ..	209921	557762	44	..	44	..	...	1	27854	...	...	121583	49085
„ Australia ..	6690200	7312110	1844	..	1844	...	...	61	...	3600	13440	373	325
„ America ..	1085451	804465	292	...	292	94005	63188	472	4753	50600	28000	47963	19707
„ Africa ..	131019	213356	..	..	...	..	724	..	56	400	1240	...	..
„ China ..	469638	453021	28	..	28	...	2026	...	1388	25000	...	2880	1854
„ Singapore ..	28907	26554	77	..	77	..	..	...	480	..	...	17812	50132
„ Mauritius ..	17420	7300	..	..	...	..	...	..	..	..	..	..	..
„ Malta ..	124227	81129	..	..	..	...	..	..	..	..	..	..	..
Total export from 1st Jan to 27th June, 1899	58513198	58902751	7320	..	7320	414873	395716	24171	254144	678793	1094221	142100	177282

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From Lewis & Peat's Fortnightly Prices Current, London, May 17th, 1899.)

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ...	44s a 100s
Zanzibar & Hepatic ,,	Common to good ...	11s a 80s
BEES' WAX, ,,		
Zanzibar & Bombay, White ,,	Good to fine	£7 a £7 10s
Yellow ,,	Fair ,,	£5 15s a £6 10s
Madagascar ,,	Dark to good palish	£6 5s a £6 12s6d
CAMPHOR, China ,,	Fair average quality	130s
Japan ,,	,, ,, ,,	132s 6d
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 9d a 3s
	Middling, stalky & lean	2s a 2s 3d
Ceylon.—Mysore ,,	Fair to fine plump ..	3s a 3s 8d
	Seeds ...	2s 4d a 2s 7d
,, Tellicherry ,,	Good to fine ...	2s 11d a 3s
	Brownish ..	2s 6d
,, Long ,,	Shelly to good ...	3s a 3s 9d
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 9d
CASTOR OIL, Calcutta ,,	1sts and 2nds ...	3½d a 4½d
Madras ,,	...	3½d a 3¾d
CHILLIES, Zanzibar cwt.	Dull to fine bright ..	29s 6d a 40s
CINCHONA BARK.—		
Ceylon ... lb.	Crown, Renewed	5d a 7d
	Org. Stem	8⅞d
	Red Org. Stem	2¼d a 3¼d
	Renewed	3½d
	Root	4⅝d
CINNAMON, Ceylon 1sts per lb.	Ordinary to fine quill	9d a 1s 6d
2nds	,, ,,	8d a 1s 4d
3rds	,, ,,	7½d a 1s 3d
4ths	,, ,,	7d a 11d
Chips	,, ,,	3d a 4½d
CLOVES, Penang lb.	Dull to fine bright bold	4¼d a 1s
Amboyna ..	Dull to fine	4d a 5¼d
Zanzibar and Pemba	Good and fine bright	3½d a 4½d
	Common dull to fair	3¼d a 3 7-16d
Stems ..	Fair	2d
COCULUS INDICUS cwt.	Fair	9s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	110s a 120s
	Middling to fine mid ..	103s a 108s
	Low mid. and low grown	90s a 100s
	Smalls	58s a 82s
Native ,,	Good ordinary	30s a 70s
Liberian ,,	Small to bold	28s a 37s
COCOA, Ceylon ,,	Bold to fine bold	74s a 80s
	Medium and fair	68s a 73s
	Triage to ordinary	50s a 67s
COLOMBO ROOT ,,	Ordinary to good	11s a 19s 6d
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair ..	£16 a £20
FIBRE, Brush ,,	Ord. to fine long straight	£10 a £21
Cochin ,,	Ordinary to good clean	£18 a £22
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	,, ,, very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	40s a 55s
CUTCH ,, ,,	Fair to fine dry	28s a 35s
GINGER, Bengal, rough ,,	Fair	20s
Calicut, Cut A ,,	Good to fine bold	70s a 75s
B & C ,,	Small and medium	28s 6d a 46s
Cochin Rough ,,	Common to fine bold	21s a 26s
	Small and D's	17s a 20s
Japan ,,	Unsplit	17s
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £15
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £8 12/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ...	£4 8s a £8
	,, ,, red ...	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 55s
Turkey sorts ,,		70s a 85s
Ghatti ,,	Pickings to fine pale ...	12s 6d a 35s
Kurrachee ,,	Good and fine pale ...	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras ,,	Dark to fine pale ...	27s 6d a 35s
ASSAFŒTIDA ,,	Clean fr. to gd. almonds	37s a 80s
	Ord. stony and blocky	25s a 47s 6d
KINO ,,	Fine bright	7s
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	36s a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	16s a 20s
siftings ,,	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 3½d
	Common to foul & mxd.	1s 9¼d a 2s 9d
Rangoon	Fair to good clean ...	2s 9d a 3s 2d
	Common to fine	1s a 2s 4d

	QUALITY	QUOTATIONS
INDIARUBBER, (Contd).		
Java, Sing. & Penang lb.	Foul to good clean ...	8d a 3s 4d
Mozambique ,,	Good to fine Ball ..	3s 5d a 3s 8¾d
	Ordinary to fair Ball ..	2s 3d a 3s 2½d
	Low sandy Ball ..	1s 6d a 1s 9d
	Sausage, fair to good	3s 4½d a 3s 8d
	Liver and livery Ball ..	2s 9d a 3s 3¼d
Madagascar ,,	Fr. to fine pinky & white	3s 4d a 3s 5¾d
	Fair to good black ...	2s a 2s 7½d
	Niggers, low to good...	1s 4¾d a 2s 10¾d
INDIGO, E.I. ,,	Bengal—	
	Shipping mid to gd violet	3s 2d a 4s 6d
	Consuming mid. to gd.	3s a 3s 8d
	Ordinary to mid.	2s 2d a 2s 10d
	Mid. to good Kurpah	1s 10d a 2s 8d
	Low to ordinary	1s 8d a 1s 9d
	Mid. to good Madras	1s 7d a 2s 6d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 5d a 1s 11d
	Pickings	1s 1d a 1s 3d
MYRABOLANES, Madras cwt	Dark to fine pale UG	6s a 6s 6d
	Fair Coast	4s 6d
Bombay ,,	Jubblepore	4s 3d a 6s
	Bhimlies	4s 9d a 10s
	Rhajpore, &c.	4s 3d a 9s
Bengal ,,	Calcutta	4s 6d a 7s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	1s 1d a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair resh	12s a 18s
NUX VOMICA, Bombay per cwt.	Ordinary to middling	4s a 5s 6d
Madras	Fair to good bold fresh	8s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	6s
CASSIA ,,	According to analysis	3s 11d a 5s 6d
LEMONGRASS ,,	Good flavour & colour	2¾d a 2⅞d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3¼d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11½d a 1s 0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody .	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf ..	10s a 15s
	,, wiry Mozambique	10s a 11s
PEPPER - (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	5¼d a 5¼d
Singapore ...	Fair	5⅜d
Acheen & W. C. Penang	Dull to fine	4½d a 5d
PLUMBAGO, lump cwt.	Fair to fine bright bold	43s a 47s
	Middling to good small	18s a 25s
chips ,,	Dull to fine bright	20s a 27s 6d
dust ,,	Ordinary to fine bright	13s 6d a 22s 6d
SAFFLOWER ,,	Good to fine pinky ...	80s a 85s
	Middling to fair ..	60s a 70s
	Inferior and pickings ...	50s a 55s
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £35
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ..	£4 a £8
SAPANWOOD Bombay ,,	Lean to good ...	£4 a £5
Madras ,,	Good average ...	£4 a £5 nom.
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth ..	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	55s a 60s
SENNA, Tinnevelly lb	Good to fine bold green	4¼d a 6½d
	Fair middling medium	3d a 3¾d
	Common dark and small	2d a 2½d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's D's and B's Small ...	£4 a £5 15s
Mussel ,,	Small to bold ...	£1 5s a £3 2/6
TAMARINDS, Calcutta ..	Mid. to fine bl'k not stony	15s a 16s
per cwt. Madras	Stony and inferior ..	10s
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	18s a 23s 6d
TURMERIC, Bengal cwt.	Fair ...	18s
Madras ,,	Finger fair to fine bold bright	27s 6d
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger ..	18s
	Bulbs ..	9s 6d
VANILLOES— lb.		
Mauritius and Bourbon 1sts	Gd. crysallized 3½ a 9 in.	20s a 32s
2nds	Foxy & reddish 4½ a 8 ,,	16s a 22s
Seychelles 3rds	Lean and inferior ..	10s a 14s
VERMILION lb.	Fine, pure, bright ...	2s a 2s 1d
WAX, Japan, squares cwt	Good white hard ...	31s 6d a 32s

THE

AGRICULTURAL MAGAZINE,

COLOMBO.

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for July :—

Vol. XI.] JULY, 1899. [No. 1.

SEASON REPORTS FOR MAY, 1899.

W*ESTERN Province.*—Paddy. Sowing for Yala over. Rainfall heavy. Rinderpest in Rayigam Korale.

Central Province.—Paddy. Yala cultivation in early stages ; rainfall sufficient, 6·46 in. registered at Matale. Health of cattle fairly good.

Northern Province.—Paddy. Fields in preparation. Rainfall 2·36 in. at Jaffna, 5·63 in. at Mannar, 3·57 in. at Mullaittivu. Health of cattle good, except in Mullaittivu district, where there is murrain.

Southern Province.—Paddy. Yala crops in early stage promising well. Rainfall 18·35 in. at Galle. No reports of cattle disease.

Eastern Province.—Paddy. Fair prospects, though some damage by caterpillars in Batticaloa district. Rainfall nil at Batticaloa, ·51 in. at Trincomalee.

North-Western Province.—Paddy. Yala crop still young. Prospects generally good. Rainfall fairly distributed, 2·33 in. at Puttalam. Cattle disease still lingers in some districts,

North-Central Province.—Paddy. Yala crops still young. Rainfall 3·94 in. at Anuradhapura. Health of cattle fair.

Province of Uva.—Paddy. Maha harvest nearly over, and preparations going on for Yala. Prospects middling. Weather dry. Health of cattle good.

Province of Sabaragamuwa.—Paddy. Yala cultivation in progress, prospects favourable. Rainfall at Ambanpitiya 10·5 in., at Ruanwella 29·8 in. Cattle murrain in both Ratnapura and Kegalle districts.

THE ANNATTO DYE OF COMMERCE.

Dr. Nicholl's work from which extracts appeared in the May number of the Agricultural Magazine I suppose is a recent publication. It would therefore be interesting to know before entering into discussion, what older authorities had written on the subject. This is what P. L. Simmonds in his great work *Tropical Agriculture*, 1877 edition, p. 388, writes in reference to the annatto industries in Guadaloupe and Cayenne :—"The fruit is like a chestnut, a two-valved capsule covered with flexible bristles and contains a certain number of seeds smaller than peas. These seeds are covered with a soft, viscous, resinous pulp, of a beautiful vermilion colour, and unpleasant smell like red lead mixed with oil, and it is this substance which constitutes annatta, or arnotto. The mode in which it is obtained is by pouring hot water over the pulp and seeds, and leaving them to macerate, and then separating them by pounding with a wooden pestle. The seeds are removed by straining the mass through a sieve ; and the pulp being allowed to settle, the water is gently poured off, and the pulp put into shallow vessels, in which it is gradually dried in the shade. After acquiring a proper consistence it is made into cylindrical rolls or balls, and placed in an airy place to dry, after which it is sent to market. It used to be most common in this form as small rolls, each 2 or 3 ozs. in weight, hard, dry and compact ; brown without and red within. The other process of manufacture is that pursued in Cayenne. The pulp and seeds together are bruised in wooden vessels, and hotwater poured over

them; they are then left to soak for several days, and afterwards passed through a close sieve to separate the seeds. The matter is then left to fermrent for about a week, when the water is gently poured off, and the solid part left to dry in the shade. When it has acquired the consistence of solid paste, it is formed into cakes of 3 or 4 lbs. weight, which are wrapped in the leaves of the banana, and known in commerce as flag arnotto. This variety is of a bright yellow colour, rather soft to the touch, and of considerable solidity. Labatstat informs us that the Indians .... instead of steeping and fementing the seeds in water, rub them with the hands previously dipped in oil, till the pulp comes off and is reduced to a clear paste which is scraped off from the hands with a knife, and laid on a clean leaf in the shade to dry ...... It owes its value to the colouring matter bixin and orellin, which constitute about 20 per cent of good dry annatto."

The following occurs in A. G. F. Eliot James' *Indian Industries*, 1880, p. 97:—"The *Bixa Orellana* belongs to the natural order Bixineae. The East Indian Bixa is found chiefly in Mysore, Travancore and Bengal. The capsules or pods are at first of a palish rose colour, but they change when ripe to a deep brown and burst open disclosing their bright-coloured contents. Directly the pods are quite ripe they are gathered, stripped of their husk and well bruised. The pulp surrounding the seeds is the portion of the pod containing the valuable arnatto dye of commerce; it is extracted by bruising and macerating the pod (*sic*) in water, they are left in just enough water to cover them for some days, or until the fluid begins to ferment, it is then thrown off, and the pulp allowed to subside. Sometimes arnatto goes through a beating process, similar to that employed in extracting indigo dye, before it is finally allowed to settle. The pulp which remains is then placed in shallow pans and left to dry in the shade. If it has been thoroughly well prepared it will be of a bright yellow colour, that is the American and West Indian arnatto, the East Indian has a rose-coloured dye prepared from it, so says Colonel Dury in his account of the substance in The Useful Plants of India. . . . . Formerly arnatto was obtained by a much more tedious process than now prevails, which was first introduced by Leblond, and consisted in merely washing the seeds until all their colour was extracted, precipitating the colour with vinegar or lemon-juice, boiling it up to facilitate the removal of impurities with the scum, and then draining it in bags. M. Vanquelin made several experiments on the arnatto pods, and quite confirmed the efficacy of these simple measures, which really enhanced the value of the dye ,and made it even of more decided use to dyers. As arnatto is not easily soluble in water, alkalies are generally employed to hasten its solution, potash being most generally used; they also improve the colour of the dye; it is perfectly soluble in alcohol. (p. 96.) Arnatto before being used by dyers, varnishers and lacquer makers is always boiled with half its weight of American ash, in the least possible quantity of soft water; it is used in dyeing silks, straw, buff, and cream-colour; chamois, salmon-colour, orange, amber, and scarlet with cochineal, &c.; in dyeing cottons, orange and orange yellow; in varnish, for gilt articles and for light wood work; in lacquer, for brass, pigments, such as orange lake, &c. In fact it is one of the most useful yellow dyes and one much in demand. It is to be hoped that the East Indian variety may become better known, and that it may also be made more valuable by being more carefully prepared."

This was written in 1880. In 1885 "The Pure Ceylon Annatto Dye Works" were started by the late Mr. A. G. K. Borron on his extensive property, Crystal Hill estate, whose assistant superintendent the writer—its present proprietor—was. Our main effort was to "more carefully" prepare the dye by adopting either one or the other processes described by these authorities. But our disappointment may be easily imagined when the contradictory accounts of the different writers is considered. These were confusing and put us into great expense by the necessity of experimenting on the different processes, before hitting upon one with success, and that one is this. To make PURE DYE the seed should not be bruised, but carefully washed, after it had been subjected to acetous fermentation which has to be regulated according to the weather. The acid used is sulphuric diluted with a certain percentage of water for the dry seed; but when fresh seed is used, a natural acid—acetic—is generated by the seed itself. If the fermentation is thorough the seed need be washed only in two waters, and the liquid strained and separated. To remove the acid is the next secret; this is done by boiling the liquid after it has been concentrated by applying alum and the superfluous water drained off by pumping it out from the top of the tub or cistern in use. The boiled mass contains the two principal colouring matter, one red and the other yellow. Here is the other secret; if it is dried hard the yellow goes off; but in the consistence of putty both colours are retained. The latter is now known as "Ceylon Paste" and considered to be superior to that produced in any other part of the globe. "Cake annatto" as well as "flag annatto" too were produced in my factory, but the trade does not take them. Here then is the solution for the various contradictory and conflicting statements found in Dr. Nicholl's work as well as in others that I have seen with regard to the shape in which annatto is brought to the market. For, as in everything else, there are different varieties of *Bixa orellana* growing in different countries all known by the name annatto, arnatto, anota, &c. In Ceylon we have two varieties—one with the pink or rose-coloured flower which give the red-coloured pod and scarlet seed; and the other with white flower, green-coloured pod and a deep orange-coloured seed. The red variety I find is the stronger dye, and is more valuable, but requires to be manufactured into paste only; dried hard it becomes worthless. The green variety gives yellow-colouring matter in place of the scarlet substance obtained from the red variety. It is of no consequence whether the yellow is made into paste or cake as it has nothing to lose by deterioration in one form or the other. Now the manufacturers of the dye in the West Indies where the green variety may be growing, adopt a certain process by which the cake is produced, and a writer whilst describing that process, falls into the error of applying the same process

to another country where the red variety may be growing, and only the paste is made and sent to the market. In the foregoing remarks I have not mentioned the method of drying the boiled mass which is done by a centrifugal machine, and also spread on linen and hung over a fire. This machine is the same about to be utilized for manufacturing indiarubber.

A. VAN STARREX.

Matale, 20th June, 1899.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF MAY, 1899.

1	Monday	Nil	17	Wednesday	·22
2	Tuesday	Nil	18	Thursday	1·2
3	Wednesday	Nil	19	Friday	7·65
4	Thursday	Nil	20	Saturday	1·94
5	Friday	Nil	21	Sunday	Nil
6	Saturday	·87	22	Monday	Nil
7	Sunday	1·26	23	Tuesday	·12
8	Monday	·06	24	Wednesday	Nil
9	Tuesday	Nil	25	Thursday	Nil
10	Wednesday	Nil	26	Friday	Nil
11	Thursday	Nil	27	Saturday	·48
12	Friday	Nil	28	Sunday	·3
13	Saturday	2·25	29	Monday	·55
14	Sunday	3·55	30	Tuesday	·23
15	Monday	Nil	31	Wednesday	Nil
16	Tuesday	·56	1	Thursday	Nil
				Total	21·24

Greatest amount of rainfall in any 24 hours on the 19th inst. 7·65 inches.

Mean rainfall for the month ·68 in.

Recorded by Mr. J. A. Rodrigo.

OCCASIONAL NOTES

We should have mentioned in referring to Dr Dodge's book on "The Useful Fibre Plants of the World" that we are indebted to Mr. John Warr of Paterson, New Jersey, for his assistance in enabling us to procure us a copy of the valuable work, for which we tender him our best thanks.

In this issue we give the first part of a paper on the subject of Fibres with which Dr. Dodge prefaces his book. It is a short but comprehensive account dealing with the different aspects of the question, and is full of instruction to the student of Economic Botany.

We are glad to notify that we shall from time to time publish Veterinary Notes dealing with cases occurring in actual practice in Colombo, and which for that reason should prove of value to all horse and cattle owners. The contributor of the notes in the present issue is a qualified Veterinary Surgeon, who has started practising in the Metropolis under favourable auspices, and as a past student of the School of Agriculture, we are pleased that he should be once again connected with the institution through the Agricultural Magazine. Mr. Chinniah has set an admirable example to his brethren in his new departure from the beaten tract of veterinary medicine, by making a trial of the preventive treatment for rinderpest, and we heartily congratulate him on the encouraging results of the trial.

We understand that the report of the Commission appointed by H.E. The Governor of Ceylon to consider the advisability of organising a department of Agriculture for the Island is due next month, and its contents are being eagerly looked forward to. It is to be hoped that the Commission will see its way to recommend some practical measures for the improvement of the agriculture of the Island, particularly the native side of agriculture, and that some properly organised controlling body will be appointed to overlook the agricultural interests of the Colony.

The approaching Agri-Horticultural Show to be held in Colombo bids fair to be a great success. The awards which, as a rule come a day after the fair, have been received betimes. They consist of 12 gold medals and 200 silver medals: the former worth £7 10*s.* the latter 15*s.* each. The Hon. Mr. F. R. Ellis, who is just now absent from Ceylon, evinced the greatest interest in the Show, and through his headmen disposed of no less than R3,000 worth of tickets in the villages, so that there should be a large attendance of the peasantry for whom the Show should have special attractions and valuable lessons to teach. The Hon. Mr. G. M. Fowler, who has succeded Mr. Ellis as Government Agent of the Western Province, is no less keen in making the Show a success. It is to be hoped that Government will help the Society in making the Show an annual event.

FIBRES.

[A paper by Dr. Chas. Richards Dodge.]

Definition of Fibres.

The tissue of plants when viewed under the microscope is seen to be made up of cells which are compacted together as they are formed during the growth of the plant, thus slowly building up roots, stems, and leaves. The walls of these cells inclose the life germ, or protoplasm, and the substance of which they are composed is known as cellulose, which chemically is very similar to starch.

Regarding the size of the cells of which common plants are made up, Dr. Gray states that their ordinary diameter in vegetable tissue is between one three-hundredth and one five-hundredth of an inch. The smaller of these sizes would allow as many as 125,000,000 cells in the compass of a cubic inch. "All soft cellular tissue, as leaves, pith, and green bark, is called parenchyma, while fibres and woody parts are composed of prosenchyma, that is, of peculiarly formed strengthening cells." We are also told that those cells that lengthen and at the same time thicken their walls form the proper woody fibre or wood cells; those of larger size and thinner walls, which are thickened only in certain parts so as to have peculiar markings, and which often are seen to be made up of a row of cylindrical cells, with the partitions between absorbed or broken away, are called ducts, or

sometimes vessels. There are all gradations between wood cells and ducts, and between both these and common cells. But in most plants the three kinds are fairly distinct. Wood cells or woody fibres consist of tubes, commonly between one and two thousandths of an inch in diameter. When highly-magnified one can see how button-wood, for instance, illustrates the manner wood cells are put together, their ends pointed and overlapping, thus strengthening the whole.

Wood cells also occur in the bark, though they are longer, finer, and tougher than those found in the wood. They form the principal part of fibrous bark, or the bast layer, and are called *bast*-cells. These give toughness and flexibility to the structure, and the extracted bundles of these cells form the filamentous product known economically as fibre, such as flax, hemp and jute derived from Dicotyledonous plants. "In monocotyledons the fibrous cells are found built up with vessels into a composite structure known as fibro-vascular bundle."—(Dr. MORRIS.) Such fibre occurs in the palms, and in the fleshy-leaved Agaves, like the century plant, the fibro-vascular bundles being found not in the outside covering of the trunk, as in bark, but throughout the stem, or leaf, forming what may be termed (in an Agave leaf, for example) the supporting structure, or that which gives rigidity and toughness to the leaf. These filaments or bundles of elongated, thickened cells, pressed firmly together, when extracted or separated from the soft cell mass by which they are surrounded, may be known as *structural* fibre, of which the fibre of sisal hemp is an example. The simple cells already described, when single or agglutinated and produced on the surface of the leaves, stems, and seeds of plants as hairs, form a fibrous material also valuable, to which the name *surface* fibre has been given. Such hairs are found enveloping the seeds of plants, and when they are produced in the bolls or capsules of species of Gossypium form the cotton of commerce.

The fibre bundles, therefore, whether occurring as bast fibre or structural fibre, or whether in the form of simple cells, as surface fibre, may be regarded as the spinning units, and a flax thread is but an aggregation of bundles of bast cells purified and cleansed of all extraneous matter and simply twisted together. In the perfecting of processes therefore for separating, cleansing, and purifying the bundles of cell structure known as fibre, a knowledge of their physical structure is absolutely essential. The rotting of a fibre is simply the breaking down of the cellular structure or complete separation of the individual cells, by which means the filament is resolved into its smallest parts, each part being measured by the length to which the original cell attains during the period of its growth.

(To be continued.)

RINDERPEST INOCULATION.

"Alston Lodge," Cinnamon Gardens,
Colombo, June 15.

DEAR SIR,—I herewith send you a report on the recent outbreak of rinderpest at Hatton, which afforded me an opportunity of trying Professor Koch's and Dr. Edington's methods of preventive inoculation. As you will see from the report and Mr. Paterson's letter, the results have been very encouraging.

Being only a private practitioner who has but lately started practice, I have not yet fully equipped myself with all the necessary apparatus for inoculation, and I was much disappointed to find that I could not obtain such apparatus in Ceylon, while even the Government Veterinary Department was unable to supply me with a veterinary hypodermic syringe in working order. I intend carrying on inoculation, if the opportunity offers, and I am glad to say that another estate proprietor in Dikoya is willing to have his whole herd operated on.—I remain, dear sir, yours faithfully.

A. CHINNIAH.

I received an urgent call from Messrs. Aitken, Spence & Co., Hatton, on the 4th of May last, and on my arrival there I was told that within one week three of the best bullocks, out of a batch recently purchased in Colombo, had died within a day, after serve purging. There was another bullock which shewed similiar symptoms, and to see which I was specially summoned. When I saw the animal he was only off feed, with no fever, and a stimulant mixture brought him round in a few days. When I was asked my opinion, I told the Manager that unless I held a *post mortem* examination I should not be able to say anything, for the symptoms might have been either those of poisoning or rinderpest. I advised him, however, to adopt the ordinary precautions against the spread of contagious diseases which he was very willing to do.

On the 7th May I received another telegraphic message intimating that three more animals had taken ill and that two of them were in a very bad way. I proceeded thither on the 8th of May and held a *post mortem* examination on two animals. With the bile obtained from them I inoculated four bullocks with 10 cc. of fresh bile. Of the four inoculated, one caught the contagion and died. This animal was a high-conditioned lazy beast, and I believe it was owing to this fact that he succumbed so readily (very possibly infected previous to the inoculation).

I may mention that one inoculated animal was intentionally exposed to contagion, but did not contract the disease.

I assured the Manager that inoculation was all that we could do, but I was unable to inoculate the whole herd at one time, owing to the fact that the working of the animals could not have been suspended. Under the circumstances I was able to inoculate only a few head of cattle at a time. Those that were not inoculated, readily caught the contagion and most of them died; while out of twenty-seven that had been inoculated by me only two contracted the disease, one of which died under the circumstances I have detailed above.

The following is a detailed account of my inoculation:—

9th May.—Inoculated four bullocks with 10 cc. of fresh bile.

16th May.—Inoculated two, one with 10 cc. the other 18 cc. of glycerinated bile.

18th May.—Four animals with 15, 18, 20, 20 cc. respectively.
19th May.—Two animals with 20 cc. each.
21st May.—Two animals with 12 cc. and 14 cc.
30th May.—One animal with 18 cc.
2nd June.—Twelve animals, one with $12\frac{1}{2}$ cc., and the rest with 10 cc. each.

The following is the letter referred to:—

Hatton, June 13.

Dr. A. Chinniah, Veterinary Surgeon, Colombo.

Dear Sir,—In reply to yours of 10th, none of the bulls you inoculated when last here have taken the disaese. Two previously inoculated took ill, one died, the other has recovered.

I cannot but think it was a pity so much time was wasted between your first pronouncement of the disease being rinderpest and the inoculation of all the stock.

The animals which recovered will be branded with an I as requested.

(Signed) W. B. PATERSON.

INSTRUCTION IN AGRICULTURE.

The following is a clause of a bill that has been introduced into the Outario Legislature:—

The Council of every Municipality may, subject to the regulations of the Education Department, employ one or more persons holding the degrees of the Bachelor of Science of Agriculture or a certificate of qualification from the Ontario Agricultural College, to give instruction in agriculture in the separate public and high schools of the Municipality, and the Council shall have power to raise such sums of money as may be necessary to pay the salaries of such instructors, and all other expenses connected therewith. Such course of instruction shall include a knowledge of the chemistry of the soil, plant life, drainage, cultivation oi fruit, the beautifying of the farm, and generally all matters which would tend to enhance the value of the product, of the farm, the dairy, and the garden.

Commenting upon which an Indian contemporary makes the following forcible remarks:—

The lines upon which the Ontario authorities are proceeding are deserving of careful consideration in this country. Agricultual education is rapidly coming to the forefront as one of the necessities of the times. Indeed, most thinking men now recognise that next to a thorough grounding in the three R's, young people attending State schools are most in need of a course of agricultural instruction sufficiently comprehensive to enable them in after life to carry on the business of farming in an intelligent and successful manner. But, instead of special attention being given to teaching of this kind, it has long been a source of complaint in this country, as well as in many other parts of the world, that the system of education provided for ihe young is calculated to engender a distate for life on the farm. Boys spend a great deal of valuable time in learning things that are of no earthly use to them in after-life, while a grounding in the principles of agriculture is neglected, either because the teachers have no knowledge of the subject, or are disinclined from their point of view to waste time in teaching something that is not included in the list of subjects on which the pupils are examined by the inspectors. As the teachers gain nothing by imparting agricultural instruction, even if they possess the ability to do so, it is hardly to be wondered at that the subject practically receives no attention. Agricultural teaching, including matters relating to dairying, should constitute an important part of the education of State school children. Only a few of the large number who must depend for a living on farm work can take a course at the one agricultural college in the colony which has been succesfully conducted. To make agricultural education general, the public schools must be utilised.

It is absolutely certain that if those engaged in rural industries are to hold their own in competition against the rest of the world, their education cannot begin at too early a period in their lives. Hitherto there has been a much too general desire on the part of young people whose parents can afford to give them a fair education to become members of the learned professions. The result of this is overcrowding, and the impossibility of the majority making a living, nothwithstanding the time, money, and hard work spent in acquiring the right to use certain capital letters after their names. The case of boys who qualify themselves to pass the Matriculation examination and afterwards become clerks, etc. is worse, and as each batch comes forward, competition is keener, and it is more and more difficult to make a decent living. There has been far too much of this sort of thing and our system of education is in some measure responsible for it. Enormous sums of money are annually spent in educating our youth, and no effort worthy of the name is made to direct their attention towards the industries that afford them the best prospect of making a living, and the development of which is of the greatest value to the State. In almost every country in Europe elementary practical instruction in agriculture is given in primary schools, through the medium of travelling instructors, or professors who not only superintend the agricultural course in the schools, but also hold conferences, give lectures and advice, and keep themselves closely in touch with the actual cultivators of the soil. That some such system wlll have to be adopted in India if progress is to be maintained goes almost without saying. The farmers, horticulturists, or dairymen of the future must possess a thorough knowledge of their calling, and to insure this the teaching must begin in early youth.

VETERINARY NOTES.

I. THE USE OF A CANDLE LIGHT IN OPERATING FOR WORM IN THE EYE.

Filaria occuli does not commonly affect horses in temperate climes, and, indeed, it might be said to constitute a tropical disease. In India it is found to occur more frequently on the eastern coast and less so on the western side. Filaria may be said to be pretty common in Ceylon.

The parasite gains entry into the system of the horse through the medium of water, and when it enters the circulation it does not begin to develope till it finds itself in the aqueous humour of the eye. Other instances of parasites

reaching special organs before developement are the fluke affecting the liver of the sheep, and the parasite occurring in the brain of the same animal and causing the disease known as sheep staggers, sturdy or gid. The tendency of filaria to reach the aqueous humour is attributed to its fondness for the light, and if it is not removed in time the irritation caused by its movements in the eye causes *total* blindness in the subject.

As a preventive against filaria, it is advisable that grass should be allowed to wilt or wither before being given to the animals, while care should be taken that only fresh pure water is used for drink, all sources of stagnant water being avoided.

On April 27th last I was summoned to operate on a mare belonging to Mr. Jacob de Mel for the removal of filaria occuli. As the parasite had been visible on the previous evening, I recommended that the operation should be put off for the following morning, as it is a habit of the worm to retreat from the light after exposing itself to its influence for a period, only to reappear again after a short interval; again recent movements have a tendency to cause a cloudiness which makes the detection of the parasite a matter of some difficulty.

On the day fixed for the operation I proceeded to cast and secure the mare, and after getting her head in an elevated position, I induced local anaesthesia by bathing the eye with a solution of cocaine. I, however, found it difficult to bring the parasite and keep it steady at the proposed seat of puncture (the upper and outer margin of the cornea). It occurred to me at this stage that the fact of the parasite affecting the light might be taken advantage of by placing and artificial light opposite the seat of operation, and the worm so attracted to and kept steady at the required point. To this end I ordered a lighted candle, by the use of which I was able to attain my object, viz., the removal of the worm with ease and certainty.

II. Protracted Labour of 12 hours in a Mare.

On May 28th last I received a call to attend on a chestnut Delft pony mare at Messrs. Walles' yard in Colpetty. This mare had been brought over from Delft and landed by the Government Veterinary Surgeon, as far as I could ascertain, on the 9th of April. The pony which had been sold to, and is now in the possession of an officer of the. H.L.I. Regiment did not show any symptoms of ill-health till May 27th, when labour pains began at about 10 p.m., and soon after the attendant in charge noticed the bursting of the water-bag. All through the night of the 27th the animal was in labour and continued to strain with no result. On my arrival the next morning (about 10 a.m.) I found that the animal in poor condition and unable to help the natural process of foaling by any effort on her part. I proceeded to administer a dose of ergot and sulphuric ether, and on examination found the knees of the foetus bent and the head and neck only protruding. Pushing back the head, I succeeded with some difficulty in securing both the forelegs one after the other, and with a steady pull managed to get the position of a normal presentation and delivered the foetus (which was larger than was to be expected) in a dead condition. As the foetus was fully formed I considered this a case of premature birth and not of abortion. In the light of my knowledge of the history of the mare I would ascribe the cause of her premature labour to the effects of her recent sea-voyage, while protraction of labour is attributable to her low condition and consequent weak state of health.

The temperature of the mare, after delivery of the foetus, was 105° F., and the pulse frequent and small. I prescribed the following:—

Sod. hyposulph.	...	6 drs.
Mag. sulph. ...	...	10 oz.
Aq. camph. ...	...	1 pt.

¼ part every 8 hours.

Later, on the temperature rising to 106° F., and the animal becoming very dull and refusing all nourishment, I gave

Tinc. aconit. ...	...	½ dr.
Tinc. digit. ...	...	20 m.m.
Water ...	...	1 pt.

⅓ part every 4 hours.

On the 30th the fever was reduced to 102° F., and the following mixture was prescribed:—

Quin. sulp. ...	...	2 drs.
Acid. sulph. ...	...	1½ drs.
Spt. Aeth. Nit....	...	2 oz.
Aq. menth. Ppt.	...	1 pt.

¼ part every 4 hours.

The womb was washed twice a day with Condy's fluid, and the mare is now quite recovered.

D. A. CHINNIAH, *Veterinary Surgeon.*

SISAL HEMP.

The question of cultivating this plant which has proved a source of large profits to growers in the Bahamas and other parts (and in which our Secretary for the Colonies is said to be financially interested), has never been seriously thought of in Ceylon. Quite lately a good deal of interest was evinced in the Mauritius hemp traceable no doubt to the fact that a "new patent" was being "boomed" through local speculators. What has been the outcome of the mild excitement over Mauritius hemp as the *deus ex machina* which was to come to the rescue of the planter when low prices and other unavoidable circumstances placed him in jeopardy, we have never been able to find out. But one thing is certain, and that is that we are not likely to hear of further trials with new patent machines for treating Mauritius hemp in Ceylon.

We read in the *Indian Agriculturist* of no less an authority than Mr. Marshall Woodrow of the Indian Botanical Department pledging his faith in sisal hemp as an Indian fibre crop, and for the benefit of our readers who may see a possibility of growing sisal in Ceylon under similar conditions to those obtaining in India, we reproduce the remarks referred to above:—

Mr. Marshall Woodrow is so fully persuadee that sisal hemp is a good thing that he is determined to sacrifice Government service for it, and to start a limited liability company to grow and manufacture it. Mr. Woodrow, it will be remembered, introduced a few sisal hemp plants into the country seven years ago, and they grew remarkably well, giving 10,000 young plants. The fibre from the original plants proved of high

quality, and is valued £23 to £30 per ton in London. The cost of produciug and exporting the fibre is estimated at R225 per ton, and if sold at £20 per ton, the profit would be 33⅓ per cent ou the capital. Five years are required to produce the first crop of 3,000 lbs. of fibre per acre; thereafter 1,000 lbs. per acre yearly may be obtained. As the sisal plants increase in number in a rising ratio, it is calculated a very short time will be sufficient to obtain commercial quantities. Its principal use heretofore has been in the manufacture of ropes and carpets, but it is said that wider use for it have now been found. A sample of this fibre sent by Mr. Woodrow was tested by an expert. His report shows the sample to have plenty of tensile strength, but when put to a breaking strain, breaks "short," which is cousistent with the general appearance and harshness of the fibre. If some means could be adopted to put the fibre through a process which would soften it, and at the same time not diminish its virtue, it would stand even a greater tensile strain, and also give a break more after the style of true hemp. He tested two specially made strands, and says the smaller one, which is below the Admiralty standard in size, stood the Admiralty test of 112 lbs., and broke at 120 lbs. This is very satisfactory except for the shortness of the break mentioned above. The second sample strand, which was made up to the Admiralty requirements, stood the same test (112 lbs.) and broke at a deadweight of 140 lbs., showing that nothing has to be feared as regards tensile strain. The expert, whose report we quote, says he is of opinion that this fibre when softened and worked into the larger kind of hawsers would meet with success, providing, of course, that the price is equal to or below that of hemp or coir. But for the smaller kinds of rope, unless the "shortness" of the break can be obviated, the fibre would not stand so well, more especially when taking short turns, around bitts or bollards. Its success depends on the cost of production, and if rope made from this fibre can be put on the market at a less price than hemp or coir, the chances are that there will be a great demand for it, in spite of enormous quantities of wire rope of all descriptions which is used at the present time.

PANICUM COLONUM.

Mr. H. Jardine, manager of an Experimental Farm in Queensland, refers as follows to the above grass (indigenous to Ceylon) which is apparently unknown to stock owners :—

We often import at great expense and trouble foreign grasses and plants. This is right enough in its way. But I am inclined to think that often better results would be obtained by cultivating and improving some of our indigenous gasses which for æons past have adapted themselves to our soils, climate, and circumstances. When visiting farms in this newly-settled district (Biggenden and the surrounding neighbourhood), I was struck by the luxuriant appearance of a grass which was quite new to me. It is leafy and succulent, stooling well, growing very thick, and reaching 3 to 5 feet in height. It is mostly found on rich land, such as, for instance, old sheepyards and camping places, and in one instance at least I saw it healthy and thriving well at the bottom of a hill where there was a soakage, rendering life impossible for corn and other plants, which were there stunted, yellow, and dyiug out A local dairyman of great experieuce (Mr. Fowler) told me he considered the grass unsurpassed as a cow fodder.

As nobody in the district could tell me either the vernacular or the botanic name of the plaut, I sent a handful of it to the Government Botanist (Mr. Bailey) who writes thus about it :—"The grass of which you forward a sample is *Panicum colonum* (Linn). It is indigenous in Queensland and most tropical and sub-tropical parts. In India it is considered one of the best for fodder, all kinds of stock being fond of it, and the abundant quantity of grains which it produces is cousidered to add greatly to its nutritive qualities."

Mr. Bailey adds that it is not so widely spread as a close ally, the *P. crus-galli*, but is probably better, and would be more easy to manage in cultivation, requiring, however, a good aud *probably damp soil.*

From what I have seen so far of the grass, it seems to me to be a summer fodder, coming into seed in February and March. When depastured or mown down, it grows again very rapidly. I think it would stand a great amount of moisture being thus well adapted for dairymen to grow on the coast during the wet season.

At Mr. Bailey's request, I am now gathering some seeds of it for distribution to those desirous of giving it a trial on a small scale. Oue should be careful, though, to keep it well under control. Like all good fodder grasses, it is likely to become a nuisance amongst other crops. It does not extend by means of rhizome roots, like couch or Johnson grass; but its tiny seeds are very numerous and shed easily, so that it becomes difficult to eradicate it once it has got established.

AN INTERESTING LETTER ABOUT RHEA.

(To the Editor "Indian Agriculturist.")

SIR,—As you gave us a notice of our ramie experimental installation at Staines, you will perhaps not be indisposed to give your readers the news of our experiments having proved most successful. When we started, we were confronted with the following difficulties:—1st, supply; 2nd, decortication ; 3rd, preparation ; 4th, spinning; and lastly, demand or market. I will deal with these *seriatim* later. Ungumming, which had hitherto proved such a fruitful source of difficulty, had long been overcome by us ; the gum question presented no terrors nor difficulties ; by our method ungumming is simple and the durability of the fibre is unsurpassed, as is proved by the yarns which have been in use now three years. They are as strong now as when first prepared. I refer to those made at Staines. I have products prepared by our process which have been in use ten years and are as good now as ever. I will deal with the obstacles as they appeared at the initiation of our works at Staines.

Supply.—There is a vast supply in China, where the natives have cultivated it and all the best textiles are made from it. The wealthy Chinese

hold it in high esteem and it fetches high prices. Very small quantities compared with the vast crops grown, unfortunately, have yet found their way out of China. We have based our calculations on the price of raw material at £30 per ton, and at this price I can show a paying industry competing with flax, but I am promised contracts as low as £20 per ton; this will open up a vast field and enable us to compete with cotton. India produces vast quantities in a wild state; these will have to be brought under cultivation. Dr. Morris, of Kew, recommends ramie to the planters who cannot make sugar pay. It would be a boon to our West India Colonies. The Australian Colonies are growing ramie; Queensland and New South Wales have sent us splendid quality. The United States Government are recommending it to their farmers, and the Government has voted $145,000 to the establishment of experimental plantations. Mexico, it appears from a Consular report, shows 145 per cent profit in ramie-growing. From South America I have splendid samples; as many as four crops in the year are cut, and I am promised regular supplies at a price which will put ramie on the market as a competitor to cotton. There is a vast field in Egypt and Soudan. The Government of Natal is recommending ramie-growing. Plantations are already started in Borneo, Ceylon, Straits Settlements, Formosa, Java, and the Malay Peninsula; Corea produces splendid ramie, and the Japanese are turning their attention to ramie-growing. In short, I hear from all quarters of the globe of the great advance in ramie-growing, and I have not the slightest doubt it will prove a strong rival to cotton. To our Colonies I would suggest ramie-growing, and, by the use of our decorticators, ribbons could be prepared whilst in a green state, for the ungumming process and filasse should be prepared on the plantation. It is a simple operation and the plant would not be expensive. The filasse so produced would be far superior to that produced from the dried ribbons, and in addition there would be a great saving in freight. The waste products, *viz.*, the leaves and lateral shoots, would produce an invaluable pulp for high-class paper making and command a high price.

Decortication.—In China this is accomplished by hand labour. The operator strips the ribbons from the stem and scrapes the fibre, removing the pelicule or brown bark and much of the pectose gummy matter whilst in a green state. The natives of India merely strip the plants and make no attempt to clean them. These rhea ribbons command a much lower price than the Chinese cleaned strips. Our decorticator cleans the ribbons similarly, but leaves them in a more perfect condition than those produced by Chinese hand labour, removing considerably more of the pectose in its fluid state.

Preparation.—The next difficulty is dressing the fibre ready for the spinner. Hitherto the expensive process of preparing on silk dressing machinery has stood in the way, and when we can turn out an article absolutely without waste beyond the shorts or noils which exist in the fibre, at a cost of one-halfpenny, which hitherto has cost 9*d.*, we can claim success and considerable advance.

Spinning.—This is now a simple process. Our wet spinning frames produce an even yarn, gasing is no longer necessary, and the strength and lustre of the fibre is materially advanced by its abolishment.

Market.—On account of its great strength and lustre it is especially in demand for lace, duck, khaki, sail cloth, fishing-lines, braiding, tapestry, and all purposes where special strength or lustre is of advantage. It mixes with and fortifies weak wools. And as the price of the raw material is lessened, so in proportion will the demand increase. Our latest is milo-thread.

We shall be pleased to send you samples. For yacht-sails it has achieved a great success. The *Defender's* sails were ramie. The *Cona*, one of the most successful English yachts, carried ramie sails made by our process. As the fibre does not rot in water it is particularly applicable to fishing nets, sails, and rigging, and its great strength commends it further for these purposes.

D. EDWARDS-RADCLYFFE,
Hythe End Mill, Staines, Middlesex.

THE WHIP TREE.

This is the common local name of the tree botanically known as Casuarina equisetifolia—one of the Coniferæ or cone-bearing trees, so uncommon in the tropics, except in the higher elevations. In the Flora of Ceylon the wood is described as "very hard, fibrous, strong and brownish-red."

Mr. J. W. Fawcett, member of the English Arboricultural Society, in his description of the Timber Trees of Queensland, tells us that the generic name, Casuarina, was given by Linnæus on account of the pendent branchlets, resembling the feathers of the bird known as the cassowary All the Casuarinas, he says, are splendid trees for planting. They are very rapid growers, and make good breakwinds, copses or shelter plantations, and the saplings are always useful for many other purposes besides the speedy supply of excellent fuel which they give. Mr. Fawcett thus makes special reference to the whip tree in his descriptive list:—

Botanical Description.—The Horsetail oak is a lofty tree of moderataly large size, attaining a height of from 50 to as much as, 50 feet, with a diameter varying from 12 to 30 in.

Bark.—The bark is rough.

Branches.—The branches, which give it a very peculiar appearance, are long, slender, and wiry; the principal ones are spreading or ascending, the smaller ones generally pendulous or drooping. They are of a greyish-green colour, glabrous or tomentose when young, with very small scale-like sheaths instead of leaves.

Leaves.—The leaves are sheath-teeth, arranged in whorls, from 6 to 8, usually 7 in number, and are very short and acute.

Flowers.—The flowers are diœcious—that is they have neither calyx nor corolla, the stamens with the pistils being on separate flowers. The male flowers have only one stamen, and are in spikes about three-quarters of an inch in length, and terminate in a slender deciduous branchlet. The female flowers possess a one-celled ovary, and are arranged in dense heads.

Fruit.—The fruit consists of hardened bracts collected in a strobilus, or compact cone, about half-an-inch in diameter, of a globular shape, each enclosing a small shining or velvety winged nut.

VERNACULAR AND BOTANICAL NAMES.—The Horsetail Oak (so-called from the likeness of its long pendulous branchlets to the long hairs of a

horse's tail) is also called Forest Oak (from growing in small patches or forests); Coast Oak (from its growing generally on the coast); Swamp Oak (from its growing in swampy localities); Bull Oak (from its robust growth); and Ironwood (from the hardness of its timber). It is called Aitoa or Toa in the Society Islands, Filao in Madagascar, and Noko-noko in the Fiji Islands. The specific name, *equisetifolia*, was given to this species by the Forster brothers, writers on Australian botany, from the resemblance of the branches to an *Equisetum* or Horsetail.

DISTRIBUTION.—The Horsetail Oak loves a maritime situation, growing freely in sandy saline soils. It is found growing in great abundance near salt-water marshes and inlets on the coasts of tropical Queensland, North Australia, New Guinea, the Malayan Archipelago, the Indian Archipelago, on the eastern side of the Bay of Bengal as far north as Aracan, Eastern Africa, Madagascar, the South Sea Islands (Fiji, Society Islands, &c.), &c.

USES.—The Horsetail Oak produces a dark-coloured timber, coarse but closely grained, beautifully marked, hard, light, and tough. It is useful for shingles, staves, and for all purposes where lightness and toughness are required. Its timber makes splendid fuel, giving great heat and leaving very few ashes.

In the Society Islands, where it grows chiefly on the sides of the hills, its timber was formerly used for making clubs and other implements of war. Its hardness and durability led the earlier voyagers to the South Seas to distinguish it as Ironwood, although it is a very different tree from that bearing the same name in North America. This latter is botanically known as *Carpinus americana*, Mich.)* Its dark hairlike pensile foliage gives it a mournful appearance, and in many of the islands of the Pacific it is consecrated to the dead, and, with crimson *Dracænas* and other shrubs and trees, is planted in or near burial-grounds. This tree has long been cultivated in gardens and nurseries, and has been introduced into France and India and other countries. It bears transplanting well, and will grow in sandy soil even to the edge of the sea. Captain Campbell Walker estimates the yield of firewood from this tree to be four times as great as the return from any tree of the forests of France. In India, where it grows on pure sand, it is greatly valued, as its timber bears a great strain, and is not readily injured by submersion in water, and it is also much used as fuel for railway locomotives. The cost of rearing *Casuarinas* in India has averaged, according to localities, from £4 to £10 per acre, and the return, after only eight years, averaged from £13 to £32. I would recommend this tree as a valuable one to plant on the coastal portions of our barren "wallum" patches.

The branchlets of this, as of other *Casuarinas*, have a sub-acid flavour, and are readily eaten and relished by cattle, especially during the droughty seasons in Queensland, and in many parts it is pollarded for fodder.

A variety of *Casuarina equisetifolia*, Forst., named *incana*, having horny or woolly young shoots and large cones nearly an inch in diameter, is found on the islands off the Queensland coast and also in New South Wales.

* The Ironwood of Ceylon is *Mesua ferrea*.

GENERAL ITEMS.

The *Queensland Agricultural Journal* in a paper on Pineapples makes the following reference to the manuring of pineapples as carried in in Fort Myers, Florida:—

A field was manured with a mixture of—

1,000 lb. cotton-seed meal,
500 „ kainit,
500 „ superphosphate
500 „ equal parts of bone-meal and dried blood,
2,000 „ cow manure,

of which 2,000 lb. were applied to the acre.

This mixture corresponds to a fertiliser containing 108 lb. nitrogen, 177 lb. phosphoric acid, and 78 lb. potash, the quantities of these ingredients applied to the acre being therefore as follows:—48 lb. nitrogen, 80 lb. phosphoric acid, and 35 lb. potash.

The field was planted at the beginning of June, 1892, after having been fertilised with 2 tons per acre of the mixture given above. Later the plants received a top-dressing of hen-manure; no record was kept of the quantities of this material applied.

The quality of the soil was light and sandy, corresponding to the typical Florida soil, which is considered of little value. The soil in question contained pretty large quantities of humus and sand at the surface, and had a hard-pan bottom at depth of from 1 to 2 feet. As far as the physical properties of the soil were concerned, it was well suited for pineapple culture. In June, 1893, 5,000 pineapples worth 5 cents (£10 18s. 4d.) a piece were harvested, and in June, 1894, the yield increased to 11,724 per acre, worth 10 cents a piece at the Fort Myers market (£97 14s.). The yield is allowed in the report to have been a complete success.

With reference to the discussion that has been going on among Indian planters on the subject of male coffee plants, Mr. F. M. Baily, the Botanist, says that no such thing as a male coffee plant has ever come under his notice, nor had it, to his knowledge, been mentioned by any other botanist. The coffee plant is neither *diœcious* nor *monœcious*; but is *hermaphrodite*, the flowers containing both male and female organs. As to a tree which bears peaberry being considered a male, the idea is absurd. If the tree were male it would not bear at all any more than a male date tree. It is possible for the flower to have the female organs and for the tree thus to be barren; but still this could not be considered a male tree unless such a condition were ever afterwards its characteristic.

A new industry is being opened up, says an Exchanger to bring hardwood timber into prominence and value. It has been found that the wood of such trees as the beech, birch, maple, when cut into thin veneers and connected together three-ply, the thickness of the whole about $\frac{5}{16}$ inch, make very superior packing cases for carrying all kinds of heavy and light merchandise. To show that this is a very large field, it is stated that about 40 per cent. of the pine now cut finds its way into packing cases. This veneer box is waterproof for all practical purposes, it is less bulky, more durable, and much lighter than the 1-inch pine packing case now in use. By this reduction of weight, the saving in freight and express charges over long

distances, it is claimed, will give the shipper his packing case free of cost, which is a consideration in the expense account not to be overlooked. A veneer factory solely for this purpose, worked by an English company, has already made its appearance in Toronto. Another mill, by a different English company, is being built in the easterly section of New Brunswick, where hardwoods abound close to the seaboard, from where shipments to England, the great user of packing cases, can be economically made by water the year round. Here the veneer is manufactured, cut into sizes, and shipped to the London factory, where the cases are put together and distributed.

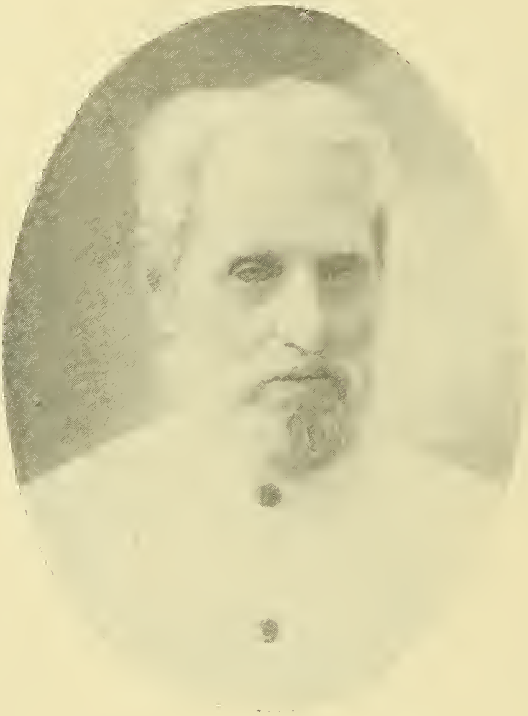
It is not generally known that the expressed juice of the garlic makes an excellent cement for broken glass and China. The juice must be applied as soon after breakage as possible, as the edges of the broken parts become worn away by friction. This makes an everlasting cement, and if the edges are joined no sign of fracture remains. The expressed juice of an onion also makes a very good adhesive fluid.

The sweetest oranges generally have rusty looking coats. An English expert says:—Pick out the dingiest in the box and you will get the best." Another test is weight. The heaviest oranges have the thinnest rinds. Thick-skinned fruit are apt to dry inside. The Glen Retreat oranges of Queensland are very fair-skinned heavy fruit and are amongst the best, if not the best of the mandarins.

Two Government Veterinary Surgeons in Cape Colony recommend Cooper's dip (a well-known patent preparation) as the best remedy for ticks. One pound of the dip mixed with 20¼ gallons of water and afterwards with 4 lbs. of soft soap should be used to wash the animals. Owing to the deposit of sulphur among the hair, fresh ticks are found unable to gain a lodgement for some period after the animal has been freed of the pest.

A writer to the *Queensland Agricultural Journal* highly recommends a simple remedy for stings from bees, warps, ants and stinging plants. It is called the "wet-earth" cure and consists of nothing more than applying moistened earth or mud to the affected parts.

Orange trees are very long-lived. In the orangery at Versailles is a tree, raised from seed, planted in 1421. There is another in the convent of St. Sabina, in Rome, said to have been planted by St. Dominic in 1200. In the neighbourhood of Finale is a tree which bears nearly 8000 oranges in a single year. In Holland are many trees which have been in the same family for from 200 to 300 years.



W. B. LAMONT,

AGED 83.

Photo and Half-Tone Block by W. L. H. Skeen & Co., Colombo and Kandy.

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"PIONEERS OF THE PLANTING ENTERPRISE IN CEYLON."

(Third Series.)

W. B. LAMONT:

COFFEE, COCONUT, CINNAMON, CACAO AND TEA PLANTER, 1841-1899.

THE subject of our notice was wont to be described by the late Mr. A. M. Ferguson as the "Hugh Miller" of Ceylon. And, when in his prime, there was a good deal of resemblance between Mr. Lamont and his distinguished countryman—also a self-made man—but our portrait it must be remembered, is taken of the Ceylon Pioneer, as an old man well entered on his 83rd year. In another way there has been a resemblance between W. B. Lamont and Hugh Miller, namely, in the terse, vigorous style which the former gradually acquired and utilized so well in numerous contributions to the *Observer* in his younger and even later days—his sentences often reminding one of much in Miller's "My Schools and Schoolmasters" and other well-known works. Few Ceylon pioneers have had such a diversified experience of planting in the Colony as W. B. Lamont, for he acquired, in due succession, a practical acquaintance with the cultivation of each of our leading products, and is now as much interested in Tea as ever he was in Coffee, Coconuts or Cinnamon. Landing in Ceylon on 17th February, 1841, he proceeded at once to the heart of the then inaccessible district of Ambagamuwa to help to form the "Barcaple" coffee plantation; and after a terrible time of trial, from want of coolies and of nearly everything that has now come to be part and parcel of a planter's life, Mr. Lamont in 1845 changed his employment, being engaged by Capt. Jolly to open Atherton, another unfortunate Ambagamuwa estate. Ten years were passed; and in the beginning of 1853, he was transferred by Capt. Jolly to the more prosperous Poengalla plantation in East Matale. He continued two years more in coffee—16 years in all—and then in the latter part of 1857, left the hill country and took charge of the Ratmalana Cinnamon and Coconut plantation, not far from Mount Lavinia, under the direction of Mr. Robert Dawson as Colombo agent. Mr. Dawson lost the agency in 1859 and Mr. Lamont left to take up "Coffee Store" work at Uplands, under Mr. David Wilson, head of the leading Colombo firm—Wilson, Ritchie & Co.—of that day. This, however, was not congenial work to the hardy Scot who had so long been trained to an out-of-door life and who, like his countrymen, the Douglases, would any day prefer "to hear a lark sing than a mouse cheep"! So, in 1860, Mr. Lamont got charge from Messrs. Darley, Butler & Co. of the estates of Uluambalama and Kimbulpitya (Cinnamon and Coconuts) in the Negombo District. After eleven years of faithful service here, Mr. Lamont got twelve months' leave

—his first and last furlough—and revisited his native Scotland. Returning in 1872, he found soon after, that the proprietor of the estates in his charge, having died, his places had to be sold and a new Superintendent was selected. Mr. Lamont, however, had by this time a little Coconut venture of his own in the Maha-oya Valley—the opening up of which, for we suppose 30 by 10 miles, he has watched from the beginning—and of this he took charge. But another whirligig of change: in 1877 he sold out, and once again got charge of Ratmalana; but only for two years; and then he went to open a lowcountry property—Eilandhu—near Henaratgoda, for the late Mr. A. M. Ferguson, in Coconuts, some Cacao and Fruit, and Tea. Here Mr. Lamont remained seven years and then returned to the Maha-oya Valley where he had still some interests. In 1891 he disposed of these and in 1893 settled on a block of land near Ratnapura, which has been opened as a tea plantation (for himself and partners)—Kosgalla—137 acres out of 313 being planted with tea. This in a letter before us he pathetically calls his "last flitting," the word applied in Scotland to a change of residence—one of the most touching of Border songs being "Lucy's Flitting," written by William Laidlaw, so long the faithful, homely friend and amanuensis of Sir Walter Scott. The subject of our notice, however, belongs to one of the Western counties of the Borderland, to that part of Scotland where lies the scene of Crockett's story of the "Raiders;" for, W. B. Lamont is a Galloway man, and we can recall the interested enquiry of a well-known Banker (in the O.B.C. days) as to what Galloway man could have written a clever story in one of our Christmas numbers, as he had thought he had been the only representative of Galloway in Ceylon! Our reply was that "W.B.L." had left Galloway long before our Banking friend was born. —So much for a brief summary of this old Planting Pioneer's career; but now we have his own autobiographical story written—be it remembered by a man well on in his 83rd year—and in the quaint, homely but eminently readable style which this self-made, honest, industrious and God-fearing Colonist long ago made his own. Let no one despise these simple annals of a cottager's son trained to hard work from childhood and rising by slow degrees :—

"Honour and shame from no condition rise;
Act well your part, there all the honour lies:
Fortune in men has some small difference made—
One flaunts in rags, one flutters in brocade."

———

AUTOBIOGRAPHIC.

On the 13th of February, 1818, I came to stay in the household of a labouring man—the seventh of ten such guests who arrived at intervals, during twenty years. The place where this event took place was a cottage within five minutes' walk of the mansion-house of Woodhall, a gentleman's seat in the parish of Balmaghee and Stewartry of Kirkcudbright; and there I spent the first five years of my life and began to develop my individuality. My natal place is, in my memory, a lovely spot amid woods and pastures, with an extensive view over an undulating country, the villages of Lauriston in the foreground, and Bengairn in the distance. Unfortunately, an elder brother was accused of knocking down a hare that crossed his path; and the very suspicion of such a crime was sufficient to account for the warning to flit that speedily followed. My father was silently sorrowful, but my mother lamented her exile from the bonny Woodhall in verse. My father obtained a shelter for his family in the Clauchan of Tongland on the bank of the Dee, two miles above Kirkcudbright, which continued to be our home till the last of us took wing in search of a livelihood. My mother died when I was ten years old—the eldest of four, the youngest under one year. My elder brothers were then earning their living away from home and I had on the sad event to take up the rôle of cook and housekeeper. I had learned to read after a fashion in a dame's school in Clauchan—an accomplishment I did not allow to rust. Before I was ten years I could have passed a creditable examination in Bible History. My father had some few volumes of devotional and controversial Divinity that were not much to my taste; but I read Buchanan's History of Scotland and Knox's of the Reformation with keen interest and every other story I could borrow from any of the neighbours. In my twelfth year I was sent to the parish school with more knowledge than most boys of my age, but a sad deficiency in my pronunciation of polysyllables. At first my reading and spelling took me to the bottom of my class, but the explanation carried me as regularly to the top and at the end of three months, I stayed there and was rapidly promoted till in little more than a year I had reached the highest taught in the institution. I had then finally to leave school and take up farm work for a time.

At that time the "Tally" business in England absorbed a good many young men of my class who found themselves superfluous commodities at home. Tally men are a sort of commercial travellers on a small scale: a man that had done well in the business got lads from Scotland and sometimes employed as many as five or six, each of whom had two-week rounds that brought them to the same place once a fortnight. They had to enquire into the means and characters of the dwellers within their sphere of action; select those whom they thought it safe to trust; and from such they must endeavour to obtain orders by forcing their way into houses, entertaining the inmates with small talk, displaying their samples, expatiting on the quality of the goods, and the advantage of paying in fortnightly instalments. To perform their duties efficiently they should have dauntless audacity, ready tact and unfailing fluency of speech. It was only by experience that I discovered my own deficiency of every one of those qualities; so I turned out a dead failure and returned home to farm work. My next move was to a nursery where I learned something of the propagation and culture of plants from the daisy to the oak, though not all that lies between them. My next move was into the service of a maiden lady—one of the Maitlands of Barcaple, an ancient family of landed gentry in Tongland—who was building a villa in the suburbs of Kirkcudbright. My work there was to lay out, plant and tend the garden and the four acres of land with fences and the etceteras thereanent. After nearly two years in this post, the lady's brother, the laird of Barcaple and a Mincing Lane broker offered to send me out to Ceylon to assist in forming coffee estates. I gladly accepted the offer as I had long desired to emigrate to Australia and was not then aware that life was very different in Ceylon. I was perfectly satisfied with his terms, viz. a free passage, board and lodging for three years, and a salary of £30, £40 and £50 for the same period.

Mr. Maitland kept me in London for two months by the way, I suppose for the purpose of studying my

character and capacity and to rub off some of my rusticity. He sent me on messages about the City and suburbs; he made me write to his dictation long letters to his Ceylon attorney and he directed me to write to his sister my impressions of the grsat City. He took advantage of my ignorance to send ms on errands to make foolish enquiries and thereby took me in on several occasions that made me blush for my stupidity.

At last, I joined

THE BARK "IRIS" (CAPT. LINTON),

at Gravesend. My fellow-passengers were Dr. Kelson, Mr. and Mrs. Dawson, of the Baptist Mission, Miss Tweedy, Alexander Davidson, Matthew Lamb and Thomas Moitimer, a Jaffna Tamil, whom the C.M.S. had sent home as a specimen of their success in educating the natives. I alone am left of that set of fellow-creatures.

We reached Colombo on 17th February, 1841, five months minus six days out. A steady head wind kept us in the Channel three weeks and things were not much better in the Bay: in fact all the passengers were laid up with sea sickness till we were in sight of Madeira, where we had tbree days on shore, while wine was being taken in for the East India voyage. We were becalmed for nine days within 400 miles of Ceylon, which was ended by a squall that caused some havoc in the rigging and snapped the main yard.

I had to remain in Colombo for three days before I conld get a seat in the coach. When I arrived in Kandy, the welcome of my P.D. seemed to me not quite so cordial as I thought I had a right to expect. Well, neither in dress nor manner did I reach his ideal of what his coadjutor should be: so he decided that I should go at once to the fittest place for such a rustic boor. After one day in Kandy we started for the spot where ths estate was to be. We went to Gampola on horseback and then on foot by the little frequented native track across paddy fields up and down rocky ravines over tracts of low jungle. Our quarters for the night was a large ambalam about a mile beyond what is now

THE TOWN OF NAWALAPITIYA,

which then was a single hut inhabited by an old Moorman. On reaching our lodgings I was fairly done up and at once lay down on one of the mud-built bunks. Just off a long voyage and unsuitably dressed for a jungle journey, I was in bad form for such work in a blazing hot tropical day. I could eat nothing, but lay in there in pain and in the full belief that my first night in the jungle was to be my last. Towards the middle of the night, however, nature came to my relief and when daylight came I was fresh and empty—much fitter for the second day's journey than the first. Passing the Mahawille and the Masnawatte gangas by fords and climbing up a forest-clad hill, at the summit a view was obtained of the country destined to be the scene of my labours for fifteen years. Thousands of acres of patana lay before us sending spurs far up the forest-covered mountains: on the south lay the Galboda ridge, on the west Raxawa and Unulagala and on the east the Ritigala range with the Mastnawatte-ganga in the bottom of the vale. Tbe top of the most distant patana to the left was pointed out as our destination; and, after a short rest, we started afresh to wade through some two miles of long grass and in descending to the bottom of the valley ws forded several streams that formed the main river lower down. From the last stream we had to climb a steep patana for a thousand feet. The settlement was not visible from below being situate in an inward dip of the land and not to be seen till within a few yards. I sat down on the grass and stared at the scene before me. There were three separate huts thatched with patana grass—two of them 10 x 20 feet and one 15 x 40—one of ths smaller ones had the walls roughly finished and the other two had the wattle up, but were wating fcr the daub. Writing home, I compared them to big bird cages. There were three inhabitants in this dreary settlement—a Tamil, a Sinhalese and an old Kaffir: the first was the servant, the second appeared to have no duty—he had been engaged as timekeeper and store-man, but he had nothing to do in either capacity. As for the Kaffir he was past his working days. The Jaffna Tamil was tbe only one of the three that knew English. The furnishing was in harmony with the style of architecture—four posts stuck in the ground supported half-a-dozen small trees adzed square by way of table; on each side of this structure was a concern constructed of "warichchis" supported in the same way as the table, covered with dry grass with mats over it: these were seats by day and beds by night. These structures were put up at one end of the larger unfinished room. As the cooly had arrived with my carpet bag I was glad to get a wash and a change, after which I ate a hearty breakfast of better viands than I expected in such a desolate place. My P.D. stayed over the next day and showed me the coffee nursery the only other work that had been done, and gave me directions to select a site and build a set of cooly lines very soon as he expected to send me a supply of labour and with the parting advice to keep George, his Tamil servant, in good humour, as my comfort would entirely depend on him, I saw no more of him for six weeks and not a cooly arrived to do any work whatever. With the aid of the old Kaffir, I mudded up the walls of the smaller hut and made myself as comfortable as circumstances would admit. Towards the end of the second month of my solitary idle life, gangs of coolies began to arrive; but they did not stop long—a week to ten days being about the time they stayed. And fully six months elapsed before I had no intervals of enforced idleness from want of labour. Meantime Mr. Wise's visits were few, short and far between. He lived in Kandy in a house he rented in company with Wilson Ritchie's Visting Agent and he never spent a whole week on the estate all the four years I was on it, though on nearly every visit he announced that he had come to stay. That first year of planting life was the most miserable of my life, but I made no complaint and set myself to learn my new work with all my might and found out how to do things without a teacher or exemplar. Wise went a good deal about, as he said, to gain experience from seeing other people's work; but before a year had come and gone, I was aware that I knew much more of my business than he did.

It was only

IN THE SECOND YEAR

that I got about fifty acres ready for planting and the following year something over twice as much was ready for planting. About this time I had a bout of ill-health and had to ask for aid in the work. As I fell ill a second assistant had just arrived but he at first could be of little use. I had consulted Dr. Reed, and he advised a change. "Go to Kandy," he said, "eat beefsteak and drink porter: you are suffering from hard work and low living." By the by the low living was no choice of mine, but Wise having exempted his servant from my authority, he fed me on rice and "karawadu" and yet his master complained to me of the housekeeping which roused me to some self-assertion. I said that he charged the estate £4 a month, for my board and wheresoever the expense came in my food had never cost him one-fourth of his charge and that his servant and the clan he had gathered about him lived much better than I did. I was then entrusted with the supplies and within a month George and his clan were all off the place, but the evil to my health was already done. On my application for leave, Wise brought an old soldier with twelve months' experience to act during my absence. He did not invite me to take up my quarters in his house, but I had to go to an hotel. In three weeks I reported myself well enough to return to work. But to my no small surprise, I was directed to place myself under the orders of Mr. Freeman on my return. My first impulse was to decline to return at all; but then I considered that there was still six months of my original engagement to run and in good faith I must fulfil my contract, though as I then knew it was not legally binding and in the meantime I could look out for other employment; so I returned to find

that much of my system of working had been suspended and new rules established. The monthly weeding was stopped. The coolies were given a half-holiday on Saturdays on full pay and other things changed that with some trouble I had established. I never knew by what representations Wise endeavoured to justify this action to the proprietor, but by return mail it was found that they had not served their ends. The orders were :—" Discharge the new man; replace William in his former position. Let him build a suitable house for himself near his work and let his salary be for the present £10 a month "—a case of Haman and Mordecai.

Captain Dalrymple—Sir James Elphinstone—had visited Ceylon about the end of 1842. Though not a blood relation he was a family connection of Mr. Maitland and an intimate friend, and visiting the estate never doubted that he would not find the responsible manager in residence. He did not express his thoughts to me when he learned that the manager did not reside on the property and only visited it occasionally. He made it his business to enquire into Mr. Wise's character and it appeared that he had achieved a notable measure of notoriety. He further learned that Mr. Wise was a leader of the fastest set of young men that frequented the planting capital and all this he wrote to his friend and how much more I know not, only as I afterwards learned his remarks inferred that the person he found on the estate could not know much about planting, so that I had failed to make a favourable impression on the visitor. After this the rôle of keeping Mr. Maitland informed of the conduct of his employes was taken up by another correspondent; and just as Wise was adversely criticised, I was commended: hence the slap in the face the former received in his effort to get rid of me.

Still Mr. Maitland was reluctant to give up the young man that had been taken up at twelve years of age, educated at his cost and trained to business in his own office. He was the son of an attendant where Mr. Maitland kept his riding horse and the youngster was often trusted to bring him the animal when he wished to ride in the Park or elsewhere. Pleased with the intelligence and readiness of the boy, he took him as his own personal attendant, then sent to school where he made rapid progress and at sixteen he wrote a fine clerkly hand and was a first-rate arithmetician. He was then taken into the office and at eighteen was principal bookkeeper of the firm. At twenty he was sent to Bombay to study Indian commerce in the house of Ritchie, Stewart & Co. All this time he had behaved entirely to his patron's satisfaction. During his residence in Bombay the mercantile community of that city caught

THE COFFEE MANIA

and nothing was talked about but the fortunes to be made bycoffee in Ceylon. Small blame to a young fellow in the lead of older and more experienced people, enthusiastically writing to his patron in favour of the opinions daily expressed by the leading members of the community in which he moved. Having read those letters in Mincing Lane fifty-nine years ago, I did not detect then the utter absence of established fact and the confidence with which the most extravagant estimates were advanced. I had to learn by experience the fallacy of such, and learned to distrust all speculative estimates of cost and profits. Those letters convinced Mr. Maitland, however, and he instructed Wise to go to Ceylon and secure a suitable tract of land.

He got the best available in Ceylon, which was of small value, where hardly one man knew any, thing of soils, climates or how these affected the growth and cropping of the plant. He travelled to many districts and finally settled on Ambagamuwa, induced thereto by the fact that the high-class civil servants, the oldest European residents and consequently the best judges had selected that district as the locality as their own field of enterprise. Finding a suitable tract between the properties of the Government Agent of the Western and Central Provinces, he applied for it and cleared the boundaries of 1,000 acres. He had really worked hard for the first six months and endured a good deal of hardship; but after getting the land surveyed, he set about indemnifying himself for his privations. He set himself down in Kandy and cultivated the acquaintance of a rather wild set of youths who paid frequent visits on the spree to Kandy; and up to the time of my arrival, no steps had been taken to begin work beyond what I have named. The habits he contracted at that period stuck to him; company was a ruin to his life and the monotony and solitude of the estate, as it was in those days, death: he had no resources within his reach, he read no books, he attached himself to no science, he studied no art and a practical planter he never could have become.

From the communications received about his attorney's mode of life, Mr. Maitland in all probability recognised the fact that he was not the stuff that planters should be made of. He therefore arranged to give him an employment somewhat akin to that to which he had brought him up. This idea was the management of a

GENERAL PLANTERS' STORE

in Kandy which was duly established and large consignments of goods and two assistants were sent out. At that time there was room for such an institution, but it did not thrive in Wise's hands and within a year it went into other hands at a heavy loss and was for many years carried on by James Affleck.

Wise, then a married man, came up with his wife and her mother, as he said to settle down for good on the estate. He stayed a fortnight.

The next news from home was that Mr. Maitland had decided on a visit to Ceylon and named the day he would leave England. It was, however, a month later when he started and he went first to Bombay, where he stayed for two months before coming down to Ceylon. I had been twelve months in a house of my own and managed the field work with hardly any interference. There was then two other assistants; they never did any field work. One being a house carpenter and the other a millwright, they found the small amount of work that satisfied them in the bungalow, and a shed by way of coffee store and a couple of rooms under the same roof for their own residence.

At length the day was named on which Mr. Maitland was to leave Bombay for Ceylon, but we had had two months to think over what would happen; and each had his own thoughts, but kept his own counsel. In my case it was the unexpected that came to pass. Wise came up with his family really to stay that time. Paterson was awaiting events in the hope that they would turn to his advantage and I was for good reasons easy in mind as to the course things might take.

The last day of September, 1845, came. That day I had gathered

THE FIRST COFFEE THE ESTATE YIELDED,

and taken it into the store where I found all my three fellow-employes. They had been erecting the store and preparing it for work. I suppose the sneer with which I enquired if they had never seen a pulper at work was visible, but I left them to find out for themselves what was wrong. The next morning being Sunday, after giving the coolies their chits, I went to the store to see how the pulping had got on. They had at once discovered that as they had placed the pulper, the pulp fell into the steeping tank instead of the coffee: so they had reversed its position, but the upper chop had being fixed too near the cylinder and much of the coffee was injured. Paterson did not accept my advice with a good grace, but he made use of it. On return to my bungalow, I met Wise's horsekeeper who handed a note which I at once opened and read. It was short and to the point. Thus it ran :—

"Having arranged to take the full management of the estate into my own hands from this date, be good

enough to send me the check-roll by bearer, and attend muster tomorrow morning when I will give you your orders for the day, and the charge of a gang. I have also to inform you that your services will not be required after the end of next month."

I promptly replied :—

"I send you the check-roll as ordered. I will leave the estate tomorrow."

Among other gentlemen that had visited the estate and been shown round it by me were two of the ablest and most respected members of the planting body in the persons of Captain Jolly and Mr. George Pride, from each of whom I had received a nearly identical communication, namely, to let them know if I found occasion to change my service. I at once wrote to Capt. Jolly that I was now at liberty to accept an engagement. He answered by requesting me to visit him at his residence in Katugastota. I walked to Kandy the next day and paid my visit the following morning. I found with him Mr. Fairey, one of his partners*, and they had already arranged to commence operations on land adjoining Barcaple and running high up on the Ritigala mountain and I was at once appointed to the operative part of the business on a salary R50 higher than I had in my former situation. Thus a second time the enmity of Wise had brought me advancement and no good to himself.

It was nearly two months after my dismissal that Mr. Maitland arrived. What passed between him and Wise was never revealed; but the latter departed bag and baggage within a week in company with a little rascal known as C—— W ——. He set up as a commission agent, but the firm did not prosper. Paterson was put in charge of the estate—a post he held for many years. Mr. Maitland made the estate his headquarters and lived on familiar terms with all classes in the district. At first I did not venture to call on him not being very sure of a welcome; but he came to see me and talked to me as if nothing had come between us since the old days in Mincing Lane, but for some time the name of Wise was not mentioned in our conversations. But at length he told me that he had received reports about both Wise and myself from several parties in the Island, and he thought they gave me more credit than was due to me. I replied that I could have no opinion as to what was written about either of us by outsiders; and though my position was never a pleasant one, but now that I was safely out of it, I would never say one word either in defence or accusation.

The superintendent of a neighbouring estate had built a grand bungalow and issued invitations to a great

HOUSE-WARMING FEAST

on Christmas Day. Mr. Maitland asked Paterson if he was going. He replied that he had not been asked and he believed that only resident proprietors or those who might become so were invited.

"Well, then", he said, "we will have a rival feast on the same day, and I doubt not ours will be the merriest of the two. Send invitations to all the Scottish superintendents and assistants in the neighbourhood."

Nine of us sat down to that dinner and a very pleasant night we had, as I well remember, and first-rate company our host proved himself. But the thing that amused us was a capital imitation of the voice and manner of host of the rival feast then going forward on the other side of the valley. He had only been in his company for half-an-hour, but he had caught the man's big boastful voice and loud self-glorification exactly and reproduced him in all his ignorance and vulgarity very much to the delight of his guests, to every one of whom he had given deep offence by his impudent self-assertion.

Mr. Maitland's health began to fail before he had been many months in the Island, but he held on till he became really very ill: so he left the estate one morning and rode to Gampola where he took the coach to Kandy. Mr. Albrecht of Ing-oya was his fellow passenger: he too was very ill and died at Kandy. The same night Mr. Maitland took an extra coach to Colombo where he arrived at daylight next morning, only to die during the same evening.

He had parted finally with Wise, but had neglected to recall his power of attorney: so he returned and took possession of the estate. He too was doomed. Never of a robust constitution—some years of reckless dissipation had done its work. Paterson who had toadied him in the days of his power, now set him at naught having reached the position he had aimed at from the first and knew that the restored reign would be a short one. No one in Ceylon had suspected that Mr. Maitland's affairs were left in an unsatisfactory state; but there appeared to be such a state of things that only the Court of Chancery could disentangle. Mr. David Wilson was appointed local administrator and his first act was to dismiss Wise who then in an almost moribund state, got a second class passage for himself and his family. He died at sea and his mother-in-law died two days after. Mr. Maitland's hereditary estate was sold for the benefit of the creditors but it did not go out, of the family being purchased by an uncle who had made a fortune in New York and the coffee estate was ultimately bought by Sir James Elphinstone. Thus the coffee enterprise first ruined and then killed the two men that brought me into contact with it.

CAPTAIN JOLLY,

under whom I served for fourteen years, was a gentleman by birth and breeding. He entered the Mercantile Marine Service of the East India Company and was first Lieutenant to Captain Dalrymple, when the Company sold their fleet, after which he commanded one of the ships under the new owners in the same trade, which he gave up for coffee planting in connection with Macvicar, Burn & Co., of Bombay. He purchased land in various districts and opened four estates—one in Hantane, one in Matale, one in upper, and one in lower, Bulatgama. The two first were successes: the two latter failures from natural causes of which we had no previous knowledge and that were beyond our control. I did the best work that was in me. In two years

300 ACRES WERE PLANTED

and weeded monthly. Hopes ran high till the period of crop yielding arrived when they began to fall year by year till they reached zero. When it became certain that with the most economical expenditure the place would barely pay, its way, I had several reasons to desire a change. I had got no advance of salary for seven years, and had not the face to ask for it under the circumstances. I was confident that in a suitable climate my experience would bring better results for myself as well as my employers. I had married in 1851 a young girl belonging to an old Dutch family, who quickly lost her health in that cold rainy climate and had to go to the lowcountry always —after a few months on the estate. What with the cost of travelling in those days and our separate living on such occasions, I found my income hardly equal to my necessary expenses. I therefore applied to Captain Jolly then a partner in the firm of George Wall & Co., to give me an appointment in another district. The only one open was Yakdessa, but as it was then a shuck place and quite as rainy as Atherton, I declined it. In the middle of January 1855, however, I received an order to give over charge of Atherton to a young Eurasian in his employ and attend him in Kandy at once. My family was down in Kalutara at that time, so that I was without encumbrance and started next day. It appeared that the superintendent of Poengalla in Matale East had been drunk in a neighbour's bungalow for three weeks in the middle of crop and everything on the estate was in the utmost disorder. In the course of my 14 years of planting, I had seen neglected and mismanaged places, but

POENGALLA CROWNED ALL.

The soil was all that could be wished and the coffee was eleven years old on the oldest fields: not only had it made no return to the absent proprietor but he had advanced money to carry it on every year. The agents

* After whom of course "Faireyland" was called.—ED.

Keir, Dundas & Co., finally offered to purchase it at about one fourth of what it had cost. He would not sell but he changed his agents. The first superintendent appointed by Captain Jolly began vigorously, but soon broke down and took to drink, I found the whole crop, 5,000 bushels of parchment, in the store; the weeds were in many places higher than the coffee; the older fields had been once pruned by the process of cutting the primaries within six inches from the stem and the primaries had become like broom besoms, the jungle had been allowed to encroach all round the borders and a field that had first given its maiden crop had suckers six feet high. Finally the cooly force was refractory and insubordinate.

My first report was a very gloomy one. I estimated that to get the place into anything like order £500 more than the previous average would have to be expended in the first year and then no great increase of crop could be expected in the current year. In answer I was authorised to spend whatever I thought necessary. Though I expected much from a thorough weeding and pruning, the result left my hopes far behind—masses of blossom came out on the leafless wood and so much young wood rushed out that there was very heavy work in handling and selecting the shoots that were to be left for the following year's crop. The crop of that first year was

ELEVEN CWT. PER ACRE

and a good deal was lost from insufficient labour and from heaviest plucking occurring in latest months of the year. I expected to get some personal advantage from the result of my first year's operations; but as it was not offered it, I had to remind Captain Jolly that I had got no increment to my salary for eight years, while others many years my juniors in the service were higher paid than I was.

My request was conceded as I thought not with the best grace; and I found my resources hardly equal to the calls on them and began to think very seriously whether I should not seek lowcountry employment where my family could live at less than one half of what I was spending. I began therefore to make enquiries with that view and ultimately engaged with Mr. Robert Dawson to take charge of Ratmalane,

A CINNAMON AND COCONUT ESTATE,

eight miles from Colombo, at a very much lower salary than that I surrendered. I knew, of course, nothing about the productions of the place; but I trusted commonsense and earnest observation of facts would soon enable me to acquit myself creditably.

The first thing that I had to apply myself to was the study of the Kandapanuwa (coconut weevil) which threatened utter ruin to the coconut fields. By the end of a month I had arrived at a decided opinion and mode of treatment which put a full stop to that plague in the course of three months. The failure of Mr. Dawson in less than two years closed my connection with Ratmalana. I was introduced to Mr. E. J. Darley and highly recommended and he promised me the first opening that occurred under the agency of his firm and in the meantime I took service under Mr. David Wilson in Uplands Mills of which I was sufficiently tired when at the end of twelve months, Mr. Darley offered me charge of the two estates of

KIMBULAPITIYA AND ULUAMBALAMA, KADIRANA,

which I gladly accepted. After I had carefully studied the conditions, I sent in a report in which I recommended many changes and improvements. Mr. Darley did not as a rule approve of innovations and vetoed the most of my proposals. I however returned to the charge and gained several points. For instance I had proposed to sell off one half of the cattle on Uluambalama: he wrote "the more cattle the more manure." I ruthlessly attacked that position and so clearly proved him in the wrong, that he yielded the point and bade me do my will. Some other points I gained, but much was rejected, so that I was at first a good deal hampered but everything comes to the patient waiter. Being forbidden to increase the cost of the cinnamon cultivation, I went in for improving the system of manuring the coconuts where I was left with a freer hand.

The coconuts were about 20 years old when I took charge and ought to have been in full bearing, but the yield was poor on the light sandy soil: little more than 1,000 per acre and with only the manure I could make on the place, improvement was rather slow in the early years of my incumbency, but from the time I was allowed to add three tons of bonedust annually, the increments became larger. The first year I had 230,000 nuts; the twelfth 590,000 and would have had much more if I had been allowed more manure from outside the premises.

The health of my family continued to give me much anxiety: my wife died in 1863, having been unable to leave her room for two years.

In 1866 I entered into a second matrimonial arrangement which was very satisfactory while it continued, which was for less than three years. After my wife's death I fell into bad health and in 1891 had to take a change to save my life: so I got a twelvemonths' leave and went home. I had to return before the year was out, because I found that my *locum tenens* was very vigorously endeavouring to obtain the permanent appointment and on my return I found that he had succeeded in the case of one of the three properties left in his charge, the agency of which had been given up by Darley, Butler & Co. The other two, both belonging to the same person, were restored to me with *carte blanche* as to manuring coconuts and improving the cinnamon cultivation. In 1873, the proprietor died and by his will all his Ceylon properties were to be sold off at once which was quickly accomplished—in the case of Ulnambalama much below its value. In those days there were few Europeans engaged in coconut planting and there was no employment for me in that line: so I retired to a small coconut property I had acquired in

THE MAHAOYA VALLEY

some years previous. As this place was very unhealthy and I suffered from fever all the time I was there, I accepted the offer of the proprietor of Ratmalana to again take charge of that estate and in 1878 I sold my Batakanda property and began to open a Liberian coffee and cacao concern on another land I owned in the Mahaoya valley. In 1879 I left Ratmalana and engaged with Mr. A. M. Ferguson to open Eilandhu in the Hena-ratgoda district where I remained for seven years. Liberian coffee and cacao failed there as elsewhere in the lowcountry, and the place was planted with tea. In my own case I dropped the greater part of my capital in my Liberian coffee and cacao experiments and in 1886 settled down on my own property to work it up in coconuts in which I fairly succeeded, but as I ran short of funds in 1891, I sold out all my belongings in the Mahaoya valley and remained at large for two years when my son who had been for seven years assistant on a tea estate, lost his employment and I thought of investing my funds in tea to give him work. I had lent out a part of my money on mortgage, but had the misfortunes to have seven thousand rupees in the new O.B.C. when it failed, so I hastened to invest anew what remained. The bargain I ultimately made was the worst of my many bad ones in the course my life; but the salary allowed for management sufficed for economical living though no profits have accrued to the partners in the six years that have passed since I assumed charge. I have however enjoyed better health in the Ratnapura district than in any of my former localities; but old age is telling on both mental and bodily power.

Writing on 3rd February, 1899, Mr. Lamont reported:—"I am well in health, but old age has told in dull senses and unsteady step, &c. If I live for ten days more I will enter my 82nd year." The Ambagamuwa pioneer is therefore now well on in his 83rd year, and that his physical and more especially

his mental force has not abated, is shown by the above "autobiographic" notes written at our request only a few weeks ago to accompany his old-age portrait, photographed and etched by Messrs. W. L. H. Skeen & Co. in June last. To the veteran of Kosgalla, Ratnapura, we can only now wish a quiet time for undisturbed reflection and meditation as well as for the daily spell of work still required of him.

With W. B. Lamont it has eminently been a case of *laborare est orare*; and we may say :—

At eventide let there be light, and—peace.

FRUITS SUITABLE FOR THE LOW-COUNTRY AND FOR MODERATE ELEVATIONS IN CEYLON.

(From Circular Royal Botanic Gardens, Ceylon, Series 1.—No. 15, June 1899.)

The following pages contain a brief account of tropical fruits (mostly cultivated), with general directions for their treatment. They may be obtained (usually in bamboo-pots) in small quantities from the Royal Botanic Gardens, Peradeniya, on prepayment of cost; plants are delivered at the gardens or at Peradeniya railway station.

Seeds where mentioned can only be supplied when in season.

General Directions.

Planting.—No arbitrary rules for planting can be laid down, as so much depends on climate, locality, and soil. Wet weather should however be always selected for the work; otherwise the late afternoon should be chosen in preference to the forenoon. The ground should be prepared and holes made before the plants are removed from their pots or nursery beds, so that no unnecessary delay may occur in planting them out. It is even preferable to have the holes opened some months previous to planting, as the soil thus exposed to the action of the air will be rendered more nutritive. For dimensions of hole to be dug and distances to plant apart, the character of the soil and the proportionate size of the plant when full, grown must be respectively considered, larger holes being necessary where the soil is poor and gravelly. For trees and shrubs generally, and in moderately good soil, holes about 2 ft. deep and 3 ft. in diameter may be recommended. Large trees, such as Durian, Sandoricum, Rambutan, &c., should be planted 40 to 50 ft. apart.

Soil and Manure.—Unless the soil is already of the desired condition, it will be improved by the addition of old manure, chopped decayed turf, marl, and old mortar rubbish, according to the need of the plants, a small proportion of sand being often necessary for giving porosity. Occasional surface dressings of a prepared compost and applications of liquid manure are most beneficial. Fresh manure of any kind should not be placed next the roots of a plant.

Shading and Watering.—These should have special attention, as the insufficiency or overbundance of either at first may cause irreparable damage to the plants. In the case of plants planted at considerable distances apart, shade by means of fast growing intercrops, such as Plantains, may be practicable; shelter from strong winds would also be thus afforded. All seed-pans, pots, boxes, or beds should be kept shaded, and only sufficiently moist to enable the seeds to germinate. After seedlings appear above ground less shade and more moisture will be required. If the weather be dry, daily watering of plants planted out will be necessary until they are well established.

Pruning.—Timely thinning out of superfluous, decayed, or weakly growths will greatly assist in the perfect development and productiveness of a plant. Pruning back the ends of shoots will conduce to the formation of branches and to a spreading habit.

Weeding.—The ground should be kept free of weeds until at least the plants are sufficiently strong to supersede them. Frequent forking up for stirring of the surface soil is eminently conducive to the well-being of plants. The encroahment of roots from surrounding trees, which rapidly impoverish the soil, may be checked by cutting trenches at suitable distances round the plants.

Propagation.—The various forms of grafting, budding, and layering, as well as propagation by cuttings, suckers, roots, or leaves, are the surest means of raising plants true to their kinds, the newly-made plant being in each case merely a counterpart of the parent plant. Plants raised from seed, however, make more shapely, finer, and generally healthier trees, shrubs, &c.; but they are liable to variation from the parent stock according as the flowers of the latter are disposed to be affected by foreign pollen in their fertilization. Only the best seeds from mature and perfect fruits should be selected for sowing, and they should be sown of course before their germinative powers become impaired or lost. Seeds generally require to be sown in a light sandy soil, which should be kept only moderately moist, and as a rule they may have a covering of soil equal to their own thickness. Where practicable, it is advisable to have plants transplanted out into beds, or preferably into bamboo-pots, plant-baskets, or ordinary earthenware pots, and tended for some time previous to planting them out where intended to grow.

FRUIT PLANTS

FOR SALE AT THE ROYAL BOTANIC GARDENS, PERADENIYA.

Abbreviations: *S.* = Sinhalese; *T.* = Tamil; Prop. = Propagation.

Aberia Gardneri.—Ket-embilla, *S.* and *T.*

A small shrubby tree of the Uguressa family endemic in Ceylon. The pale, purple, velvety edible fruit is of the size, form, and consistency of a gooseberry, with a pleasant acid taste. It makes excellent tarts and jam. Season, August to September. Thrives at medium altitudes, in light loamy soil. Prop. by seed. Sown in pots or boxes under cover.

Price: Small plants 25 cents each.

Achras Sapota.—Sapodilla-plum; Bully-tree; Naseberry; Rata-mi, *S.*; Shimai-eluppai, *T.*

A small symmetrical tree with dark green shining leaves, native of Tropical America. Fruit globular, about the size of a plant, with dark brown tender rind. When quite ripe it is considered of the most luscious of tropical fruits, the pulp being sweet and refreshing, and somewhat of the consistency of a pear. In India it is often sold under the name of Mangoesteen. Season, November to February. The tree furnishes an elastic gum used in medicine, and the bark is considered to have febrifugal properties. Thrives in the low-country and up to 1,000 ft., in deep and well-drained soil. Prop. by seed and layering. Seeds similar to those of Soursop. Sow in nursery beds.

Price: Plants 25 cents each; seeds 25 cents per packet.

Ægle Marmelos.—Bengal-quince; Bael-fruit; Baeli, *S.*; Vilvom, *T.*

A small spiny tree of the Orange family, considered a native of India. The fruit is comparable in form to a large orange, with a hard green shell, the interior containing a mass of doughy aromatic pulp, intermingled with which is a limpid glutinous substance, which some relish and consider of an agreeable flavour. It is renowned for its medicinal properties, being used especially in native medicine as a specific for dysentery and fever. Season, chiefly February to April. Low-country and medium altitudes. Prop. by seed. Sow in open beds.

Price: Plants 20 cents each; seeds 25 cents per packet.

Anacardium occidentale.—Cashewnut; Caju-gaha, *S.*; Mundiri-maram, *T.*

A bushy tree originally introduced from Tropical America; height about 30 ft. Its well-known fruit consists of two distinct parts, viz., (1) the swollen pear-shaped sta ked (cashew-apple), which, being juicy and astringently acid, is used in preserves and made into a wine; and (2) the kidney-shaped brown nut at the extremity. The edible kernel (seed) of the latter is of an agreeable nutty taste, especially when roasted; it is in demand in Europe for confectionary and flavouring purposes. The crusted shell is acrid add poisonous. All parts of the fruit of various uses in medicines. Season, April and May. The tree yields a gum said to be obnoxious to insects, which is recommended for bookbinding. The juice obtained from incisions of the bark forms an indelible ink. Thrives best in the low-country up to 1,500 ft. Adapted for moderately dry districts. Prop. by seed, layering, and cuttings.

Price: Plants 20 cents each; seeds 35 cents per 100.

Ananas sativa.—Pineapple; Annasi, *S.*; Anasshi-pallam, *T.*

Generally supposed to be the most delicious fruit in the world. The leaves afford a fine and durable fibre of commercial importance. Will thrive from sea-level to medium altitudes in moist and dry districts. Rich loamy soil, leaf mould and well-rotted manure; well-drained and sunny situation. Plant about 2 ft. apart, in row 3 ft. from each other. Prop. by suckers and "crowns" (fruit shoots).

"Kew pine" (Smooth Cayenne).—The best variety for general cultivation, being a robust grower usually bearing in the low-country in six months from time of planting suckers. Fruit grows to a large size, sometimes weighing over 20 lb. (exceeding the record for other countries); is very juicy and of a delicious flavour. Leaves not spiny.

Price: Suckers Re. 1·50 per dozen.

"Mauritius."—Fruit moderately large, yellow, and well-flavoured. Leaves not spiny.

Price: Suckers Re 1·20 per dozen.

"Gal-annasi."—Similar to the latter in appearance and flavour.

Price: Suckers Re. 1·20 per dozen.

Anona muricata.—Soursop. Katu-anoda, *S.*; Seetha, *T.*

A low fast-growing tree with fragrant laurel-like leaves, introduced from the West Indies. Fruit large (2 to 3½ lb.), green more or less oblong often kidney-shaped, covered with soft green pickles. It ranks among the best dessert fruits of the Tropics, the soft white luscious pulp being agreeable and refreshing, with a strawberry flavour. A grateful cooling drink is also made from it. Season, June to October. Low-country and up to 3,500 ft. Deep loamy soil. Prop. by seeds and layering. Sow seeds in prepared nursery beds.

Price: Plants 20 cents each; seeds 50 cents per 100.

Anona reticulata.—Bullock's heart; Anoda, *S.*; Ramsita, *T.*

A small bushy tree of Tropical America and West Indies. The name "bullock's heart" signifies the shape and size of the fruit, which is edible, the custard like granular pulp being of a rather agreeable flavour. Seasons, March to April and October to November. The leaves and young twigs are said to be used for tanning. Altitude and soil same as for latter species. Prop. by seeds sown in pots or open ground, or by cuttings planted in rainy weather.

Price: Seedling plants 25 cents each.

Averrhoa Bilimbi.—Cucumber tree; Blimbing; Biling, *S.*; Bilim-kai, *T.*

A fine-foliaged dwarfish tree, long cultivated in the Eastern Tropics for fruits. Fruits about 3 in. long, resembling small cucumbers in form, produced in clusters on the trunk, are valued for making pickles, preserves, jam, tarts, and cooling drinks; they are also specially esteemed as an ingredient in curries. The flowers are sometimes made into preserves Low and medium altitudes. Rich, friable, and well-drained soil decayed manure, leaf-mould, &c. Prop. by seeds layering. Seeds small, sow in pots, pans, or boxes under cover.

Price: Plants 25 cents each.

Averrhoa Carambola.—Karambola-tree; Kamaranga, *S.*; Tamarata, *T.*

A tree similar to the latter, but more ornamented in habits, being also in cultivation in the East for a long period. Fruit oblong, 3 to 5 in. long, semi transparent, amber-coloured, and produced on the branches its five peculiar wings or ridges give it a handsome appearance. The pulp is acid and very juicy, but, though used in some similar ways, is not so highly valued for culinary purpose as the fruit of its ally already described. The juice of the fruit removes stains from linen, and is good for burnishing brass, &c. It is also said to be used as a mordant in dyeing. Adapted for same elevations, soil, and method of propagation as the last described species.

Price: Plants 25 cents each; seeds 25 cents per packet.

Canarium commune.—Java almond; Rata-kekuna, *S.* Myrrh family. A large handsome Malayan tree with generally a remarkable buttressed trunk, cultivated for the sake of its plum-like fruits produced in abundance from April to December. The hard three-cornered kernel contains an edible substance similar in flavour to sweet almonds; it yields by expression an oil used for burning in lamps and for cooking purposes. A desirable tree for planting in avenues, &c. Hot and moist districts up to about 1,500 ft. elevation. Deep and fairly well-drained soil. Plants are raised readily from seed. Sow seeds in nursery beds, and keep wet and shaded.

Price: Plants 20 cents each; seeds 50 cents per 100.

Carican Papaya.—Papaw; Tree-melon; Pepol, *S.*; Pappali, *T.*

Passion-fruit family. A familiar fast-growing, small, branchless tree, with a crown of large palmate leaves, indigenous to Central America and West Indies. Fruit greenish-yellow when ripe; globular or oblong, 10 to 15 in. long; centre hollow, flesh lemon to orange colour; seeds attached to walls of central cavity, plentiful, few, or none, according to variety. A most refreshing and wholesome dessert fruit. It may be made into jam and sauce; unripe, it may be pickled, or boiled and used as a vegetable. The milky juice of the unripe fruit curdles milk like rennet; it is in commercial demand for its peptic properties. The leaves are used for wrapping round fresh meat to render it tender. The tree is of short vitality, deteriorating at the age of five to six years, but bears fruit continuously from the time it is a few months old. Prop. by seeds, which germinate readily. Sow thinly in nursery beds. Low and medium elevations. Rich loose soil, decayed manure, vegetable mould, &c.

"Madagascar."—A large oblong fruit with many seeds.

"Pasba."—Fruit large, globular; seeds few, sometimes none.

"Lanka."—Fruit small, round, very milky.

Price: 20 cents per plant; seeds 25 cents per packet.

Chrysodalanus Icaco.—Coco-plum; Spanish nectarine. A small spreading shrubby tree of the Apple family, native of Tropical America. Its fruit is of the size and appearance of a rather round plum, with a purplish tender rind; it is eaten as dessert, the white pulp adhering to the kernel being of an agreeable taste; it is said to be also largely made into conserves in Cuba, where it thus forms an article of export. Will succeed in low-country and up to 2,000 ft. in light sandy loam. Prop. by seed or cuttings.

Price: Seedlings plants 30 cents each.

Chrysophyllum Cainito.—Star-apple; Rata-lawulu, *S.*; Seemaipala-pallam, *T.*

A fairly large West Indian tree with handsome foliage and habit of growth; leaves dark green above, copper-coloured underneath. The dark brown fruit is round in shape, about 5 in. in circumference, usually 2-seeded, very milky when unripe; the white inner portion of the pulp is edible, it being com-

pared by some with blanc-mange. Up to about 1,500 ft. Deep loamy soil. Prop. by seed. Sow in open and sheltered beds.

Price: Plants 25 cents each.

Chrysophyllum monopyrenum.—Date-plum; Kosetalawulu, *S.*; Seemaipala-pallam, *T.*

A graceful tree of more recent introduction from the West Indies than the preceding species, which it resembles in size and general appearance. As the vernacular names signify, the fruit is smaller in size and form to both a Date fruit and a Jak seed; it has a thin shining purplish black outer skin, and contains but one seed; the milky reddish pulp is edible. Principal season, February to April. Elevation and soil same as for preceding species. Prop. by seed. Sow in pots, &c., under cover or in sheltered beds.

Price: Plants 25 cents each.

Citrus Aurantium.—Sweet-orange; Peni-dhodan, *S.*; Narran-kai, *T.*

Except in the case of choice varieties, plants raised from seed of locally-grown fruit can only be recommended to be planted for local consumption. Imported fine kinds thrive best at medium and fairly high elevations, provided rainfall be not too great. Prop is generally recommended by grafting and budding, the product of plants so raised being naturally less liable to variation in size and quality than that of seedlings. Experienced cultivators maintain, however, that no serious risk of deterioration arises from planting seedlings from carefully selected seed, provided that inferior varieties are not permitted to grow near the seed bearers. Soil, fairly deep and well-drained marly loam; decayed manure, mortar rubbish, &c.

Price: Seedlings from selected locally-grown seed 25 cents each.

Citrus Decumana.—Shaddock; Pumelo; Jambola, *S.*; Jamblica, or Bambalinas, *T.*

A tree of the Orange family, about 30 ft. high, cultivated for its large round fruits, as well as for the beauty of its foliage and flowers. Several varieties are met with, those with green pulp begin usually very sour; while others with reddish pulp have a pleasant sub-acid taste, and are valued for making jams, &c. Seedlings make good grafting stocks for the better kinds of oranges. Low-country up to fairly high elevations. Thrives in any middling good, deep, and well-drained soil. Prop. by seed or by layering.

Price: Seedlings 20 cents each.

Citrus Limetta.—Lime; Dehi, *S.*; Dhaisikei, *T.*

Of this also there are several varieties, some being superior to others as regards size and quality of the fruit. The latter is used for many different culinary and other purposes, especially for flavouring and in the making of cooling drinks, lime-juice of commerce being prepared from it; the rind yields citric aicd. Low and medium altitudes. Rich and well-drained soil. Prop. by seed or by layering.

Price: Seedlings 25 cents each.

Citrus Limonum.—Lemon; Natran, *S.*; Kidanarattankai, *T.*

This small-sized tree is extensively cultivated in Southern Europe and elsewhere, being a native of Northern India, and said to be now naturalized in the West Indies. Lemon fruits are very largely used for flavouring in confectionery, &c. The rind yields a valuable essential oil and citric acid; it is also made largely into candied lemon peel of commerce. Thrives best at medium at fairly high altitudes. Soil similar to that for oranges will answer. Plants are easily raised from seed (pips)

Price: Seedlings plants 25 cents each.

Citrus medica. Citron; Adam's apple; Sidran, *S.*; Nar-attam-palam, *T.*

A spinous, much-branched, small tree indigenous, like the Lemon, to Northern India, and also cultivated for its fruit. The thick rind forms the candied citron peel of commerce; it also affords citron oil and citric acid, used in medicine and perfumery. The white acid pulp of the fruit is made into conserves. Large quantities of special kinds of citrons are said to be grown in parts of Southern Europe to be used solely at certain religious rites of the Jews. Medium and high altitudes. Fairly deep and well-drained soil. Prop. same as Lemon.

Price: Seedlings 25 cents each.

Citrus nobilis.—Mandarin-orange; Jamma-naran, *S.*; Konde-naran, *T.*

A thornless bushy tree, 20 to 25 ft. high with small pointed dark-green leaves. The fruit is of moderate size, and is distinct by its loose brittle rind, readily separating from the pulp, and by a curious button-like projection at the extremity; the rind remains green when ripe, but the pulp is deep orange-red and of delicious flavour. Affects moist localities at medium elevations. Rich and well-drained soil. Prop. by seeds, layering, &c.

Price: Seedling plants 25 cents each.

Clausena Wampi.—Wampee; Rata-karapincha, *S.*

An ornamental an odorous tree of the Orange family, 30 to 35 ft. high, native of China. Its pale yellow berries are edible, being of an aromatic acid taste; they are made into preserves, and used for flavouring meat curries, &c. The fragrant leaves also are a favourite leaves also are a favourite curry condiment. Humid districts at medium elevations. Fairly deep and porous soil. Prop, by seeds, layering, and cuttings. Sow seed in pots under cover.

Price: Seedling plants 25 cents each.

Cupania edulis.—Akee.

A moderate-sized tree of West Tropical Africa, where its fruit is eaten and relished. The edible portion is the firm fat-like substance (aril) in which the seeds are embedded. It is eaten either raw or cooked, and is considered delicious when fried with butter. The fruit is pear-shaped, about 3 in. long, bright red when ripe, produce in September and October. Seeds jet black, two to three in a fruit. From sea-level to about 1,000 ft. Deep sandy soil. Plants may be raised by layering, but are best from seed.

Price: Seedling plants 25 cents each.

Cynometra cauliflora.—Nam-nam; Leguminous family.

A large shrub of small and much-branched tree, native of India and Malaya. The fruit is a one-seeded and much-wrinkled pod, produced in quantity on the lowermost portions of the branches or trunk the thick fleshy shell is considered palatable and refreshing, and is used for pickling. The large flat seed yields an oil said to be used in medicine. Season, May and June. Low-country and up to about 1,500 ft. Fairly deep loamy soil. Prop. by seeds.

Price: Plants 25 cents each.

Dialium ovoideum.—Velvet tamarind; Gal-siyambala, *S.*; Kalupullium, *T.*

A tall leguminous tree peculiar to Ceylon. From near the ends of the branches hang the clustered dark brown velvety fruit, each of the size and form of a filbert. The thin brittle shell encloses a seed surrounded by a spongy-powdery pulp, which has a pleasant acid taste, and is considered a delicacy and a tonic by the natives; it is also made into a fine chutney. The timber of the tree is dark red handsome and strong. Thrives best in the low-country with a rather dry climate. Light loamy and well-drained soil. Prop. by seeds.

Price: Plants 25 cents each.

Durio zibethinus—Durian.

A very large and handsome pyramidal-shaped tree of the Malayan Archipelago, cultivated for the sake of its world-famed fruit, which, produced on the older branches, is oval-shaped, weighing 5 to 7 lb., and armed with thickly set formidable spiky prickles. This fruit is most highly prized by the Malays, and notwithstanding its offensive odour, Europeans, as well as Sinhalese and Tamils, frequently acquire a special taste and liking for it. The cream-coloured pulp wrapped round the seed is the edible portion. The large seed may be roasted and eaten like chestnuts Pounded into flour, they are said to be made. into vegetable ivory. Season, July and Agust. A desirable tree to plant for scenic effect. Hot and humid districts up to about 1,500 ft. Deep loamy and

well-drained soil. Prop. by seed. Seeds of short vitality; and germinate in seven to eight days.

Price: Plants 25 cents each.

Elæocarpus edulis—A small tree of the Veralu family, native of New Guinea. Its bright red fruit is 3 to 5 sharpangled, 1-seeded, is oval in shape, and nearly 2 in. long. The outer fleshy red portion is of a sweetish bitter taste, and may be made into a savoury jelly or used for pickling. A very ornamental tree both on account of its graceful foliage and handsome fruits. Thrives in shady places with loose rich soil, up to about 2,000 ft. Prop. by seed, layering, and cuttings.

Price: Seedling plants 30 cents each.

Elæocarpus serratus.—Wild olive; Veralu, *S.*: Verali-pallam, *T.*

A handsome and rather small tree indegenous to Ceylon and said to be cultivated in parts of India for the sake of its olive-like fruit. The latter is edible, the fleshy portion surrounding the stone (seed) being sub-acid and palatable. It is excellent for pickling unripe like olives. Season, April and May. Moist districts up to about 2,000 ft. Prop. by seed. Sow in beds, and keep damp and shaded.

Price: Plants 20 cents each.

Eugenia Jambos.—Rose apple; Veli-Jambu, *S.*, Seeni-jambu, *T.*

A medium-size tree of India and Malaya, introduced early into Ceylon. Its symmetrical shape and fine foliage render it a handsome tree. Its fragrant rose-coloured fruit, about the size of a hen's egg, may be used for dessert or made into preserves. Season, chiefly May and June, Low-country and up to about 3,500 ft. Prop. by seeds and layering.

Price: Seedlings 20 cents each.

Eugenia javanica.—Wax jambu; Peni-jambu, *S.*; A Malayan tree, about 30 ft. high of an ornamental habit of growth. Its attractive, shining, white to rose-pink fruits are borne in small hanging clusters, each fruit being about the size of a big strawberry, with the base laterally compressed; the fragrant pulp is edible. Low and medium altitudes. Rich porous soil. Prop. by seeds.

Price:—Plants 20 cents each.

Eugenia malaccensis.—Malay apple; Jambn, *S.*; Peria-jambu, *T.*

A handsome tree of moderate size, combining beauty of foliage, flower and frnit, indigenous to the Malay islands. The pear-shaped white to bright-red frnits, produced abundantly in May and June, have an attractive appearance; the snowy-white pulp is of the consistency of a real apple, which it also simulates in flavour, though less juicy. Low and medium elevations. Fairly deep rich soil, Prop. by seeds. Sow in beds.

Price: Plants 20 cents each; seeds 25 cents per packet.

Eugenia Micheli.—Brazil cherry. Gorka-jambu, *S.*

A small shrubby tree of Brazil. Fruit round and ribbed, rather flattened at the ends, about 1 in. in diameter, polished and bright red, suggesting small tomatos at a distance; pulp agreeably acid in taste, makes excellent jelly, tarts, and preserves. Medium altitudes to about 4,000 ft. Rich sandy and well-drained soil. Prop. by seeds or suckers.

Price: Seedings 25 cents each.

Flacourtia inermis.—Lovi-lovi. Louvi, *S.*

Uguressa family. A handsome Malayan tree, growing to about 30 ft. high. The bright red, cherry-like fruit, produced almost all the year round, is sour in taste, but makes splendid jelly and tarts. Moist low-country and up to about 3,000 ft. Deep rich soil. Prop. by seeds seed small. Sow in boxes, &c., under cover.

Price: Plants 25 cents each; seeds 25 cents per packet.

Garcinia Mangostana.—Mangosteen; Mangos, *S.*; Mangos-kai, *T.*

A moderate-sized conical tree with large leathery leaves, indigenous to the Malay islands. Its globular purplish brown fruit, about the size of an apple, is as famed one of the most delicious fruit of the Tropics. The delicate white melting pulp is sometimes compared in flavour to a combination of strawberries and pineapple. The firm thick rind is said to be used for dyeing, and to yield a valuable tan. The tree bears when seven to nine years old the fruiting season being June to September. Will thrive from sea-level to about 1,500 ft. in humid districts and sheltered localities. Rich loamy and well-drained soil. Prop. by seed, grafting, or layering. Seeds of short vitality. Sow in sandy soil and leaf-mould, in pots, &c., under cover.

Price: Seedling plants 50 cts each.

Garcinia Xanthochymus.—Co hin goraka; Rata-goraka, *S*; Seemai-goraka, *T.*

A symmetrical cone-shaped, bushy tree, growing to 25 or 30 ft. high, with leathery linear-lanceolate leaves, 12 to 16 in. long; native of India and Malaya. The handsome yellow fruit, produced throughout the year, but more abundantly in December and January, is of the form and size of an orange, with a pointed projection at the end, the tender thin skin being smooth and polished; the pulp also is yellow and of an agreeable acid, refreshing taste, being good for making tarts, jam, jelly, &c. Low and medium altitudes. Will only thrive in fairly rich deep soil. Prop. by seeds and layering. Sow seeds in open beds.

Price: Seedling plants 25 cents ercb.

Hibiscus Sabdariffa.—Rozelle; Ratablincha. *S.*; Pulincha-kira, *T.*

A small annual shrub, cultivated in most warm countries—sometimes as an intercrop with other products—for the sake of its large red fleshy calyces (outer part of flower, which, remaining after the flowers fall away, become enlarged, enclosing the fruit-capsule; they are made into delicious puddings tarts, jam, and jelly, and a refreshing beverge is also prepared from them. The leaves are esteemed by the natives as a vegetable in curries, and the stems afford a quantity of strong fibre. The plants will begin to bear fruit in four to six weeks after planting. Medium and fairly high elevations. Light rich loose soil. Prop. by seed or cuttings. Sow seeds thinly in nursery beds.

Price: Plants Re. 1 per dozen; seeds 25 cents per packet.

Macadamia ternifolia.—Queensland nut.

An Australian tree of comparatively small size, with dense dark green foliage. It bears in May and June edible nuts of the size of marbles which are of an agreeable flavour, being similar to hazel nuts. Will thrive best at medium altitudes. Well-drained light sandy soil. Prop. by seeds (nuts).

Price: Plants 30 cents each.

Mammea americana,—Mammee apple; St. Domingo apricot.

A moderate-seized tree of the Mangosteen and Goraka family, native of Tropical America, where it is said to be much cultivated. The fruit is large and round, brown coloured; 1-seeded, 3½ to 5 in. in diameter, with usually a pointed nipple developed irregularly on any part of the surface. It has two rinds: the outer leathery, the inner tough, yellow, adhearing to the pulp, which is firm and bright yellow; has a singular, though rather pleasant taste, and an aromatic smell. It may be made into jam and preserves, as well as used for dessert. An aromatic liqueur (*Eau de Creole*) and a scent are prepared from the flowers. Moist low-country up to about 1,500 ft. Deep loamy soil. Prop. by seeds.

Price: Re. 1 per plant.

Mangifera indica.—Mango; Amba, *S.*; Manga, *T.*

Generally the Mango thrives from sea-level to about 2,000 ft., in deep and properly drained soil, manuring not being of so much importance as attention to pruning, trenching and forking of the ground. Propagation is best by inarching, a form of grafting, but plants are easily raised from seed, and they generally come thus sufficiently true to kind, provided proper is exercised in their selection. A great many varieties of widely different merit are in cultivation, but the following are worth growing:—

"Bombay;" Bombai, *S.*—A medium-sized yellow frnit, round and flattened in form flesh; oranged-coloured.

Price: Seedlings 25 cents each.

"Parrot-mango;" Gira-amba, *S.*; Kilimooku-manga, *T.* Fruit distinctly beaked, about 3½ in. long, flesh deep oronge, aromatic, and of luscious flavour.

Price: Seedlings 25 cents each.

"Jaffna;" Jap-pane, *S.*; Yalpanam-manga, *T.* Fruit large, oval-shaped, green when ripe, with delicious soft flesh.

Price: Seedlings 25 cents each.

"Mi-amba" (honey), *S.*; Thaina-manga, *T.* A small round fruit, juicy, and of a pleasant tart flavour.

Price: Seedlings 20 cents each.

"Nagpur."—Seedlings from a good variety grown in Nagpur.

Price: 25 cents each.

Monstera deliciosa.—Arum family.

A noble epiphytic climber with large scolloped and perforated leaves, native of Mexico. The fruit, a sort of stalk (spadix), is edible and sweet-scented, having a flavour like pineapples, but is rather juiceless. Moist low-country up to about 1,500 ft. Soil a mixture of decayed coconut fibre, old bark, pieces of broken bricks, rotted turf, and chopped moss. Prop. by cuttings or seeds. Plant cuttings where intended to grow; as against large trees, decayed trunks, &c.

Price: Rs. 5 per cutting.

Nephelium lappaceum.—Rambutam; Rumtum, *S.*

A Malayan fruit-tree of medium size and graceful spreading habit, its bright red fruits, suspended in clusters from the ends of the branches during June and July, rendering it especially attractive. The bur-like fruit, covered with long soft fleshy spines, is used for dessert, the acidulous white aril adhearing to the seed and separating readily from the shell, being agreeably tasty and refreshing. Low-country up to about 2,000 ft. Deep loamy soil. Prop. by seeds.

Price: Plants Rs. 3 per dozen; seeds 75 cents per 100.

Passiflora laurifolia.—Water-lemon; "Jamaica Honeysuckle."

Passion-fruit family. A handsome West Indian climber with laurel-like foliage. Its egg-shaped fruit with soft, yellow rind, contains a quantity of an agreeably sweet watery pulp; it is considered the best dessert fruit of this family. A desirable plant for growing on arbours, &c., and as a screen to the sides of plant houses. It will thrive up to about 2,000 ft. Light humous and well-drained soil. Prop. by cuttings or seeds.

Price: Plants 20 cents each; cuttings 25 cents per dozen.

Passiflora quadrangularis.—Granadilla; Garandilla, or Rata-pubul, *S.*; Seemasorakai, *T.*

Passion-fruit family. This fast growing square-stemmed climber, introduced from Tropical America, is more robust in habit than the latter species. Its large oblong greenish-yellow fruit, resembling a vegetable-marrow, contains a mass of purple sweet acid pulp. In the unripe state it is boiled and used as a delicate vegetable. The root is usually swollen and fleshy, and is sometimes eaten like a yam. The flowers are generally fertilized by insects, in the absence of which artificial fertilization must be effected by hand. Low-country to abour 3,000 ft. loose rich soil. Plant against trees, fences, &c. Prop. by cuttings or seeds.

Price: Plants 20 cents each; cuttings 25 cents per dozen.

Persea gratissima.—Avocado pear; Alligator; pear; Soldier's butter; Et-pera *S.*; Anakoya-pallam, *T.*

A small-sized tree of the Cinnamon family, native of Tropical America. The fruit, which remains green when ripe, is of the form of a large pear. When fit for eating, the round stone (seed) in the centre becomes loose from the pulp, which is ½ to ¾ in. thick, cream-coloured, of the consistency of firm butter, and may be eaten either plain or flavoured with pepper and salt, vinegar, wine, &c., according to taste. It is a grateful and wholesome fruit, being esteemed by some as a substitute for butter with bread; it is also prepared and relished in other ways. A useful oil is obtained from the pulp by expression. From sea-level to about 2,000 ft. Fairly deep and well-drained soil. Prop. by seeds, which should be sown as soon as taken from the fruit; they germinate in a few days.

Price: Plants 25 cents each.

Photinia japonica.—Loquat; Japansese medlar.

Apple family. China and Japan. A tree of middling size and symmetrical habit, with large handsome leaves, which are woolly-white underneath; cultivated as a fruit tree in most worm countries. The small oval yellow fruit is not unlike a crab-apple both in appearance and taste, being rather acid in flavour. Medium and fairly high elevations. Plants are raised readily from seeds, but superior varieties should be propagated by grafting. Light rich soil with good drainage.

Price: Seedling plants 25 cents each.

Psidium Cattleyanum.—China guava Purple guava; Calcutta guava.

A small shrubby tree. native of Tropical America, said to be extensively cultivated in China and Japan especially. The spherical dark claret-coloured fruit is the best for dessert of the guava kind, its flavour being compared to that of strawberries. Thrives best at medium altitudes and up to about 4,000 ft. Light rich soil. Prop. by seeds or layering.

Price: Seedling plants 25 cents each.

Psidum Guyava.—Guava; Pera, *S.*; Koya-pallam, *T.* A low shrubby tree, often a shrub, long introduced from Tropical America, now naturalized in Ceylon, India and elsewhere in the east. Select varieties are cultivated in most warm countries for the sake of the fruit, which may be used either for dessert or made into pudding, jam, jelly, &c.; it is also largely made into preserves, in which form it is an article of export in some countries. Medium and moderately high altitudes. Loose loamy soil with good drainage. Prop. by seeds, suckers, cuttings, or grafting.

Pice: Seedling plants 20 cents each.

Sandoricum indicum.—Santol.

A handsome lofty tree of Malaya, producing in June and July large clusters of yellow globular fruits, which resemble small oranges. Like the Rambutan, the soft white aril covering the seeds (5) is of an agreeably acid and refreshing taste; fermented and mixed with rice, an intoxicating drink is prepared from it. Will thrive in the moist low-country up to about 1,500 ft. Deep loamy soil. Prop. by seeds. Sow in woll-prepared beds.

Price: Plants 25 cents each.

Sarcocephalus esculentus.—Negro-peach; Ratabakmi, *S.*

A robust climbing or spreading shrub, allied to the Cinchona, and native of West Tropical Africa. The brown warty fruit, produced in almost all seasons of the year is abont the size of an apple, the soft reddish edible pulp being rather juicy and of a sweetish taste. Low-country up to about 2,000 ft. Will thrive in any fairly deep and drained soil, Prop. by seeds and cuttings. Sow seeds in pots &c., under cover.

Price: Plants 25 cents each; cuttings 25 cents per dozen.

Tamarindus indica.—Tamarind; Siyambala, *S.*; Pullium, *T.*

This well-known large handsome leguminous tree is considered to be originally a native of Tropical Africa, though long naturalized in Ceylon, India, &c. It lives to a great age and affords a very valuable and beautiful timber. The acid pulp of its pods forms the Tamarinds of commerce, being preserved in syrup or with sugar. Tamarind wine and other cooling drinks are also prepard from the fruit. Season, December and February. Low-country up to 1,500 ft. Deep alluvial soil. Pro. by seed.

Price: Plants 20 cents each.

Vangueria edulis.—Voa-vanga.

A small much-branched shruby and deciduous tree, native of Madagascar. The greenish-yellow, apple-like fruit is succulent and edible. The large shining light green leaves are of various uses in medicine in its native country. Moist low-country up to about 2,000 ft. Rich loamy soil. Prop. by seed and cuttings.

Price; Plants 25 cents each.

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H. F. MACMILLAN,
Curator, Royal Botanic Gardens.

Peradeniya, May 26, 1899.

ALOE FIBRE.

A NEW INDUSTRY FOR CEYLON.

INTERVIEW WITH MR. ARTHUR SILBURN.

[WITH NOTES BY AN EXPERT.]

Mr. Silburn is in Ceylon in connection with a Syndicate recently formed for working aloe fibre, which, it has been discovered, possesses the same valuable properties that Manila hemp has long been credited with, with the additional advantage of being superior in several respects.*a* If it can be properly worked, concerning which Mr. Silburn is confident, visions open up of a new and profitable industry in which all can join, but more especially those who are at present thinking of abandoning the cultivation of tea on portions of their land.

Mr. Silburn is the inventor and sole patentee of the decorticating machine which purposes to do the trick, that is, extract the fibre from the aloe leaf and convert it into a valuable market commodity. Our readers must have had their attention attracted to an advertisement appearing lately above the name of Mr. W. Jenkins, inviting supplies of the leaves of the large green prickly aloe. Mr. Jenkins is a member of the Syndicate we have referred to, and is associated with other well-known gentlemen, whose general "cannyness" is amply sufficient to justify confidence in the potentialities of the new concern.

Mr. Silburn arrived in Ceylon from South Africa in August last for the purpose of extending the patentee rights of his decorticating machine, which he has at last secured and which covers a period of protection of fourteen years. On leaving Ceylon Mr. Silburn proceeded on a similar mission to India and has taken out patent rights in the adjoining continent. He has entrusted Messrs. Walker Sons & Co., with the manufacture of one of his machines, which he expects to have in readiness shortly. Mr. Stevenson has consented to have the machine set up at the Mattacooly Mills in order that experiments may be carried out, and if these prove satisfactory no time would be lost in establishing a manufactory to push on the work of the Syndicate on a more extensive scale. The machine has for years been in use in Natal, has carried off gold and silver medals at international exhibitions held in Mauritius, New Zealand, and Durban.*a* Mr. Silburn, in fact, was awarded medals at both the 1895 and 1897 Exhibitions held in Durban. This gentleman informed our reporter that the chief preliminary trouble he anticipated was in getting sufficient of the raw material. There were various species of the aloe plant, but what the Syndicate wanted and had advertised for was for the leaves of *Agave Fourcroyæ* (*sic*) or green aloe, *b* not the *American Gigantica* (*sic*) *c* or blue aloe which was so frequently met with in the grounds of Government House and elsewhere.

"Have you seen any of the kind you want in the Island?"—"Oh! yes. We have received advices of quantities that are being sent down by planters. The plant is, in fact, indigenous to the Island. *d* I have seen it growing wild about Kandy round by the Buddhist Temple. It grows in any soil, principally rock. However poor land may be for other purposes, green prickly aloe will grow there. It spreads with rapidity of weeds, requires little or no attention, and no expenditure in the way of manuring. It is superior to ramie in one sense and is to be preferred on account of its high commercial value, and we expect it to take the place of Manila hemp and to be largely in requisition for the manufacture of ropes.*e* Indeed, I have already large orders from India, if they could only be executed."

"Where are you going to establish yourself in India?"—At Lucknow, where I have been able to secure a large grant of land, some 600 acres in extent, which are being planted out now from saplings supplied both myself and from public gardens in India. It takes two years to come to maturity."

"How do you purpose to plant it in Ceylon By seed?"—"By saplings *f* procured from the wild plants growing about the country. It will be a very large industry, employing a large number of people both in its cultivation and manufacture."

"What number would you say?"—"Oh! that depends upon the size of the mills and the business that would be created. In its manufacture alone a large number of natives would be required. In addition it would put work on the railway, especially on that portion of the line where the plants are thickest."

a Inferior to Manila Hemp in *strength*—former would always command a higher price.—E.

a Have seen *one* silver medal for this machine only, and only Mr. Silburn's word for that—a Natal Medal. In Mauritius only the old "gratto" machine is used costing about R250 similar I think to the "Raspador" of Yacatan.—E.

b Fourcroya Gigantea (*not* agave.)—E.

c American agave Gigantica.—E.

d I doubt entirely its being indigenous, any more than lantana.—E.

e Will not bear the same strain as Manila Hemp but probably comes in a good second.—E.

f Sucklings.—E.

"Have you made any application to the authorities for assistance?"—"We intend to apply that for the purpose of our experiment the Railway authorities should grant a rebate of the dues. The experiment, as it is, will entail a great deal of expense. It is a new industry which should benefit the Colony a good deal. The machinery will be made in the Colony the plants are grown in the Colony; native labour will be employed, both skilled and otherwise; it will increase the revenue of the railway and the shipping agencies and the money realized by the sale of the fibre will be spent in the Colony. Large orders are constantly being received for the supply of the raw material and these are likely to increase especially as I see from today's papers that the American have captured Ilo Ilo, which was abandoned after the Filippinos had first fired the place."

"But the telegram said the Americans speedily extinguished the flames?"—"Yes, but there is no reason to doubt that the Filippinos destroyed the manufactories in the same way as they did the chief centre at Manila. From the latest advices Manila hemp has gone up from £40 to £ 50 a ton in consequence of the disturbed state of the country."

"I suppose the machine has been tested at Natal?"—"Oh! yes, and also in London and Glasgow, and from the latter place we have received orders to supply on an average 100 tons a month for weaving and rope purposes. The chief difficulty is to get a sufficient supply of the green stuff.*a*

"Is that likely to be a serious difficulty in Ceylon?"—"No, I regard Ceylon as the natural *habitat* of the plant. It was a great difficulty in Natal. We had to plant out and experienced a lot of trouble through it. The cultivation of the aloe plant should specially commend itself to the tea planter. If he finds that his tea is likely to come to grief, that his land is bad and will not grow tea, or that he cannot afford to go in for manuring, constant pruning, and such like, he had better put in aloe, wait two years and then he would find he would get a valuable commodity which would last for seven years before it would require being renewed. That is what we do in Africa, where those engaged in the sugar industry chiefly suffer through the ravages of locusts, which sometimes threaten the grower with ruin altogether. In the Bahams there are 70,000 acres planted with sizal hemp which is not so good as the aloe fibre, and only obtains an inferior price in the market, rates being governed solely from the standpoint of the length of the strips. The machine which I have patented is the only fibre extractor in Africa.*b* I hope to get a sufficient supply of green stuff to commence experiments in a fortnight's time I have had the machine protected in Ceylon India, and Burma, and machinery is being constructed in Calcutta. It will deal with all leaves containing any fibre, independent of size, from a ten-foot aloe leaf to a foot pineapple leaf *c*. It is a self-feeding machine capable of being adapted to any size. Of course, I have not had time to go much about the country, but as I have sa I believed the particular plants we want thriv largely in Ceylon."

The conversation ended here Mr. Silburn's attention being called off to attend to matters connected with the forthcoming work of the Syndicate.—Local "Independent."

a Machine has never been tested except in Natal Mr. Stevensons's own machine, primitively made according to Silburn's drawings. Some fibre was sent to London and Glasgow and reported upon.—E.

b There are a number of powerful machines in use in Bahamas, Yucatan, &c. with a very large fibre-texracting capacity.—E.

c Would need special adjustment for a small leaf.—E.

[The commercial name of the fibre is *Mauritius Hemp* of which 800 to 1,000 bales are exported from the Colony monthly but it is claimed that the machine will produce the hemp longer, better, and unbroken and extract *at least twice* the weight of dry fibre from the same wieght of green aloe leaf.—Ed. *T.A.*]

CUPRESSUS MACROCARPA

In the villa gardens round about Torquay this Conifer is put to valuable use, and if proper attention be afforded, it admirably answers its purpose. Many of the villas are built on undulating land, and the roofs of some are almost in a line with the ground floors of those just above them on the hills. It follows that the garden of one is often open to those of its neighbour, and even to those placed on level ground, there is always a desire on the part of the occupants for a certain degree of privacy and seclusion, so essential to the enjoyment of a garden. The garden-walls are about 3 or 4 feet high, with soil on the inside borders almost level with the top of the wall. On this a number of Cupressus macrocarpa are planted, 2 or 3 feet apart, and being a quick grower, the lower portion soon thickens; and when the plants have grown some 6 or 8 feet high the leaders are cut away which encourage the thickening of the top. Ere, however, this finishing part is permitted, it is necessary that a strong iron railing be run the whole length of the intended hedge, and stout iron standard and stays well secured to the wall as well as the border inside with a couple of rails, one about 2 feet from the ground, and the other 5 feet. These of course, are firmly fixed to the upright so that when finished the whole is strong and able to resist the winds which will, by-and-by, try the hedge. The plants are secured to this iron railing, which is soon hidden and as they reach the height previously mentioned topped and clipped, a most compact and beautiful hedge is formed which entirely shields everything in the garden from the gaze of passers by or from neighbourly observation. The hedge may be permitted to measure 3 feet through at the base, gradually slopping in height till the top, perfectly level, is about a foot in thickness. Some run just 6 feet heigh, 2 feet at the base, slopping gradually to the top. The bright, pleasant green of the young shoots just at the present season makes such a hedge singularly attractive. Some of the owners, I notice, have made provision for the little gaps that occasionally occur in the lower part of the plants by planting a row of Euonymus between the Cupressus and the walls; these are kept dense and compact by constant clipping. The variegated forms as well as the common Euonymus are used, the whole making a very pretty and complete bank of vegetation, always green, and most attractive. The beauty of such a hedge is, of course, enhanced and preserved by regular clippings —twice a year they should be attended to by one who thoroughly understands his work. Of course, any one can use a pair of clipping shears; but where straight and curved lines and level top are to be maintained it is very desirable that one who is somewhat of an adept at his work should be always permitted to do it. In the hot summer seasons in the south of Devon, and on raised banks and borders, it is necessary that the hose-pipe be used, and abundant supplies of water constantly afforded, as only by such means can the health of the hedge-plants be maintained. *W. S., Exmouth.—Gardner's Chronicle.*

THE FERTILITY OF SOILS.

The factors upon which the fertility of the soil depend are many. The amount of plant-food and its degree of solubility' the mechanical texture or tilth, and the climate, which includes temperatule, amount of rainfall, &c., are the chief of these.

Soils to be fertile must contain the elements of plant-food in such forms that they can be readily used for the nutrition of vegetation. At the same time, its condition must not be too loose, else a firm hold will not be afforded to the roots of plants, and there will be too much drainage and evaporation; nor must it be too heavy and plastic, for then air and water could not freely permeate it, nor the roots extend themselves beyond a very limited area. Generally speaking, light, loose soils are not as rich in plant-food as those in which clay predominates; yet, on account of their excellent condition of tilth, and the ease with which they are worked, they are specially adapted for most horticultural purposes, and having a sufficiency of manure, they often yield in favourable seasons heavier crops than the, stronger soils would do. Stiff heavy clays, though rich in inorganic food, potash, and phosphoric acid, are often poor in nitrogen, while their mechanical condition is such as to prevent through aëration and the penetration of the roots. It is these soils especially that are benefited by drainage. By a system of drainage the water which saturates the surface-soil is carried off, air allowed to permeate, the whole is rendered more friable and easily worked, and much plant-food is converted into assimilable forms.

Where sand largely preponderates, the soil is not retentive of moisture and fertilising material, especially if the subsoil be light, and though easily worked it is not so desirable in very dry seasons as on a heavier soil. A proper proportion of sand and clay therefore, for many reasons, makes the best soil. With the clay and sand, varying amounts of peaty matter, or humus derived from the decomposition of vegetable matter, may be mixed. In horticulture leaf-mould is largely used. Calcareons matter, chalk, lime, and bone-meal, are usually associated, and a light proportion of these exerts a beneficial influence upon the tilth of the soil, as well as upon the solubility of the plant-food. By the slow decomposition of the clay, the vegetable matter, and the lime, valuable plant-nutrients, are liberated in a soluble form, and therefore the function of these soil constituents is, not only mechaaical bnt chemical.

The most important ignorganic constituents of a soil are potash and phosphoric acid. These, together with nitrogen, are known as the essential elements of plant-food.

To understand the question of soil-fertility, the gardener should become familiar with these matters, should know what these elements will do for crops and plants, aud when and how to apply them.

Nitrogen.—This element, like potash, lime, and phosphoric acid, is an essential constituent of all plants. In its free state it is a permanent gas, and is one of the most widely distributed elements, comprising about four-fiths of the earth's atmosphere. This vast supply of nitrogen is, however, of no direct value to plants, since they are unable to use it, except when combined with the elements oxygen or hydrogen, forming nitric acid and ammonia, that may be taken up through the roots of plants. Leguminous plants, like Peas, Beans Lupins, &c., and possibly Orchids, are indirectly able to build up their nitrogenous ingredients from the free nitrogen of the air, through the activities of misroscopic plants (known as bacteria) intimately associated with them; other plants may, possibly, under favourable conditions to some extent have the same faculty.

Nitrogen is present in the soil in simple combinations as nitrates or ammonia salts, or as more complex organic compounds, forming the dark coloured humus especially abundant in peat, leaf-mould, and forest soils. The total quantity of nitrogen in ordinary soils varies between 0·1 and 0·2 per cent.; occasionally the nitrogen content will approach one per cent., as in the case of rich pasture soils. Peat soils will often contain over two per cent. of nitrogen; this is however; largely in a combination that will not directly sustain plant life, but has to undergo a weathering process before the plant can make use of it

Nitrogenous manures help to strengthen plants in their earlier growth, favour leaf development, and give a deep green healthy colour to the foliage; applied in excessive quantities they induce rank growth at the expense of the development of the fruit.

Phosphoric acid is present in soils in combination with a number of other chemical snbstances, which exert a very beneficial influence on the growth of plants. Phosphoric acid is found in soils partly in a form that plants can readily dissolve aud make use of in the building of their structure, partly in an insoluble form which nnder the inflnence of water carbonic acid and air, or the mineral components of the soil are gradually changed into available plant food. There is only a small quantity of phosphoric acid in ordinary soils, viz., less than 0·2 per cent., and often only 0·05 per cent.; but as the content is not decreased in any way except by the growing of crops, the soil will only become deficient in this constituent in case of continuous cropping without manuring.

Phosphoric acid is of special importauce in the early life of plants; it stimulates the assimilation of mineral substances in the plant, and favours the development of its root system. There is an intimate relation between the nitrogenons principles and the phosphoric acid in plants, and we find that, generally speaking, a high nitrogen content is accompanied by a high percentage of phosphoric acid. The phosphoric acid of plants is usually concentrated in their maturing organs, the flower and seed.

Potash is found in Nature in conbination with acids like sulphuric, carbonic, and silicic acid. Potash is generally distributed in small qnantities in most soils, except light sandy soils, which are apt to be deficient in this fertilising element it is found in ordinary soils in somewhat larger qnantities than phosphoric acid, namely, from one to three-tenths of one per cent., and occasionally as much as one per cent. in case of soils orginating from granite, basaltic, and other rocks rich in potash. Like phosphoric acid, potash may be present in the soil in a non-available form, especially as double silicates, that are bnt slowly decomposed through the action of water, air, and other constituents of the soil.

Potash is fonnd in the largest quantities in foliage plants, in leguminous plants, in Vines, and in Potatos. It is of the greatest valne to plants, in facilitating the flow of sap, and the diffusion of starch from cell to cell. It gives increased strength to the cell structure of plants and has in general a benificial influence on the flavour and textnre of fruits and Potatos.

Lime is present in most fertile soils in sufficient quantities to allow of the prodnction of large crops, but occasionally there will be too little of it to reach this end, in which case the addition of some lime compound to the soil, will produce very beneficial results. It is considered that a lime content of one-half of one per cent. an ample supply in light soils, while heavy soils may need 2 per cent. or more.

The good effects from the addition of lime to soils do not come only from the increase of an ingredient essential to plant growth, bnt the mechanical condition of the soil, its texture, water and heat-retaining capacity, are improved. This same is true in perhaps all cases when fertilisers are applied to soils, a fact which is generally overlooked by horticulturists.—*Gardener's Chronicle.*

THE RAMIE SYNDICATE.

The Ramie Syndicate, Hythe End Mill, Staines, sends ns the following:—You will perhaps not be indisposed to give your readers the news of onr experments having proved most snccessfnl. When we started we were confronted with the following difficulties: 1st, supply; 2nd, decortication; 3rd, preparation; 4th, spinning, and lastly demand or market. I will deal with these seriatim later. Un-

gumming which had hitherto proved such a fruitful source of difficulty had long been overcome by us; the gum question presented no terrors nor difficulties to us; by our method ungumming is simple and the durability of the fibre is unsurpassed as is proved by the yarns which have been in use now three years, they are as strong now as when first prepared. I refer to those made at Staines. I have products prepared by our process which have been in use ten years and are as good now as ever. I will deal with the obstacles as they appeared at the initiation of our works at Staines:

1st. Supply.—There is a vast supply in China, where the natives have cultivated it and all the best textiles are made from it. The wealthy Chinese hold it in high esteem and it fetches high prices. Very small quantities compared with the vast crops grown, unfortunately, have yet found their way out of China. We have based our calculations on the price of raw material at £30 per ton, and at this price I can show a paying industry competing with flax, but I am promised contracts as low as £20 per ton; this will open up a vast field and enable us to compete with cotton. India produces vast quantities in a wild state, these will have to be brought under cultivation. Dr. Morris, of Kew, recommends Ramie to the planters who cannot make sugar pay. It would be a boon to our West India Colonies. The Australian Colonies are growing Ramie, Queensland and N. S. Wales have sent us splendid quality. The U. S. Government are recommending it to their farmers and the Government has voted a large sum $145,000 to the establishment of experimental plantations. Mexico, it appears from a consular report, shows 145 per cent profit in ramie growing. From South America I have splendid samples, and as many as four crops in the year are cut; and I am promised regular supplies at a price which will put Ramie on the market a competitor to cotton. There is a vast field in Egypt and the Soudan. Thus Government of Natal is recommending Ramie growing. Plantations are already started in Borneo, Ceylon, Straits Settlements, Formosa, Java and Malay Peninsular. Corea produces splendid Ramie and the Japanese are turning their attention to Ramie growing. In short I hear from all quarters of the globe, of the great advance in Ramie growing, and I have not the slightest doubt it will prove a strong rival to cotton. To our colonies I would suggest Ramie growing, and by the use of our decorticators, ribbons could be prepared while a green state for the ungumming process, and filasse should be prepared on the plantations; it is a simple operation and the plant would not be expensive. The filasse so produced would be far superior to that produced from the dried ribbons, and in addition there would be a great saving in freight the waste products viz., the leaves and lateral shoots would produce an invaluable pulp for high class paper making and command a high price.

2nd. Decortication.—In China this is accomplished by hand labour. The operator strips the ribbons from the steam and scrapes the fibre, removing the pelicule or brown bark and much of the pectose gummy matter while in a green state. The natives of India merely strip the plant and make no attempt to clean them. These rhea ribbons command a much lower price than the Chinese cleaned strips. Our decorticator cleans the ribbons similarly but in a more perfect condition to that produced by Chinese hand labour, removing considerably more of the pectose in its fluid state.

3rd. Preparation.—The next difficulty is dressing the fibre ready for the spinner; hitherto the expensive process of preparing on silk dressing machinery has stood in the way, and when we can turn out an article absolutely without waste beyond the shorts or noils which exist in the fibre at a cost of one-half penny, which hitherto has cost 9d. we can claim success and considerable advance.

4th. Spinning:—This is now a simple process, our wet spinning frames produce an even yarn, grasing is no longer necessary and the strength and lustre of the fibre is materially advanced by its abolishment.

Lastly Market.—On account of its great strength and lustre it is specially in demand for lace, duck, khaki, sail cloth, fishing lines, braiding, tapestry, and all purposes where special strength or lustre is of advantage. It mixes with and fortifies weak wools. And as the price of raw material is lessened, so in proportion will the demand increase. Our latest is milo-thread. For yacht sails it has achieved a great success; "the Defenders" sails were Ramie. The Bona, one of the most successful English yachts, carried Ramie sails made by our process. As the fibre does not rot in water it is particularly applicable to fishing nets, rails and rigging, and its great strength commends it further for these purposes.—"*Planter.*"

NEW PROCESS OF TEA MANUFACTURE IN COLOMBO.

A SERIES OF INVENTIONS.

THE NEW VENTILATING FAN

At Messrs. Davidson & Co.'s Sirocco works in Forbes Road, Maradana, Mr. F. G. MaGuire has just finished erecting a complete plan for tho manufacture of tea by "hot process," and has put through the fiist break from start to finish. He manufactures on Tuesdays and Fridays; but on other days visitors will be wellcomed. The factory is fitted throughout with nothing but Davidson's patent mahinery, and includes several novel features. First of all there is the new withering machine, which is the only one at present erected in the island, though previously a model one, with which experiments have been conducted, was set up on Polatagama estate in the Kelni Valley, and which existed all last year. The machine is capable of keeping two rollers going, and is driven by a new and ingenous engiue which has proved quite a success at home. It is a highspeed engine without any packing, except on the piston ring. The governor and the valve also are both sitiuated inside the steam chest and this forms a special featnre of the invention, for, as shown by Mr. MaGuire, the governor regulates the working of the machine to a nicety unapproached by an outside governor. The main bearing and crank shaft, too, are submerged in oil, and an indicator is fixed to the outside of the oil bath, to constantly show the depth of oil.

Even when wet leaf is put into the witherer, in an hour's time it is ready for the roller, and in three hours the whole process from green leaf to black tea—but not the grading, &c.—is completed. With the roller, experiments are now being carried on to effect an increased degree of pressure by means of interchangeable cones in the centre rolling table. From the roller the tea passes into an evaporator, the object of which is to decrease the percentage of water to obtain a good twist on the leaf in the second rolling. This machine is fitted with one of the new patent fans, encased and driven by its own little engine. The down draft sirocco for firing is, of course, familiar to our readers; but at Maradana this also is fitted with a new fan, in place of a chimney, for the blast. Besides requiring a far less quantity of fuel the driver now consumes its own smoke, so that nothing but clear gas issues from the shaft. Then at the other end of the room, is one of Davidson's large sorting machines and a Davidson-MaGuire Packing Machine, on which the morning twenty Acme chests were being placed in position to receive the first batch of tea, to be sent to Belfast to be sampled and sold. In course of time some of the breaks made, will be put on the local market; and experiments will be carried on for another month. The leaf from which the first break of tea has been made was bought from a native estate in Kaduganawa at 6 cents a lb., and Mr. MaGuire claims that from this inferior material he has made good tea. The tea continues

hot from start to finish, and by this means it is asserted that, after a few additional experiments, it will be possible to make tea of a penny per lb. higher value than by the old process, which besides the saving of time and fuel, would naturally, amply repay and additional outlay in machinery. There is the further valuable consideration that instead of an expensive three-storey factory a simple shed of one floor will suffice to accommodate the machinery for the manufacture of any quantity of tea Estates it is expected, will send down leaf to be experimented with as a practical way of testing what is claimed for the new method in improving prices. At the end of the office a laboratory has been fitted up in which chemical tests are carried on, and where with a powerful little miscroscope the leaf is examined in the various stages of manufacture.

THE "REVOLUTION" IN FANS.

Perhaps the most ingenious of all the new things to be seen at Messrs Davidson's Works, however is the fan. This was described in a letter in our paper of the 28th March, and the first shipment of 18 ventilating fans arrived by the last Bibby steamer. These had been preceded by two fans for smoke chimneys, one of which has been sent to Balangoda for Messrs. Finlay, Muir & Co., and the other is going to one of the Haputale estates of Lipton, Limited. The eighteen ventilating fans were all of 30 and 35 inches diameter; and last night the remaining eight were booked—two by one firm, and six by another the orders being for two fans in each factory. Another shipment is expected by the next Bibby steamer, when various sizes, from 15 inches to 35 inches, of the ventilating fans will come to hand. The new fans have not been advertised at home as yet, because, although the number turned out at Belfast is daily increasing, the existing demand can hardly be coped with. Before long, we are informed, 25 a day will be produced, and then the invention will be extensively advertised, and the production will be increased as quickly as possible to 100 per day. A contract has been obtained for the ventilation and cooling and heating, of the Law Courts in London, which have always been in an unsatisfactory atmospheric condition; and the fans are to be used in connection with the scheme, which involves a seperate plant for each court with refrigerating and heating apparatus for winter and summer respectively. The air will also be filtered, so that fog and other impurities may not enter. In addition to this the ventilation of the House of Commons is to be similarly improved; and exhaustive experiments were to be made a week or two ago by the Admiralty to see whether the new instruments did what was claimed for them, in which case Sir William White, the Chief Director of Naval construction, had declared they would be adopted at once through out the new vessels of the Navy. Information of the result of these tests has not yet come to hand. The flax and linen industry of Russia, which had been considerably pushed in recent years, and which requires fans for the benefit of the work people, has also produced a wonderful demand for the new patent, which we are told has been ordered in such numbers that the Russian market alone constitute a very important element. It is in Ceylon, however that the fans have been first advertised and first erected in different factories.

To describe the fan, one of which, 30 inches in diameter, is already in position and working at the Maradana establishment, we may say that it involves an entirely new idea in practical engineering. The fan hitherto familiar to the public possessed blades extending from the circumference to the centre and it follows, as a fact, that the maximum amount of work done by each blade is at the circumference, the force being lessened gradually until the centre is reached, where there is very little speed at all. Thus with any opposing pressure the efficiency of the old fan is greatly reduced, and air may even pass the opposite way through the centre, while the blades are doing their work at the outer edge. Davidson's patent may be described as shaped like a revolving squirrel cage, the blades being all of equal length round the circumference, and thus performing equal work throughout. By the same arrangement the space for the passage of air is as large as the fan itself, and the result is evident even to the lay mind, and is a marvellous advance on the old idea. an interesting feature is that the principle involved in the construction of the blades is in agreement with the contentions of professors, but contracts with the experience of engineers in all other fans; and the new vindication of the scientific theory is to be shortly discussed at the Institute of Mechanical Engineers. The advantage of the machine is that, while the air emerges with greatly increased force it enters in a regular and even manner, producing no disturbance in the vicinity. The air in fact is drawn from all directions as powerfully as from immediately in front, and thus a much greater area of space is under its action. The regularity of the entrance of the air was also shown when a funnel was fixed to the bracket which holds the fan. The atmosphere rushed into this in a full and regular steam, indicating the fan's great capacity for disposing of an unusual volume of air in a given time The speed was tested at various distances and from various directions by an anemometer, and established the inventor's contention. The fan was then running, driven by a belt, at 380 revolutions a minute, and 10,584 cubic feet of air per minute were being drawn through. This entered at the rate of 2,000 feet, but was ejected on the other side at the rate of 5,530 feet, when reversed the fan does nothing. It may also be mentioned that the bracket holding the fan has the shaft suspended like the axle of a bicycle, and the two bearings are in one piece, so that even if carelessly erected by an inexperienced person, they cannot be put up out of line. On the outside a solid disc prevents high wind, or even a cyclone, disturbing its efficiency; and the air is discharged with equal force on all sides. The force of this air can be utilised for an upper loft by the fan being enclosed and the air conducted to the storey above The power used was only about ¼ h. p.

Close by the fan already in position preparations were going forward for the erection of a still larger fan, to be completed by this afternoon. Although no harm would result, it would be waste of energy to over-drive a small fan, and according to the amount of work to be accomplished, machines of certain diameters are recommended. Mr. MaGuire further explained that the fans can be driven by electric motor and by water power, with new Pelton wheels recently patented by the inventor of the fan. A volume of photographs further shows the variety of uses to which the invention can be put; and other pictures represent some highly interesting tests, one of which in competition with one of the older style of fans of three times its area was fully decribed in our issue of the 28th March,—Local " Times."

COFFEE.—The *Moniteur des Interêts Matériels* says the coffee crop of 1895 with 6,500,000 bags realised £25,000,000. The result induced increased production, but in 1897 the exportation of 9,500,000 bags only brought in £10,000,000, and the 10,000,000 bags in 1898 only realised £15,000,000.

THE MUNICIPALITY of Bariry, S Paulo, has about five millions of coffee trees planted of various ages. Its first crop will be gathered this year, which is estimated at 150,000 arrobas of coffee. A coffee plantation at Mococa, Sao Paulo, was recently sold at judicial auction for the sum of 90,000$ its valuation being 202,000$. The plantation contained 112,000 coffee trees, 5,000 arrobas of picked coffee, coffee-cleaning machinery, buildings, saw-mill, etc., etc. It looks like a decided sacrifice.—*Rio News.*

RUBBER CULTIVATION IN CEYLON;

THE LATEST INFORMATION AS TO CASTILLOA, PARA AND CEARA KINDS;

ABOUT 1,500 ACRES NOW COVERED WITH RUBBER TREES IN CEYLON; THE APPROACHING REVOLUTION:—

NOT ONLY IN THE SYSTEM OF SEPARATING CAOUTCHOUC FROM MILK; BUT ALSO IN EXTRACTING RUBBER FROM THE STEMS OF YOUNG TREES.

We direct attention to a very important letter on local Rubber cultivation, above the well-known signature of "E.S.G." on page 94. The writer will be admitted to have? had exceptional means of forming reliable opinions on the points he discusses, and where these differ from any in the official "Rubber" Circulars, we believe it will be safer to follow the lead of the practical planter. "E.S.G.", then, for good reasons given, rehabilitates Para rubber to a very great extent; and, indeed, we have never seen good reason for the rush from one extreme to the other in reference to the cultivation of this variety, nor could Mr. Willis mean that his latest views in favour of Castilloa should be construed to the deprecation of the continued cultivation of Para, where such had been established. We may even go farther and say that there is scope and fair encouragement for the continued planting of Para outside of the limited region between Kalutara and Ratnapura, which is considered most favourable for its growth; and in which, perhaps, the Castilloa tree would not prosper so well. Nevertheless, the latter, as "E.S.G." and Mr. Willis both show, has an extensive field for its production; and there is no reason why, as soon as seed is available, it (the Mexican tree) should not grow very freely both up and down country.

It will be observed that "E.S.G.," although in possession of the results of tapping experiments, does not give us estimates or figures, in the meantime, though he promises to do so at no distant date. On the other hand, there has been some instructive and even amusing correspondence in a local contemporary's columns on the subject. "J.M.", who was one of the first to plant "Castilloa", has shewn how, even in the face of a splendid valuation for the resulting rubber—which passed through our hands—he was officially discouraged from continuing the cultivation! "The whirligig of time" has indeed brought about "its revenge." Major Gordon Reeves, who now owns the Wiharegama estate and the trees planted by "J.M.", reports of the several old trees of Castilloa and his harvesting, as follows:—

There is no difficulty whatever in raising plants, and in a wet district I should imagine that any sized plants from seedlings of 3 inches to stumps of 2 feet will grow readily. In our climate, which is rather a dry one, I think there is no doubt that good sized stumps do best. The old trees on Wiharegama must have a girth of quite 30 inches at 3 feet, and are probably 30 feet high and of spreading habit and rather resembling a teak tree: these are planted through the cacao, and do not seem to have any injurious effect on the latter, and we are now extending plantations of cacao, with *Castilloa* 20 feet apart, and *Erythrina* as a temporary shade. I had two of the old *Castilloa* experimentally tapped, taking only about 1½ lb. of rubber, though a great deal more could, of course, have been taken: the milk was simply run into butter tins without any cleansing, and dried chiefly in the sun, which is we *now* know an injurious process. The samples were forwarded to Messrs. W. Wright and Co., the principal India-rubber brokers in Liverpool, and are reported on as follows:—

No. 1.—Good, clean, strong, dry rubber, value about 3s 6½d per lb.

No. 2.—Good, clean, fairly strong rubber, but very wet, value about 2s 11d per lb.

A very satisfactory report, considering how little we then knew about curing. *Fine* Para rubber is only worth 4s 2d.

Next "J.M." recalls estimates for a Castilloa plantation in Nicaragua, which were given in the *Observer* and which can readily be found in full detail in the *Tropical Agriculturist* or still more conveniently in our Manual ("All about Rubber," a second edition of which is now passing through the press); but a few figures may be quoted if only to make the mouths water of some of our planting readers, in anticipation of a good time coming! Here is "J.M." quoting Mr. Cator:—

Cost of 500 acres of land at 5s per acre	£ 125	
,, survey and titles	100	
,, clearing land	1,000	
,, collecting seed, and planting...	500	
,, 8 years' weedings at £200 ..	1,600	£
,, tools, &c.	300	3,625
Interest on £3,625 for 8 years at 5 per cent.	1,450	
Superintendent's expenses, 8 years, at £200	1,600	
Cost of gathering the 8th year's crop	1,500	4,550
		£8,175

He estimates a profit at the 8th year as follows, *per acre*:

Dr.	£ s d	Cr.	£ s d
Cost of cultivation per acre	7 4 9	Government premium	2 8 3
Cost of tapping	3 0 0	Crop, 965 lbs., at 2s	96 10 0
Balance of profit per acre	88 13 6		
	£98 18 3		£98 18 3

Thus, 500 acres at £88 13s 6d = £44,337 10s profit on a capital of about £8,000; and, as if that was not sufficiently sanguine, take the 9th year by itself:—

	£		£
Expenditure for weeding	200	Value of crop in 9th year	50,000
,, harvesting	1,500		
,, planting	500		
Interest	180		
Profit	47,620		
	£50,000		£50,000

Here, indeed, seems room for enterprize, even taken midway between the utterances of the sanguine "man on the spot" and the pessimistic reports from the Peradeniya Gardens Director. How this reminds us of the golden days of "Cinchona"!—when William Smith of Craigie Lea proved to a demonstration how foolish his partners, Colonel Byrde and Mr. John Davidson, were when they refused their consent to 150,000 cinchonas offered by Dr. Thwaites free from Hakgala ("a medicine

tree" as Col. Byrde rather contemptuously called it) being put out on Craigie Lea then being opened for coffee as the pioneer estate of Dimbula Felix in the early "sixties." Poor Smith—15 years afterwards when cinchona was booming and Nanuoya netted more than 10s a tree for some hundreds of mature trees cut down—used to say that his partners had thrown away £37,500, realizable by taking half of the 150,000 plants as coming to maturity at 10s a tree! No single proprietor in Ceylon, we fear, ever realized as much as a few thousands of pounds sterling from cinchona, although we got up to a shipment of 15 million lb. of bark in one year.

To return to Rubber: we may mention that we attempted some months ago to get an approximate idea of the extent to which the various kinds of rubber were cultivated on estates. First, we wished to see how far "Ceara" rubber, which was the earliest to be boomed, had been continued in cultivation; but our responses were but few; for, in most cases, the Ceara had been rooted out as inimical to cacao, or to give place to tea. We may quote a few illustrations: here, for instance, is a report from Crystal Hill estate, Matale:—

What kinds of Rubber are now growing? Three Ceara trees only remain out of several hundreds planted in 1878. A few hundreds of Castilloa were planted in October 1897 along with coconuts and are doing well.

Approximate age of oldest, Ceara 20 years.

Size of largest trees—circumference, height (actual or approximate), Ceara circumference 2 feet 4 inches, height about 30 feet.

Result of tapping, Nil.

Injuries or otherwise to plants underneath or near to the Cacao? Underneath the Ceara gave little or no crop. Wild pigs that had been attracted by the yam-like roots of the Ceara began to eat the Cacao pods, and the Cearas had therefore to be destroyed.

Going to the other end of the country in Madulsima, from an estate where there were 30 acres of rubber growing in 1886, the following was our latest report:—

What kinds of Rubber are now growing?—Ceara. Approximate age of oldest? About 18 years. Size of largest trees—circumference, height (actual or approximate.?) About 50 feet high, 4½ feet below lowest branch, 5 feet at the ground, branched out about 15 feet from ground.

There is only about one acre of rubber trees on estate now. Spread about. The rest have been cut out. I can't say what damage they would do to any other plants as they are near none.

Next from a Hantane estate that had ten acres of Ceara in 1886, we are told it was all rooted out and there are no rubber trees growing now. Again, the well-known Kandenewera estate, Matale, had 6,000 Ceara trees a dozen years ago; but Mr. Gordon replied in answer to our circular some months ago:—

The Ceara rubber trees on this estate have all been cut out, some of the largest were tapped four years ago experimentally, but the yield of rubber was very poor and watery. Certainly no success commercially. As shade trees to either Cacao or Cardamoms they are harmful, and being greedy feeders are undesirable cultivations with mixed products.

Sanquhar estate, Gampola, has still 80 Ceara rubber trees growing alongside a road, but we have no particulars as to size. On Hurstpierpoint in the Galle district, of 5,000 Ceara trees in 1886, there are still a few left about 17 years old, 30 to 40 feet high and 1½ to 2 feet in circumference.

Of reports on other Rubbers, we have a few to present. The Manager of Daisy Valley, Kurunegala, has put out a good deal of Para rubber from seed got in the Peradeniya Gardens. From Mr. P. D. Clark, Manager of Rasagalla, Balangoda we have a satisfactory report as to Para, showing, apparently, how much wider is the sphere for its successful growth, than Mr. Willis has conceived, when he confined it to the low-country between Kalutara and Ratnapura:—

What kind of Rubbers are now growing? Para rubber, Hevea Braziliensis, about 35,000 very promising trees. Cultivation to be extended. Approximate age of oldest, two years. Size of largest trees—circumference, height (actual or approximate,) 18 feet high, expected to tap from 8-10 year judging from present growth. Injuries or otherwise to plants underneath or near to? Appareutly not injurious to tea.

Mr. Corrie was good enough, some months ago, to report from Gikiyanakanda in the Kalutara district as follows;—

What kinds of Rubber are now growing? Para and Castilloa. Approximate age of oldest, six years. Size of largest trees—circumference, height (actual or approximate,) 9 inches diameter, 3 feet from bottom, height say 30 feet. Injuries or otherwise to plants underneath or near to? All our Rubber but a new clearing just planted is growing through tea. No damage to tea at present.

There are a few Ceara trees growing about 15 years old, but we do not tap them, not considering it worth while as the yield at this variety is so small.

From Mr. J. A. Storey, on Igalkanda estate. Elpitiya, we learn of Para rubber trees, six years old, doing well, the size being given as follows:—

Largest measured 33½ inches circumference at one yard from ground, several others over 30 inches. Height (approximate,) 35 feet.

And then we have what Major Gordon Reeves wrote to us at the time of our circular in regard to Wiharegama, which, of course, must be modified by his more recent information:—

What kinds of Rubber are now growing? Ceara Para, Castilloa, Approximate age of oldest, Ceara about 15 years, Para 5-6 years, Castilloa 8-10 years. Size of largest trees—circumference, height (actual or approximate.) Ceara, no measurement taken, Para circumference 2 feet to 2 feet 6 inches, height say 30 feet. Castilloa cir. 2 feet 6 inch to 3 feet, height say 25 feet. Result of tapping? In tapping experiments now being made (will report) with Para and Castilloa, but *not with Ceara*. Injuries or otherwise to plants underneath or near to Para rubber trees planted over nine acres of Cacao as shade. No injury apparent; ou the contrary forms good shade at 20 to 25 feet apart. I proposed to plant as shade over a large extent of Cacao field.

So far three kinds of Rubber—Para, Castilloa and Ceara—have been mentioned. On a little estate in the Kelani Valley, there were, 12 years ago, some 500 specimens (creepers) of the East African rubber-yielding plant, Landolphia Kirkii, equal to four years' growth then, and kept as show stems and to see if they would seed. Unfortunately, these creepers no longer exist and this is the explanation offered by the proprietor, Mr. James Gibson:—

I regret that during my absence in India 1887 and 1888, that the man in charge cut out all the Landolphia Kirkii trees from Pleasure Ground

which is mine still and the few I also put in on Kennington were destroyed also. I do not know of any others on any estate; I was grieved at the destruction.

The above estate reports can, of course, be only taken as indicative of what is going on in many other estates in the planting districts. Twelve years ago we estimated 600 acres were covered with India-rubber trees, chiefly Ceara. Last year Mr. Willis estimated 750 acres of Para rubber alone; while our Directory returns in August last showed an aggregate of 1,071 acres, notwithstanding all that had been cleared out of Ceara. With all that has since been put out, of Para especially, we reckon that these figures may safely be increased to 1,500 acres. But we may be told that quantity or area does not matter so much as quality, and just as Ceara rubber—so rushed after at one time—was cast aside in Ceylon as well as Java in favour of the "Hevea" or Para, so is the latter about to be superseded by the Mexican or Castilloa tree. Now in all these conclusions, we think too much haste is manifested. We fear, indeed, that those who have abandoned even Ceara clearings, will live to regret their action. We can recall when samples of Ceara rubber from Ceylon realized 4s per lb., and now that we are on the eve of a revolution in the means of "harvesting" the crop, as well as of separating the caoutchouc, we say that every man who owns a rubber-yielding tree, whatever be the species, ought to carefully conserve it. In January, 1898, Mr. Willis told the world that the only important rubber for Ceylon was the "Para," and at the time he was, no doubt, acting up to the best light. But a good deal has been learned since; and in his Circular of April last, facts and figures are given to show that preference should be given to the Mexican or Panama *Castilloa* tree. Now we have not a word to say against this preference, nor do we fail to recognise the special importance of the invention of Messrs. Howard and Biffen in their "Caoutchouc Separator" as still further demonstrated, if not improved, by Mr. Hart of Trinidad. But while lately compiling from available literature for our "All About Rubber" Manual, we have been much struck with information reproduced in our own *Tropical Agriculturist* so far back as December last, which attracted too little attention at the time. From it we learn that, among other inventions or experimental applications on the *tapis*, is ONE FOR EXTRACTING CAOUTCHOUC PROFITABLY FROM THE YOUNG STEMS OF RUBBER-YIELDING TREES; AND WE VENTURE TO INFER THAT, ULTIMATELY, YOUNG TREES OF CEARA, PARA OR CASTILLOA MAY ALL BE FOUND AVAILABLE FOR THIS PURPOSE. Surely here we have the elements of a great revolution in Rubber cultivation? In case we may be supposed to write without chapter and verse, we refer to the article in the *Tropical Agriculturist* for December last entitled "Some Recent Developments in Rubber Cultivation," and we quote the writer as follows, prêmising that so far he gives the preference to young Castilloa trees:—

During a trip of several months through the old rubber-producing regions of Central America and the northern states of South America, I found a great interest in rubber cultivation, and preparations were being made to start very considerable undertakings, particularly in the British West Indies, where the fact that rubber never has been indigenous to those islands is not considered in the enthusiasm of the people. On the island of Trinidad I found this enthusiasm increased to a substantial boom. Rubber seeds were selling at five cents each, and young trees were wanted at fifty cents, through owners were refusing to sell year-old trees about two feet high for less than a dollar a piece. It was reported that two English companies were about to begin operations in Trinidad and were proposing to invest a combined capital of $5,000,000, while private enterprise would probably brings $2,000,000 more to the island, making a total of $7,000,000 prospective capital to be invested in that one locality. Other islands were becoming interested. In Grenada seeds were in demand with the prospect that a very considerable acreage will be set out.

The most interesting point under discussion in relation to rubber-planting in the British West Indies is a series of experiments now being carried on in London and Trinidad, by which it is proposed to secure rubber from year-old trees of the *Castilloa elastica*. It has been found that seeds sown broadcast over a prepared field will yield an abundant crop of young trees, which at about a year old can be cut and sent to a factory where, with ordinary machinery operating a simple process, 8 per cent. of fine rubber can be extracted from the young shoots. This can be done in the laboratory. It is claimed that the process is a simple one, that but little machinery is necessary, and that in future the world's rubber supply will be secured from an annual crop of young trees sown on cultivated estates, and not from remote forests at present. A series of experiments has shown that the young tree contains about 8 per cent. of rubber, which would at present prices return an estimated profit of $200 to $400 per acre. The extraction of rubber from young shoots has been accomplished chemically in the laboratory, but whether it can be applied to the economic production of ruubber on a large scale remains to be seen.

And then the writer goes on to discuss the conditions under which "Castilloa" will grow. Every planter and merchant interested should read the paper in full, and decide whether we may not be on the eve of a boom in Rubber planting after the fashion of cinchona in the early "eighties"; but, we trust, with better results. Of course, the advice so far is to sow broadcast Castilloa seeds; but we cannot at all believe that the experiments dealing with year-old twigs of that variety, may not ultimately be extended to other varieties —not only to Para, but to the despised Ceara; and as we said above, we may shortly find branches or bark from every rubber-yielding tree or plant—even from many of our indigenous Ceylon species —in demand in connection with the very important experiments now being made in London and Trinidad—not only to separate the Caoutchouc from the milk, but to extract Rubber from the stems. True, this is only said to be realized so far from the stems of young Castilloa trees; but we cannot but anticipate a far wider application of the experiments ere long. Meantime, therefore, let all who can, plant Castilloa seed; and where that cannot be got, put in Para; and yet again, if such seed is not available, do not hesitate to multiply Ceara if the opportunity offer, rather than have no rubber trees at all; and very soon we shall see—what we shall see—possibly a demand for the stems of all three of these rubber-yielding trees.

RUBBER CULTIVATION IN CEYLON: PARA *versus* CASTILLOA;

CEYLON *versus* THE STRAITS.

Dear Sir,—In reply to your enquiry as to the relative merits of Castilloa and Para Rubber cultivation in Ceylon, I think, and always have thought, that the former is adapted to a wider stretch of country than Para, and it will moreover grow and flourish at a much higher elevation; but the tree (in Ceylon at all events) is slow in developing, requires a good soil, and seed is very difficult to get: in fact unless a quantity can be imported into the country, it will be a long time before we have any appreciable acreage of this class of rubber growing here. I doubt, if there are more than 50 or 60 full-grown trees in the island at the present time, and it is only *some* of these that bear fruit. Those in the Peradeniya Gardens, for instance, though well matured, I am informed, give no seed. What Mr. Willis says about Para rubber growing in Ceylon may be briefly summarized thus:—

(1). That there is only a limited area available for its successful cultivation, probably about *10,000* acres in all; the land being situated between Kalutara and Ratnapura.

(2). If planted outside this zone, the trees, although they may grow well and develope a good girth, are not likely to yield a sufficient quantity of rubber to make the industry a remunerative one by itself.

(3). That the tree will do very much better in the Straits than in Ceylon, both as regards growth and productiveness.

As regards the area available for Para cultivation in Ceylon, I am inclined to agree with Mr. Willis that it is not very extensive if the *best* results are expected, and there is no doubt that well-grown trees in the locality he speaks of will produce very much better returns than in less favoured districts where the rainfall is deficient and the soil inferior. Experiments I have made fully bear this out: the yield from trees of varying ages in the Kalutara district being largely in excess of what would be expected in a drier climate. But when Mr. Willis implies that we must not look for a satisfactory yield *outside* this zone, I join issue with him at once and inquire how about Heneratgoda and the trees that have been tapped there?

Here we have a dry, hard, cabooky soil with a scanty rainfall,—conditions altogether unfavourable for such cultivation,—and yet the trees are well grown for their age and according to the published returns the tappings have been successful, both as regards the quantity and quality of the produce. The prospects of Para cultivation in Ceylon have been based exclusively on data supplied from Heneratgoda Gardens, and it says a good deal for the future of the enterprise that the returns should have been so satisfactory, seeing that according to Mr. Willis the trees are growing in a neighbourhood which may be described as wholly unsuited to their requirements. I have always myself thought it a great pity that the Heneratgoda Gardens were chosen as a home for the Para trees, for the reason that amidst such surroundings it seemed almost impossible that results could be otherwise than unsatisfactory. The published records of the yield, however, shew to the surprise of everybody, a very good margin for profit, even if the price of rubber were to fall considerably below present quotations; and in more favoured localities, there is every reason to be well satisfied with the prospects of the enterprise.

I agree with Mr. Willis that the tree might be planted with advantage through fields of tea, and I am of opinion also that if placed at wide distances apart, the shade would be beneficial rather than otherwise to the tea underneath, but the trees would have to be kept well lopped up.

The statement made by Mr. Willis that Para rubber can be grown to better advantage in the Straits than in Ceylon applies to many other Products besides Rubber, and if we are to wait until we find something that will produce better results in Ceylon than anywhere else we shall have to wait for a very long time.

Take Rice, for instance. Is this cultivation to be discouraged because it grows better in India and Burma than it does here?

Are we to cease growing Cacao because the trees give better returns in the West Indies?

Is the cultivation of Tea to be discontinued because we cannot get the flavour of Darjeeling or the strength of Assam?

In Ceylon we have labour and transport facilities which counterbalance to a great extent the drawbacks associated with an inferior soil and, what we are chiefly concerned in knowing, is not whether tropical products can be cultivated to greater advantage in other countries, but whether there is a fair prospect of making them remunerative here.

In the case of Para rubber the only figures that have as yet been made public in Ceylon go to shew that satisfactory returns can be obtained from trees growing under all the disadvantages of soil and climate, and such being the case the presumption is that very much better results may be expected when the trees that have been planted in other parts of the country have reached full maturity.

I have figures at my disposal which point to excellent returns from this cultivation; but in view of the fact that more extensive tappings are now in progress it may be well to withhold these statistics in the meantime, though in due course the information may be imparted to those interested in the cultivation of Rubber in Ceylon.

The yield from Rubber trees in the Straits is considerably in excess of the best returns in Ceylon; but as a set-off against this, labour is twice as expensive there as it is here; and there are other disadvantages to contend with, though none that are very serious so far as I am aware.—Yours faithfully,

E. S. G.

Australian Produce for the Rand.—The *Leader* announces the arrival of a refrigerator car from Durban with the first consignment of Australian and Tasmanian apples. They arrived in first-class condition, as also a quantity of pasteurised Australian butter, rolled hams and rolled bacon, sugar cured, cheeses, cakes from Swallow and Ariel, and preserved rabbits from the Flemington works.

THE TEA AND PRODUCE COMMITTEE.

REPORT.

The Committee has held four meetings during the year.

The first subject brought under notice of the Committee was the proposal for the reduetion or abolition of the duty on tea imported into the United Kingdom. A Joint Committee was appointed to consider the matter, consisting of three members of the Indian Tea Association (London) and three members of this Committee, Messrs. W. H. Anderson, H. Bois and H. K. Rutherford. But in view of the opinion, expressed by the Committee of the Planters' Assoeiation of Ceylon, that it was not desirable at the present time to press for the proposed relief it was decided to postpone any action.

A correspondenee took place with the Postmaster-General as to the rates of postage and the limits of weight for samples of Tea posted between London and Ceylon, but no modification of the rules was obtained.

The Indian Tea Assoeiation (London) submitted to the Committee certain proposals for changing the conditions of Public Sales of Tea. The chief of these was the reduction of the biddings at Sales up to 6½d from ¼d to ⅛d, but the proposed alteration did not meet with the approval of the Committee. A new seale for deposits, payable on the purchases of Tea at Publie Sales, was approved by the Committee, but it has not yet been adopted in practice.

An attempt was made without success to obtain a reduction of the very high rates of freight ruling for Tea and other Produce between Colombo and the Australian ports.

In connection with the Indian Tea Association (London) a circular has been issued to all Producers and Importers of Tea, inviting assent to the proposed abolition of the allowanee of 1 lb. draft on each package of Tea solsold at Publie Sales. A large number of assents has already been received, and it is hoped that there may be sufficient support to enable the reform to be shortly earried into effeet.

The great improvement in the statistical position of tea during the year, as giving hope of a more prosperous time in the near future, is matter for congratulaton to all coneerned.

GREAT WESTERN TEA COMPANY OF CEYLON.

DIRECTORS' REPORT.

The report of the direetors was submitted as follows:—

The Directors submit their Annual Report and Accounts for the Season ending 31st March, 1899.

The yield of Tea during the Season has been only 313,425 lb. (including a balance of 135 lb. from the previous Season) being a decrease of 145,728 lb. on last Season's crop.

This is due partly to the unfavourable Season which adversely affected the yield of all Ceylon Estates and partly to more careful plucking—the Tea averaging 48·15 cents per lb. against 40·27 cents in 1897--98—and partly to the necessity of nursing some of the fields which were suffering from previous overplucking.

The cost F. O. B. Colombo is 35·98 cents per lb. (including 3·56 cents for manuring) against 30·13 cents the previous Season, showing a profit on cultivation of 12 17 cents against 10·14 cents last Season.

The amount received under the Loss-of-Profit Policy effected over the Factory was R21,840·75 of which R13,184·46 (representing the additional cost of outside manufacture and transport caused by the destruction of the Factory) has been deducted from the Expenditure of last Season and this, and the balance R8,656·29 (taken as a set-off against the loss entailed in quality) has been passed to credit of Profit and Loss Account.

The amount available for distribution is thus R45,376·88, out of which the Directors recommend the payment of a Dividend of 6¼ per cent, absorbing R37,960·00, and in view of the present cost of and difficulty of obtaining firewood, and the need for the erection of other motive power, they recommend the carrying forward the balance R7,416·88.

The estimated crop for the current Season is 400,000 lbs. and the expenditure not including that on Capital Account R124,404·15 being at the rate of 31·10 cents per lb. tea inclusive of 3·06 cents per lb. for manuring.

In terms of the Articles of Association Mr. G. F. Walker retires by rotation, and being eligible offers himself for re-election.

PLANTING (TEA AND COFFEE) IN THE PHILLIPINES.

Mr. T. H. Stephens, well-known here and who is praetising his profession as dentist in Manilla, sends us some planting information and in return we are glad to mention that Mr. Stephens says "he ean get land eheap for anyone requiring it in the Philippines." He himself is introducing tea there; but he believes in coffee as well. From a loeal paper we quote the following aceount of what reads like a planting Eldorado:—

Mr. Donaldson-Sim finds that Benguet is a splendid place for plantations. He has over 8,000 coffee trees bearing excellently, besides some 30,000 tea seedlings and some 3,000 full-grown tea plants, bearing well and ready for picking. He has one of the best plantations in northern Luzon. He has practically no neighbors, that is to say, there is no other plantation anywhere near his, and the nearest village is about four or five miles away. His plaee is several hundred feet higher than the village, and is 4,600 feet above sea-level. He has done a good deal of experimental planting with other things with results so promising that the vexation of having the province overrun with armed lunatics, stopping all work, destroying all business, damaging all property and putting an end to every plan and scheme, is disheartening enough to drive a man mad. There is nothing to rebel about in Benguet, and the Benguet people themselves have no desire to rebel. They have nobody to rebel against and there would have been no disturbance at all if the Aguinaldists would only let people live and attend to their business in peaee.

Benguet is believed to be the riehest province in the Philippines for gold. There are native gold workings all over the province, the natives only working alluvial, but there is also quartz gold. The province is also rich in iron, copper and silver mines. It has some splendid mineral springs, especially at the village of Itogon and in Tublai in the north of the province. Benguet is partly wooded over with magnifieent pine forests as good as Norway pine, and very fine quality of wood, and the remainder of the province, probably about a half at a rough guess, is open pasture land. It is difficult to estimate how much is wood and how much is open because it is all in patches here and there. The pasture land is excellent, and horses and cows thrive better there than in any other part of the island. Most of the hills are fairly gentle, undulating slopes, not precipitous to any great extent. Cattle and ponies, fine, large animals, are very cheap in Benguet.

What about labour we would ask, and its eost?—also rainfall? Mr. Stephens knows that the unsettlement eaused by mining is not favourable to planters and their work.

COCONUT OIL AND COPRA.

The section devoted to Coconuts in the Kelani Valley Commissioner's Report contains without doubt some valuable information on the subject, but our attention has been drawn to certain averages which are apparently contradictory *e.g.*, that 1,000 nuts is a safe average of the number required to produce one candy (560 lb. or 5 cwt.) of copra, and copra contains 2-3rd oil and ⅓ poonac: while 36 nuts is a safe average to calculate for a gallon of oil. And further that according to the usual calculation 2 nuts=1 lb. copra. Now adopting these figures, as one correspondent points out, we arrive at curious results. On the basis that 1,000 nuts will give a candy of copra, we find that 3,000 nuts should give 15 cwt. copra, and that this ought to produce 10 cwt. oil and 5 cwt. poonac. But then 15 cwt. copra=1,680 lb., which at two nuts to the lb. would require 3,360 nuts for its production. Again, if 36 nuts are required for one gallon oil, the number required for 10 cwt. (125 gallons) would be 4,500 nuts. So that we thus have as a result of the calculation based on the above averages the unsatisfactory result that 10 cwt. of oil would require 3,000, or 3,360 or 4,500 nuts (as the case might be).

Another calculation gives an acre yielding 3,000 nuts as producing only 6 cwt. oil and 3 cwt. poonac, which is put down as equivalent to (not 9 cwt. but) 14½ to 15 cwt. copra. But how is the difference accounted for? Putting aside these figures for the present, we should like to know what test is adopted in the trade for ascertaining the percentage of oil in purchased copra, or is it merely judged "by the eye?"

Turning to Mr. Cochran's Manual of Chemical Analysis, we find that the percentage of oil in copra may vary from 63 to 70 per cent, and the moisture from 2 to 7 per cent. If there is no means of judging of these variations in a practical way, and if copra is bought by weight, there is surely ample opportunity for finessing on the part of sellers.—*Agricultural Magazine.*

[We suppose the process is one of "give and take" as it is in so many departments of marketable produce—some men like Mr. George Hedges in the case of 'native coffee,' have an instinctive faculty or long-trained experience to aid them in discovering the true value of what is offered.—But what is the use of arguing over so variable a quantity as a coconut: 1,000 of one size will give 560 lb. of copra, while it may require 1,600 of smaller nuts to do the same.—Ed. *T.A.*]

THE FOOCHOW TEA TRADE.

Foochow, May 27.—Business in the new seasons tea commenced on the 23rd inst. (following some early shipments of Pakling Congou as usual and a few contract chops of Panyong) and buying has gone on steadily since. The settlements to date are reported at 40,000 half-chests Congou and 3,600 chests Flowery Pekoe. The "Glaucus" calling in today for brick tea will also take about 1,100 tons of the new leaf for London. The "Glenshiel" is advertised to clear on the 2nd prox., the "Ceylon" a week later, and the "Kintuck" about the 12th. There is a rumour that the "Java" is to call on the 29th inst., but she has not yet been circulated. The "Stobberg" is to take the berth for Havre and Hamburg.

We learn that on the opening of the port of San-tu-ao it was intended that the teas of the Panyong and Paklum districts should be brought to this market by steamers, but that the dissatisfaction and discontent of the small army of natives hitherto employed in carrying the tea to Foochow was so great that the new method of conveyance had to be abandoned for the time being at any rate. The tea could not be left there to lose its market while a settlement with these good people was being come to and so the teamen had to give in, but no doubt some arrangement will be made later on. The notice given to the carriers was probably too short and it was only natural that they kicked at being suddenly deprived of their livelihood.—*Echo.*

CEYLON TEA AT SYDNEY.

Messrs. Alfred Harvey and Co. offered a catalogue of 758 Ceylons on account of Dalgety and Co., Ltd., of which they sold 648. Price teas sold at fair current rates, demand being strong for lower grades. Low to fair broken Pekoes, although a shade easier in price, were really unaltered, taking quality into consideration. Finer grades were neglected, and passed in. Pekoe Souchongs realised from 7¾d to 8d, Pekoes 8½d, and broken Pekoes 8¾d to 10d.

Messrs. H. W. Carey and Co. offered an assorted catalogue of China, Ceylon, and Indian teas, under instructions from Messrs. Gibbs, Bright, and Co., and other importers, at the Exchange yesterday afternoon. For the bulk of the Ceylons, which consisted of high-grade Orange Pekoes, biddings were much below vendors' limits to be accepted; for the Chinas and Indians also vendors' limits could only be partially compassed, but, in the face of cabled advices from producing centres, holders were not prepared to sacrifice. 150 Ceylons changed hands under the hammer at 9d to 10½d per lb., and 150 China Congous at 6¼d to 6½d per lb. in bond.—*Sydney Daily Telegraph*, May 27.

THE INDIAN TEA ASSOCIATION.

A meeting of the General Commitee of the Indian Tea Association was held at the Royal Exchange Buildings, Calcutta, last week. There were present: —Messrs. H S Ashton, H C Begg, W Brown, R Magor, G A Ormiston, M R Quin, A Tocher, R R Toynbee, and T Traill. On the motion of Mr. Begg, Mr. Ashton was unanimously elected Chairman of the Association for the year 1899-1900. Mr. Ashton, having taken the chair, proposed that Mr. Begg be elected Vice-Chairman for the year. This was seconded by Mr. Tocher, and was carried unanimously.

Ocean Freights.—The average rate obtained by the Conference during the last four years from Calcutta was 27s 6d per ton net, while the average rate from Colombo for about the same period was 23s 8d, which, in the opinion of the Conference, showed that the figures of comparison as between the two ports, which had been adopted by the Association, were fallacious. It was also impossible, with any fairness to compare the rates of freight from Colombo with those from Calcutta on a mileage basis. Moreover, Colombo was one of the cheapest, and Calcutta one of the dearest, ports in the world, and rates of freight on tea from any part of the world must be assimilated to the current general rate in that particular locality. The Conference consequently declined to make any change in the existing rates. The General Committee discussed this letter to some length. It was decided to await further information as to what action the Committee of the Association in London proposed to take in the matter, and meanwhile, to circulate the papers to the members of the Committee for further consideration.

One Pound Draft Allowance of Tea Sales.—With his letter of the 28th April, Mr. Tye forwarded copies of a joint circular issued in London by the Indian Tea Association and the Ceylon Association, asking support to a proposal to abolish the 1 lb. draft allowance on teas sold at public auction in London. This circular had been reprinted in Calcutta and issued to all members of the Association. The proposal was strongly supported by the General Committee, and a number of favourable replies had been received. These were to be forwarded to London in due course. It was understood that support had been received in London to the extent of 83,880,500 lb. of Indian, and 29,702,000 lb. of Ceylon, tea up to the time of writing.

The Paris Exhibition.—Considered (1) letter of 21st ultimo for the Hony. Secy. Nilgiri Planters' Association, asking whether a coffee room could be run in connection with the proposed Indian tea room at the Paris Exhibition, and the probable expense of so doing; (2) letter of the 26th ultimo from the Secretary, United Planters' Association of Southern

India, stating that that body had been informed by the Madras Government that the Government of India was prepared to allot space to the Indian Tea Association and to the United Planters' Association for an adequate exhibition of tea and coffee at the Paris Exhibition. The Government of India also suggested that should the two Associations desire to avail themselves of the offer, the arrangements might be most conveniently carried cut by a Central Committee working in London. The Planters, Association wished to act as far as possible in concert with the Indian Tea Association, and it was asked in the letter if any definite plan of action had been formulated. They were also desirous that a coffee room should be opened in co-operation with the tea room. After some discussion, it was decided to forward copies of both the letters quoted to the Committee of the Association in London for their information in connection with the arrangements being made. It was also decided to write the United Planters' Association to the effect that the General Committee were not yet in a position to state definitely what arrangements would finally be made for the representation of Indian tea, or whether the Committee in London could work in conjunction with the representatives of the coffee industry if the latter desired to exhibit. It was also to be suggested to the United Planters' Association that they should put themselves in communication with the Indian Tea Association, London, stating the amount of money they were prepared to spend in connection with the Exhibition and the space desired for both tea and coffee. The Nilgiri Planters' Association were to be informed in reply to their letter, that the matter had been brought to the notice of the General Committee by the United Planters' Association to which body they were to be referred.—*Madras Mail*, June 13.

THE STOWAGE OF OIL.

The last subject was to present the report of the special committee appointed to consider the question of stowage of oil in steamers loading in Ceylon, which we published in our last issue.

APPROVED OF BY THE CEYLON CHAMBER OF COMMERCE FOR THE GUIDANCE OF CAPTAINS AND STEVEDORES OF STEAMERS LOADING IN CEYLON.

I. GENERAL RULES.—A solid level to be laid in ship's hold for the ground tier where coconut oil is shipped. The tier to be well bedded and quarter coigned, and a strict cantline to be observed.

Wings of bottom tier to be made up with dunnage wood. No small packages to be stowed in the wings, unless they can be protected from tho weight of the next and following tiers above. This can be done by having uprights in wing, and strong cross-beds to rest on.

It is permissible to stow plumbago over oil, but not oil over plumbago.

Top tier in lower hold and top tier in 'tween decks must be well chocked and wedged off to prevent shifting. *This rule should have particular attention.* No packages to be stowed athwart-ship except in top tier.

Vessels without 'tween decks must lay one or a platform with 2" hardwood planks not more than 6" apart.

Copra, jaggery, dates, and other cargo throwing off heat must not he stowed in proximity to oil, as this is sure to lead to leakage by the heat shrinking the wood of the packages and expanding the hoops and oil. Termeric, ginger, pepper, &c., should be well dunnaged off, so as to prevent contact with oil packages.

II. COCONUT OIL PACKAGES to be well bedded and coigned, and a strict cantline and tier to be kept.

Casks must be well chocked off with dunnage wood and be stowed bung-up and bilge free. No more than 4 tiers of pipes to be allowed without an intervening platform as described above. No packages to be stowed athwart-ship except in top tier.

III. PLUMBAGO.—When commencing to stow plumbago on oil a perfect level should first be made with dunnage so as to form a platform. The barrels to be stowed in square tiers full bilge and cantline, and to be well bedded in the first tier.

Particular care should be taken that the barrels are stowed in such a manner that the head staves are perpendicular.

Old sails and (or) mats to be put under the plumbago so as to enable the discharging Stevedoro to readily collect sweepings from leakage and broken barrels. No more than three tiers with oil, and five tiers where no oil, to be allowed without an intervening deck, and no barrels to be stowed athwart-ship expect in top tier, and then only to make a chock.

IV. ESSENTIAL OIL should be stowed away from any cargo liable to be affected by smell.

V. DUNNAGE WOOD to be used in sufficient quantity to properly bed, chock, and secure cargo so as to prevent any possibility of shifting.

VI. VENTILATION requires particular attention of Captains. If properly carried out by removing fore and aft hatch in cool and fine weather, it will chill the oil and prevent all leakage. Coconut oil will congeal at a temperatnre of 60° F.

VII. PACKAGES IN BAD ORDER and showing signs of leakage should not be stowed away until properly attended to by shipper's coopers. If the defect be serions and cannot be repaired on board, the package must be returned without delay.

Chamber of Commerce, Colombo, 1st June, 1889.

COPRA.

SAMOA.—During the last quarter of 1898 no invoices were issued at this consulate. Upon inquiry, I find that the contract of the German firm with the San Francisco merchant has terminated, and that a fair price for the commodity cannot be obtained in the United States. I am informed that only a trifle more than the cost of the copra at this place can be obtained at San Francisco. During the last year, Lever Brothers, of Sydney, had an agent here, and competition was sharp. By the last steamer the agent was notified that he was no longer needed, and that they had constituted the German firm their sole agents. This indicates that the entire product of the islands will from this time go to the colonies or to Europe. Rates between San Francisco and Samoa have been such that most American commodities consumed here are sent to Sydney, and thence 2,800 miles to Apia, and delivered here much cheaper than they could be obtained direct from San Francisco. The tariff direct from San Francisco is $16 per marine ton, and from Vancouver to Sydney $6 per ton. Possibly some arrangement could be made by which could be sent to Vancouver and thence to Fiji, and then here by the interisland boats, which to some extent would relieve this place from the excessive rates from San Francisco.—*United States Consul at Apia.*

SOUTH MYSORE PLANTERS' ASSOCIATION.

The annual general meeting was held at Munzerabad Club, Saklaspur, on the 30th ultimo; and from a speech of Mr. A.R. Park (President), we quote:—

"It is my pleasant duty to report that the somewhat gloomy forebodings expressed early in the year have not been realised, and that the season, on the whole, has been a moderately good one. The advices of sales of East India that have reached us indicate a depressed state of the market, which, owing to the increasing production in different parts of the world, seems likely to continue for some time. The cardamom crop was above average, but prices were lower, ruling from R50 to R60 per maund. Leaf disease has been less prevalent than for some years past. Crop prospects for the coming year are favorable, and the rain which fell in February has not on the whole been prejudicial."

Agricultural Chemist.—The out come of the various discussions that have taken place, as far as Mysore is concernned, is the appointment of Dr. Lehmann, the Dewan exhibiting in the matter his accustomed liberal-mindedness. All those who are interested in agriculture cannot fail to be gratified at the appointment of so highly qualified a Chemist, and I hope shortly we may learn what course the Durbar intend pursuing as regards his work. Meanwhile he has lost no time in showing a desire to become acquainted with the local circumstances, as is seen by his present visit to this district.

Forests.—I have written to the Chief Conservator of Forests to enquire if grants of land for cardamom cultivation have been made in the forests of Kubbenhully, Bisleh and Kemphully, and await his reply.

Mr. Park was elected, President, and Mr. Playfair, Honorary Secretary.

MINOR PRODUCTS.

From Messrs. Schimmel & Co.'s "Semi-Annual Report," (April 1899) we take the following:—

Cinnamon Oil, Ceylon—The Cinnamon market has settled down somewhat during recentmonths, but the prices still remain high. The transactoins in cinnamon chips, the material used for the distillation of the oil, have surpassed any former oues. In 1898: 1,414,165 lb have been shipped, against 1,067,051 in 1897. The chips reached the highest price at 4d per lb, and since several months have brought 3¼d to 3½d per lb at Hamburg. The above figures show that Germany is now rauging at the head in the consumption of this commodity. Ceylon cinnamon oil is a speciality of our firm.

Citronella Oil.—The transactions iu this article have again considerably increased in 1898. The export from Colombo and Galle (Ceylon) reached the as yet greatest maximum figure, namely 1,365,917 lb. The distribution figures, however, do not exactly indicate the real consuming countries, for a considerable part of the oil destined for Germany and France only passes through England in transit. In our estimate Germany consumes at least 220,000 lb, or about one sixth of the entire production. A recent paper on the production of citronella oil, published in the October number (1898) of the *Tropical Agriculturist*, agrees in the principle points with the iuformation given in our Reports of October 1898. Two kiuds of citronella grass, *Maha pangiri* and *Lenabatu pangiri* are said to serve for distillation. The former is hardly cultivated any longer, while the latter was little known twenty-five years ago. *Maha pangiri* is said to be richer in oil but to perish after a cultivation for ten to fifteeu years. The cultivation of citronella grass and tbe distillation of the oil are now sufficiently well known so that every one interested in them can readily obtain all desired iuformation. The well known simple and reliable method testing the oil, elaborated by us and called "Schimmel's test," meets with approval and success. The proper rejoinder to some objections raised against it may be found on pages 16 and 17 of our October Report of 1898. Our test is in every respect as reliable as it is practical and deserving of full confidence and general application. A first shipment of citronella oil from a new plantation and distillery from Java, amounting to about 300 kilos, is on its way to us. Preliminary specimens which have reached ns indicate an oil of superior quality of a very light colour and high percentage of geraniol. We must, however, defer our final estimate until the arrival of the gross lot. According to a recent statement in No. 986 of the *Chemist and Druggist* (London) a syndicate of Arabs has purchased a considerable area in Queenland for tbe purpose of raising citronella grass for distillation.

Geranium Oil.—Tbe cultivation of geraniuim has been considerably extended in Algiers aud as an additional explanation of the steady decline of values it is claimed that a greater yield of oil is obtained in consequence of better methods of raising the plants aud distilling the material. As far as we have been informed about the geranium production and the appointments for distillation, they by no means excell by perfection. The price of the oil is a low oue in conseqnence of overproduction. Réunion oil, formerly much in favour; has become less in demand because it renders unsatisfactory results with transparant soaps. In view of the slight difference in price, African oil is preferred. The geranium cnltivation on Réunion, moreover has experienced a considerable reduction, since the plantation of vanila has proved more remunerative and surer of profitable disposal. Our supplies of East Indian oil of geranium (Palmarosa oil) have arrived and are of excellent qnality. Upon several estimates they contain 92 per cent of geraniol. The price of the oil is normal and no reduction is to be expected. We also have a fresh supply of the exceedingly fine Spanish oil.—[Could not Geraniums on estates up-country be utilised for oil?—Ed. *C.O.*]

Lemongrass Oil.—In this article normal values have finally retnrned. Quotations in China vary between 2½d to 2¾d per onnce, and transactions are said to be very dull, because large stocks are still laid up in Loudon, checking any speculative tendency.

BUDDING MANGOES.

Mr. R. Bunnage, of Gracemere, Queensland, has successfully budded two mango-trees, and one of these has borne fruit for the past two seasons. The other, although the buds have uuited properly, has not yet begun to bear. The tree to be budded should be in full growth, and all the youug wood should be taken off, but sufficient must be left to afford shade for the buds. The operation is best carried ont in dull weather, and the buds shonld not be too far advanced. As soon as the tree is budded, all other growth mnst be taken off as it occurs, or the bnds will not take.

On this subject Mr. A. H. Benson says:—"I note with interest that Mr. Bunuage has been snccessful in budding the mango, and agree with him that for the operation to be successful the tree to be budded must be in full growth. I should not, however, consider it advisable to cut back the tree that is to be budded before the union of the bud and stock has taken place, as there wonld be a dauger of flooding tbe bud with too much sap, and consequently preventing a union. I have seen a mango-tree successfully budded in Mackay, and have succeeded in budding young seedling mango-trees myself. Unlike Mr. Bunnage, I wonld prefer the buds to be plnmp and fully developed; in fact, just ready to start into growth."—*Queensland Agricultural Journal.*

International Scientific Bureau.—Correspondence that has taken place between the Hon. Secretary of the Asiatic Society of Bengal and the Ceylon Government has been published regarding the subject of an international catalogue of scientific literature proposed by the Royal Society of London and the share Ceylon will take in the matter. Steps are being taken by the Ceylon Government to carry out the scheme and copies of the correspondence have been forwarded to the Secretary of the Ceylon Branch of the Royal Asiatic Society and the President of the Medical Association Ceylon. What Ceylon as well as India is requested to do is (*a*) to direct the heads of all Departments issuing publications, of which any of the contents come within the scope of the Royal Society's Catalogue, to supply to the Asiatic Society "index slips" prepared in accordance with the scheme finally adopted by the Royal Society; (*b*) to instruct all local Governments and Administrations—to supply to the Asiatic Society periodical lists of all Scientific and Literary Societies established within their jurisdiction, and periodical lists of all books published within their jurisdiction

THE PROPOSED ABOLITION OF THE DRAFT POUND.

To the Editor of the Home and Colonial Mail.

SIR,—As the pound draft question is being debated now, I venture to suggest an alternative method of getting over the difficulty. The importers say "that the profits are so small that it is imperative to curtail every item of expenditure to the very lowest limits." And as there are various other items of expenditure on an average chest of Indian or Ceylon tea (worth, say, 8d per lb), it seems to me that, before interfering with an old trade custom, and raising another very serious controversy with the buyers of tea, it might be possible to apply the pruning knife first to such items as :

	Per chest.	
	s.	d.
Shipping charges and freight	4	0
Warehouse charges and insurance	3	8½
Calcutta agency commission	1	6
London agency commission	1	9
Brokerage and public sale charges	0	½
	11	

Now, the average saving to be effected by withholding the draft pound would only amount to 8d, and it seems to me that before levying all the tax on the retail tea dealer, it would be more productive to squeeze a little off the Calcutta and London agents, who seem to enjoy rather an undue share, in consideration of the amount of work they have to do. —I am, &c., A TEA DEALER.

IMPORTANT TO THE TEA TRADE.

We understand that a very determined effort will shortly be made to abolish the one pound draft allowed from time immemorial on chests and half chests of tea. In 1870 a similar attempt was made to carry out the same object, but, owing to the active efforts made by the leading wholesale and retail traders, the project was completely defeated, and the subject has not been raised for nearly thirty years. With similar energy on the part of the dealers there is no reason why they should not be equally successful in resisting the present attempt to deprive the trade of their legitimate rights.

It is well-known that teas are now weighed much closer than was the case a few years ago, and the experience of dealers is that, even allowing for the one pound draft, the net weight of tea contained in many packages is less than that actually paid for. Moreover, the trade has long suffered serious loss and inconvenience from the inefficient manner in which teas are bulked in London. Indeed, in many cases, it is well-known that importers instruct their warehouse keepers not to bulk their teas at all, trusting to luck that no complaint will be made by the buyer, and this, notwithstanding the fact that all catalogues state that "These teas have been weighed, inspected, and bulked" (in the country of production or London). In fairness to the better known companies it should, however, be stated that these latter remarks do not apply, as most of the teas from their estates are properly bulked at the place of growth. Still, the evil is an important, and, we fear, an increasing one, as far more complaints are now made with regard to the matter than was formerly the case. Meanwhile, we hope that immediate steps will be taken for opposing the proposal to abolish the one pound draft, and our columns, as on the previous occasion, are open for the free ventilation of this important subject.

On reading through the discussions which took place in 1870, nothing can be more clear than the fact that this draft was not allowed for loss of weight only, but was intended to cover all sorts of other contingencies arising from the nature of the trade, such as the occasional refusal of any allowance for damage, false package, &c., after delivery from the public warehouses. Of course, also buying at original landed weights, the trade accept a great risk when delivery is delayed, as it often is, and they must have some margin in return.—*Produce Market*, May 20.

INDIAN PATENT.

Applications for the under specified inventions have been made:—

No. 133.—Samuel Cleland Davidson, merchant, of Sirocco Engineering Works, Belfast, Ireland. Improvements in means of supporting the bearings of spindles or shafts in wall brackets or frames.

No 134.—Samuel Cleland Davidson, merchant, of Sirocco Engineering Words, Belfast, Ireland. Improvements in centrifugal fans and pumps.

No. 165.—William Jackson, Engineer, of Thorn Grove, Mannofield, Aberdeen, North Britain. Improvements in apparatus for sifting, sorting and classifying tea or other products or materials.—*Indian and Eastern Engineer.*

CEYLON TEA IN AMERICA.—In our daily and *Tropical Agriculturist* will be found a good deal on this subject: Mr. Mackenzie reports progress and Mr. R. E. Pineo, at some length, discusses the need of extending as well as continuing the American campaign. "Advertising" is the burden of Mr. Pineo's advice and well pleased we are to follow him, until we come to the point where we learn that he would exclude advertising in the daily newspapers! "O lame and impotent conclusion," and yet it is true that the "dailies" are not regarded in the States as they are in British territory—and yet these papers must be read? If so, we believe it should pay well for the Ceylon Commissioner to make a contract in a few prominent dailies for a really conspicuous but concise intimation, such as "Drink Pure Ceylon Tea." It is all nonsense to say such would not eventually tell and if it is not the custom to advertise in dailies, the charge should be all the more moderate Mr. Pineo believes in "Demonstrations" and rightly so;—but to dvocate an illustrated lecture on our "Buried Cities," in order to get the Americans to drink Ceylon tae, savours a little of the comical! And yet again, the "sensacional" as well as the "amusing" must be freely used if popular attention is to be attracted across the Atlantic. Still, we should think that a lecturing campaign treating Ceylon on its productive merits—the island of cinnamon, cardamoms, citronella, coconuts, cacao, coffee, coolies and Cinghalese!—adding in its gems, pearls, plumbago, its grand variety of palms and all their wonders and winding up with its TEA, ought to tell. But there cannot be too much of a good thing and certainly the "Buried Cities," if backed by Mr. Cave's illustrations, would prove a capital subject; but would it be quite fair to tag on to it "a tea demonstration"? Mr. Mackenzie should be the best judge.

MATTE TEA.

Brazil.—Curityba is the centre of the "matté" industry, which employs nineteen mills in the town and suburbs. The preparation, though simple, is all done by machinery. The raw material arrives in sacks of about 1 cwt. from the interior. At the mill the leaves and finer stems are separated and ground to dust of various fineness. The thicker stems serve as fuel. The Argentines prefer dust "matté," and as they suck it through a "bombilla" are not inconvenienced by the floating particles; but there is no reason why it should not be prepared in the leaf like tea. The decoction has a greenish colour. The taste is agreeable, but not so aromatic as tea. It is stated that "matté" is peculiarly sustaining; that it is a digestive nerve tonic and cure for sleeplessness. The "Gauchos" of Rio Grande, Uruguay, and Argentina are the chief consumers, and will do a hard day's work with no other nourishment. Mr. David Carneiro, whose mill we visited, employs about thirty men, and when in full work the daily output is between eighty and ninety barrels of about 250 lb. The dried leaves and twigs, as they arrive unprepared from the interior, cost on an average 13 milreis, or 8s. 8d. a cwt., and the price prepared at Curityba averages 23 milreis, or about 15s. 6d a cwt. The retail price at Buenos Ayres varies from 20s to 50s. a cwt. Mr. Carneiro is endeavouring to create a market for "matte" in Europe, and stated that duties, freight, &c., paid, it can be sold in France at 1 fr. a kilo. An agent has already been secured at Paris, and another in London. If "matte" drinking ever becomes popular in Europe, it will be more probably among the labouring classes, on account of its cheapness and sustaining qualities.—*British Legation Report from Rio de Janeiro.*

PRODUCE AND PLANTING.

THE DEMAND FOR CEYLON TEA IN RUSSIA.—The British Consul at Odessa, in his official report, had something very encouraging to say about Ceylon tea. He refers to the increasing consumption, and points out that it is only a few years since it was introduced into Russia, and last year nearly two and three-quarter million pounds of tea were shipped from Ceylon direct to Odessa, against less than half a million pounds in 1897. He points out that teas from China and Ceylon are imported in vessels of the Russian volunteer fleet, which, owing to the low freights charged by those vessels on the homeward voyages, have now practically a monopoly of the tea-carrying trade from the tea ports of China and from Colombo, more especially as now tea imported from the Far East in Russian bottoms has preferential railway rates between Odessa and Moscow. On the other hand, there is a growing purchase by Ceylon of Russian petroleum; in 1897 and 1898 Colombo took over one and a quarter million gallons each year. The Acting Consul-General suggests that Australian firms might avail themselves of the low rates of freight in order to introduce tin, tallow, copra, &c., into Russia. It is said that if these commodities were shipped by Singapore the local agency of the volunteer fleet would undertake their transhipment into Russian vessels on moderate terms.

DRAFT ON TEA SALES.—The following is a copy of a protest signed by practically all the leading wholesale tea firms and many country dealers against the proposals of the Indian and Ceylon Tea Associations in London. Clearly there is to be a strong stand against the abolition of the draft allowance:—"The Secretary, Indian Tea Association, London, May 23, 1899.—Dear Sir,—Our attention has been called to a circular and memorandum, issued by your Association, in conjunction with the Ceylon Association in London, to producers and importers of tea, containing a proposal to abolish the draft allowance on teas sold by public auction in London, and inviting support. In the Memorandum it is stated that it would be to the interest of producers and importers that the proposal should be carried into effect, and that it has the unanimous approval of the committee of the two associations named. As this is a matter affecting, in a very serious way, the interests of the entire wholesale and retail tea trades, we feel that we canno allow the circular to pass without entering a strong protest against the proposal which it contains. In opposition to the very trifling reasons advanced for the suggested alteration may be set a host of long-standing grievances under which those engaged in the tea trade in this country have been labouring for years, without being able to obtain the slightest satisfaction, mainly owing to the most unreasonable conditions of public sale. With regard to paragraph No. 8 in the memorandum, we submit that it is no argument to compare a duty-paid article like tea with bacon and cheese, as in the case of the former there is a very serious loss in the process of handling, sampling, and blending, and then again an additional waste in weighing in ordinary bulk form for general trade. This is accentuated when the retailer requires teas weighed out in small quantities, the total loss being much greater than the trifling and inadequate overdraft which it has hitherto been the custom from time immemorial to allow. Again, there is a regular loss through bad cooperage and broken, inferior lead, the latter resulting in the mixing of chips of wood with the tea, and the loss by percolation in transit. Another ever-present difficulty is that of extracting extraneous matter from teas, more especially nails, which results in considerable loss and inconvenience to dealers. What with cheesy teas, mouldy teas, badly bulked teas, teas smelling strongly of indiarubber, apples, and other foreign substances, inferior returns in sample packages, and various other complaints with which the members of your association must be well acquainted, if the suggestion to remove the last crumb of comfort is carried it will be the duty of the undersigned to take steps to protect their interests in a way which will very much out-balance any benefit which might be gained by the merchants in the abolition of the pound draft, viz., by taking stringent measures to see that the conditions of sale are in every case followed to the letter especially as regards bulking, so as to ensure teas being in every way equal to sale sample. United action will also be taken in an effective way to deal with Clause 5 of the conditions of sale, which in its present form is an utter impossibility to buyers. We request that you will place this letter before your committee for their kind attention, and we remain, yours faithfully," (Here follow the signatures.)

TEA IN FRANCE.—Following the desire to be up to date as in London, the Parisians are taking rather slowly, it must be admitted, to tea, not as a decoction for invalids, but as a drink to be taken with food. Confectioners are inviting their customers to afternoon tea, and there is at length some prospect of tea becoming popular. Now is the time for developing the French taste for tea, and pushing the Ceylon and Indian product, for most of the tea sold at present in France is indescribably bad and very dear.

PUBLIC SALES OF COFFEE.—The "Grocer" calls attention to a congestion of public sales in coffee, which tends, it points out, to throw everything out of gear, and threatens to bring business in landed parcels of coffee to a deadlock. Complaints, though for the moment suppressed, are not the less urgent and strongly made against the defective arrangements, as they now exist, for disposing of coffee by auction; and the evils resulting from the prevailing system in occasioning delays, loss of time, and postponements of sales, have caused such widespread inconvenience to importers, exporters, and wholesale dealers, that it is admitted by all parties that "something should be done" to remedy the existing state of affairs as speedily as may be, or a complete break-down must occur in the whole commercial machinery for supplying the article to the public. Already this year public sales of coffee in Mincing Lane have been postponed more frequently than ever, entirely because of the excessive quantities put forward on certain

specified days, and it has always been uncertain when and at what hour such and such an auction in a long series would commence and finish. The same kind of chaos and confusion has been repeated during the present week, when, among the brokers's catalogues printed and issued for coffee to be sold under the hammer, were included eleven that contained particulars of parcels and descriptions which had been advertised for public sale on the 12th inst., being nearly a fortnight later than the date originally fixed. At this rate of progress the new season will be far advanced ere the superabundant imports of coffee from the British East Indies, Costa Rica, Guatemala, and other parts of Central America, will be worked off, and the nearer the trade get at the wind-up of the supplies for 1899, the fewer will their chances be of securing precisely the kind of coffee they require to carry their supply over till another year. A healthy competition has prevailed at the different auctions since the earlier part of the season, which fact goes to prove that both dealers and shippers were practically bare of stock at the outset; and as their wants have increased rather than otherwise, the extra buying necessary to replenish the exhausted stores of bonded or duty-paid coffee has lent additional support to the import market. Though the rates submitted to have been unquestionably low for the worst descriptions of coffee, they have been reasonably cheap, if at times uneven, for the middling and intermediate grades; whilst for bright colour y, fancy, and attractive growths of plantation coffee, instead of a reduction a tangible advance has in many cases been seen.

A Suggested Remedy.—A few of the leading members of the coffee trade, with bolder spirits than their fellows, have hinted that Monday, which from ancient custom has been regarded as an "off" day, should in future be given up for the purpose of clearing away to arrears remaining from public auctions held in the preceding week. Some such arrangement would no doubt materially help to bring the average daily supply of coffee within a manageable compass, and greatly facilitate the sale, preparation, and distribution of the article throughout the country; but from what we have heard in influential quarters, says the *Grocer*, so drastic a course of proceeding on the part of brokers and their merchants would be strongly opposed by the wholesale dealers, who would resist to the utmost any encroachment on their Mondays. *H and C Mail*, June 2nd.

CEYLON ASSOCIATION IN LONDON.

REPORT OF THE EXECUTIVE COMMITTEE FOR 1898-1899.

LAID BEFORE THE ELEVENTH ANNUAL GENERAL MEETING, ON 12TH JUNE.

There has been again, as in every previous year, an increase in the numbers on the roll, the present number being 163 as against 159 n 1898.

As foreshadowed in the last report arrangements were made by the Committee for the full statement of the ease for Ceylon before the Indian Currency Committee. Messrs. T. North Christie and H. Bois gave evidence in much detail as to the effect on Ceylon producing industries of the forced appreciation of the rupee, and have thereby earned the thanks of the Association. The Currency Committee has now finished its sittings for taking evidence, and its report is awaited with interest.

On 19th December last a General Meeting of the Association was held to consider the following resolutions:—1. "That this Association strongly disapproves of the proposed expenditure on the Ceylon Northern Railway, as being opposed to the true economies of the Colony." 2. "That a deputation be appointed to wait on the Right Honourable J. Chamberlain, M.P., with the view of urging on the Government a re-consideration of the Ceylon Northern Railway scheme, and that Lord Stanmore be asked to introduce the deputation." The immediate result of the meeting was to disclose among Ceylon residents at home, many of them with very large interests in the Colony, a remarkable consensus of opinion adverse to the Government scheme, and the resolution of disapproval was passed *nem. con.* The deputation to the Secretary of State, it was decided, should be postponed till the views of the public bodies in Ceylon could be ascertained.

The position of this very important public question in Ceylon at the date of the Association meeting was, considering the novelty and gravity of the proposals, a singular one. It is true that early in the year both the Planters' Association and the Chamber of Commerce had passed resolutions approving of the then Government proposals; but those proposals embraced another Railway, and hence the value of the resolutions, as bearing on the Northern Railway, was rendered very uncertain.

Subsequently a change was made by the Government, both in respect of the gauge and of the provision of funds for the construction of the Northern line, a change on behalf of which no word of approval has been heard as yet from any quarter. The public bodies in Ceylon accepted the amended scheme without protest. Not so the local press; and in view of published statements as to the condition of opinion in Ceylon, statements which were left without contradiction, the Executive Officers of the Association felt it their duty to allow the question to be re-opened. Their action has been justified by the subsequent proceedings of the Ceylon public bodies.

It was most unfortunate that when for a second time the question came before the Planters' Association and Chamber of Commerce calm discussion on the merits of the Northern Railway should have been prejudiced by the introduction of personal and irrelevant matter, the more so as in the result the protest to the Secretary of State for the Colonies was thereby greatly weakened.

A deputation, representing the various interests of the Colony, waited on the Secretary of State on 16th March, and was informed that the Railway would be made, and made as a broad gauge line.

The Committee is unable to share the regret expressed by the Ceylon Chamber of Commerce and by the Chairman of the Planters' Association at the action of this Association; but, on the contrary, deems it a matter of congratulation that, at last, a formal protest has been lodged against the new Railway Policy of the Government.

The vote of thanks, accorded to Mr. J. Henniker Heaton, M.P. by the Association for his services in securing for Ceylon the benefit of Imperial Penny Postage, led to an invitation from that gentleman to representatives of the Association to attend a conference at the House of Commons to consider a scheme for the reduction of the cost of telegrams between the United Kingdom and the Colonies. The invitation was readily accepted, and it is hoped that the agitation thus initiated may prove successful.

The Committee regrets to report the death, during the year, of Mr. W Bowden Smith, a gen-

tleman, who for forty years had been connected with the Ceylon planting industry, and during the years 1874-76 had represented that industry in the Legislative Council.

HOW IT STRUCK AN AMERICAN.

[EXTRACT FROM A LETTER RECEIVED FROM GENERAL NAGLE BY MR. R. E. PINEO.]

"My Dear Sir,—I was quite delighted with your beautiful city, and with the evidences of prosperity which we saw on every hand.

"I have just read an article from your pen entitled 'Ceylon Tea in America.' Being an American, I was struck with the force of your suggestions concerning the most effective advertising of Ceylon tea in America.

"There is no question but that you people furnish a tea that is superior in quality and flavour to anything that comes to our shores, which, if properly advertised—its merits well demonstrated—would secure for it a very large sale indeed.

"Your Exhibit at the World's Fair in Chicago in '93 certainly must have augmented the demand for it very much, BUT A LIKE AMOUNT SPENT AS YOU SUGGEST WOULD BRING FAR GREATER RETURNS. The States are of very wide extent, filled with seventy millions of prosperous consumers. There is no way to make an impression on them in favour of Ceylon tea, but by hanging your banner on the outer wall and *keeping it there* CONTINUALLY. *The people who drink tea must see the banner*—not the jobber alone—and it will be of infinitely more advantage if they can be induced to sample the tea. In almost every case this will result in securing a new customer, which will swell the demand for the tea, and will furnish an incentive to the retailer and wholesaler alike to *push* Ceylon tea. *The advertisement in the local newspaper with the dealer's name attached will be worth far more than any general advertising you can do.*

"I have been a maker of American newspapers the greater part of my life, and feel that I know something of the subject in hand. I think I am safe in saying that, if Ceylon tea is properly put before the American people, you will have gained a permanent customer that will make the beautiful island of Ceylon, with its enterprising and interesting people, wealthy beyond expectation."

INDIA AND THE TEA CAMPAIGN.

At the annual general meeting of the Indian Tea Association, held on 29th May, Mr. Ashton drew attention to the fact that though Mr. Blechynden's engagement had terminated this by no means meant that the efforts to push our teas in America were to be abondoned. The new levy will be used for America, for Russia, and for the Paris Exhibition and India will work with Ceylon. Mr. Ashton points out—in view of the criticisms which have been made in the newspapers, and by some Association members since they heard of the termination of Mr. Blechynden's engagement—that the London Committee, who are the executive in all matters connected with Europe and America, are not in the happy position of our Ceylon friends. They do not know from year to year that they will get all the money they will require. They have to send out a levy, and they never know whether members of the Association even will respond fully to their request for funds. Mr. Ashton says: "Obviously this is very cramping when they have to make up a programme; and I think the details they have sent us are all we can expect at this stage of affairs. I desire, therefore to appeal most strongly to proprietors if they accept the principle of joint advertising, to trust to the London executive, and not to cavil at details. The detail of a programme can never satisfy everybody, and I confess to being a little suspicious of people who tell you that they approve of a general idea, that they are the last people in the world who seek to benefit by other people's expenditure, but that they have not subscribed because so and so is done, or has not been done. I suggest to you to subscribe first." The sale of tea in India was next reviewed, and the distribution of pice-packets of quinine—through the agency of the Post Office—and the refusal of the Government to sanction tea being sold in the same way through postmasters noted. Mr. Ashton does not seem very much surprised that we have not been able to develop the local tea trade quicker. He says: —"I have often noticed in the criticisms people make on this matter, and the parallels they draw between what is done in India and in foreign markets, they leave out of sight the fact that foreign markets we compete against beer, coffee, spirits, wine and so on. These are all very much more expensive articles than tea, and the difficulty in those markets is not one of price but one of taste. We have to divert or create the taste of the people. In India it is quite different because here the natives are almost entirely water drinkers, and tea, although it is cheap, cannot compete with water on price. The consequence is that whereas the important matter in foreign markets is taste, the important matter in India is price. It seems to me that to induce people—and a very slow-moving people too—to spend more money on drink than they like is harder, if you take profits into account, than to divert taste, say from coffee to tea when you at the same time save people's pockets."—*Planter*, June 10.

CASUARINAS.—A correspondent elsewhere gives us some very interesting information about Casuarinas in Ceylon. We recall the fact that a Ceylon planter made "a little fortune" 30 years ago through a plantation of Casuarinas he had planted near the sea coast outside Madras city.

OVER-PLUCKING TEA.—A Ceylon planter writes to an Indian contemporary :—

"I have heard it said in more places than one and particularly from Indian tea planters who have now and again visited this district that in Ceylon we over-pluck, this, too, not so much from the older trees but from the younger ones particularly. Now as this has not come from *one* Indian tea planter, but from nearly all, surely their views should be received with attention, instead of our calmly ignoring the statement altogether. I have a friend who is in Assam and has been there for many years who writes me that he cannot believe that I am getting 500 lb. tea per acre off my estate, which is a young one. He tells me that he would never pluck it up to that but be content with 200 to 300 lb. and even off full-bearing tea he would not take more than 400 to 500 lb. at the most now. I would ask are we on the right tack? Are we doing the correct thing, and that which is likely to ultimately benefit the estate owners? That good tea estates in Ceylon will bear up to 700 lb. per acre is, I think, beyond doubt, but I want to know whether we are right in taking that quantity; will it not in all probability impoverish our trees in a few years?"

What does this Ceylon planter say to the 100 acres tea field on Mariawatte plucked at a rate averaging over 1,100 lb. per acre for 16 years and still vigorous!—or, higher up, the 30-year old field on Loolecondera giving between 400 and 500 lb. and looking remarkably well?

FACILITIES FOR MAKING GOOD TEA:—X.

KELEBOKKA—RANGALA—UPPER HEWAHETA; MANURING AND PRICES.

Two letters from Madulkele, one from Rangala, and one from Hewaheta, may be conveniently treated together, though they illustrate diverse views. While one of the Madulkele letters (from the higher part of Kellebokka) holds "wind, mist and rain" as the drawbacks to making better tea, the other considers the character of the factories (one only being first-class in the district), the over-pruning and over-plucking of bushes whereby their health suffers and the flavour is affected, the chief obstacles to be overcome. And both planters are men of wide experience and keen observation. Our Rangala Correspondent again sees no drawbacks, as, with finer plucking on most estates, as good tea is turned out in the district as is possible; not so, the writer in Upper Hewaheta, who holds the weather in the North-East monsoon a drawback, and also the fact that half the crop of the district is plucked between 20th February and 7th June. But have not the months of pruning any effect on the chief months of plucking? On, perhaps, one estate only is all the tea regarded as good jât; on most estates there is, according to all four letters, a mixture represented on the whole by "fair"—the planting of over ten years being inferior. While one Kellebokka writer admits general poverty of soil, in which Rangala agrees, the other regards the general character of the soil as not poor. Our Hewaheta friend distinguishes between old coffee land, in which the soil is poor, and jungle land which is good. There is no difference in opinion that some of the Kellebokka estates are worn out, chiefly old coffee estates, whose surface soil has disappeared. In Rangala, as most of the tea is on old land, much of it has necessarily been worn; and what is not old, is wind-blown! So our friend cheerfully remarks that over-cropping is not the cause of the wearing out; while Hewaheta understands our question in an unusual sense, when he says that estates are worn out, only as far as good yields are concerned, and not as respects flavour and strength of liquor. Our question had reference to the character of the soil; and, perhaps, an answer is to be found in the fact that, though the yield of the land might be better, the flavour and strength of the tea remain what they were—which is not the general experience. Manuring, says one of our Madulkele friends, will improve the tea and prove profitable, on estates along the public cart road; the other admits improvement of the bushes as a sequel to manuring, which, however, is further followed by a fall in prices where manure has been extensively used. This last is an important statement; and we should like to see it thoroughly sifted. Is it merely a case of *post hoc, ergo propter hoc*, or, if an explanation is not to be found in the special character of the manures employed, can there have been climatic or other considerations to account for the fall in price. Rangala practically shares the opinion first-mentioned, with the qualification that the profitableness of the operation is doubtful at present prices. Hewaheta is rather indefinite, in asserting that we have yet to learn the best form of manure to help to keep the tea bush in good heart.

The opinion of one of the Madulkelites on factories is to be found in his answer to the first question, which includes insufficient withering space among the drawbacks, and he is supported by his district neighbour, who further explains that the deficiency is chiefly due to the long spells of bad weather, which are at the bottom of most of the mischief in the Kellebokka and Knuckles districts. The two other districts suffer from the deficiency, though Rangala notes an improvement of late. In motive power little remains to be desired, except in dry weather; but as respects machinery, Kellebokka, in the opinion of one writer, is decidedly deficient in some places. Enough, or more than enough, is the general response to the question touching labour. On pruning, the opinion of one writer has already been expressed, as a drawback to making good tea, owing to its undue severity; but while he does not think the knife has been too long withheld, the other writer declares that the two extremes, of cutting down to within a few inches of the ground, and letting the bushes up to 2 feet or 2½ generally prevail. Rangala has no complaint against pruning; and he and Hewaheta are agreed on pruning at intervals of 18 months to two years. "General remarks" take the form of a growl against "Weather! Weather! Weather!" from one Madulkele source; while the other descants strongly against cruel pruning and close cropping as telling against the general health of the bushes. Rangala regards cheap manure as the only cure possible, where the old land is getting exhausted and the young is too exposed for heavy flushing; and Hewaheta rather contradicting itself as to loss of flavour, desires information as to the cause of the loss of some of the flavour for which tea from the district was noted some ten years ago. This, however, bears out the opinion of Mr. T. C. Owen which we quoted the other day as to a connection between virgin soil and delicate flavour; but, on the other hand, that veteran agriculturist, Mr. Joseph Holloway, on our sixth page today indicates how flavour as well as vigour may be maintained by judicious cultivation.

THE FLORIDA VELVET BEAN.

For the past year or two a great deal has been written about this extraordinary plant. Mr. Geo. W. Hastings, an orange grower in Florida State, thus sums up his experience of it in one of the leading American papers, and in view of the introduction of this bean to this colony may be of interest:—

"The cultivation of the velvet bean up to the present time has established the following facts:—For the extreme south, it is the greatest forage and humus producer yet discovered. North of central Georgia, only in exceptionally long seasons will the seed mature. North of the Ohio River, it will make large growth of vine and leaves, but will not come to bloom. It is a great fertiliser for orange groves, but its use is not advisable after the grooves come into bearing, as the vines are a habitat of

the pumpkin (stink) bug, and on the decay of the bean this pest goes to the orange, puncturing the fruit, and causing it to fall. As a rule, the velvet bean is not the equal of red clover or the cow-pea, either for seed or forage, north of the Gulf States. For forage and fertiliser it has no equal in the barren sandy lands of the south, where the seasons are long enough for the crop to mature before the coming of frosts."—*Agricultural Gazette*, of New South Wales.

CEYLON TEA IN RUSSIA.

The rapid increase in the consumption of Ceylon tea in Russia is noticed in the last British Consular report from Odessa. It is only a few years since it was introduced into Russia, and last year nearly two and three-quarter million pounds of tea were shipped from Ceylon direct to Odessa, against less than half a million pounds in 1897. Teas from China and Ceylon are imported in vessels of the Russian volunteer fleet, which, owing to the low freights charged by these vessels on the homeward voyages, have now practically a monopoly of the tea carrying trade from the tea ports of China and from Colombo, more especially as now tea imported from the Far East in Russian bottoms has preferential railway rates between Odessa and Moscow On the other hand, there is a growing purchase by Ceylon of Russian petroleum; in 1897 and 1898 Colombo took over one and a quarter million gallons each year. The Acting Consul-General suggests that Australian firms might avail themselves of the low rates of freight in order to introduce tin, tallow, copra, &c., into Russia. It is said that if these commodities were shipped by Singapore the local agency of the volunteer fleet would undertake their transshipment into Russian vessels on moderate terms —London *Times* May 31.

THE BRAZILIAN COFFEE CROP.

Messrs. W H Crossman and Brother, of New York, write as follows on the position and prospects of Brazilian coffee:—

"The receipts in Brazil up to date confirm the figures we have previously given on the current crop. In Santos the receipts already reached 5,000,000 bags, which make it probable that the total there will exceed 5,500,000 bags. In Rio, so far, the receipts are 2,700,000 bags, but in that port they again neglect to count the coffees sent down from the interior direct for export, the quantity received in this way being about 125,000 bags up to date. The total in Rio for the crop year, however, will be close to 3,500,000 bags, the aggregate for the two ports no doubt reaching 9,000,000 bags. Regarding the next crop, it is now well known that the Brazilians are averse to giving out figures, but they are practically unanimous in stating the next crop to be larger than the present one some claim 10 per cent. more and others as much as 20 per cent more. But whatever the figure finally reaches, it is positively immaterial, since the fouth consecutive large crop in excess of the requirements of consumption will mean a continuation of very low prices.—*The Grocers' Journal*, May 27.

THE LONDON CINNAMON SALES.

We are glad to find, from information received by a recent mail, that Cinnamon, like tea, has touched the bottom prices, and is now beginning to experience an upward tendency. When we wrote last, on the February sale, we had to chronicle a continued drop in prices, which had commenced with the Hispano-American war; and we were apprehensive that it might be some time yet before Spain recovered sufficiently from its expensive and humiliating defeat to resume her old commercial transactions. The apprehension, notwithstanding the loss of the greatest of her remaining colonies, has, we are glad to find, not been fully justified. Among the conditions which helped prices at the last quarterly auctions on the 29th May, was the receipt of Spanish orders. The affect of a demand for our great spice from Spain was naturally a rise in the price of the finer qualities of cinnamon. While the ordinary qualities advanced from ½d to 1d per lb., the advance in the higher qualities was from 1d to 2d per lb. It is safe to anticipate, if not that the advance will be continued, that the present prices will be maintained, now that one of our oldest and best continental customers is again in the field.

The statistical position of the spice also favored the rise in prices. The quantity offered was only 781 bales, as against 959 in May last year, and 1,649 bales at the February sales. In February, out of the large quantity offered—and it was by no means the largest offering for the month—only about 650 had been sold at the auctions. The fair deduction from the smallness of the offerings and the rise in prices last month, is that the large quantity taken off in February found buyers privately in the interval between the two public sales. We pointed out that cinnamon, like most other products, showed a serious falling-off in exports, in consequence of the prolonged and severe drought during the past quarter. That, too, must have helped the disposal of the stocks in London, and sent up prices some extent. So far as quilled cinnamon goes, the deficiency has not been made up yet, and we are glad to think is not likely to be made good—at any rate during the present quarter. The exports of quilled cinnamon in bales, up to 02th Jun, estand as follows, compared with the three previous years:—

To 20th	June	1899	...	660,985 lb.
Do	do	1898	...	877,580 ,,
Do	do	1897	...	903,749 ,,
Do	do	1896	...	798,999 ,,

Against this falling-off in quilled bark must be set the phenomenal increase in chips, which is a natural consequence of weather which renders peeling impossible, or difficult, and compels the scraping of bark which has coarsened. Naturally, the immense increase in the quantity of chips sent away has led to a fall in prices. We find that chips were neglected at the last sales and that prices receded to 2d and 2¼d. The outlook for quilled bark is thus very promising for the present, but rather doubtful for chips.

The following is the report of the leading London firm, from whom we generally quote:—

London, May 31, 1899.

Cinnamon.—At the periodical auctions held on the 29th inst., the small supply of 784 bales Ceylon was presented, compared with 1,619 bales offered in February and 959 bales at this period last year. There was a better attendance and with Spanish orders in the market, the sales went off

with spirit some 680 bales being cleared under the hammer. Ordinary to medium sorts "unworked" (*i.e.*, sold as shipped) mostly brought ½d to 1d per lb. advance on February prices, while the good and fine quill "worked"—all being sold—realised about 1d to 2d per lb. better than last sale's rates. Firsts, ordinary to fine, sold at 10d to 1s 6d. Seconds 9½d to 1s 5d. Thirds, 9d to 1s 4d, and fourths 7½d to 11½d per lb. 33 bales Tellichery were brought in for want of offers.

CHIPS, &c., were in excessive supply and neglected. Of 2,638 bags offered, about 80 bags only were sold. Chips @ 2d to 2½d, clippings, &c., 7½d to 8½ per lb.

Present Stock of Ceylon 3,830.

	1898.	1897.	1896.	
Bales against	3,854	3,408	3,473	Bales.
	1898.	1897.	1896.	
Chips 7,383 bags	2,692	5,344	5,209	Bags.

The next auctions are fixed for 28th August.

LADY-BIRDS AND GREEN BUG.

The annual general meeting of the Lower Pulneys Planters' Association was held on the 3rd instant at the Dindigul Club.

The Hon. Secretary said:—In presenting my report for 1898-99, I regret I cannot record an altogether flourishing position of affairs. Crops, which in the early part of 1898 we were so sanguine would be large, proved disappointing. The average rainfall on the Lower Pulneys and Siroomullay Hills during June, July, and to the 20th August, 1898, did not exceed 55 cents, showing what a total failure the S.-W. monsoon was. This prolonged drought, accompanied with a bad attack of green bug, resulted in serious damage to our crops. For the present season crops again will not be satisfactory, and prices, I regret to say, have fallen very low.

LADY-BIRDS.—During the past year no action has been taken towards importing this useful insect (our only remedy for eradicating that awful pest—green bug). It has been suggested by the Nilgiri Association that Mr. Newport be asked to send periodical consignments of lady-birds by post from Australia. Unless we have an entomologist on this side to receive these insects, and subject them to a careful examination before setting them free, there would be the danger of introducing the parasite. We cannot be too careful, or the remedy may prove worse than the existing evil. As this question is to be discussed at this meeting, I shall say nothing further on this subject.

Discussing this subject later on, the Honorary Secretary, Mr. Gerrard, said:—"Mr. H O Newport was sent over to Australia to collect lady-birds. The experiment, as you all know, was an utter, and to us disastrous, failure: for we are somewhat in the same position now, as so vividly described by Mr. Newport in a speech before the U. P. A. S. I. two years ago (1897). He then said: 'Even if this bug spares our trees, it does not spare the crops, and if some thing is not done—and that quickly—we, on the Lower Pulneys, will have to abandon our estates, and leave the district.' Of course the picture was overdrawn. No estates have had to be abandoned on account of the attacks of green bug; but there is little doubt that the continued attacks of this pest have had a good deal to do with the short crops of the last few years, and it is for this reason that we would welcome the arrival of lady-birds to put an end to the bug; for it is very evident that, with present low prices, it is absolutely necessary for the trees to bear large crops, and any pest that prevents them from doing so, by destroying good bearing wood, becomes a very serious evil. So much money has been spent over the Newport failure that there is little left for further experiment, and how, now, to successfully introduce lady-birds from Australia will require very careful consideration at the next meeting of the U.P.A.S.I. I think you will all agree with me that a skilled entomologist should receive the consignments as they arrive, for there is always the danger I believe, in unskilled hands, of introducing with the insect the parasite that feeds on it; and, with reference to this matter, I don't think that a botanist can be expected to carry out the work of an entomologist."

SANDY TEA FOR THE POOR.

Half the "dust teas" brought into England should be confiscated by the Customs according to Mr. Henry Sell's paper, *Commercial Intelligence*, which, by the way, has just been greatly enlarged and improved. In 1,0^0 pounds of "dust tea" there are often 200 pounds of sand and earthy matter. Sometimes there is as much as 35 per cent of mineral rubbish, although not more than 1 per cent of sand is "natural" to tea, in the opinion of Dr. Bell, of the Government laboratory. The official inspection, it is charged, is most superficial, for "not one sample out of 1,000 packages of 'dust teas' landed is submitted to analysis." Large importations of very inferior goods rejected by the Hamburg and New York Customs have been passed by the English Customs and sold in London. The breakfast table of the very poor suffers correspondingly.—*Home paper.*

TEA-GROWING IN RUSSIA.

The tea plantations in the neighbourhood of Batoum continue to occupy the serious attention of a few Russian tea planters, who appear to be more or less sanguine as to the ultimate results that are likely to be attained. Messrs. Popoff have erected a factory for manipulating tea on one of their estates near Batoum, and have gathered their first crop this year, but I regret to say that, owing to the mystery with which they attempt to surround their industry, and the secrecy which they maintain in respect to all matters concerning their plantations and the cultivation of tea on them, it is quite impossible to procure information of a reliable nature in regard to them. Although the tea crop from these gardens was all forwarded to Moscow and St. Petersburg, it does not, according to the St. Petersburg papers, appear to bear comparison with the imported article in general use in the Russian Empire. The Imperial Domain authorities expect to obtain a crop next season, and are making preparations for the erection of a factory on their estates, and I am given to understand that the order for the buildings and plant has been placed in the United Kingdom. It seems probable that the results of tea-growing on the last mentioned estates stand a better chance of success than those obtained on the other estates, thanks to the fact that they have not confined their sowings to one quality only, but have laid out plantations of several kinds of Indian teas as well as Chinese and Ceylon hybrids. By adopting this rational course they will be able to judge which quality is more especially adapted to the prevailing climate and other local conditions. Their acreage under tea has been largely increased during the present year.—*British Consul at Batoum.*

VANILLA.

MEXICO.—There are a few Americans already here in the business with plantations about ready to bear. Some have just started. Many others are coming, judging from the numerous inquiries. Heretofore, the French have mainly cultivated the vanilla, with now and then a Mexican, while the Indians hunt and gather the wild vanilla. Vanilla is principally exported to the United States—about $2,000,000 worth per annum. I write this article to answer in a general way the many inquiries addressed to me concerning this industry. Now that our people are embarking in it. I look for improved methods that will increase the production and simplify the process of curing.—*United States Consul at Tuxpan.*

MINOR PRODUCTS REPORT.

CINCHONA.—The shipments from Ceylon for the week ending May 9th were 8,064 lb only. At Amsterdam, on June 8th, 4,956 bales and 500 cases will be offered. The total weight is 481,800 kilos (containing the equivalent of 829,920 ounce quinine sulphate), of which 73,382 kilos. is pharmaceutical bark, and 408,118 kilos. manufacturing bark. The manufacturing bark contains an average yield of 5·56 per cent quinine sulphate against 5·52 per cent in May, and 5·21 per cent for the ten auctions in 1898. There has been a fair amount of business done in druggists' barks lately, and in many instances lower prices have been accepted. The Java shipments in May amounted to 666,400 Amst. lb against 672,500 Amst. lb last May. The total for the five months is 170,000 Amst. lb under last year.

PLANTING NOTES.

A FINE POTATO PLANT.—A remarkably fine potato plant, says the *Australasian*, grown in the Apollo Bay district, has been shown to us by Messrs. Davis, Lancaster, and Co. It is from a crop grown by Mr. Jas. McPhee, at Heathfield Farm. The area of the paddock is five acres; but the yield is expected to reach 75 tons, or an average of 15 tons per acre. The soil is 20 feet deep, with a clay bottom, and the ground forms part of the river flats, of which there is a considerable quantity. The haulm of the plants exhibits unusual vigour of growth, the one shown to us, laid out on a board, reaching the length of nine feet. From its roots twelve large potatoes were taken. The variety is the New Zealand Blue Derwent. The Apollo Bay district also produces good crops of onions, yields of 30 tons per acre being common.

COFFEE AND CACAO IN MEXICO.—We have a letter from Mr. E. O. Darley—who will be remembered by some as a Knuckles coffee planter—stating that he had taken charge of about 100,000 acres of land belonging to a Company on which he has to plant a large acreage with coffee, cacao, rubber and sugarcane. He is to give us a report of the district and its capabilities when he has seen a little more of it. Meantime he writes:—"A very large quantity of very fine cacao is produced here and the native coffee bears very heavily and no leaf disease, and I do not believe it exists in Mexico at all. I have never seen or heard of it. Sugarcane also is most prolific, the local demand for sugar and rum making it a very profitable business."

ANNATTO: POOR PROSPECTS OF CROP AND AN ENEMY.—Mr. Van Starrex, of Crystal Hill, Matale, who, we suppose, cultivates as much annatto as anybody in the country, writes:—"The annatto fly has been so bad in the Matale district this year that fears are entertained that the crop out-turn will not pay for upkeep, and there is a fear of the plant going consequently out of cultivation. At any rate, the poor crop with the low prices now given for the article, is likely to stop the manufacture of the dye on Crystall Hill for the present. Rather sad for those who have been earning something out of the seed sold to these manufacturing works from the smallest quantities up to several tons, every season." As soon as the Entomologist returns, he should see to the "fly" and its remedy. What is the cause of persistent low prices? Overproduction (where?) or chemical dyes?

RAMIE (Russia).—The cultivation of the ramie plant (Chinese nettle) has been so very successful, more especially in the district of Batoum, that the area under this plant is from year to year increasing. This year's crop has been very abundant, and it is stated that some Russian capitalists are on the point of building a factory in a suitable locality for the purpose of working up the fibre. The Imperial Domains at Chakva have already received machinery for handling this articles.—*British Consul at Batoum*, June 1.

HEATING CAPACITY OF WOOD.—The *River Plate Review* says that a writer in the *Staats-Zeitung* corrects a very common supposition in regard to the heating capacity of wood, the most notable fact in the case being that such a practicable and easy demonstrable error should so long have prevailed—namely, that the heating capacity of hardwood is greater than that of softwood. The fact, as ascertained by repeated determinations, is that the greatest heating power is possessed by one of the softest varieties of such material—viz., the linden. Taking its heating capacity by the unit, the second best heater is also a soft-wood:—Fir, with 0·99 heating power; next follow the elm and pine, with 0·98; willow, chestnut, larch, with 0·97; maple and spruce fir, with 0·96; black poplar, with 0·95; alder and white birch, with 0·94 only; then come the hard oak, with 0·92; the locust and the white beech, with 0·91; and the red beech, with 0·90. These examples leave no doubt of the general fact that hardwood heats the least.—*Queensland Agricultural Journal.*

INDIARUBBER CULTIVATION is attracting a great deal of attention in several of the French Dependencies. We have enquiries about our forthcoming Manual from Paris, Marseilles, West Africa and Madagascar; and an enterprising French Agriculturist reports that he has indented for, and is daily expecting to receive, *one million* of Castilloa seeds and asks if such are of use in Ceylon. We have advised him to send 500,000, if in good condition, out here at once and that we may get the seed auctioned by Mr. Symons (with his consent) with perhaps as good a result as in the case of Para seed, if not better! In a recent French Review devoted to Colonial Agriculture we find several important, up-to-date papers on Rubber. One is devoted to West Africa where France has now very large tropical interests, and one authority shows how, to supplement the indigenous creeper rubber vines, they are introducing four exotic varieties:—Para, Castilloa, Ceara and a new and as yet little-known kind "Maniçoba" rubber. It is evident that there is going to be a good deal done in "rubber" culture; but many parts of Ceylon have special advantages, especially where the rubber trees can be grown as a subsidiary to tea. As regards "preparation," we find the following in a letter addressed to the French Colonial Minister by M. Marcellin Pellet in the latest "Revue des Cultures Coloniales":—

"M. Joaquin Asturias has found out a new system. He filters the milk, to get from it impurities of all sorts, and then lets it dry by natural evaporation, exposing it to the sun on mats, plantain leaves or skins. This process gives an absolutely pure product, equal or superior to the best Para rubber."

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30.

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Castilloa Elastica (Panama or Central American Rubber).—Seeds and Plants supplied; price and particulars as per our Circular No. 32.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; seeds.

Santalum Album (Sandlewood).—The cultivation and felling of the tree is entirely under Government monopoly in India, Sandlewoods to the value of over £100,000 being annually exported to various countries from India. The cultivation of this useful tree is now receiving increased attention an other countries; seeds and plants.

Eucalyptus Marginata (Jarra).—Large quantities of this most valuable timber are being annually exported from Australia to London and various parts of the world for street paving and other purposes. Price of seeds on application. 7,846 pieces of Jarra timber has already arrived for Ceylon use.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Kolanut, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world.

"South Africa."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price List of Seeds and Plants of Fruit Trees now being prepared and will be ready shortly.

Agents in London:—Messrs. P. W. WOOLLEY & Co., 33, Basinghall Street.
Agent in Colombo, Ceylon:—E. B CREASY, Esq.

Telegraphic Address:
William, Veyangoda, Ceylon.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
Henaratgoda, Ceylon.

RUBBER IN TRINIDAD.

The annual report of Mr. J H Hart, Superintendent of the Royal Botanic Gardens in Trinidad, for the year 1898, is as follows:—Rubber.—(Castilloa elastica, Cerv.) Rubber cultivation has been taken up with considerable energy during the year 1898. The principal kind nsed for planting was Castilloa elastica, Cerv. Auction sales of seeds and plants of this rubber were well attended and good prices were realised, as there was considerable competition.

At the experimental station a small area was planted in July. Among the Castilloa has been planted at wide intervals the larger and slower growing Hevea brasiliensis with the view to their becoming the permanent occupants of the ground; it being the intention to bleed the Castilloa trees very hard for certain experiments, under which many may succumb. Another area has been planted out under the shade of standing trees, in what is called the old cottage grounds. It has been found that where Castilloa is well shaded their growth is much more rapid and vigorous than in the open. To grow Castilloa without a certain amount of shade and shelter, would in my opinion be to invite a succession of slow and stunted growths. In its native countries it is always found in sheltered and protected lands and always become stunted in the open vega. Trees planted in Trinidad under standing shade have been found to thrive well, and soon become the picture of healthy growth. At the experimental station it was necessary to shade with Banana, Cassava, &c., and under these conditions the plants have also grown well. In the nurseries at St. Clair are several thousands of Castilloa plants in bamboo pots; a large proportion of which are already ordered for the next planting season. Castilloa under favourable conditions in Trinidad makes rapid growth, and is probably better suited to the climate than any other class of rubber, as it comes to maturity earlier and can be handled with a minimum of previous planting experience. Specimens of the rubber sent to England for valuation prove that our Castilloa trees are the best *kind* in cultivation. The large crops of seed now obtainable from Castilloa will make it possible at an early date to grow stems for the purpose of extracting rubber from them in their young state. Stems of a year old have been fonnd to contain some 8 per cent. of their dry weight in rubber, and this amount has been extracted in the laboratory. Whether the same percentage can be extracted in actual practice, remains to be seen.

HEVEA BRASILIENSIS, "Para Rubber."—This tree produces rubber of the finest quality, for which the demand is very regular. As a tree it is of slower growth than Castilloa, but grown for a permanent crop it will probably exceed that tree in value. The tree proves itself to be hardy, it can be handled with ease, and grows freely; although it takes a number of years before the trunk becomes large enough to bleed regularly. Growing at the old Gardens, the tree is seen to make itself at home on the hard and barren soil which there obtains; showing that although it is a tree fond of water, and delighting in frequently-flooded valleys, it will also grow in other situations. Specimens of rubber made from these trees have been examined in London and valued at high rates.

I have noted that seeds of this kind of rubber are being offered in France at a rate of over £40 per thousand or 10d. each; and in Ceylon rates of £3 per thousand on the spot—packing cases, and freight extra —are being charged. The vitality of Hevea seed like that of Castilloa, is very fugitive, and great risk is run by planters in obtaining seeds from a distance. Our seed harvested in Nov. was of excellent quality and fully 99 per cent germinated.

A tree of Hevea confusa, Hemsly, formerly known as Hevea Sprucei, also bore fruit. The distinguishing characters of the seed are its large size, its angular form, and the softness of its outer covering, when compared with those of Hevea brasiliensis.

What is apparently another Hevea has been presented to the Experiment Station by his Excellency the Governor, who obtained it from Dr. Carl Bovallius, who was recently exploring the territory of the Amazon, S.A.

These, when handed over, were in bad condition, as I proved by cutting a sample lot before sowing. Out of 170 seeds only some five seeds germinated, and only two plants promise to survive. This Hevea has seed not more than half the size of those of Hevea brasiliensis, and of much darker colour.

Kicksia africana, or Ire Rubber is obtained from a newly introduced African tree. A small section was planted out in November, and, so far as we can judge in so short a time, promises to do well. This rubber has been seen in the African forest by Mr. Millen, my acting assistant, who states that our plants are quite true to name. Mr. Millen has shown me samples of material collected by himself from trees in the African interior which shows this rubber is little, if it all, inferior to the best "Para." A parcel of seed sent to us by Kew did not germinate so well as did the first lot received, and but few plants were obtained from it. Every endevour will be made to extend the culture of this species, as it appears to be of great promise and well suited for growth in Trinidad.

A report reached us from German sources to the effect that Kicksia africana does not produce rubber at all. Mr. Millen's evidence, however, satisfies us upon this point. In addition, however, it may be recorded that we have trees sufficiently large to bleed on a small scale, and from these trees we have recently procnred atex, from which a small piece of excellent rubber was produced, which proves the report to have been a mere trade rumonr.

MANIHOT GLAZIOVII OR CEARA RUBBER.—Some demand has set in for seeds of this rubber. These demands we have had to refer elsewhere, as we have no supply. There is one tree in the Garden which si said to bo some 25 years old which bears a few seeds annually, bnt, although of this age, its stem is but barely six inches in diameter. Some of onr correspondents, however, are qnite sanguine as to its value for cultnre in Trinidad. Some few trees were planted a few years ago at the Chaguans Convict Depot, bnt their condition is far from convincing proof of its suitability for our climate. My own experience, the Ceylon records, and various other sources of information tend to convince that Castilloa, Hevea, and Kicksia are all preferable to Ceara for cultivation in this island. Ceara, when yonng, grows rapidly, and induce the cultivator in many cases to believe in a continuous run of growth, which often proves disappointing. It has been reported by some who have visited the Ceara districts that the trees never grow to a large size. It may possibly be grown with economy in some of our mountain lands, unsuited for other products, but as a rubber prodncer I cannot nndertake to give it a higher recommendation. The rubber produce is, however, of good quality.

LANDOLPHIA AND CEROPEGIA.—African and Ceylon rnbbers. These are both under cnltivation, bnt at present there does not appear to be sufficient inducement to plant them extensively.

TABORNAMONTANA CRASSE.—This tree is a repnted rubber producer, and was grown on trial in these gardens for the past few years. Having a tree which had attained a large size, it was bled freely, and the latex was treated in different ways with a view of prodncing coagulation, but withont success. Eventually a substance was produced which resembled in appearance a lump of chalk, or compacted starch, quite brittle in character, and certainly not rubber.—*India-Rubber and Gutta-Percha Journal*

PARA RUBBER TREES.—We learn that the largest rubber tree on Culloden has a girth of about 8½ feet at 3 feet from the ground. This one is some 16 years old and others of the same or less age are, we are told, well over 7 feet.

TOBACCO.

The directors of the New London Borneo Tobacco Company recommend a dividend of 2½ per cent for 1898 and 5 per cent on account of 1899 on the paid-up capital of the 80,000 ordinary shares.

The United States Tobacco Trust announces its intention to proceed immediately with the construction and equipment of factories in Japan, where, however, tobacco is a Government monopoly.—*L and C Express*, June 2.

PRODUCE AND PLANTING.

TEA UNFIT FOR CONSUMPTION.—Attention has been called in these columns, and by more than one of our contemporaries, to the rubbish called by courtesy tea which has of late found its way into the London market. From the complaints made it is clear that there has either been laxity on the part of those business it is to detect rubbish in tea or that the Customs department needs the addition of some expert knowledge and a general strengthening of its staff. The subject has been dealt with sensationally in more than one paper, and the result is that the Chancellor of the Exchequer was interrogated on the subject last night. Sir F Flannery (Yorkshire, Shipley) asked the Chancellor of the Exchequer "if his attention had been called to a statement in the Press that a quarter of the caper teas and half of the dust teas now imported should be confiscated under the Food and Drugs Act of 1875 by reason of their containing 20 per cent. of earthy matter and sand; whether he would explain the nature of the precautions taken by the Customs department in London for the detection of such adulteration, and whether the number of samples analysed could be increased with advantage; and whether, having regard to the fact that the descriptions of tea above named were for the most part consumed by the humbler classes least able to protect themselves against adulteration, he would increase the staff of inspectors especially allocated to the duties of sampling and analysis of caper and dust teas." The Chancellor of the Exchequer, in reply, said: "My attention has been called to this matter. The Board of Customs have, in view of representations made to them by certain firms and of statements in the Press, ordered a full inquiry to be made. It is not easy, within the limits of an answer to a question, to explain the precautions taken by the Board for the detection of the adulteration of tea; but I shall be happy, if the hon. member wishes it, to supply him with particulars. The Board of Customs, as at present advised, do not consider that there is any need for altering the existing regulations, but if, as a result of the investigation now in progress, it should appear advisable to make such alterations or to increase the number of tea inspectors the necessary steps will be taken at once. Meantime a circular has been issued to the tea inspectors directing them to administer the existing regulations with special care." This full enquiry is needed, and it will be awaited with some interest.

THE DRAFT QUESTION.—It remains to be seen whether the strong opposition to the abolition of the draft on tea, as expressed at the meeting of the tea trade held on Wednesday, and reported in another column will cause the Tea Associations to modify their views. That the trade is in earnest on the subject admits of no doubt, and the Associations will now have to consider the question of the wisdom of carrying their proposal into effect in the face of such strong feeling against it.

VERY COMMON TEA.—Apart from the adulteration question, it is noticeable of late that, owing to the competition in the tea trade, and the demand for low-priced tea, leaf of very inferior quality finds a sale. These teas are so very poor that they are really dearer than the better qualities, and as a correspondent points out, the purchaser of low-priced canister teas contributes a much larger percentage to the revenue than he would if buying better and higher-priced teas.

THE INCREASING POPULARITY OF TEA.—With the ups and downs of the tea planting industry one fact is noticeable, and that is that tea drinking is on the increase. In spite of the open hostility of the medical profession, tea continues to grow in popularity in countries where tea drinking is a recognised institution, while it is gaining favour elsewhere. This is largely due to the nterprise of Indian and Ceylon planters. Tea has been "pushed" in recent years as it never was when China controlled the market, and the result is seen in the growing demand on the European Continent, in the United States, and in the British colonies. Referring to this we notice that the "Globe" pays tribute to the work of popularising tea. It says: "After a long and costly struggle, Indian and Ceylon teas are fast conquering the whole world of consumers by their now recognised superiority: Australasian prejudice was the first to succumb; then followed South Africa; the United States and Canada made a harder fight, but they too, have given way; while Russia, the greatest market of all, is largely and continuously increasing its importations." The *Globe* then refers to South America as a field for tea, and alludes to the consumption of maté. In some parts of South America Paraguay tea is popular, but there is plenty of scope for pioneer work in the introduction, or rather the pushing, of Indian and Ceylon tea in Brazil, the Argentines, Chili, Peru, and the other South American States, where up to now the opportunity for purchasing good tea has been very limited.

A NEW FORM OF ADVERTISING.—Apropos of "Tea and Travellers" the *Grocer* says: "In the law courts, Tuesday last a case was heard, which, though not relating tea to gave a few incidental references to curious procedure in connection with the tea trade. That branch of commerce, as we need hardly say, has greatly changed during recent years, both in its wholesale and retail aspects. There is no duty-paying article now sold at a closer margin of profit than tea; it is cheaper than ever, and people drink more of it, despite a fairly brisk demand for cocoa; and if a grocer is so ill-advised as to sell sugar without an adequate profit he cannot expect to recoup himself satisfactorily out of his tea sales. Competition has brought down prices to a point which seems to have reached the irreducible minimum; but some of our retail friends appear to believe that they have not yet touched bottom. We can only hope that their fears are unfounded. In the wholesale branch, moreover, the position of affairs is not eminently gratifying; things are, as the saying is, cut very fine. In the case referred to above, one of the litigants had been connected with a City tea company. He admitted, when questioned as to the business of that concern, that he had kept a set of books containing fictitious entries in order to get the travellers to believe they were doing a larger trade than they were, and to tell the customers so. 'That,' added this ingenuous witness without periphrasis, 'was a form of advertising. He did not see anything discreditable in it, although it was certainly not a highly moral proceeding. Granting that such a method in regard to tea is exceptional, it indicates that there are in the City of London at the present time a certain class of speculative traders who are not particular what they do, and who, if they cannot sell tea in one way, are quick to try another, even if the latter does not happen to be 'highly moral.'. So long as they are able to keep on the safe side of the law they do not trouble themselves with ethical problems. Their conscience only begins to prick them when there is little cash in the till, when business is falling off, and when they are not doing as well as expected. Then their efforts to improve their position—including 'fictitious entries' in books to produce an impression of great commercial

activity—are apt to stray near the border line where honesty ends and sharp practice (or worse) begins. It is a pity that the tea trade should be exploited by so many adventurers. They would have no chance, of course, if the public were not easily gullible, often being induced by peculiar 'forms of advertisement' to purchase inferior tea at a price far in excess of its value."

Tea in Holland.—The Dutch have not hitherto proved themselves large consumers of tea, but the popularity of the "cup that cheers" in other countries has given additional zest to it in Holland. As a result there is an increasing demand for Java tea in the Netherlands. In 1893 the imports of tea from Java amounted to 67,361 chests, while from China only 3,346 chests were received. According to Mr. Robinson, the British Consul at Amsterdam, the average price of the Java article in 1898 was 5 4-5d per lb. There were considerable fluctuations during the year—*H. and C. Mail*, June 9.

INDIA RUBBER IN FRENCH AFRICA.

(Translated for the "Ceylon Observer" and "Tropical Agriculturist" from the "Revue des Cultures Coloniales for May 1899.)

There have been introduced into Africa, trees furnishing excellent Caoutchouc. Those who introduced them thought they would compensate for the irrational destruction of the (lianes) creepers as carried on by natives. The following are the kinds introduced :—

Manihot Glaziovii (the Ceara rubber tree).
Maniçoba (little known, but allied to Ceara.)
Castilloa elastica (from Colombia).
Hevea brasiliensis (gives the kind known as Para).

These trees grow well on the Western coast, but it is quite a question whether colonists should be advised to start plantations of these only, just at present. M. Chalot, Director of the Experimental Garden of Librevil' has made a series of experiments with Manihot trees, aged six or seven years. The results, so far, are not conclusive, whether as to yield or method of collection ; where they had expected one kilogramme of coagulated latex, they have only obtained 600 gr. ; the value of the raw material being 3 fr. 60 c., in place of 6 francs as estimated, and the expense of harvesting had been much greater than was anticipated. Until now, they have been able to arrive at no conclusions as to the suitable soils, time for harvesting, &c. To get these, it will be necessary to collect information from private sources. Meanwhile it seems to us that a plantation of Caoutchouc would imply too tedious a sinking of capital, as there would probably be a waiting of 10 or 12 years involved. If an owner of plantations would put in belts of Indiarubber amongst coffee or cacao, perhaps as boundaries or as shade trees, the experiment could be carried on at small cost. So, also, if foresters holding a concession, would put in young rubber plants, in the cleared portions—getting these plants from the Experimental Gardens—and employing only bands of children for the work, they could at small cost help in useful experiments.

CULTIVATION OF RUBBER CREEPERS *(lianes).*

Would the cultivation of these be possible, it has been asked. In 1893 I asked that experiments in these might be made in the Garden at Libreville, but no information has been given. There are in the plantations of Aschuka a certain number planted as a hedge, said to be in good condition. Better still, I heard, there is a M. Lacour, who has in the Kasaï a plantation of 200,000 stumps of *Landolphia*. When was this plantation started? I have asked M. Merlin, General Secretary of the Congo, to answer several questions about this............I have since learnt that the estate is only three years old.

If it is a qusetion of creepers—these must be cultivated in a horizontal and not vertical direction, lest one should run against the other and cause great difficulty of harvesting—weather by incision or by cutting down trees. If by incision, one ought not to have to use ladders. Perhaps to solve the question of how to harvest, it would be well to follow the natives into the jungle for some days, noting carefully their methods and the quantity of vegetables used, the quantity of latex collected by one man, the distance covered and the means of transport used. The black man does not calculate his time or his food.........Should we not have to replace the plantain leaf in which the latex is collected by the native, by the earthenware vases provided with clamps that are used in the Gironde, for the collection of resin ; and in place of the saucepan they use, should we not take a larger vessel and perhaps use acids, even if these are natural ones, made on the spot?

Finally we scarcely think our colonists could make a profitable industry out of rubber as things now stand. Perhaps it might be best to follow as near as may be the methods of collection of the natives if the trade is to be even profitable. But then the question of the destruction of the creepers and trees comes in and I would suggest that just as in some French departments a certain sum is annually set apart for re-foresting the hills and mountains, so here an agent for agriculture be employed to distribute plants and secure cultivation. He would not be content with simply collecting and despatching seed, but would see it well packed and planted ; and once planted up, the lands would be regarded as communal forest and be hired or leased out at so much per tree, whether to Europeans or to natives. Another system has lately been put into practice in the Congo State. Inspectors of forests have been started, who are always moving about. Their work is not to forbid the cutting down of rubber creepers, but to oblige the chiefs, or village headmen to preserve a certain number of the fruits, which the natives used to eat, and to sow the seeds in the forest. Already many chiefs have come and announced their intention of so doing and the places have been marked where this was being done. The Belgians foresaw that their export would soon diminish, as has already been the case with Netherlands India. The native in Africa has further to be instructed in the preparation of the latex. They boil it, add some natural juices and earth, stones and woody fibres, and this product is of a lower value by 4 or 5 francs. The natives of the province of Para also coagulate by heat, but their process is in itself excellent. Into the vessels which contain the latex they plunge a wooden spatula which they afterwards expose over a hot fire of odorous planters. The spatula then goes and comes, from a hot fire to the vessel, and the latex coagulates in thin layers closed up and from which all humidity is driven away. This suppresses ulterior fermentations and prevents the disagreeable odour which comes from African stocks. In native Africa they use sometimes natural acids (native sorrel lemon juice). The process is excellent, but there is always the mixture of various juices and of foreign bodies. The native, then, must be taught that it is to his advantage to produce the best possible latex and that he must cause to coagulate rapidly the latex obtained from one single variety of creeper, the *Landolphia* is the best.

MOTHER-O'-PEARL AND RUBBER.

England supplied to France, in 1897, 1,308,331 kilos of mother-of-pearl, estimated at 3,794,159 francs, and Germany 24,594 kilos, estimated at 71,332 francs. The mother-of-pearl export from French Oceania, on the other hand, at the present time, ranges in value from 1¼ to 1½ million francs annually, and is monopolized by the Society Islands Group. Practically the whole of this export goes to London and Liverpool. As France, however, requires on an average 6½ million francs' worth of mother-of-pearl annually for her industry, it would seem that the production of the French Oceanian Settlements is not likely, unless largely developed, to be sufficient. The shell fisheries of the Persian Gulf of Ceylon, of Cape Comorin, of British Australia, of the Straits Settlements, of the China Seas, of Japan, and of the United States of America, are not liable to French export duties, and will always remain for the supply of the British markets. It is interesting to note that, in 1897, the mother-of-pearl supply of France was drawn in the following proportion from the various countries: from England 55½ per cent., from India 27 per cent., from the United States of America 4 per cent., from Japan 2 per cent., from Germany 1½ per cent., from other foreign countries 9½ per cent.. and direct from the French Colonies ½ per cent. But mother-of-pearl is not the only article for which France is attempting to create a market in her ports by means of export duties. We hear upon good authority that a proposal is under consideration for the imposition of an export duty upon india-rubber, which, like the export duty upon mother-of-pearl, would be remitted upon the production of a certificate from the French Customs to the effect that the india-rubber has been sent direct to a French port and declared for consumption in France. The importance of this proposed step, which would cover Madagascar and the French Congo and French Guiana, need not be insisted upon.—*British Trade Journal.*

ADULTERATION OF TEA.

HOUSE OF COMMONS, THURSDAY, JUNE 8.

Sir F. Flannery (Yorkshire, Shipley) asked the Chancellor of the Exchequer if his attention had been called to a statement in the Press that a quarter of the caper teas and half of the dust teas now imported should be confiscated under the Food and Drugs Act of 1875 by reason of their containing 20 per cent of earthly matter and sand; whether he would explain the nature of the precautions taken by the Customs Department in London for the detection of such adulteration, and whether the number of samples analysed could be increased with advantage; and whether, having regard to the fact that the descriptions of tea above named were for the most part consumed by the humbler classes least able to protect themselves against adulteration, he would increase the staff of inspectors especially allocated to the duties of sampling and analysis of caper and dust teas.

The Chancellor of the Exchequer.—My attention has been called to this matter. The Board of Customs have, in view of representations made to them by certain firms and of statements in the Press, ordered a full inquiry to be made. It is not easy, within the limits of an answer to a question, to explain the precautions taken by the Board for the detection of the adulteration of tea; but I shall be happy, if the hon. member wishes it, to supply him with particulars. The Board of Customs, as at present advised, do not consider that there is any need for altering the existing regulations but if, as a result of the investigations now in progress, it should appear advisable to make such alterations or to increase the number of tea inspectors the necessary steps will be taken at once. Meantime a circular has been issued to the tea inspectors directing them to administer the existing regulations with special care.—London *Times*, June 9.

Shuttleworth, W. S. & Co.; Tetley, Jos., & Co., Travers, Jos., and Son, Limited; Tower Tea Co.

This was seconded by Mr. T. Smith, formally put to the meeting, and carried unanimously. After further short addresses from gentlemen present, all to the same purpose, the meeting concluded with a vote of thanks to the chairman.—*H and C Mail*, June 9.

FACILITIES FOR MAKING GOOD TEA XI.

CONTRADICTORY VIEWS AS REGARDS MANURING.

In respect of "Upper Hewaheta district," we misapprehended the local conditions in some of our remarks in our last article. For instance, as regards the time for "pruning," planters have to consider the effect of the South-west monsoon which sometimes plays havoc with tea bushes with less than a year's growth on them after pruning. As regards soil, the remarks made to us were meant to show that though the old coffee soils do not give as good yields as virgin soil; yet flavour is maintained in tea from the former, longer and more steadily than in tea from virgin soil, partly due, perhaps to the slower growth of the flush on old coffee land. No doubt there is a difference in flavour all round, if one makes comparisons with say ten years; but it is shown that fresh land yielding 500 lb. of tea per acre has lost flavour more than old land cropping 300 lb. per acre. In regard to "Manuring" it is felt that a better knowledge of chemistry would be a great help to a planter in going thoroughly into the question and making the practical experiments on his own land which can alone show what fertilisers are most suitable to apply.

The three letters which have been held over to the last, are dated from Hatton, Nawalapitiya and Dolosbage; but they are not the least important of those with which we have had to deal. The first holds the arranging and chopping the manufacture"—by which. we suppose, is meant interference by Proprietor or Visiting Agent, according to the supposed course of the market—as the drawback to the turning out of better tea. Nawalapitiya recognises no particular drawbacks, as the average rates obtained for its teas, are all that can fairly be expected from its elevation and soil. In Dolosbage, the great drawback has been, till very recently, insufficient labour, aggravated from March to May by a rush of leaf, which hinders proper withering and necessitates night work which seldom produces good tea. The jât on most estates in Hatton is said to be poor, and even inferior; whereas Nawalapitiya considers its jât generally fair; and Dolosbage generally good. On the other hand, the Hatton soil is fairly good, and, so far from being worn, the estates yield larger returns than they did some years ago; while Nawalapitiya, though its estates

are not worn, has generally poor soil, with exceptions, the tea having succeeded coffee or some other product which had left the land without rest for 30 to 40 years. Dolosbage does not regard its soil as particularly poor, and has no wornout estates. Hatton returns a decided "No" to the question whether manuring would improve the tea, and make it more profitable; but gives us no reason in support of the strong opinion it holds. Nawalapitiya not only holds a diametrically opposite view; but also advances grounds in support of it which seem to us cogent, when it says that manure would improve the bushes and thus increase the quantity, on that the improved condition will enable the bushes to resist "the so-called rust, and other pests from which tea is by no means as free as some people imagine." These results would necessarily be profitable: Dolosbage reports the prosecution of manuring; and argues that, if it only pays the cost of the manure and its application, it should be continued, as affording work for coolies during the slack season!

In regard to Factories, Hatton does not complain of any deficiency of withering room or machinery; but thinks the motive power admits of improvement. Nawalapitiya is in a different case, lacking as it does withering room, but being well-off as regards machinery, while sharing the deficiency in motive power. Dolosbage gets on well with its withering space for nine months; but when April to May pours in thrice the average yield of leaf, there is necessarily pressure. Neither in respect of machinery nor motive power has it any grievance. All three districts enjoyed a sufficiency of labour during the past year; but Dolosbage during the rush has to resort generally to cash plucking, and even with that it is not possible to go round within ten days. Pruning is not too severe in Hatton, though it is neglected too long on most places; but Nawalapitiya is free from either neglect or undue severity, while Dolosbage laments the spare use of the knife which it thinks should be on the move once in 18 or 20 months, when flush practically stops, whereas the rule has been to keep the bushes on for two years. Hatton's general remarks embrace the counsel to prune frequently, and to adapt the manufacture to the district, without attempting to get high-grown tea from low-lying places. Dolosbage's forcing climate results in lack of flavour in its teas; but where quantity is not aimed at, fair prices are obtained. Nawalapitiya considers the district well-suited to tea, but does not hope for a larger output, as what little land may be added to the acreage will be enough only to make up the falling-off from older fields. Indeed, that is its view of the whole Island, save Balangoda where a big acreage has yet to show its yield; and there is some significance, coming as it does from an old hand, in the hint that the weather alone cannot explain the lack of growth in the output of the island's tea.

Satinwood in Ceylon.—Mr. A. F. Broun has an interesting paper on this subject with a sketch map in the *Indian Forester* to hand. We shall take it over in full later on.

RUBBER ESTATES OF PARA.

DIFFICULTIES WITH THE VENDOR'S OVERCOME—RUBBER ALREADY BEGINNING TO COME IN.

An extraordinary general meeting of the Rubber Estates of Para, Limited, was held yesterday, at Winchester House, Old Broad-street, E.C., the Hon. John Augustus de Grey in the chair. After the formal business.

Mr. Woodrow said: Will you tell us something about the business of the company now?

The Chairman: Our position, as I understand it, is now a very favourable one. But before going into that question, I feel that the board have to account to those gentlemen who originally subscribed for the shares of the company, for the fact that we have not yet been able to pay a dividend. I should remind those who hold preference shares that their dividend has not been passed over; it is simply postponed until the company is in funds sufficient to enable it to pay them. The reason why we have been obliged to defer payment of the dividend is a very simple one. When we were in treaty for taking over the company's property in Para, we ought to have concluded our contracts in April; but the company's issue was not responded to by the public sufficient to enable us to do so, and consequently we had to ask for an extension of time, and so it came about that we were not able to do so until September 10 of last year, when we did complete our contract by the purchase of the property. The result of that was this, that the vendor had us more or less in his power. We received an assurance through the vendor's agent on which we thought we could rely, that we should receive compensation for their crop which the vendor announced that he was going to deprive us of, and at that time we were obliged to pay £2,000 as compensation to the vendor for not having fulfilled the contract at the time it should have been fulfilled. Then we were informed that the vendor intended to appropriate the whole of last year's crop, but that we should be compensated. I should explain that the season for rubber collecting begins in July, but that the arrangements are made as early as about the February before. The vendor had made his arrangement for sending men to the estates and was in process of getting that crop when we completed our contract. We should not, if we had taken over the estate then, been in a position to interfere, but we expected that the crop would have been handed over to us. But we were disappointed in that respect, and in the result none of the promises which were made to us by the vendor were fulfilled. And, moreover, we were promised the rents of the rubber roads from the tenants, and we received £1,400. The whole of the money we received from the estates was in the past season. Those facts are what caused us to be unable at the present time to pay a dividend for our shares, because it was not until March 1 of this year that we obtained full possession of the estates, and were able to commence working on them. Some months ago, however, we sent out Mr. Milne, our manager, who has had his work supplemented by an accountant and several storekeepers from this country. You will have received the circular, dated April 14, which was the first information that we were able to give you of our prospects in the coming season. That circular is of an encouraging description, and as far as the expectations held out in it about the beginning of the season, they have been fully realised, because we have received altogether from the estates during the wet season, and up to the end of May, some 7½ tons; and we have now at Parà about 1½ tons more awaiting shipment, which brings up the amount from the estate to a little more than we anticipated in that circular. We are, perhaps, the first people who have had any result at all from a rubber estate in the wet season; but we sent our men up early, and they consequently got this return, and we hope that the June returns will fully come up to what is foreshadowed in our circular. We have sent up about 650 men on our own account, and we are working the estates, as I told you that we should, on the direct system; that is to say, without the

intervention of a middle-man. We sent our men to work the roads under our own supervision. The system hitherto has been to let the rubber roads to tenants at a rent which the tenant pays; but if you send your men to the estates, you have, first of all, to keep them supplied with food and necessaries, and then they are debited with the amount of the stores which you provide, and they have to pay that back in rubber. All the rubber which they collect has to be sold to this company, and it is invoiced to you at a price between which and the price at Para there is a considerable differeuce; the exact amount of difference I will not now venture to state, but I will say that it is in your favour. Some of our roads are still let to tenants; but we reckon that we still have about 750 men working on that property, besides our manager and the accountant, and the five inspectors. We are in process of negotiation for a steam launch for our estate. I do not like to say too much about the profits which we are likely to make on the season, but I hope that something like the gross product foreshadowed in our circular may be realised. You must remember that this is a new business; it is a thing that has never been tried by anybody before, and with the actual number of trees in Para, what the number of trees per road may be, &c., is more or less an unknown quantity. Therefore, I will not commit myself to more than this—I will say that from the returns which we have had we may expect a profit at the end of the year. One important point which I am reminded of is that we believe we have now plenty of working capital to carry us to a successful issue in the operations of the company. (Applause.)

Mr. Woodrow moved a vote of thanks to the chairman, which was seconded by Mr. Gillingham, and agreed to unanimously.

The Chairman having briefly acknowledged the vote, the proceedings terminated.—*Home paper.*

INDIAN AND CEYLON TEA.
ANNUAL REVIEW.

38, Mincing Lane, June 5th, 1899.

We take the opportunity offered by the publication of the figures covering the twelve months ending May 31st, to review the events of the season now concluded, and to print some statistics which may be of general interest.

The season has been memorable for the illustration it has afforded of the vicissitudes of fortune awaiting those who devote their energies and capital to the business of tea planting; and of the rapid transition from a state of discouragement to one of hope possible under the conditions which regulate trade in our times. It will also be remembered as the year in which the policy of striving to cultivate new markets, so long pursued with tenacity, at length met with an adequate reward.

Through a combination of circumstances, the position of Tea has, indeed, undergone since the autumn of 1898 a change so conspicuous as to claim very careful attention—placing in the background, for the time being, topics of minor importance.

As a preliminary to consideration of the question of deepest concern, "Is this change merely a temporary incident, or likely to be permanent in its effect?", it will be well to recall the position a year ago. We were then suffering from the loss to producers entailed by the rise in exchange and freight; from deterioration in the quality of the Indian crop; from a temporary check to the increase of consumption at home; and from disappointment at the slow development of trade with other countries.

At the opening of the season came estimates of a large supply from India—destined not to be realized, as has not infrequent y been the case, but harmful through the fear of over-production which they created. Only for those estates capable of p oducing fine teas could the outlook be deemed hopeful; for it seemed that while values for these would be maintained, quotations for other sorts might fall even lower than before.

Eventually this proved to be the case, and towards the end of 1898 prices for all but the best qualities fell to a point which has rarely before been touched, to the serious disadvantage of sellers everywhere, but especially to those who had hurriedly sold in Calcutta.

In the meantime, movements resulting from the low value of produce were in progress. At home, consumption received a stimulus from the keen competition among Distributors, which led them to offer to the public cheaper tea than had ever before been sold; while trade in general received an impetus from the renewed industrial activity which followed the settlement of the labour troubles of 1897, thus augmenting the purchasing power of the wage-earners. Abroad, from nearly all quarters came, by degrees, the larger demand for which long and careful preparation had been made; mainly due, without doubt, to the low quotations at which the kinds wanted by foreign buyers could be secured, but partly in consequence of diminished exportation from China; and as regards the United States, it is said, owing to stringent measures taken there to prohibit the admission of certain common kinds of Chinese tea.

As the months passed it began to be evident that the supply from India would be curtailed by the drought in Sylhet and Cachar; that the heavy yield once obtained from certain parts of Ceylon and India might not be kept up; and that a good deal of unprofitable and immature acreage was here and there being quietly abandoned. Everywhere the work of extension was so far suspended as to make seed practically unsaleable; while if the limit of Ceylon's producing power had not yet been reached, it was evident that we should probably receive from that quarter less than hitherto instead of more.

All these points were duly noted here, and their bearing upon the future was pointed out. But the Trade, long accustomed to abundant supplies and low quotations, were slow to believe that a change was impending, and being quite unprepared for it were eventually compelled to operate at advancing prices. They had, indeed, no option, for the modern system of business had left the country bare of the reserve stocks upon which in former times retailers could fall back, and so resist a rise in price. It had long been foreseen that whenever the position should justify a rise on its merits, and apart from the action of speculators (from which we have been fortunately free) the small stocks on which the Trade had accustomed themselves to work would make an upward movement sudden and pronounced:—and it must not be forgotten that when something occurs to *weaken* the position, re-action on the same lines may follow.

But whether that be so or not, we have now to deal with the fact that the unprecedented increase in the use of Indian Tea at home and the larger demand for both Indian and Ceylon Teas abroad have raised prices for the lower qualities to a point which has enabled those who had not the misfortune of a short crop to reap a better result of the year's work than at one time seemed possible, while opening to all who make them a brighter prospect for the coming year. For producers of the finer qualities, however, the effect has not been quite so beneficial—advance in the value of the cheaper sorts being generally prejudicial to the value of fine—but as a large portion of the fine crops were sold in the autumn at high prices, those who made them would have shown as good results as usual, if it had not been for the abnormally high freights and an exchange of 1s 4d or 1s 4¼d for the rupee.

We have now to consider how the near future will be affected by what has occurred. It is only reasonable to assume that many growers, tempted by the prospect of a good profit on a large crop laid down at a low cost, will make all the tea they can:—and because such a policy has not usually proved successful in the past, it does not follow that it may not be the best course for some to take now. The short Deliveries in May show that the need of the moment is a plentiful supply of low-priced Indian and Ceylon tea quickly brought to market, in order

that the wants of consumers may be at once met and the danger of a check to consumption averted. Failing such a full and free supply, traders will turn elsewhere; for opposed to the frequent assertion that when once British-grown tea has been used it will never be given up, stands the fact that the public have to take what retailers sell them; and some retailers have a way of using for a time anything that can be called tea sooner than raise the price to their customers or forego their accustomed profit. The door has already been opened here through which foreign rubbish enters, and it should be closed as soon as possible.

But there must be limits to this plicy. The production of large crops of low-priced tea should be left to those who can attempt it with the least hazard. It would be most imprudent for those in Assam, Darjeeling, or the highlands of Ceylon, whose estates can yield tea of fine quality to risk their pre-eminence. We have behind us the evidence of many years that demand for fine tea is an assured and constant feature of the home market, and although, for the time being, those who produce it may not be getting their due proportion of profit, this will be adjusted when liberal supplies once more come forward and the normal range of value between fine and common tea is re-established.

An ideal crop would be one containing the widest possible variety of character and value, with enough of the best to meet the home demand and to maintain the reputation of British-grown tea all over the world, and with a sufficiency of such as growers could afford to sell at low rates, in order to increase our trade abroad by supplanting the produce of other countries. New markets can neither be opened nor kept open with short supplies and high prices.

Recognizing how much of encouragement there is in the present position, we feel there are too many uncertain factors of the problem to justify the very sanguine forecasts in which some have indulged:—the quantity that may possibly be drawn from China by the prices now ruling is unknown; Ceylon as well as India, is liable to suffer, and has suffered from drought and blight; in India the difficulty of getting coolies increases; and though freights may be lower, an exchange at 1s. 4d. has still to be reckoned with. On the other hand, the Home Trade is in a strong position, abundantly supplied with capital; the advance in quotations was a genuine movement, entirely due to the fact that supply had fallen short of demand and not to any artificial manipulation of the market; stocks are lower than they have been since 1886, when the annual turnover was 50 million lb. less than it is now and the price of tea 50 per cent. higher;—and although an increase in the importation from India may be expected, very little more will come from Ceylon; there is consequently not much reason to expect to total supply from these sources will be larger than we require here, provided that a free consumption at home and abroad is not hindered by very high prices at the outset.

It is no longer necessary to enlarge upon the importance of gaining for our tea a better share of foreign trade, for the result of taking a few million lb. from the London market has been seen. It is sufficient to state that 92 per cent of the home trade, and 75 per cent of the Australian trade have already been secured, in order to show that we more than ever need the help of other outlets, if there is to be further development of the tea-growing industries of India and Ceylon.

As regards home requirements for the coming season, it should be safe to take the year 1898 as a criterion. The Board of Trade returns show that in that year we used at home or sent abroad 141 million lb. of Indian, 94 million lb. of Ceylon and 36 milion lb. of China and Java tea:—total 271 million lb. We should, therefore, be able to handle here without much difficulty during the season ending the 31st May, 1900, about 145 millions from India, 95 millions from Ceylon, and 35 millions from elsewhere—say a total of 275 million lb.

We refrain from details relating to manufacture, assortment and so on, respecting which managers must already be in possession of the information they need: but inasmuch as it is desirable that the requirements of Continental and American buyers should be studied by those who can produce the sort of teas they take, it may be useful to mention that the *desiderata* for those markets are—an even leaf, not broken or dusty; flavour rather than strength; aroma on the dry leaf: large breaks and sound packages made of the best material.

And whereas the stability of the home market is undoubtedly endangered for more by the excessive number of seperate invoices and breaks than by the actual *weight* of tea brought to sale when it is necessary to hold large Auctions, we would once more urge those who pack many different kinds or send forward small invoices at short intervals, in their own interest to do what they can (short of sending unassorted tea) to lesson the difficulty experienced by the Trade in handling the large quantities which must of necessity be brought to market during the busy months of the season.

WM. JAS. & HY. THOMPSON.

Showing the progress of the Ceylon Tea Trade in London:—

Season ending 31st May, 1897. Imported 92 million lb. Total of Auctions, 1,140,000 packages. Average price 8d per lb.

Season ending 31st May, 1898. Imported 93½ million lb. Total of anctions, 1,160,000 packages. Average price 7¾d per lb.

Season ending 31st May, 1899. Imported 93 million lb. Total of auctions, 1,105,000 packages. Average 8⅜d per lb.

London Warehouse Returns, including all kinds of tea, for the past three seasons, ending 31st May. (Estimated Weights):—

	1896-7.	1897-8.	1898 9.
	lb.	lb.	lb.
IMPORT:			
Indian ..	131,650,000	135,377,000	136,073,000
Ceylon ..	92,073,000	93,580,000	92,947,000
China ..	33,012,000	31,997,000	27,683,000
Java, etc. ..	3,606,000	3,682,000	3,849,000
Total ...	260,341,000	264,636,000	260,552,000
DELIVERY:			
Indian ..	126,165,000	129,399,000	142,646,000
Ceylon ..	90,677,000	96,303,000	90,150,000
China ..	39,691,000	32,895,000	29,436,000
Java, etc. ..	3,800,000	3,719,000	3,824,000
Total ..	260,333,000	262,316,000	266,056,000
Of which were Re-Exported about ..	33,300,000	33,700,000	32,700,000
STOCK 1ST JUNE:			
Indian ...	32,235,000	38,213,000	31,502,000
Ceylon ..	19,953,000	17,231,000	19,790,000
China ..	12,891,000	11,993,000	9,967,000
Java, etc. ..	865,000	827,000	812,000
Total ..	65,944,000	68,264,000	62,071,000

THE EXPORT TRADE OF CHINA.

	Season 1897-98.	1898-99.
	lb.	lb.
To England ..	31,000,000	27,000,000
To Russia* ..	26,800,000	24,800,000
To America ..	45,200,000	42,200,000
To Elsewhere ..	11,000,000	13,000,000
Total ..	114,000,000	107,000,000

* Overland trade not included.

THE EXPORT TRADE OF JAPAN.

	Year 1897.	1898.
	lb.	lb.
To United States ..	35,000,000	31,500,000
To Canada ..	7,000,000	7,500,000
To Elsewhere ..	1,000,000	1,500,000
Total ..	43,000,000	40,500,000

TEA IN WESTERN ASIA AND EUROPEAN TURKEY.

Looking over the several replies received by Messrs. Cresswell, we find that in Turkish Arabia the bulk of the tea imported is Indian, and only about 5 per cent. from China and Java. The people are not tea drinkers, coffee being their beverage, but the Consul-General thinks it possible a change may take place in the habits of the people. In symrna, the Consul says the demand for tea is increasing, and there is room for further development of the trade; the tea used being a blend of India and China. In Salonica the use of tea is not general among the population, but appears to be extending rapidly. The Vice-Consul at Uscub (European Turkey) says tea is not largely consumed there; what there is, comes from Asia Minor. From Van (Asiatic Turkey) comes the intimation that there would be a good demand for tea there. All the tea comes from Constantinople, where it is mixed, but the people are not at all satisfied with the stuff as sold there. At Beyrout (Turkey) tea is not a national beverage, but about 15,000 chests pass through annually. There is little chance of developing the trade there. At Angora (also in Turkey) the tea-drinking population is increasing, tea being said to be taking the place of coffee. The British Consul at Damascus says the tea consumed there is Indian; that the habit of tea drinking is undoubtedly growing in the city, and the demand for tea will certainly increase in the future, though coffee is the beverage of the country. In Jerusalem the consumption of tea is on the increase, though the people are indifferent to the quality. The Europeans and the better class of inhabitants consume Ceylon tea. Her Majesty's Minister at Teheran (Sir M. Durand) says he is making enquiries as to the prospects of the tea trade in Persia, and will send the information as soon as possible. At Mohammerah (Persia) the British Vice-Consul says the imports of tea are increasing, and are likely to increase. Indian, Ceylon, China and Japan supply the demand, the tea being shipped by British steamer at Bombay. The British Consul at Ispahan (Persia) does not think there is much chance of increasing the tea trade of the place; but the tea imported is Indian, and the trade is entirely in the hands of Parsee Merchants, who have their agencies at Bombay. The Consul at Erzeroum says only Indian teas are imported, and that the people are great tea drinkers, while the habit is increasing from year to year. We notice that the tax or duty on teas in all of the cities referred to in the correspondence is low, ranging from 5 to 8 per cent. *ad valorem*.

THE PLUMBAGO TRADE IN CEYLON.

(*From Capital.*)

Plumbago prospecting in Ceylon, about which so much had been heard of late, can scarcely be said to be a profitable undertaking—at any rate as far as the generality of those engaged in the industry are concerned. And it seems to be understood that hardly one out of every ten embarked in this business makes any appreciable profit.

This statement might seem strange at first sight, for the plumbago trade has every appearance of prosperity. The prices prevailing are high, and during the last year or two they have stood higher than they ever have been. Moreover, the supply of plumbago is abundant, and plumbago mining is conducted in several parts of Ceylon, for the mineral has been found in localities where only a few years ago its presence was not even suspected. About two years ago the number of plumbago mines in the Colony was officially stated to be 299, and the aggregate annual yield of these mines was declared to be over 23,000 tons, while the value of this produce was estimated at slightly over 3½ millions of rupees.

There are various causes, however, which contribute towards rendering plumbago prospecting in Ceylon a non-profitable concern—at any rate not a generally profitable one. First and foremost, it would appear that there are considerable difficulties connected with the transport of plumbago from the mines to centres where markets can be found for it. The plumbago obtained from mines in the interior of the island is, with no little trouble, carried by means of rivers or canals to the closest Railway station, and is then trained to Colombo whence it is exported. As railways are not abundant in the interior of the island, the inconvenience and expense of such transport can easily be imagined.

Moreover, there are difficulties about the particular sort of timber which is required for the casks in which plumbago is exported. It appears that *hora* wood is the only kind of timber which answers this purpose, and it is stated that oasks made of any other sort of timber are ill-adapted for exportation of this mineral. Unfortunately this *hora* timber is becoming scarce in Ceylon, and high prices are being accordingly demanded for it, and thus the cost of transporting plumbago to a place of exportation is enhanced by the expenses due to the purchase of *hora* timber. Roughly speaking, the supply of *hora* is practically exhausted in the Western parts of the island of Ceylon, and it is now procured in the Southern regions. The price of 1,000 feet *hora* is at present about R70, whereas scarcely ten years ago the same quantity could have been purchased for R30. The *hora*, which is obtained in the Southern Province of the Colony, is conveyed at much cost to the railway line along the Southern Coast, and is then transported (by railway) to Colombo, the port of shipment. The cost of transport to Colombo amounts to about R15 or 20; and this item helps considerably towards maintaining the high prices of *hora*. If the railway authorities could be prevailed upon to reduce their rates, the trade in *hora* timber would probably increase a great deal, and if the freight could only be reduced to something like R5 per 1,000 feet, the plumbago trade might be run at a profit. Moreover, the local timber trade could receive a great impetus; and the crown lands in the south of the colony would doubtless then be taken up for the purpose of exploiting *hora* timber; but, as matters stand at present, these Crown lands are taken up merely for purposes of cultivation, for the timber trade is not sufficiently paying under the circumstances now prevailing.

While plumbago prospecting has not proved remunerative to the majority of those engaged in it, a happy minority contrive to make it profitable; and among these fortunate people should be mentioned certain persons who are known as District Mudaliyars, and who are the lawful guardians of Crown lands. A thorough knowledge of local conditions is necessary to understand how profit is made in these oases; but it is believed that the Government of Ceylon would be well advised to thoroughly investigate the matter.

PLUMBAGO IN UVA.—We learn that the plumbago work on Dambatenne, although so far not very remunerative, is encouraging. Others think of trying their luck, and "Capt. Boyd"—so says a correspondent—has a commission from the Poonagalla Valley Company to report and advise. Let us hope that the expert's visit will result in finding a rich paying vein.

OIL ENGINE.—We heard the other day of two of "Campbell's Oil Engines" doing most satisfactory work on a Kelani Valley estate and that, although fuel was abundant, they were preferred to steam, the cost of oil not exceeding half cent per lb. of tea. This should be encouraging news where fuel is *not* abundant, as in the central portion of Dimbula, for instance.

THE PROPOSED ABOLITION OF THE DRAFT POUND.

MEETING IN LONDON.

A meeting of the members of the wholesale and retail tea trade was held at the Commercial Sale Rooms, Mincing Lane, on Wednesday last, to oppose the proposed abolition of the draft pound by the Ceylon and Indian Tea Associations. The Right Honourable the LORD MAYOR, who was called to the chair, explained the purpose for which the meeting had been called. He said that he had great pleasure in presiding over that numerous and influential meeting, because he felt that it was a matter of great importance to every wholesale and retail dealer throughout the United Kingdom. From time immemorial the pound draft had been a concession to the trade, sanctioned by the importers to cover all the various losses of the retailers occasioned by leakage, samples, &c., and now the Ceylon and Indian Tea Associations had made the astounding proposal that this one pound draft should be abolished. He would give the two chief reasons for their seeking to introduce so serious a change. First, it had the unanimous approval of committee of the two associations named. This seemed a very inadequate reason, for those represented by the associations would benefit by the change. Second, the profits on tea had been greatly reduced of late, but those present had only to take the dividends paid by the leading tea companies to see that this was greatly exaggerated. He had looked up the matter and found that the four leading companies interested paid dividends averaging from 15 per cent to 12½ per cent, and those were profits that could hardly be complained of. Personally, he (the Chairman) had given the subject very great attention, and in his judgment the proposed abolition of the one pound draft was most unfair and unreasonable, and further, the assigned reasons were wholly inadequate. He then called upon Mr. Thomas Longh, M.P., to propose the first resolution, viz: "That this meeting expresses its great surprise and regret at the ill-considered and drastic proposal emanating from the Ceylon and Indian Tea Associations to abolish the draft allowance on teas sold under sale conditions in London, which would inflict a very serious loss upon the tea trade in this country; and this representative gathering of the entire wholesale and retail tea trades protests against this one-sided and unreasonable change in the sale conditions."

Mr. LOUGH, in proposing this, complained strongly of the secrecy of the proceedings to which they had been subject, saying that he had heard nothing of the proposal till a fortnight since, although he heard now that as long ago as last March circulars had been sent out to India and Ceylon and distributed among all the tea-growers and their consent obtained to the proposal. He said there was only one party who would benefit by this proposed change, and that was the sellers. Another thing he had to complain of was that they had to pay 40 per cent. of the price of tea before they got the order of delivery. He said that those in the tea trade had a number of grievances that they did not complain of, but which would never be tolerated in any other trade, and that this pound draft, which was now their sole refuge, was not a concession because in the majority of cases it barely covered the losses arising from leakage, samples, &c. When, therefore, this was abolished it would leave the trade exposed to the full misery of the situation, and the real reason was the private profit of those represented by the association. The associations had in their circular stated what a large number of pound packages they had given away through this one pound draft, but this amount was only 1 per cent. on the whole sale of tea in this country. He trusted that they would unanimously accept the resolution, and that, with the consent of buyers and sellers, no change would be made.

Mr. HUDSON KEARLEY, M.P., seconded the resolution. He also said that it was a matter of history repeating itself, for in 1870 when Chinese tea had the monopoly, a similar proposal had been made and had been rejected unanimously, as he was confident this one would be. Such an alteration would seriously disturb the tea trade, and he thought that the fact of its being an old established custom ought to be sufficient to prevent the abolition of this one pound draft. He begged to make a single suggestion, and that was that if there was not already an organisation strong enough to represent the interests of the tea trade that they should form one out of that meeting and fight the importers' association.

SIR WILLIAM PINK, Mr. J Lecky, Mr. Heath Clarke, and Mr. J J Meakins, amongst others supported the resolution, and reiterated the opinions expressed by the previous speakers. The resolution was then formally put to the meeting and carried unanimously. Various gentlemen representing large firms in the provinces then warmly opposed the proposed abolition, giving as their experience that the one pound draft in the majority of cases barely covered the losses arising from leakage, samples, &c., and in some cases actually it did not cover them.

The CHAIRMAN then said that he had received a large number of letters and telegrams from firms in most of the large towns. The names of the towns and firms were then read. The Chairman called upon Mr. J. Innes Roger to propose the second resolution, viz. :—"That representatives of the following firms be appointed a General Committee, with power to add to their number, and to form an Executive Committee to deal, in conjunction with the Committee of the Wholesale Tea Dealers' Association, with any questions that may arise from time to time in connection with the subject now before this meeting." Budgett, Samuel, & Co., Limited; Burbidge, Pritchard, and Bartlett; Brooke, Bond, & Co., Limited; Co-operative Wholesale, Limited; Edwards & Sons; Hanson, S. Son and Barter; Harrisons and Crosfield; Home and Colonial Stores, Limited; Kearley and Tonge, Limited; Lipton, Limited: Lloyd, David, Pigott & Co.; Mazawatte Tea Co., Limited; Payne, Geo., & Co., Limited; Rowley and Davies Shuttleworth, W. S. & Co.; Tetley, Jos., & Co.' Travers, Jos. and Son, Limited; Tower Tea Co.

This was seconded by Mr. T. Smith, formally put to the meeting, and carried unanimously. After further shoot addresses from gentlemen present, all to the same purpose, the meeting concluded with a vote of thanks to the chairman.—*H and C Mail*, June 9.

THE PROPOSED ABOLITION OF THE DRAFT POUND.

To the Editor of the *Home and Colonial Mail.*

SIR,—As a regular reader of your valuable paper, I have noticed a letter in your issue of the 2nd inst., signed "A Tea Dealer," in which he argues that it would be more productive to squeeze a little off the Calcutta and London agents than to abolish the draft pound. In sup-

port of his contention "A Tea Dealer" states that the average saving to be effected by withholding the draft pound would only amount to 8d per average chest, whilst, according to his estimate, Calcutta Agency Commission amounts to 1s 6d, and London Agency Commission to 1s 9d per average chest.

I do not know how "A Tea Dealer" has arrived at these comparative figures, but I am in a position to supply some actual figures, extracted from the 1898 accounts of a company in which I am interested.

The company in question made in 1898 a total crop of 1,956,825 lb. of tea. The number of packages was 22,930, and the average gross sale price was 11 23-32d per lb. The 1 lb. per package draft was therefore 11 23-32d per lb. on 22,930 lb. or, say, £1,119 12s 7d. The Calcutta Agency Commission for the year was £474 13s 1d. The comparison in the case of the company in question is therefore not 1s 6d for Calcutta Agency against 8d for the pound draft, but 4 31-32d for the Calcutta Agency against 11 23-32d for the pound draft.

The company in question does not pay any London Agency Commission, but the accounts, show an item of £60 for rent of London office a moderate sum for office salaries, and auditors' fees, and certain other charges, which, as it appears to me it would be difficult to reduce.

On the whole I am not convinced by the argument that it would be more productive to squeeze a little off the Calcutta and London agents than to tackle the question of the 1lb per package draft.—Yours faithfully,

E. G. Rock,

1, Great Winchester Street, London, E.C., June 6, 1899.

MINOR PRODUCTS REPORT.

Cinchona.—There was a good demand for the small supply offered in auction on Wednesday, and the bulk sold at full rates to a slight advance, the average unit working out at 1⅝d to 1¾d per lb, and 2d for cinchonidine. A parcel of 99 bales East India was withdrawn upon instructions from India. The catalogues offered by the six brokers consisted of:—

	Packages offered.		
East Indian cinchona ..	290	of which 165 were sold.	
Ceylon cinchona ..	245	do 245	do
South American cinchona ..	120	do 47	do
	655	457	

The following are the approximate quantities purchased by the principal buyers :—

	lb.
American and Italian factories ..	41,314
Amsterdam and Mannheim factories ..	26,663
Messrs. Howards & Sons	12,156
Brunswick factory	9,344
Paris factory	3,220
Druggists, &c.	6,060
Total quantities sold ..	98,757
Bought in or withdrawn ..	40,041
Total quantity offered ..	138,978

Ceylon.—Succirubra, good rich chips, quilly, 7½d to 5½d for fair; medium, 4½d to 4⅝d; and fair root chips 3⅜d. Officinalis, chips and shavings 5⅝d to 6⅝d; renewed ditto 4½d to 6½d per lb.

Quinine has again shown more activity, at rising prices, and when the market opened on Tuesday small transactions were put through, mostly for August delivery, at 1s 4½d to 1s 4¾d, an advance of 1d on Friday's prices; October delivery also changed hands at 1s 5d per ounce. Wednesday saw an advance to 1s 5d for August, and 1s 5¼d for October, with a fair business. Today it has been in good demand, and as high as 1s 5d spot has been paid; June 1s 4¾d, and August 1s 5d to 1s 5¼d.

Vanilla.—The exports from Bordeaux in 1898 were 741 cwt, as compared with 473 cwt in 1897; of this quantity 187 cwt. went to the United Kingdom, against 27 cwt in 1897. The stock of vanilla at the close of 1898 was 4,255 kilos., against 4,560 kilos in 1897, that in first hands being nil.—*Chemist and Druggist*, May 27.

THE TEA TRADE.

After a long and costly struggle, Indian and Ceylon teas are fast conquering the whole world of consumers by their now recognised superiority. Australasian prejudice was the first to succumb; then followed South Africa; the United States and Canada made a harder fight, but they, too, have given way; while Russia, the greatest market of all, is largely and continuously increasing its importations. South America, however, still remains faithful to mate or Paraguayan tea, as it is sometimes called. The decoction of this herb is altogether inferior to the genuine brew, but it has the advantage of being very much cheaper. That merit is more than counterbalanced, however, by its containing a higher percentage of theine, a drug which produces violent nervous excitement unless consumed in very small quantities, and the smaller the better. Possibly, the revolutions, which have been so common in South America had their origin, to some extent, in mate. The people themselves are sufficiently excitable without any adventitious aid to inflame their passions. Even from a purely political point of view, therefore, some benefit might come from the substitution of Indian and Ceylon teas for the indigenous herb. At all events, if that could be managed, great gain would result to our planters from securing a footing in an enormous stretch of country where, as in Russia, a liking for "the cup that cheers but not inebriates" is already firmly rooted. After South America is won over there will remain no more worlds for Anglo-Indian enterprise to conquer by tea.—*Globe*, June 5.

NEW AREAS OF CULTIVATION IN THE NORTHERN PROVINCE IN 1898.

As stated in my Administration Report for 1896, there is hardly any scope for extending the cultivation in the Jaffna peninsula. The following figures show the extent of the new area brought under cultivation as estimated by the headmen, and the extent sold during the year :—

	Private Land estimated by Headmen.	Extent sold at the Kachcheri.
Jaffna.	Acres.	Acres.
Fit for coconut ..	—	73
Fit for paddy ..	9	72
Fit for garden ...	—	30
Mullaittivu.		
Fit for paddy ..	136	367

The Assistant Government Agent of Mannar states that no new land has been opened in his district during 1898, and that there is no likelihood of any attempts being made to extend the cultivated area until after the restoration of the Giant's tank. There is a great opening for coconut cultivation in the Mullaittivu district, where the soil and climate are favourable. I refer to the remarks of my Assistant regarding this.—*Mr. Ievers's Report.*

SATINWOOD.

CHLOROXYLON SWIETENIA *D.C.*

Brandis in his "Flora of North-West and Central India" thus speaks of this tree :—"A common tree in the Satpura Range, the Dekkan, the Konkan, and the drier parts of the peninsula and Ceylon. A small tree in Central India, in South India attaining 30-40 ft.; trunk straight, symmetrical. Bark yellow, soft, corky, ½ in. thick or more. Heartwood, with a beautiful satin lustre, fragrant, when seasoned, greenish white with a yellow tinge, or yellow, mottled, and feathered, close grained. Heavy the cub. ft. weighs 51-66 lb. when seasoned and 70-75 lb. when green. The value of P. has been found to fluctuate between 600 and 1059, and the average may be taken at 800. Has been compared to box, not found suited for engraving, but is excellent for turning. Employed for agricultural implements, cart-building, makes beautiful furniture and picture-frames. Imported into England, used for cabinet work and the backs of brushes."

My experience of Satinwood in India being most limited, my remarks apply mainly to this tree in Ceylon, where it atttains its best dimensions.

Distribution :—The annexed sketch map shows, roughly, the distribution of this tree over the island. It will be seen that it is only absent from the South-Western portion, *i. e.*, from the portions affected by the South-Western monsoon, and from the higher mountain ranges. I have seen some trees at an elevation of about 1,500 feet in the Province of Uva, and a few trees in the intermediate rainfall zone near Kurunegala, but, as a rule, it can be said that it is not found above an elevation of 800 feet, and in localities with a rainfall of over 65 inches. The finest forests are in the Northern portions of the Batticaloa district, and in the Puttalam district. In the Northern portion of the island, the trees, although abundant, do not attain very large dimensions.

Soil :—Satinwood requires a light sandy soil with good subsoil drainage. It is also found on well-drained rocky hills, if there is not too much clay in the soil.

Sylvicultural Requirements :—This tree is essentially a shade-avoiding tree, except perhaps in its infancy when, like other trees, belonging to the natural order of the Meliaceæ, it prefers side-shelter or low cover. It springs up readily in clearings, but is also found along the sides of forest roads and lines or growing in the midst of bushes in old clearings abandoned by the chena cultivator. In this respect it is a valuable re-afforesting agent; for, after the chena cultivator has cut and burnt off the jungle and cultivated it for two or three years, a rank growth of spiny and prickly bushes springs up, which the Satinwood helps in again becoming valuable forest. In high forest, especially if the leaf canopy is not dense, or if it is not high, Satinwood seedlings germinate readily enough, but they require the aid of man to develop into trees. It is for this reason that in Ceylon forests of a certain age, although large and medium-sized trees are not uncommon, there is a remarkable absence of saplings and poles. This has led Mr. Vincent, in his valuable Report on the Ceylon forests, to state that the natural reproduction was poor. The contrary is, however, the case; but up to recently the Government did not do anything to replace the trees taken away by helping the young seedlings, and no cleanings or seed-fellings have been carried out. It appears to me that the correct treatment for Satinwood is to girdle trees for some distance to leeward of the seed-bearers, in sufficient numbers to give light to the soil without encouraging the growth of rank grass and weeds, and far enough to let the light seed, which is carried to some distance by the wind, have a chance of developing into seedlings. As the seed ripens before the North East monsoon, the girdling should be done early in the year, and at the same time all large climbers which invade the crowns of the trees should be cut. After the seed has germinated and the seedling established itself, it requires direct overhead light, and this should be provided, but caution must be exercised in not girdling too many of the dominant trees, for this might lead to an invasion of insects which would be liable to attack the seedlings as well as the girdled trees.

Dimensions and Rate of Growth :—Satinwood grows to a large tree, except in wind-swept localities near the sea, where it attains only small dimensions. The crown is large, as can be expected with its light, feathery foliage; the bole, although it attains a girth of 8 or 9 feet is usually comparatively short, *i.e.*, rarely over 30 feet in height. This is due to the requirements of light by the tree which early forms branches in order to develop a large crown. As regards the rate of growth of the tree, the data which we have at present are unfortunately not very reliable on account of the small number of trees in each sample plot and in consequence of the habit of mixing up trees of different girth-classes, and of calculating the average girth for all. This method of measurement has now been given up and the trees are measured by girth-class, and it is hoped that in a few years reliable data will be obtained. I have gone carefully into the figures available and the following appear to me to give a fairly correct idea of the rate of growth of an average Satinwood tree.

Age of tree	18 inches	in girth	..	20	years
do	do	3 feet	do	.. 45	do
do	do	4ft 6in	do	.. 75	do
do	do	6 feet	do	.. 125	do

If this estimate of the rate of growth proves to be correct, it takes 50 years for a tree 4ft. 6in. in girth to reach a circumference of 6 feet. If, therefore, the exploitable size is taken at 6ft. as it is now in Ceylon, it would be proper under the selection method of treatment to go over the forest in 50 years, taking all the trees 6ft. and over which can be spared from a sylvicultural point of view. In all forests, it would be better still to go each year, on an average, over one twenty-fifth of the area, taking only one-half of the exploitable stock or confining operation to trees whose removal is most urgent.

We have not yet sufficient experience to know, in the event of the Regular Method being adopted, how many years before the final fellings the seed-fellings should be made. Observations made in our forests since 1891, show that the Satinwood flowers abundantly every year and it is probable that seed-fellings made some 7 to 10 years before the final fellings, would give a good crop of seedlings.

Enemies.—This tree, like others belonging to the same natural order, is liable to attacks from insects which bore into the pith of the young shoots. A large number of trees die from the attacks of the larva of a beetle, probably a longicorn, which makes galleries between bark and wood, that not unfrequently girdle the tree. The young saplings are very liable to injury by stags, since these prefer them to any other trees for rubbing off the velvet from their horns. This preference is probably due partly to the corky nature of the bark and partly to the gum, which exudes from wounds and soothes the irritation which the animals feel. In some parts of the island the trees are liable to the attacks of a fungus, which rots the centre of the tree and causes a clean hole, sometimes throughout the length of the bole. This is the case particularly in the South-Western portion of the island. Satinwood does not resist fires well.

The Timber.—The weight of 12 well-seasoned pieces taken by me from different parts of the island, varied from 55·2 lb to 65·4 lb per cub. ft., and the average was 59·92 lb or cub. ft. This is a somewhat average than that of the specimens higher tested by Mr. Smythies in 1878, which averaged 57lb. Seasoned wood can, therefore, be said to be lighter than water. The wood is hard and strong, takes a beautiful polish, and is extremely durable. The most valuable wood is that which is known in Ceylon as "flowered," and in the home market as "figury" wood, especially if it is light coloured and can be used together with West Indian satinwood. The price of

flowered satinwood in Colombo ranges from R4 to R7 per cubic foot in the log. It has not yet been ascertained what the figure in the wood, which is merely curly fibre, is due to, and whether it is hereditary. It was found in some abundance in one of the forests of the Puttalam district, which was exposed to the full blast of the monsoons and wind may have something to do with it, but I think that it must be due also partly to the soil. There is streaky and curly flower, and it is the latter which gives the prettiest effects of satin-like lustre and which fetches the best prices in the market. Unflowered satinwood fetches prices up to R2·50 per cubic foot according to colour and size of the logs. Light-coloured logs are preferred although the darker ones are better for patching up old cabinet work. Logs of a dull, muddy colour are not appreciated. The best logs as regards colour and size are now obtained from the forests in the East of the island. Fine logs used to be obtained from Puttalam, but these forests have been more or less exhausted by timber traders in the old days. The finest logs I have seen were eight to nine ft. in girth.

The logs for the home market are sent to the Central Timber Depot in Colombo, where they are tested for "flower," and the flowered logs set aside. Hitherto they have been sold according to market rates; but, in future, on account of the great demand for flowered logs, the latter will be sold by auction. The proportion of flowered logs is not much above 5 per cent. Satinwood is also sold at the Forest Depots or, when possible, standing in the forests. This has been the case in the Eastern provinces, where first-class logs have been stamped over one-sixtieth of the area, but the sale of the *coupes* was effected after the picked logs had been felled and sent to Colombo.

The strength of the wood has not yet been tested with pieces of a proper size, the largest specimens tested having, according to Gamble, a cross-section 2 in. square. I have not much faith in tests made on pieces of timber which may be taken from any part of a log, and should like to see the example of the University of Sidney followed, where Professor W H Warren tests pieces of timber of the dimensions ordinarily employed for construction. According to Gamble the value of P. varies from 504 to 1,059, but I think, that, on an average, it will be nearer 1,000 than 500.

The uses to which this timber is put in Ceylon are the following:—

Cabinet work and furniture. Satinwood furniture is however, heavy; and is really suitable only when finely made, as in the case of Chippendale patterns. In cart-building it is used for the naves and spokes of heavy carts. It has been much used for house and bridge building, and the bridge at Peradeniya, near Kandy, consisting of a single arch 205 ft. wide, is built entirely of this wood. Ball-room floors made of Satinwood are considered good, but to my mind they are too hard, wanting in elasticity and much too hard, too slippery for dancing. Sleepers made of this timber have lasted over 20 years on the Ceylon Government Railway, and experiments are now being carried out in the new Colombo Harbour-works to test its resistance to the *teredo*. The pieces have only been put in position a year ago, but so far they are intact. In the North of the island the wood is used for oil mills; and in the Eastern province, hollow logs are in great demand for wells. Ploughs are usually made of this wood.

Minor Products.—According to the Dictionary of Economic Products, this tree yields a yellow dye and a wood-oil. I have, however, never heard of these products being employed in Ceylon. The bark, like that of other Meliaceæ, has medicinal properties, and a gum exudes from it which might prove to be a good substitute for gum arabic. A. R. Broun in *Indian Forester*.

Colombo, 28th March, 1899.

THE PLANTING SEASON AT ZANZIBAR.

The spell of dry which we have experienced for two years has at last terminated and the country from end to end will now be busy planting. 7.13 inches of rain fell at Dunga on April 2nd 6.07 inches; being recorded between 5 p.m., and 3 a.m., and 10.18 in the great rain of the 23rd. Sweet potatoes, muhogo, Indian corn, mtama, ground nuts, rice will all have been put in. We have called attention elsewhere to the expediency of planting cloves and the same urgency may be pleaded in favour of coconuts. Arabs don't plant now-a-days; a few hundred coconuts here and there perhaps, but nothing more. What will be the state of this country in another decade or two if the yearly waste among the cloves and coconut plantation is not repaired? The rearing of a coconut plantation is a long but not a laborious or expensive process, and money put into a coconut plantation is like money put into the bank, and at good interest too. We can understand the reluctance of Arabs to embark upon new ventures like cocoa, coffee or vanila, until something definite has been ascertained as to their suitability to this country but every planter on the island knows the value of the coconut industry.—The *Shamba*, March, April and May.

COFFEE CULTIVATION IN CEYLON AND THE STRAITS.

We are indebted to Mr. E. V. Carey for an interesting letter addressed to us on his experience of Liberian coffee and hybrids from Coorg plants in the Straits. It is too soon to draw conclusions as to the success of the latter, but so far all is promising; and it is certainly of interest to learn that the hybrids are free from the leaf fungus pest. Long may they continue so!

Meantime we learn from a very experienced Ceylon planter that coffee in Udapussellawa at 5,500 feet elevation and more or less under dense shade, is cropping well this year. There is hardly any "bug" to be seen on this coffee and *none at all* where the shade is very dense, although the crop is just as heavy as in the open—indeed heavier. This, our informant remarks, "conveys a lesson; but it comes too late." But then, we would remind him how shade did not save the well-known Hopewell coffee in Hantane, rising up to 4,000 feet; and we have a clear recollection of a delightful coffee clearing on Nilambe estate in the middle "seventies," which, we believe, was opened very carefully under shade; but where is it now? Nevertheless, we sincerely trust that the experiment in Udapussellawa at a much higher elevation, and on splendid virgin soil, may continue to be very successful.

CATTLE FOR NORTH CEYLON.

Nearly a thousand head of bulls and calves were landed last week at Kayts, being brought from Puliyur in South India by some Moors. We also learn that some of the Maniagars, during their recent trip to the metropolis, purchased and brought with them some very fine cows from the Government Dairy.—*Cor.*

NEW COMPANY.

ANTI-TANNIC TEA INFUSER, SYND LD. (62,257).—Registered May 24th, with capital £8,000, in £1 shares, to acquire the business carried on at 180 West Regent St. Glasgow, to adopt an agreement with John Marshall, to carry on the business of manufacturers of and dealers in china, hardware, and household utensils, and to cultivate and deal in tea, coffee, cinchona, and other produce. The number of directors is not to be less than 3 nor more than 7; the subscribers are to appoint the first; qualification £100; remuneration £75 each per annum (£150 for the chairman Registered by King and Co. 77 Gresham St., E.C.—*Investors' Guardian*, June 3.

HOW TO MAKE GOOD TEA.

At the suggestion of a well-known planter interested in the reputation of Ceylon tea, we printed off 500 cards and sent them on board the ss. "Olympia," in the hope that each recipient of Sir Thomas Lipton's generous gift of a 5lb.-box of tea will take care to follow the directions:—

[*With the compliments and good wishes of the Editor "Ceylon Observer."*]

HOW TO MAKE A GOOD CUP

FROM

PURE CEYLON TEA.

First fill your kettle with FRESH water; then see that it really BOILS. Next warm your TEAPOT, and put one small teaspoonful of tea for each cup required; then pour on the required quantity of boiling water, infuse for FIVE minutes, then pour off the tea into another teapot or cups ready for use. [Milk and sugar added according to taste.] Thus treated, CEYLON TEA will give a liquor, pure, delicious and fragrant.

On no account should a second brew be obtained from the same leaves.

THE INDIAN TEA CAMPAIGN.

The "Times of Ceylon" has dragged us into the arena of its little sparing match with the *Madras Mail*, not "to see fair play," but as a supposed ally. We must disclaim the honour. Our contemporary introduces us in these terms:—"Meanwhile there is a little paper, known as *Planting Opinion*, which is produced much nearer to the planting districts of Southern India than the *Madras Mail*; and it does not back up the separation idea at all. It reproduces the first editorials on the subject; and is delighted that Travancore Associations are subscribing to the central fund." We need not go into the geographical question, as our greater proximity to the planting districts is a mere matter of yards, if not of inches. We would only say, that when, some little time ago, we urged South Indian planters to push onwards, and to combine for the purpose, we were mostly in favour of *South Indian* combination. That we approved of Travancore subscriptious to the I.T.A. is true. Better half a loaf than no bread at all. Our Colombo contemporary accuses our Madras neighbour of affecting a lack of perception after the former's statement that Ceylon wants the co-operative system revised because the present one is unfavourable to herself. But the *Mail's* question was to the point:—"If Ceylon has had less advantage than India out of co-operation up to the present time, why should she wish to continue a system that is unfavourable to herself?" It is, we think, absurd to suggest that India has reaped a greater advantage than Ceylon out of the joint efforts of their Commissioners. It is perfectly clear that Ceylon would not wish to continue co-operation, unless she saw something to be gained by it. As for South India, she is too small to help her big brethren materially, and, consequently, if she co-operates, can only expect to reap very small benefits, unless she attempts to get an unfair share on the sly. This would be a course unworthy of her. Of course, it is impossible for her to conduct a campaign on broad lines such as those of the Ceylon Planters' Association and the Indian Tea Association, but that she can quietly and at small cost bring her teas under the notice of buyers in various markets is beyond question. Hers cannot be a series of massed operations, where numerals count for nought so long as the battle is won. On the contrary it most be the advance of a small but resolute body of men, bent upon making every shot tell, knowing that the "shot in the locker" is not over-plentiful.—*Planting Opinion.*

TEA COMPANIES' ACCOUNTS.

There is a proverb to the effect that "Speech is intended to conceal one's thoughts," and there is another common saying that "Figures can be made to prove anything." Whatever truth there may be in the former, there need be absolutely none in the latter; for accounts properly kept, can only show, and show plainly, *facts*—alas! too often, hard, logical, stern facts. But what can be, and often is, done, is to unwisely mix up the different branches or heads of account; with a result following, that no clear perception of facts, as they really are, is practicable. It has long been a matter of complaint, both in England and in India, that the accounts of some public companies are far from being as perspicuous as they might be, and ought to be. This is the more to be regretted in India, because so many shareholders are almost permanently absent from Calcutta. A man may be, and in regard to tea often is, a shareholder in several companies. He takes up the accounts he has received, and finds probably a different system and classification adopted in each. He tries to make some comparison, but finds it impossible.

It may, therefore, not be out of place to suggest greater uniformity and more particularity of detail. If it be answered that those concerned have it in their power to obtain information at any time, on any point, from agents, we would remark, in the interests of agents themselves, that it would be found to add greatly to their labour and inconvenience if such references were at all frequently to be made. It may be said, if the experience of agents is that such references are not as a rule made, we would reply that when a shareholder finds his investments unprofitable, he will probably be inclined to take a little more interest in his affairs than he is now found to do. Or if, again, it be argued by the executive that it will be time enough to change when shareholders think it worth while to demand it, we would say, rather anticipate any objections that may possibly be made, and show that you are desirous to prove that you have nothing to conceal, but that, on the other hand, you invite the fullest examination of every part of the company's expenditure. We know very well that directors and agents are blamed sometimes unjustly, and held responsible for inevitable results, which they have earnestly striven to mitigate the effects of, in the interests of their shareholders. The more clearly explanations are put before those concerned, the better for all parties.

Speaking generally, we think that a statement of expenditure should be absolutely separated into garden and Calcutta outlay. By Calcutta outlay we mean that really *appertaining* to Calcutta, and not including, as is often the case, garden stores purchased, or garden payments made, in Calcutta.

Regarding the item of "stores' outlay" only such portion as is actually consumed during the season should be entered to debit of the year's account, and this figure should be derived from the garden at the end of the year, supported by detailed lists of stock on hand. For all stores purchased, the agents would keep "Suspense Account" with the garden, writing off "deficiencies" only, annually, and carrying forward "balances" as an asset. There is little trouble or risk attending this plan, which, indeed, some have adopted. The mere fact of the purchase of a certain amount of stores during the year, does not necessarily entitle that amount to be altogether debited in that year's account, but we believe it often *is* so done. Thus matters are made to look worse than they really are, besides which, if the manager is paid partly by commission, he may stand, thus, to be much prejudiced in any one year, and the next he may die or leave.

The expenditure on the *garden* during the season is, (except in respect to bonuses, new machinery and buildings), of course, all fairly debitable to that season; but it may be quite otherwise in respect to certain items of payment through agents in Calcutta. We would, as we say, have only so much of that expenditure as really belongs to the season, entered in the statement of the *year's* expenditure. Supposing, for instance, an original batch of three years' agreement coolies to be forwarded, 50 per cent. only (say) of engagement and importation cost should be debited to the first year—the remainder being recoverable during the next two years. The same may be said, also, of coolie bonuses, only in this case, as the people have become, then, acclimatised, the cost might fairly be distributed equally over the whole period of re-engagement. This is sometimes done, it should be always done; and so, also, as to the matter of stores proper, before adverted to.

We would greatly multiply the headings at present in use. There is no difficulty, trouble, or expense in so doing. Vouchers being made out for every item of expenditure, and submitted for passing to the competent authority, it would only need to endorse, on the face of each voucher, when passing it, the account to which it was to go. These vouchers being properly posted, shareholders would thus be able to see, at a glance, what was the amount of each main item of expenditure; and assuming that a uniform system was thus theadopted, a comparison of the cost of working, the several companies could readily be made taking into account, of course, their relative acreage, and any special circumstances prevailing.

At present tea companies' reports can scarcely be said to afford sufficient information to shareholders, nor are the accounts detailed in a manner sufficient to permit of that examination and comparison which it is the duty of the shareholders to make, and which, we submit, it would be desirable that agents should render easy and practicable, even in their own interests.—*The Planter*, June 17.

PLANTING NOTES.

Ceylon Tea in America.—We direct attention to the communication by Mr. Pineo published in another column in which it is shown that the way in which to secure and 'hold' the consumer is by working through the retailer who should be assisted in every reasonable way by the Commissioner in advertising and through demonstrations.

Fertilizers should not be allowed to come is direct contact with the seed of any crop. This caution is constantly urged in fertilizing pamphlets and otherwise, but most of us fail to properly heed it. Careful and scientific tests have shewn that "ammonia nitrate of soda, chlorate and sulphate of potash and ammoniated superphosphates exert an injurious effect upon the germination of seed in general." But this can be wholly avoided by mixing the fertilizer with the soil.—*Hawaiian Planter's Monthly.*

Jarrah-Wood paving in London.—Australian wood as a paving material is ousting the softer woods previously in use in London. In the report to the Vestry of the Chairman of the St. Pancras Department of Works it is stated that the hard Australian wood lasts longer and decreases splashing. The western section of Euston Road was paved seven years ago in section of Swedish, Jarrah, and Karri blocks. The Swedish timber broke up so rapidly that a vote of urgency had to be obtained for replacing it with the Jarrah blocks.—*Home paper.*

The Opium Trade of Bengal: Immense Increase.—It is notified that during the calendar year 1,900 not more 44,400 chests of Bengal opium will be offered for sale, and not more than 3,700 chests in each month; also that not more than 2,000 chests each month will be Benares opium, and not more than 1,700 Patna opium. No reduction in these quantities will be made without three months' notice. The figures show in a striking manner how production must have increased in the North-West Provinces and Oudh, Ghazipur and Patna having changed places in respect of the quantity of opium manufactured.—*Pioneer*, June 25.

A Living Advertisement for Ceylon-Indian Tea.—Thus the *American Grocer*:—A. Nicholson, of New York, resident representative of the Ceylon and India tea growers, was a welcome visitor among the "trade" here last week. Mr. Nicholson is a worthy specimen of our English cousins, and if he has thus developed by the stimulating effects of Ceylon-India tea, he presents in his physical and social qualities a "big card" to encourage its more general use. Mr. Nicholson states that the sales of the above tea in Philadelphia are in the proportion of 500 chests as against 5 chests five years ago. Coupling the above facts, we shall certainly look for a generation of Quaker giants when our growing tea-drinkers shall mature.

Coffee in Mexico.—The "North American Review" has a paper on "Mexican Haciendas—the peon system"—that is the labour supply. The writer makes out that of the three divisions of Mexico, "cold," "temperate" and "hot," haciendas (plantations) in the last pay best, and up to a few years ago were calculated to yield a yearly interest of 14 to 15 per cent. and to repay outlay in half-a-dozen years. From "coffee" even now, we are told, a yearly income of 20 per cent. on the value of plantations in 1892 can be got; while a majority of the coffee investments established five or six years ago now yield from 40 to 150 per cent. on the sum of their cost. This is too highly coloured to be accepted; because we cannot believe that the hard-headed Ceylon planters, who exploited Mexico in 1897, would have declined to invest, had there been such profits available.

Coffee-growers should not be discouraged by the present low prices, says the *Hawaii Planters' Monthly*. This is sound advice, and is based on conditions that are a repetition of the history of the coffee trade. Higher prices will again return, as they have in the past. In 1886 there was an era of low cost, and the industry being unprofitable, the planters neglected their plantations and no new areas were cultivated. The supply was out of relation to the world's requirements, and an era of high prices followed, and this stimulated coffee-planting in Mexico, Central and South America, and in time has brought out an excess of supply and present low prices. There is no excess of fine coffee, and the result is the wide range in quotations—from seven cents for low grade up to 33 cents for the finest raw Java and Kona.

Inoculation against Rinderpest in India.—In the last issue of the *Pioneer* to hand we learn that successful experiments in inoculating cattle had been made in the N. W. Province of India, at the instance of Capt. Rogers Imperial Bacteriologist. Care was taken not to prejudice the natives against the measure, a Tahsildar or Deputy collector being sent to the village where our outbreak was announced; he assembled the chief landlords and *raiyats*, explained the use of inoculation and asked them for their consent without which no operations were performed. The Lieut.-Governor of the Province expresses the hope that general inoculation of cattle would follow upon the successful first experiments at Bareilly. In Ceylon there has not been evidence of so much prejudice as in India and the importance of preventive measures to check rinderpest in the island is equally great.

Indiarubber in French Africa.—We direct attention to an interesting Report (see page 110) on Rubber operations—in hand, intended or advised—in French West Africa. Besides the indigenous *Landolphia*, the four best-known American kinds (Para, Castilloa, Ceara and (or) Maniçoba) have been introduced; and although it is too soon to get results, yet there is a good deal of interesting information afforded, especially from an official point of view and we see that both the French and Belgian (Congo) authorities are most fully alive to the necessity of replanting in order to make up for the present ruthless waste of rubber-yielding trees and creepers by the natives in their harvesting. How this is proposed to be done, we must leave our translation on page 110 to say.

Agricultural Congress at the Paris Exhibition.—A programme has reached us by a recent mail of the coming Sixth International Congress of Agriculture to be held during the Paris Exhibition next year from July 1st-8th. With it comes a printed letter from M. Jules Méline, President of the Commission, in which he states that the Commission appeals to agriculturists and farmers of every land, asking them "to lend their aid in increasing the importance and the *éclat* of this great reunion which should draw together the bonds that already exist between the agriculturists in all countries." Sir Ernest Clarke, Hon. Cecil T. Parker, and Mr. R. W. Granville-Smith are to represent Great Britain on the Commission. But as far as we can see, the subjects to be discussed concern Agriculture in Europe alone.

Useful Timber Trees.—The Queensland "Agricultural Journal" gives particulars of several timber trees which seem easily grown and very useful: first, there is "The Swamp Oak," *Casuarina glauca*, growing 30 to 90 feet with a diameter of 9 inches to 3 feet, according to soil and locality, and of which we are told:—

> The timber of the Swamp Oak is of a reddish colour, beautifully marked and very close-grained. It is also hard and durable, strong and tough, and is valuable, and much used for shingles and staves. It is also useful as a cabinet wood. The straight saplings make splendid rafters for bush buildings, and old trees, with plenty of heartwood, make good posts, lasting well in the ground. All the *Casuarinas* are splendid trees for planting. They are all of very rapid growth, and make good breakwinds, copses, or shelter plantations. The saplings are always useful for many other things besides the speedy supply of excellent firewood which they give. These trees form one of the most striking features of the Australian landscape. Their leafless branches and black, gloomy, sombre appearance always make a sad impression on the traveller, and whenever there is a slight breeze there comes from them a dull, depressing sigh. They are remarkable as belonging to a class of trees which abounded in the forests of other countries in long-past geological ages, as is evidenced by the fossil remains frequently found in the coal measures. The Swamp Oak, besides being a quick grower, is a very beautiful tree if planted apart, its tall, straight-stemmed trunk and pendulous leafless branches showing well.

Next the "Horse-tail Oak," *Casuarina equisetifolia*, 50 to 150 feet high and 12 to 30 inches in diameter:—

> The Horsetail Oak produces a dark-coloured timber, coarse but closely grained, beautifully marked, hard, light, and tough. It is useful for shingles, staves, and veneers, and for all purposes where lightness and toughness are required. Its timber makes splendid fuel, giving great heat and leaving very few ashes.

The "Erect She-Oak," *Casuarina suberosa*, 30 to 50 feet by 12 to 24 inches in diameter:—

> The timber of the Erect She-Oak is of a dark-brown, very prettily marked, coarse in the grain, but hard and tough. It is a handsome timber, strong and durable, and is very valuable. It is used for bullock-yokes and hurdles, shingles, staves for buckets, kegs and tubs, mauls, &c. It is also useful in cabinet work and for veneers.

The "Forest Oak," *Casuarina torulosa*, 30 to 80 feet by 9 to 24 inches in diameter:—

> The timber of the Forest Oak is of a reddish colour, and very nicely marked. It is a handsome wood, sometimes remarkably heavy, and of great strength, hard, tough, and close in the grain. It is in much demand for durable shingles and furniture-work, and is also much used for yokes for bullock drays and wagons, and for staves. It is also valuable for cabinet work, and gives a handsome veneer. It furnishes one of the best timbers for fuel, and is thus greatly in favour both for domestic use and for heating bakers' ovens. It burns with a clear white ash, and leaves no cinders. It is a tree which is worthy of cultivation, for when growing on good soils it makes a handsome tree.

The editor adds on the Casuarina generally:—

> All the *Casuarinas* ought to be planted more frequently than they are. They are all fast-growing trees, growing as much as 3 and 4 feet in one year in height, and are all useful. There is no waste, for the timber of all species makes excellent firewood. Besides this, they make excellent breakwinds or shelter plantations. For general beauty and use (in so many ways) they are hard to beat, and farmers and settlers might do worse than plant some of them.

Perhaps Mr. Nock may be able to tell us how some of the above have grown at Hakgala, or are there any at Peradeniya and in Colombo?

AN ENTERPRISING PLANTING COMPANY.

Southern India, baving shown the way in the introduction of electric tramways, is now showing the way in the introduction of electric ropeways for ghaut work. One of the links in the communications between the sea-board and the Kanan Devan Hills in North Travancore, where the big planting coocern started by Sir John Muir is now spending huge sums in developing tea and other cultivation, will be a ropeway for tbe ghaut section between tbe hills and the Madura plains which will be quite unique in several respects: (1) it is being built locally in the Planting Company's own workshops; (2) it is t › be driven by electricity; (3) it is one of the biggest undertakings of tbe kind iu existence; (4) it rises over 4,000 feet in 2¼ miles. The light railway from Ammayanayakanur, on the South Indian Railway, for which a concession has lately been granted to Messrs. Wilson & Co., and which is about to be put on the market in London, will run right to the foot of tbe ropeway. Then, on the top of the ghaut, from the upper end of the ropeway, a light single-rail tramway, on Ewing's system and worked probably by electric motor cars, will run for 22 miles through the tract of country that is now being opened up for cultivation. Some idea of the amount of work that is being done on these Hills and the amount of capital that is being spent, may be gathered from the fact that there are some 75 Europeans employed there at present. A correspondent now up there writes to us:—"It is a beautiful country, but inaccessible at present. However, when the ropeway is completed (a few months hence, it is hoped) one will be able to go up the ghaut in half an hour and pass from tbe red-hot climate of Kotagoodee at 2,800 ft. to the beautiful climate of Kundale at 6,000 ft. It is opposed to start a hill-station heie before long. It will be laid out in such a way that the drainage will be perfect and typhoid fever unknown. Arrangements will be made for constructing one or two lakes of very considerable size, into which trout and other fish will be introduced. The whole of this new planting district is now connected up with telephones, so that every one is practically in communication with the wbole world from his bungalow. And last, but not least, the climate is very fine." The moving spirit in the enterprise is Mr. Davidson, formerly of Ceylon, who has been working from dawn to dark every day for the last 18 months initiating, guiding and controlling the numerous important works that are connected with the Company's big programme of operations. Seldom, if ever, we should say, has a tract of hill country been opened up so quickly and, comparatively speaking, so thoroughly. It is a wonderful example of what energy and enterprise can do when backed by sufficient capital.—*Madras Mail.*

TO SUPPLANT TEA.

SOUTH AMERICAN HOLLY, MAKING THE ATTEMPT.

Our cup of tea is threatened with a rival in our affections, and one no less formidable than "mate," the tea substitute of Buenos Ayres, Paraguay, and other South American territories. The shrub from which it is made is the ilex paraguayensis, and looks like an English holly tree, which, in fact, is one of its cousins. Not only the leaves are used, but the whole plant—stalks, bark, and all—after being dried, is chopped up rather finely, and is ready for use. The mate cups are made of gourds, the stalk part forming a short of handle at the side, and a little opening is cut in the top. The tea, stalks, dust, &c., are put into the cup, and boiling water is poured over it. You take your mate through a tube—instead of a straw—with a strainer at the end. Milk and sugar can be added, and the mate poured into everyday cups, but that is not the really professional way of taking it. The beverage is paler and more bitter than our own tea, but those who have learnt to like it drink it far more lavishly than we drink tea. In fact, English residents in South America say that mate is the one thing continually in evidence there. Entering a bank to do business the usual thing is to have a smoke and a cup of mate before mentioning the object of the visit, and at every house the visitor learns that it is a breach of etiquette not to accept a cup. At a party or circle of friends a larger mate cup is passed round, and everyone takes a suck at the same tube.

Old stagers who have lived out in South America for a score or so of years cannot do without their mate, and have it sent over here to them; but you may break yourself off the habit if it is not too inveterate. The British Acting-Consul in Paraguay is bringing the mate under notice; but it is doubtful whether it will ever seriously challenge our own tea.—*Morning Leader.*

MINOR PRODUCTS REPORT.

Cocoa Butter.—Iu auctiou at Amsterdam, on June 6th, 70 tons Van Houten sold at 73¼c to 77c, 3½ tons Helm at 74¼c to 75¼c, 3 tons Hamer at 75½c, and 10 tons Suchard at 75c per half kilo. In Loudon, on the same day, 65 tons Cadbury's brand sold at 1s 2½d to 1s 2⅞d (average 1s 2⅝d, against 1s 2½d in March).

Quinine is quiet, and in consequence, easier. Spot transactiou include B. & S. or Brunswick at 1s 4⅝d to 1s 5d. August delivery 1s 4⅞d to 1s 5d; June delivery at 1s 4¾d per ounce; and spot 1s 4¾d. with buyers at 1s 4d. French can be had at 1s 4d. In auction two cases Zimmer, containing ten tins each of 100 oz, were bought in at 1s 4¼d per oz.

Areca Nuts.—Fine Ceylon partly sold 25s per cwt.

Cardamoms sold with fair competition at slightly dearer rates. The following was the range of prices:—Ceylon-Mysore, fine medium to bold pale pods, 3s 11d to 4s; good bold steady 3s 10d; medium to bold pale 3s 5d to 3s 6d; dull small to medium ditto 3s to 3s 3d; bold dull long pale 3s 2d; medium lean pale 2s 6d; pale medium long 2s 10d to 2s 11d; small pale long 2s to 2s 4d; long dull bleached 2s 9d; very small lean 1s 9d; medium dull long 2s 2d; good splits 2s 3d; long, lean and split 1s 6d to 1s 9d; brown splits and pickings 1s 8d. Ceylon-Malabar fair to medium lean palish 1s 11d, and small brown lean 1s 8d; fair wild Ceylon 2s 6d per lb. Seeds, good browu 2s 4d; mixed seeds 2s 2d. Shipments from Ceylon from January 1st to May 16th were 216,087 lb.

Cinchona.—In auction the demand was for crown and grey bark only, which sold as follows:—Good bold pale Crown Loxa 7½d per lb; 1 c.c. damages 5½d to 6½d; second class 3¾d to 4¼d; and fourtb class 2d. Dusty grey Huanoco, broken was bought in at 5d, and Boliviau cultivated calisaya, thin was limited at 10d per lb, and Cartagina, flat at 4½d per lb. Four bales of flat calisaya brought 4d per lb, subject to approval. The shipments from Ceylon from January 1st to May 16th were 284,371 lb. The stocks in first hands at Amsterdam ou May 31st consisted of 2,403 packages Government and 9,896 packages private bark. The arrivals last week in Amsterdam were 2,553 packages The "Netherlandsche-Veem" reports the cinchona bark shipments from Java during May at

	1899	1898	1897	1896	1895
Amst. lb	943,000	672,000	600,000	768,000	402,700
Jan.-May	3,964,800	3,884,000	2,510,000	3,260,000	2,879,700

while the "Vriesseveem" received a telegram from Java announcing the shipments from May 2nd to June 5th at 1,156,000 Amst lb, and from January 1st to June 5th at 3,848,403 Amst lb.

Citronella Oil.—Dull of sale, at 1s to 1s ½d per lb in drums on the spot, and for August shipment there are sellers at 10⅝d per lb c.i.f. in drums. A parcel of 5 packages catalogued as guaranteed to pass "Schimmel's test," sold without reserve at 11d per lb; other parcels of good odour were limited at 1s 1d per lb. The Ceylon

shipments for the week ending May 9th were 19,788 lb, and from January 1st to May 9th they have been:—

	1899	1898	1897	1896
Lb ...	393,275	482,356	443,775	359,404

Vanilla.—Moderate supplies were catalogued today, and mostly sold at 1s higher as follows:—Madagascar, 8 to 8½ inch 15s 6d; 7 to 7½ inch 14s; 6 to 6½ inch 13s 6d; 5 to 5½ inch 12s to 12 6d; Seychelles, good chocolate 5 to 6 inch 17s to 18s; 4½ to 5 inch, 16s. Bourbon fine bold, 8 inch 26s 6d; 7 to 8 inch 26s; 6 to 6½d inch 28s; 6 to 7 inch 20s; 5 to 5½ inch 23s; 3½ to 4½ inch 22s 6d; mixed sizes 10s 6d to 13s 6d per lb.—*B & C Druggist*, June 10.

FROM THE NILGIRIS:—CINCHONAS.

Mr. T. C. Anderson and Mr. A. E. Scovell returned recently from their trip to the Nilgiris, highly pleased with the visit and all they saw. The little Railway up to Coonoor is working well now and is a great convenience:—three bogie carriages with an engine behind make an up-train. The line is now being carried on to Ooty itself and may be prolonged down one of the Western Ghauts. Mr. Anderson met Mr. Standen, Superintendent of the Government Cinchona Gardens, who had been on a three months' trip to Java (where he saw succirubra trees two feet in diameter), to Darjiling, &c. He thinks very highly of Glen Morgan hybrid trees of which there are 40,000 of a mature age. These Mr. Anderson thinks of coppicing this year: his bark has analysed over 6 per cent. The seed is very carefully collected only when fully ripe and from mature trees. —Tea is also doing well on Glen Morgan.

KANAN DEVAN PLANTERS' ASSOCIATION.

ANNUAL REPORT OF COMMITTEE.

In presenting the Annual Report, the Committee congratulate you on the absence of cholera from the District, largely due, they believe, to the steps taken by His Excellency the Governor Madras to improve the sanitary condition of Bodinayakanur. The success of last year's planting in the District, coupled with improved prices both for tea and cinchona, make the outlook for the future satisfactory. Coffee prices are unfortunately low, but crops all round have been exceptionally good this year. The absence of the Chairman on a well deserved holiday, and the departure of the Secretary, Mr. Sharp, to another District, leave blanks in the Association, which are felt by all. The improvements in Post and Telegraph service are greatly appreciated, and it is to be hoped that the improved postal facilities between these hills and Madras may very shortly be extended to Ceylon. The Committee regret that the inadequate medical grant of the past was entirely withdrawn last year, but trust and believe that this District will be put on an equal footing with the other Districts in His Highness' territory in the near future. The Committee regret that, while all other South Indian planting Districts have had or are having cart-roads cut to them, the prospects of a cart-road to this District are no nearer than they were a year ago. Your Committee are thankful that plague has practically disappeared from Southern India. Your Committee are also thankful to see that the Government of India have under consideration a labour ordinance, which will meet the requirements of planters and also give some security for advances in the future. There has been an abundance of labour in your District during the past year, and now, with better facilities for procuring food-stuffs, there seems every likelihood that this satisfactory state of affairs will continue. Another marked feature with regard to the labour-supply is the increased number of old Ceylon trained coolies now coming in from their villages to work on these hills for small advances of under R10 per head. These coolies, to a young District with a large acreage of tea coming into bearing necessitating trained factory hands, will be very acceptable. This result has undoubtedly been partly brought about by recent gratuitous advertisements in Ceylon papers, for which the Committee desire to thank those who are responsible.—*M. Mail*, July 3.

TEA COMPANY REPORT.

EMPIRE OF INDIA AND CEYLON TEA.

The directors, in their report for year 1898, regret that the results for 1898 were unsatisfactory and disappointing. The year began well; but as it progressed, several causes contributed to a poor result. The weather was, on the whole, unfavourable. Exchange advanced from 1s 39-32 d, to 1s 4 1-32th d, which reduced profits by £4,000. Higher ocean freights also increased the cost of bringing the tea to market. The tea market was depressed until near the close of the season. No one was responsible for this conjunction of misfortunes, and it should not be forgotten that the year was one of crisis and difficulty for all tea gardens. But the directors regret to have to add that on some of the company's gardens there was a mismanagement and a neglect on the part of the members of the staff, which undoubtedly contributed to the failure of the year's results. Mr. George Moore, a director of the company, who has had a long and successful experience in tea planting, went out to India in last November, and has spent nearly six months on the company's Assam gardens, investigating the system of working, and carrying out reforms. While bearing testimony to excellent work on some of the properties, Mr. Moore felt constrained to replace the managers of three of the company's gardens by more efficient men. Having regard to the general position of the tea industry, and to the improvements which have been effected in the local organisation at the gardens, the board hope, with some confidence, that the year 1899 will result favourably. Including the amount brought forward from last year of £143 3s 9d., the availabe profit is £20,084. The board recommend the payment of the preference dividend of £10,950, and a dividend on the ordinary shares of 4½ per cent. per annum, which will absorb £8,988, leaving a balance of £145 to be carried forword.—*H. & C. Mail*, June 16.

Ceylon Tea in Canada.—From a leading wholesale merchant in Montreal we have received a communication in which he says:—"Ceylon Tea is selling well here and becoming more popular every day: prices are also up several cents lately: incidentally I may say I have had a good season and feel bright."

Tea "Fluff" for Dyeing Purposes.—A correspondent writes:—"*Re* the statements about shipments of bad tea from Colombo, can the London Customs people be making a mistake, in supposing that local shipments of tea 'fluff' for dyeing purposes are meant to be used for tea infusion. This 'fluff' has been several times exported recently." We scarcely think a mistake could be made about tea "fluff"; but ought not the cases containing it to be marked as for dyeing purposes, to prevent any misapprehension?

Correspondence.

To the Editor.

TEA ON VIRGIN SOIL; AND HOW FLAVOUR IS KEPT UP BY PROPER CULTIVATION.

June 15.

Dear Sir,—I see in one of your leaders you quote Mr. T. C. Owen as saying—"Do what he could, he could not keep up the quality of tea to what he got the first few years from tea in virgin forest land."

I am well aware it is easy to sweat lands by allowing plants to grow up and spread out to their own sweet will and to allow them to bear fruit or leaf to such an extent that the trees will soon become sickly, will not be able to bear even part of the crops they did before and even the crop they do bear is of inferior quality—why is this? Well, the pump of the tree has been used to the utmost of its capacity and the roots became contracted, so sap could not be taken in sufficient quantity to nourish the fruit and leaves,--leaves drop off and fruit does not get ripe or get the same flavour as fruit did on same tree before it was allowed to overbear.

On the other hand, an experienced Agriculturist is able to grow fine trees on land where not even a blade of grass did grow before he took in hand this barren land. Your own *Tropical Agriculturist* books of the past, bear evidence how, I, on Maria, tended one Arabian coffee tree grown up as native coffee and picked one year, one bushel and one measure parchment from that tree. 2.—How I planted one tea seed in another part which became a tree 25 feet high. 3.—When I had one cacao tree which gave three varieties of cacao from three branches, and another from the stem 20 feet high. 4.—How I planted out tea plants on Raxawa estate after my Agents advised me to sell the plants, as that soil would never grow tea, got some bushes to spread seven and eight feet, and tea now giving over 600 lb. made tea per acre and tea of good quality. 5.—How on Frankland estate, where at first cacao would not come on by judicious manuring, I have many trees over 20 feet high and had excellent crops—from the same estate. I sent you the largest cacao leaf grown in Ceylon, and sent also the largest pods.

You will remember how I have repeatedly written advising the use of green manure (weed and foliage from trees), cattle manure. The latter is purchased from villagers by some planters because it costs on the spot from 3d to 6d a cart-load. They, however, forget that it is not pure cattle manure but a mixture of cattle-dung and earth, besides village cattle eat all kinds of foliage even lantana, so you get a lot of seed in your manure, and in addition you take to your estates, beetles and their eggs, which require to be picked out. Then also you require one basket full to each tree, whereas I warrant ½ basket of poonac and straw-fed cattle manure collected on roadside cattle shed, carefully heaped up on a stone floor will be twice as good as one basket village rubbish; but green manure is the most essential to keep trees up to the original standard, and in Ceylon we are blessed with a large variety of plants and trees which I have discovered and I will undertake to increase yield and improve flavour in tea, with this green manure, wood ash, lime and in some cases bones added in any part of the island.—Yours faithfully,

JOSEPH HOLLOWAY.

USEFUL TIMBER TREES (CASUARINA.)

Dear Sir,—With reference to your notes on the above in the *Observer* of the 16th inst. (see page 122) *Casuarina equisetifolia*, as well as some other species of the family, finds in Ceylon a congenial home, growing rapidly and producing seed in abundance both in the low-country and up to about 4,500 feet elevation. A tree of this in Peradeniya Gardens which was killed by lightning in 1896, was found to measure 150 feet in length, with a girth of over 11 feet at the base (which was buttressed), the diameter being over 40 inches, thus exceeding by 10 inches, the maximum diameter recorded for it in its native country, Australia. In India the same species has been rather extensively planted, especially in unreclaimed areas, for the purpose of supplying fuel to the railway, as the wood makes good fuel and leaves but little ashes. The heart-wood is hard, heavy, and fairly durable, though in the latter quality it does not equal some of the Ceylon woods, *e.g.* Palu, Satinwood, Keta-kala, &c. The Sinhalese call it "Kassa-gaha," meaning whip-tree, on account of the slender cord-like leafless branches; while in Australia it is known under the names of She-oak, Forest oak, Beef-wood (on account of the colour of the wood), Horse-tail oak, &c. The latter as well as the specific names signify the Horse-tail herb of temperate climes. This is one of the handsomest species of Casuarina, and is highly esteemed as an ornamental pot-plant in Europe.—Yours faithfully, X.

BAMBARA "BEE."

Sir,—Is there any other man in Ceylon who tamed the Bambara Bee. I kept them in an open bee box in my verandah, till their young were ready to fly, when one day in my absence they left the box and had settled on three different trees, but my cooly was afraid to catch them in boxes I had prepared, and when I came back I could not trace them.

J. H.

[We rather think the late Mudaliyar Jayatileke of Kurunegala—a great bee-keeper—succeeded well with the two indigenous bees of Ceylon. Does "J.H." recall the experiences of Mr. Benton, the American Apiarian, when here? —Ed. *T.A.*]

THE PRICE OF ANNATTO.

Dear Sir,—In answer to your enquiry, the present low price of annatto is said to be due to a falling-off in the use of the dye for colouring cheese in Germany to which country the seed was chiefly imported from Africa. It remains to be seen whether this seed has gone to other countries and sold at the lowest prices. This gives rise to the suspicion that chemical or aniline dyes are more in use now for purposes for which annatto was used before. The fall of prices in 1890-91 was due to over-production in Ceylon. But the following year the price of cacao rose, which led to annatto lands being cleared and cacao planted. From what was still left, care was taken not to export the dye in *seed*. The manufacturing works at Crystal Hill started purchasing all the raw material produced in the island.

This had the tendency of gradually raising the price again; and the trade preferred buying the made dye rather than the raw seed, as it came to be known that while the latter does not keep long but deteriorates, if kept unused for more than five or six months, the former can be kept for any length of time—in fact it developes and improves in strength the longer it was kept. Of course, the present low prices have affected the Ceylon-made dye too, and except in Holland there has been no demand for it anywhere else in Europe for the last eighteen months or so. Under the circumstance the present insect pest so destructive, both to the crop and the plant, seems to be providential.—Yours truly, PLANTER.

HYBRID COFFEE IN THE STRAITS: FREEDOM OF COORG COFFEE TREES FROM LEAF-DISEASE.

Klang, Selangor, Straits Settlements, June 15.

Dear Sir,—In the year 1895, I got some Coorg Arabian seed over here and planted eight acres, in two patches of five and three acres each, on hills in the middle of large Liberian clearings.

From an economic point of view, this result was not a success, though at first the trees came on splendidly; but grown at sea level in this latitude, a satisfactory result could hardly have been expected: blossoms mostly brushed, owing perhaps to insufficient shade, and the trees have never at any time up to the present yielded more than 50 to 60 berries each. But the experiment has not been altogether without interest, inasmuch as plants raised from the seed of these trees are showing distinct hybrid characteristics, taking more after the Arabian parent, but being fuller in the leaf and with their primaries further apart. At present the few hundred plants I have growing are only about six months old from seed, so it is impossible to say how they will turn out; but in view of Mr. Cameron's extremely interesting report upon coffee in Coorg, I need hardly say they will be watched most carefully.

Perhaps the strangest feature of this small experiment has been the fact that I have never seen a spot of leaf-disease on one of the Arabian trees yet, although the two small clearings are surrounded with Liberian, scarcely a tree of which is free from it. When the surplus plants were very thick in the nurseries, two or three, certainly not more than half a dozen, were attacked with a spot or two, and I then rooted up and destroyed the nursery, but though I have often examined the two clearings very closely, being struck by the strange phenomenon, not a sign of *Hemileia* have I ever detected.—I am, dear sir, yours faithfully,

E. V. CAREY.

RUBBISH IN TEA.

Upcountry, June 26.

Dear Sir,—I fancy the stuff your London correspondent describes as taken out of 14 chests of tea must have been the results of tampering with chests after they left the factory and tea was in transit. Such tampering has been known, but it is not always found out.—Truly yours,

FACTORY BULKED.

RUBBER-PREPARING MACHINE.

June 26, Upcountry.

Dear Sir,—Can you tell me if Mr. Thomas Christy's Rubber Machine has arrived in the island, and who are his Agents in Ceylon?—Truly yours,

RUBBER-FARMER.

[We cannot answer: possibly this publication may bring the required information.—Ed. *T.A.*]

HOW TO INFUSE CEYLON TEA.

Dear Sir,—May I call attention to a small omission in Mr. Kelway-Bamber's handy and useful *brochure* on the Dietetic Value of Tea? He says (4) "put the required quantity of tea into the hot tea-pot," etc.—*but* nowhere specifies "the required quantity!" Now, of course, the great advantage of Ceylon over China tea for Australia, America and the Continent is that you need not use so much: the old rule was a good tea-spoonful for each person, and one for the pot. With Ceylon tea, the one for the pot and some more may be dispensed with.—Yours truly,

HOUSEKEEPER.

[We obtained through the courtesy of a friend, a copy of the above, and agree with our correspondent that the "little omission" requires to be supplied in what is otherwise a most excellent and instructive little guide. In our own little pamphlets, cards and handslips we have said:—"Put one small tea-spoonful of tea for each cup required."—Ed. *T.A.*]

IMPRESSIONS OF KALUTARA TEA DISTRICT.

Ambagamuwa, July 3.

Dear Sir,—If my impressions of what I saw of the Kalutara tea district can be of any interest to your readers, the following is at your disposal. In company with yet another K.T.B. I proceeded last week to Kalutara, taking ad.

vantage of this truly slack season to spend a few days with an old friend whom I had not met for years, he having severed his connection from Ceylon quite ten years ago and only recently returned to once more toil in our midst. Of the journey to and back from Kalutara to Polgahakanda I will say as little as possible. Suffice it to think I have arrived there with my framework quite entire. We took the shortest route out, viz., via Dodangoda: the last three miles or so of this road would take a lot of beating, -road! save the mark, it was more like a newly-ploughed paddy-field; my only experience of such another beauty in the highly-favoured Central Province is the 3½ miles from Katugastota bridge to the sixth milepost on the Galagedara road, where I have a small totum.

Plumbago mining is much in evidence all along the Dodangoda route. Our driver pointed out a hillside planted in tea and coconuts, with large embankments thrown up of clayey-looking soil heaped along the lower edges of this hillside. On inquiring as to what it all meant, we were told it was "Hector Mahatmaya"'s plumbago pit, and that half the men employed were at that present moment working *under our Perambulator.* Pleasant sensation!

One does not begin to realise that tea would grow as it does in Kalutara until you are well within the hill-country of this district. Once passed the Dodangoda toll bar, the formidable range of forest-clad hills burst into view; it will not be too much to say that the forests of Kalutara are second to none I have yet seen in Ceylon; the soil too is very friable, save in some parts where cabook is seen to advantage; but yet I have seen as good tea growing in cabooky soil as would well compare with the tea growing on Kalutara's best alluvial deposits.

Heatherley, Pantiya, Clontarf, and Polgahakanda estates, which I have seen, would be hard to beat. On the first-named totum an all-round yield of 550 lb. per acre was almost secured for the year ending 30th June, so said the young Superintendent! On Polgahakanda 500 lb. per acre is expected for 1899, 31st December, and with good reason. This estate is looking in fine heart under the able management of my good old friend. Nothing less was to be expected.

We had a very pleasant time of it, the proverbial hospitality of the planters not being one shade behind in Kalutara to that of the general run. In fact, my genial host and hostess will take the places anywhere. Polgahakanda has a factory quite suited to its wants a brand new (8 or 10 H P.) horizontal engine supplying the power. Up to date rollers and desiccators were in full swing, taking the leaf—heaps of withering accommodation. The wind and rain was much in evidence; yet the flush was there in appreciable quantities. Would I could say the same of *the country* where Noah launched his cruiser.

Clontarf has a new factory in course of construction. Taking this district as a whole, my own impression is that the tea estates in the "Richmond of Ceylon" will take a lot of beating. C. T.

OIL ENGINES.

Hatton, July 6.

Dear Sir,—I see in your paper of 5th that one of your correspondents that stick to facts or your P.D. has made a mistake. I allude to paragraph "Oil Engine"—you there-in state oil engines doing most satisfactory work in Kelani Valley, &c., &c. The cost of "oil not exceeding half-cent per lb. tea." Now, Mr. Editor, I take that statement with a pinch of salt. Up this side I am told 2 cents per lb tea is about the cost, and I have heard of one man somewhere in Matale East, who says he can do it for one and half-cent. Could you give me the address of your half-cent friend so that we may able to do likewise?—Yours faithfully,

PLANTER.

[Our Kelani Valley friend will, we have no doubt, allow "Planter" to inspect his oil engines and see how cheaply they work.—Ed. *T.A.*]

Aerated Waters and Tea.—It was not so very long ago that the sickness on board of a favourite passenger ship of a favourite line calling here was traced to bad ice taken on board at Port Said. Our own leading Ice and Aerated Companies enjoy a high reputation; but it would be well that it should be generally known that neither freezing nor ærating renders impure water pure. An Indian contemporary contains the following useful warning:—

There is a general impression among residents in India that aerating water destroys any bacteria that it contains, but it has remained for an Italian physician to dispel this cherished delusion. This investigator found that bacteria grew and flourished when subjected to a pressure of carbonic acid gas equal to fifty five atmospheres, and that the liveliness of the typhoid bacillus was in no way affected by being exposed to an uninterrupted current of the gas. The purity or otherwise of a mineral water is, therefore, dependent entirely on the care exercised by the manufacturer in boiling and sterilizing the original medium. The extent to which this is carried out may be gathered from the fact it was ascertained during a cholera epidemic last year, that not one of the European manufacturers of ærated waters in one of our largest stations either boiled or filtered the water from which their mineral waters were manufactured.

Patent Tea Machinery.—We have received from W. J. McDonnell, of the Ceylon P.W.D., some particulars of his patent tea-leaf cooler and oxidiser which had a successful trial in Ceylon last year. The apparatus consists of a blower connected by means of a pipe with the receptacle of a tea rolling machine. The receptacle is made with a lid or air-tight cover, to which the pipe leading from the blower is attached, and, on the air supplier being put into motion, a mid-current of air, of the temperature of the surrounding atmosphere, is made to permeate, with a downward action, the mass of leaf being rolled, keeping it cool and aiding oxidation. The covered in top or lid, together with the downward motion of the air, tends to retain the flavour in the leaf, which in the ordinary receptacle rises with the warm air through the open or partly open top and escapes by reason of its specific gravity, into the cooler atmosphere above the receptacle. An obvious advantage is claimed for this system, as the loss of flavour, due to the heating of the leaf during the process of rolling, cannot afterwards be remedied, no matter what treatment the leaf undergoes later on, nor how cool it may be kept. The apparatus has been successfully used it is stated, with results varying from ½d to 1d per lb. over prices obtained for teas made alongside in the ordinary manner. It is recommended that the blower be placed outside the factory, in order that the leaf may be treated with air of a lower temperature than that of the rolling room.—*Indian and Eastern Engineer*, May.

RUBBER-YIELDING TREES IN THE FRENCH SOUDAN.

In the *Revue des Cultures Coloniales* of June 5, 1899, we find an article on "The Exploitation of Caoutchouc in the French Soudan" which gives very recent news and shows how the French are now setting to work to make a wise use of their colonies. We give a special translation of the summary referred to:—

"We have received from Kayes the following interesting particulars:—The Governor of Soudan some time ago empowered a technical Commission to investigate in S. Soudan the Caoutchouc bearing zone, particularly as to the density of the growth of the rubber-bearing plants, the quality of the latex and the native methods of extraction. The sittings have now ended, and M. Hamet, the head of the Commission, has just given in information, from which it is evident that any undertakings for exploiting rubber in the Soudan are bound to be very profitable and that there is room in the Soudan for many such undertakings.

The rubbers were originally collected there under the auspices and under the control of the French military who gathered it partly as a tax and tried by this means on the one hand to prove to the natives the value of the exploitation and on the other hand to cause this Soudan product to be known in the European market. The rubber has gained a standing in the European market and often ranks after the rubber imported from Central America or even compares favourably with it. It was bought on the European markets at fr. 6·50 or fr. 7 or fr. 7·50 and the purchasers would still have freights, &c., to meet; and the price has risen of late. No trouble has been spared to secure the increase in value of the article. Schools of Agriculture have been started at Kouroussa to which natives from different rubber-growing districts come to learn the right methods for coagulation, &c.

M. Hamet also says "the Soudan rubbers compare favorably with those of the Belgian Congo, having all their purity, resistance and nerve and they also have greater resistance to heat."

M. Hamet and his co-workers have been studying the different kinds of milk-bearing plants native to Soudan: artocarpiæ, genus ficus, euphorbiacæ, apocynacæ, &c.

It is one of these latter, a Landolphia (hendolitic senegalensis) called, commonly *liane goi* or *gohive*, that gave the results referred to above. This creeper is one of the shrubs most abundant in the south of the Soudan. In places visited by the mission, its density attained to 100 to 150 plants to the *hectare* (about 2½ acres) 40 of the plants being very stout—rather thicker than a man's arm. These (8 or 10 years old) may give 8 to 10 gallons of latex a year. When the latex from this plant (the gohive creeper) is examined, says M. Hamet, one can see from the coagulation that it consists of two parts:—(1st) the liquid containing the rubber proper with albuminoid matter and a vegetable wax; (2nd) the serum which contains the constituent water, mineral matters and azotized matters which the rapid fermentation of the latex carries off before any coagulation takes place. On the other hand, these matters imprisoned in the bitter waters tend to deteriorate the rubber. It is these fermentable agents that it is absolutely necessary to destroy either before or during the coagulation.

These two operations are effected by the one stroke by using fluoride of sodium,—antiseptic and very strong in the proportion of 2% of the weight of the latex.

Other antiseptics, such as *formol, gaïcol, salol acid thymic* and ammoniacal acid do not coagulate,

M. Hamet has tried coagulation of this plant by the different processes in use in the country: First mechhanical; second by heat; third by smoking; fourth by chemical agents; fifth by decoctions of native plants. The yield of rubber has been independent of the process employed; practically, it has varied from 28 to 32 per cent. All the methods tried have given excellent results, specially the two last. Amongst the chemical agents employed must be signalized chloryhydric, sulphuric, oxalic and citric acid, marine salt, chloride of aluminium and finally ammoniacal and chlorohydric acid together. Finally, the native plants that have given equally good results are: the *guama*, the *do*, the wild sorrel, *somo*, lemons or limes and the tamarind. They have been used in decoctions which have been left to lie for a night and been filtered through a cloth the next day, then warmed up to boiling point before being used. The experiments have been made on *aseptized* latex and have brought about the coagulation of a rubber of very first quality.

But we must remark that, even treated by natives and without first being *aseptized* and with decoctions of plants of the country, the latex of the gohiva has given a rubber that fetches four to five fr. at Kouroussa.

M. Hamet sums up and concludes by affirming that the rabber furnished by the Soudan, especially the South, is of excellent quality, that the methods of collecting prevalent should be continued; that they are simple and easy even for children who go into the brushwood to collect it and that experiments are being made in the agronomic stations for the multiplication of plants.

THE COORG PLANTERS' ASSOCIATION.

The following are from Proceedings of the Annual General Meeting of the Coorg Planters' Association, held at the North Coorg Club, on the 1st ultimo:—

Crop.—The coffee crop just gathered was one of the best the country bas given for some years; but, unfortunately, the poor quality of the coffee, owing to the season, and the great drop in prices, owing to the large Central American and Brazil productions, has deprived us, to a great extent, of the benefit of the good crop. The price of native coffee was also extremely low, and large areas have been abandoned by the natives and have gone out of cultivation. The official returns of the coffee crop for 1897 98 were 2,500 tons against 2,030 tons for 1896-97, and this year, in spite of the decrease of native coffee should show a substantial increase. Next year the prospects are almost universally poor, and a great deal of damage is reported to have been done by abnormally heavy rain in April. However, we can only bope for better quality and better prices. Mr. Cameron, whose services were so kindly lent by the Mysore Durbar, made tour of these coffee districts during November, and delivered two very interesting and instructive lectures at Mercara and Pollibetta, a report of which has been printed and circulated, and has also been sent to the U. P. A. S. I., and will doubtless form a subject for discussion at the next Meeting. Our best thanks are due to Mr. Cameron for the trouble he took, and for his very able and instructive lectures, and to the Mysore Durbar for lending his services.

Tea.—About 50 acres have been planted by Mr. Parsons during the year, but, owing to small plants being put out, the clearing was not so successful as it might have been. This industry is being watched with great interest.

Cinchona.—Owing to the rise in the price of this product, increased interest has been given to the hitherto-neglected cinchona trees, and several lots of bark have been sent Home for sale.—*M. Mail.*

PROGRESS IN THE FEDERATED MALAY STATES.

We envy the Malay States for the thoroughly just and scientific basis on which their system of revenue collection is based. Beginning *de novo* these Administrators were able to profit by experience gained in Ceylon as well as at Singapore. We have before us Mr. H. Conway Belfield's report on Lands, Mines and Surveys, Federated Malay States, for the year 1898, and from it we learn that the conbined Land Offices of the Federated Malay States have once again succeeded in amassing a revenue which exceeds former records and stands at the satisfactory figure of $637,699. The increase is progressive year by year. The credit for this advance is due, says Mr. Belfield, to the excellent progress made by the States of the Negri Sembilan and Pahang, the older States of Perak and Selangor having been both unsuccessful in attaining the totals achieved in the previous year. There is one principal reason, however, why the returns of the two latter States were no higher than as recorded, which so completely eliminates any suggestion of deterioration of revenue that it is well that it should be mentioned at once: "It is found in the determination of the Government of Perak and Selangor to restrict in some measure the alienation of mining land, so as to reduce the number of speculative purchases, and prevent as far as possible the locking up of lands for lengthy periods. The difference in the amounts of purchase money thus realised is far greater than the actual decrease of the revenues in each State, and is more than sufficient of itself to account for the whole of the falling off. The revenue derived from the recurrent and, therefore, more important items, such as Rents on Agricultural and Mining Lands, shew solid improvements." The following particulars of the quantity and value of tin exported are of interest. They are furnished by the Warden of Mints:—

Year.	Tons.	Pikuls.	Price. $	Value. $
1894	... 23,552	... 395,631	... 39	... 15,047,748
1895	... 23,866	... 400,956	... 35	... 14,853,507
1896	... 22,811	... 383,227	... 32	... 12,339,909
1897	... 20,949	... 351,945	... 36	... 12,701,695
1898	... 19,703	... 331,007	... 43	... 14,177,101

We read that "the Survey branch, Lower Perak, measured up 36 town lots and one agricultural estate of 262 acres, and ran 74 miles of traverse. The district branch of the Survey Office sustained a severe loss in the unfortunate accidental death of the District Surveyor, Mr. Draycott, who was drowned in the Perak river on the 11th October, in consequence of a collision between the steam launch in which he was travelling and the ss. 'Canton.' I had inspected Mr. Draycott's office shortly before that date and had had pleasure in expressing to the Resident my high opinion of the value of his work. His death has deprived the Government of the services of an experienced and hardworking officer."

With regard to Ula Langat, we read:—

As a considerable portion of the agricultural land of this district has been devoted by the natives to the cultivation of coffee it is satisfactory to observe that the precarious condition of this industry has not caused diminution in the amount of Land Rents collected, which, though they did not reach the estimates, were nevertheless better than in the previous year. The total credited was $7,028·50. As in many other places, receipts on account of Forest Products also shew increases, attributed by the District Officer to improved supervision, which has been possible since the Forest Rangers were relieved of the demarcation work.

For Kuala Selangor, we read:—

There is little to report in connection with the European owned estates; upon two of them the planting of coffee is being continued, and planters have generally acted similarly to those in other districts in turning their attention to experiments in other forms of cultivation. The Selangor Coconut Oil Mill Company's factory is now in working order, and oil has been produced. It will be necessary to largely supplement the supply of locally grown nuts by purchases elsewhere.

In respect of Registration of Titles, Mining and even Land Enactments, Ceylon is, we suspect, behind the Malay States. This is how Mr. Befield winds up his very voluminous and able Report:—

The Land Enactment came into operation at the commencement of the year in all the States, and has, upon the whole, worked satisfactorily. Since its provisions have been submitted to the test of practice certain minor points have come to light in which it will be possible to effect improvement, but it has, I think wisely, been decided to defer amendment until the law as it now stands has remained in operation for a longer period. Land Officers would have found it much more easy to work the Enactment had it been possible to publish the Land Rules during the year.

The Registration of Titles Enactment was brought into force in Perak and slightly amended in Selangor during the year, and has worked smoothly. It was considered that the time had not yet arrived to enforce its provisions in the other two States.

The new Mining Enactment, which is much wanted, was discussed in detail at a conference of Residents presided over by the Resident-General at Kuala Lumpur, and formed the subject of prolonged correspondence. At the time of writing it has not yet come into force.

In preceding paragraphs of this report I have spoken of Settlement Officers and their work, and have attempted to emphasize the importance of their employment in all districts in which demarcation work is in progress.

A great deal is now being done every day throughout the States in the way of measuring up native holdings, but that is only one stage of this important work, and I am anxious that it should be more generally recognised than it now is that that work only becomes of value when it is accompanied and attested by the examination of the Settlement Officer. I trust that more general recognition will be accorded to this matter in the immediate future.

I may perhaps be permitted to close this report with an expression of the genuine satisfaction which is felt by the Land Officers of the Malay States and myself at the really remarkable progress in the collection of Land Revenue which has been a feature of the administration of these States from the commencement of Federation to the present time. The improvement has been effected concurrently with the institution of radical changes of system, and the introduction of laws and regulations novel to the officers who were called upon to enforce them; that results such as those recorded have been attained not only speaks volumes in favour of the changes made, but testifies to the assiduous manner in which officers have studied the new procedure, and to hearty and well sustained efforts on their part to do their best for the Department by earnest application and constant personal industry.

PLANTING NOTES.

Pineapples—writes Datu Meldrum from Johore—are a drug 80 (dollar) cents per 100, some have been sold as low as 60 cents per 100. Is nothing ever to be done with the fibre, or a temperance drink be made out of the pine, a fortune may be in it; but "brains" are wanted.

The Empire of India and Ceylon Tea's Company.—The dividend on the ordinary share of the Empire of India and Ceylon Tea Company for 1898 is only 4½ per cent., compared with 9 per cent. in 1897. Other causes than the rise in exchange contributed (says the *Home and Colonial Mail*) to this disappointing result. Bad weather reduced the outturn on the Assam and Ceylon properties, and although there was a large increase in the crops of the Dooars gardens, the price of Dooars tea was lower. In addition, the directors state that there was mismanagement on some of the company's gardens, which undoubtedly assisted in causing the poor results. An investigation has since taken place; the management has been reformed, and with the firm appearance of the tea market better things are hoped for in the current year.

Rubber Planting results in Mexico.—Writing in *Modern Mexico* from San Juan Bautista, the capital of the Mexican state of Tabasco, under recent date Clarence W Gano says:—"During the past few years many planters have turned their attention to the cultivation of rubber, and they are generally of the opinion that it is the most profitable crop that can be grown. One planter, Don Federico Calcanio, a few weeks ago sold the rubber from 2000 seven-year-old trees in San Juan for a net profit of $3000—an excellent return from ten acres of ground. The rubber tree increases its yield from the seventh to the fifteenth year, after which, if it receives proper attention, it will bring a steady income for two score years or longer. The method of planting is simple and inexpensive, and after the third year there is practically no care bestowed on the plantation beyond seeing that the trees are properly tapped."—The *India Rubber World*, June 1st.

Socotra's People and Plants.—A preliminary report upon the results of the scientific expedition to the island of Socotra has been issued by Mr. Henry O Forbes, Director of Museums to the Liverpool Corporation, who, under the auspices of the Royal and Royal Geographical Societies of London and of the British Association, and in conjunction with Mr. W R Ogilvie-Grant, representing the British Museum, undertook the investigation of the natural history of the island. The expedition occupied about six months, and the party discovered many species of animals, birds, insects and plants new to science. According to the report the Socotrians are only poorly civilised Mohammedans, living in caves or rude huts, and possessing few utensils implements, or ornaments, and no weapons. Still the explorers took back specimens of pottery of primitive quern-like mills of basket work, and of weaving apparatus. The plants, of which living specimens or ripe seeds, over 200 in number, have been taken to England, Mr. Bayley Balfour, Professor of Botany in Edinburgh University, describes as of highest scientific interest and of great commercial value being, unique out of Socotra.—*Pioneer*, June 30.

Coffee in Brazil.—A coffee plantation near Campinas, São Paulo, said to have been valued at 130,000$, was sold at auction the other day for 13,000$! That is a better illustration of the situation—says the *Rio News*, May 30,—than any we can find in the official reports.

The Rise of the Portuguese in India.—Upon the recent review of this work which appeared in our columns the author writes us an appreciative letter saying that the review was the first he had seen written by any one with a competent knowledge of the subject. He admits some errors and a share in their responsibility but on some points he would join issue with our reviewer. He writes:—

It is Barros who says (I allow the others differ) that D. Lourenso was ordered to search for Ceylon as well as the Maldives. It is Castanheda (ii. c. 23) who says that the pillar (which he describes) was erected at Gabaliquama "now called porto de Gale," the date 1506 is from Correa. I admit there are difficulties in the chronology. As to the loss of ships from the attacks of the English and Dutch there was more talk than damage. Falcão in his (p. 195) abstracts the loss as four vessels taken and three burned, total seven. From his detailed list of ships, however, I should say the totals should be five vessels captured, three burned and one run on shore, total nine—a number which did not seem to me to appreciably affect the percentage. At the same time I might have noted this cause.

Ceylon in the "London Times."—In *The Times* of June 12th, received by the German mail, the following appears:—

Ceylon.—Our Colombo Correspondent writes on May 17:—The check which the interference of the Indian Government with the currency gave to productive enterprise is proving a blessing in disguise to tea planters at least, for there can be no doubt that if a rupeee of 1s 2d or less value had continued, the planting and production of tea would have far outstripped the demand, to the injury of the general body of planters. The sixteenpenny rupee stopped extensions and not only so, but has led to a contraction of cultivation by the abandonment of poor fields in some instances, so that, both from Ceylon and India, there is no immediate prospect of an increase of crops—while the United Kingdom is getting an almost less supply of our staple. The direct trade in tea with the Continent of Europe—notably Russia and Germany—with America and Australasia—is being carefully fostered, and must steadily increase. Meantime an improvement of prices in London has cheered our tea planters. Their restricted enterprise, however, has begun to tell on the general revenue, the quarterly return ending March 31 showing a comparative decrease—a warning to our authorities and the Colonial Office not to press unremunerative public works too much. "What single product can be (profitably) grown over 80 miles of our North Central territory?" was a question seriously propounded in an official quarter lately, and no answer could be given. An agricultural commission is now sitting to try and devise means to improve local agriculture, if not to establish an agricultural department. A commission to inquire into the incidence of taxation, as promised by Governor Ridgeway, is now eagerly looked for by the public. The defenceless state of Trincomalee and the need of railway communication with Colombo has recently attracted attention. The Colombo harbour works and graving dock have made good progress of late; the working season afloat for the former will now close with the advent of the south-west monsoon. Ceylon is to be well represented at the Paris Exhibition, especially in respect of our tea and general planting industries and in gems. The total export of tea up to May 16, 1899, to the United Kingdom is 33,457,229 lb., against same period, 1898, 34,288,943 lb., and to all other countries in 1899, 8,078,783 lb. against 7,723,624 lb. in 1898.

NORTH TRAVANCORE NOTES.

July 2.

TEA FACTORIES

are not so busy just at present, although there is a considerable quantity of leaf coming in. On the whole I do not think this monsoon quite so bad as it was last year; the rain measured up to date is much about the same but the wind probably not so strong.

I had the pleasure of taking a short trip down to some

COFFEE

estates in the Valley, a few miles away one day last week. Although but a short couple of days I enjoyed it very much. I was eager once more to behold old king coffee, and must say that the bushes laden with green berries, and in good heart was a pleasure to look upon—no sign of disease of any kind, the trees crowded with fine healthy wood, and now being all nicely "handled" out. The elevation of these estates is about 4,000 to 5,000 feet and certainly seems to suit the coffee tree. During my morning walk down through the heavy jungle my friend and self passed through a wealth of vegetation, enormous timber trees standing out here and there, and lesser ones loaded with creepers, a great number of which were in bloom, the colours of these being many and varied, but all beautiful. The lower down we descended they changed considerably, and being more numerous, until we reached the coffee regions, where the hand of man has stepped in to try and improve upon the wealth of flowers adding climbing roses, and many other kinds introduced there, from the gardens of civilization. There are some 200 acres of new clearings now being opened up, but for tea and not coffee. Soil is good, but a good deal of rock about; it looked to be grand, lay, and soil for cinchona, too many rocks for tea, and I should say the cinchona trees in such land would grow to be giants. I was rather unlucky in my visit finding most of the Valley men away attending

I have been on the out-look for some time back for any news regarding what we call our

TRAMWAY

from the flat country west of Bodinayakanur. This tram is being erected from the bottom of the Ghaut up to Yellapatti, this latter being the top of the hill, or rather gap in these hills. It is on the principle of some tramways which I have seen in Ceylon, but only much stronger, I had some little news of it the other day, and from what I could learn it ought to be in working order, before this year ends. Loads of 5 cwt. will be carried up and down; loads will be fixed on rope every 500 feet, to be worked in middle by an engine. Should this work all right, which I see no reason to doubt, it will make an immense difference to transport of both goods and passengers (for the latter are to be carried). Engineers go first trip, of course, to show that they have every confidence in their tramway. Then from Yellapatti the road tramway will bring goods, etc., all the way on to Munaar and later on still nearer. The opening of this interesting and much-needed tramway ought to be quite a red-letter day for these parts. I may be lucky enough to be at this function and, if so, you shall have notes on the day's doings. With this tram going and a railway from the station called Ammayanayakanur via Perri Kolam and Bodi to foot of the ghaut, we will be wonderfully much better off for transport of goods, etc.

KLONDYKE.

CULTIVATION OF SEEDLESS PLANTS.

Discussing some recent experiments of the Agricultural Department, the New York *Sun* says: "Under modern methods of cultivation the seeds of our best varieties of fruits can easily be dispensed with, as they are of little practical value. Seedling stock, raised from the wild or common varieties, answer the purpose as well as the rare or choice trees, and their usual combination of hardiness and virility influences the budded scions for good. Nature had already anticipated horticulturists in dispensing with the seeds and depending upon other methods of propagation. The banana, for instance, is a seedless fruit which nature has apparently changed through some peculiar process. Rudimentary seeds are to be found in the fruit today. By slitting the banana down lengthwise rows of the rudimentary seeds will be exposed to view. Undoubtedly at one time, in its primitive wild state, the banana propagated itself by means of seeds, but the use of suckers for this purpose gradually made the seeds of less and less value. Following out the law of nature, the seeds, becoming useless organs, degenerated. Occasionally a banana is found that does propagate itself by means of its seeds, or at least perfect seeds are produced in the fruit which can germinate. If for any reason the suckers of this plant should fail to do the work entrusted to them, it is not unlikely that nature would reinstate the seed organs and develop them gradually to their early responsible position.

"The pineapple and cauliflower are two other common illustrations of how nature oocasionally dispenses with seeds. The pineapple is almost seedless, and, like the banana, its propagation is entirely by suckers. The seeds are in a low, rudimentary condition, but at one time they must have had their function to perform in life, and they are capable, under stress of circumstances to renew their vitality. The type would not be exterminated if the suckers should fail to perpetuate the plants. All the resources of the plants would go to the assistance of the seeds to develop and vitalize them once more. This has been found possible by experiment. By selecting the pineapple with the most promising seeds, and propagating them by the usual process, the seed organs have gradually been developed until they are able to reproduce their kind.

"The eggplant is more interesting than either the banana or pineapple. Here we have a fruit which is only occasionally seedless. That the seeds are really immaterial to the welfare of the plant is evidenced by the fact that perfect fruits are often developed whether the blossoms are fertilized or not. If the hands of the horticulturists it would be an easy matter to produce eggplants that would have only the slightest trace of rudimentary seed organs, or vice versa, it would be possible to develop a class of fruits that would be supplied with an abundance of large, full-grown seeds.

"Nature's hints, thus supplied in a few isolated cases, have been the opportunities of man to raise a class of seedless fruits. Sometimes it is merely a freak of nature that happens only once or twice in a generation, and if the opportunity is missed the loss is great. To this origin we owe our fine California navel orange, which is generally a seedless fruit' although occasionally a few small seeds are to be found in it. The navel orange was an effort of nature to produce twins, but one of the twins aborted, merely surviving as a protuberance in the blossom end of the orange, a little kernel enveloped in the skin, which closely resembles the human navel in appearance. In the effort to produce a monstrosity the seeds were apparently neglected. By taking the scions of this fruit tree and grafting them on seedling stock we have practically established a seedless orange. It is, further more, remarkable because of its excellent quality and size. Usually the freaks of nature produce fruits that are not very good. Thus quite a number of apple trees have been produced, the fruit of which is nearly or quite seedless. Their origin has been largely the same as that of the navel orange,

They are generally abnormalities, and they are often called 'bloomless,' because the blossoms have no petals and sometimes lack stamens. Their appearance and quality are not such as to recommend them to the general consumer. The core is small and insignificant, but the shape is peculiar and the flavor poor.

"But seedless apples and pears of good quality may yet be propagated, and gardners are working towards this end. Recent new varieties show great improvements over those first produced, and in the course of time careful culture and selection may bring about the desired results. How much the culture, selection and environment have to do with the proper development of the fruits is apparent in the case of the seedless currants of Corinth or the Sultana grapes of south Europe. These were supposed to have been as full of seeds as any other fruits far back in history, but successive years of culture and selection eliminated the seeds and improved the quality of the fruits. How the culturists first got their hint of seedless fruits is not known, but it is reasonable to believe that they took advantage of a freak of nature which produced a vine with fruits that had very few or no seeds.

"Experiments are now being made in California with the famous Muscat grape of Alexandria. This famous raisin grape would be greatly enhanced in value if the seeds could all be eliminated. Considerable progress has been made in this direction by selecting cuttings from vines which produce grapes with less than the normal number of seeds. Several smaller varieties of seedless grapes have been in existence for many years, but most of them are inferior in some way to the best raisin grapes raised for market. Seedless fruits will be a success only when, in addition to maturing without seeds, the size and quality of the fruits will be equal or superior to the best varieties in the country. That is the essential reason why the navel orange is the greatest success of modern horticultural."—*Bradstreet's*, June 10.

UKUWELA ESTATE COMPANY, LIMITED.

Registered on April 26th, by Harwood and Stephenson, 31, Lombard-street, E.C., with a capital of £17,000 in £50 shares (378 six per cent. cumulative preference.) Object, to acquire the Ukuwela and Bowatte estates in Ceylon, to adopt an agreement with F G Ambrose, and carry on the business of tea, coffee, and cacao planters, importers, exporters, and merchants. The first directors—to number not less than two nor more than five—are F G Ambrose (chairman and managing director with £250 per annum), H L Anley, W B Anley, and J P B Anley. Qualification, £250. Remuneration, £50 each per annum Registered office: 165, Fenchurch-street, E.C.—*Financial News*, May 3.

CINCHONA IN INDIA.

The planters in India are watching suspiciously the new energy of the Government in the direction of cinchona culture, an example of this, which we instanced the other day, being the sending of Mr. Standen to Java to see how things were done there. The Government of Madras purpose extending their cinchona plantations in the Nilghiri Hills to a very large extent, and have already acquired two estates for the purpose. A vote for the extension of cinchona culture was ncluded in the last estimates. Some of the planting papers are indignant at what they regard as an attempt to acquire a Government monopoly of cinchona planting in the Nilgiris.—*British and Colonial Druggist*, June 23.

AMSTERDAM BARK MARKET.

June 15.

The detailed particulars of the Amsterdam bark auction of last week are as follows:—About 20 tons (20,623 kilos) of *Manufacturers'* bark were actually sold in the auction, and about 1½ ton (1,748 kilos) of *Druggists'* bark. There were brought in about 1½ ton of the former, and about 1 cwt. of the latter. So that nearly the whole amount offered was sold. The tone of the auction was quiet: the unit selling price worked out at 8·25 cents per half kilo. (1½ per lb.), against 8·5 cents at the last auction, a decline of over three per cent. Of the bark put up, 73,382 kilos, were succirubra, 369,720 were Ledgeriana, 38,698 were Hybrid and other kinds, and of all these 49,956 kilos were root bark.—*British and Colonial Druggist*, June 19.

MINOR PRODUCTS REPORT.

Areca Nuts.—Offered 25 bags. Sold 0. Good quality was bought in at 30s.

Citronella Oil.—Steady and quiet at last week's price, the spot value of drums being 11½d, and that of tins 1s to 1s 0¼d. For 3 cakes of fair quality put up at today's auctions without reserve, no bid was obtained.

Kola Nuts.—Offered 36 packages. Sold one. A bag of fair dried nuts was sold at 2½d, all the rest being bought in.

Lemon Oil.—Slightly better this week. One brand, indeed has been advanced 6d in price, 3s 8d c.i.f. being asked when 3s 2d would have been taken yesterday.—*B. & C. Druggist*, June 23.

Annatto Seeds.—Business was done in ordinary vermillion colour at 1d to 1½d per lb. The Jamaica crop has been over for some time, and the demand there is poor.—*Chemist and Druggist*, June 24.

DIRT IN TEA.

COMMERCIAL INTELLIGENCE.

Our special correspondent's revelations concerning the adulteration of tea and the rules for its examination by the Custom House have provoked the greatest interest, not only in the trade, but throughout the country. Last week, in the House, Sir F. Flannery asked the Chancellor of the Exchequer if his attention had been called to a statement in the Press that a quarter of the caper teas and half of the dust teas now imported should be confiscated under the Food and Drugs Act of 1875, by reason of their containing 20 per cent of earthy matter and sand; whether we would explain the nature of the precautions taken by the Customs Department in London for the detection of such adulteration, and whether the number of samples analysed could be increased with advantage; and whether, having regard to the fact that the descriptions of tea above named were for the most part consumed by the humbler classes least able to protect themselves against adulteration, he would increase the staff of inspectors especially allocated to the duties of sampling and analysis of caper and dust teas.

The Chancellor of the Exchequer: My attention has been called to the matter. The Board of Customs have, in view of representations made to them by certain firms and of statements in the Press, ordered a full inquiry to be made. It is not easy, within the limits of an answer to a question, to explain the precautions taken by the Board for the detection of the adulteration of tea; but I shall be happy, if the hon. member wishes it, to supply him with particulars. The Board of Customs, as at present advised, do not consider that there is any need for altering the existing regulations, but if, as a result of the investigation now

in progress, it should appear advisable to make such alterations or to increase the number of tea inspectors, the necessary steps will be taken at once.

On the following evening, Mr. Carew returned to the attack. He asked the Financial Secretary to the Treasury whether he was aware that large importations of tea rejected by the Hamburg and New York Customs had recently been passed by the English Customs and sold in London, though containing up to 20 per cent. of clay and sand, and was unfit for human consumption; and whether, in view of the fact that the price of common teas had advanced 50 per cent., of which the poor were the largest consumers, the Government would insist on a more rigid inspection of all future importations to prevent a repetition of the fraud.

Mr. Hanbury replied that the "Board of Customs have no means of testing the accuracy of the statement in the first paragraph. A full inquiry is being made and if it should appear advisable to alter the existing regulations, or to increase the number of tea inspectors, the necessary steps will be taken at once. Meantime, a circular has been issued to the tea inspectors, directing them to administer the existing regulations with special care."

We are glad that our revelations have had such immediate and far-reaching results, and as inquiry can only reveal the truth of every word of our indictment, we shall look to it that the Government is held to its pledge of reform.—*Public Opinion*, June 23.

PRODUCE AND PLANTING.

NO CHANGE.—The latest report of the Commissioner of Customs for Shanghai does not confirm the reports circulated freely some time back that the Chinese were about to reform their methods of tea manufacture. The hopes expressed that the mandarins were at last awakening to the advantage of preparing tea by machinery, we are told, have been disappointed. There has been no improvement, says the report for 1898, in the treatment of tea, "nor is there likely to be as long as Russia takes nearly all the crop of black as it is."

THE SORROWS OF THE TEA RETAILER.—The "Grocer" reproves those who foster the demand for cheap tea. It says "Consumers of tea are willing to pay a fair price for a good article, and it may be hoped those retailers who are fostering the demand for 'the shilling canister,' and who are by so doing throwing away another chance of making a legitimate living profit, will curb their zeal and philanthropy. Generally speaking, profit on sugar is almost an unknown quantity; at any rate, retailers do not get a fair return for the labour and capital involved in its distribution. It will be a great misfortune if the tea trade is allowed to drift in a similar direction, and an effort to check the diminution in the margin of profit ought to be made before it is too late. Would the retail distributor's determination to secure a fair return on all his tea sales limit the demand? We think not." Touching lightly upon the sorrows of the retailer, the "Grocer" adds: "The tea trade has been the subject of a great deal of attention during the last few weeks. In several of the general newspapers statements have recently appeared to the effect that a quantity of tea containing an appreciable percentage of 'dirt' has found its way to Mincing Lane, and sensation-mongers have been urging consumers 'to be on their guard against retailers who desire to charge them for tea and to foist upon them an inferior article containing substances not grown upon the tea plant.' It is a pity that such writers do not make inquiries of the Commissioners of Customs before perpetrating such libels on a trade which is generally conducted on as pure a basis as any that could be mentioned. Following upon this damaging statement came the assertion in the prosecution of Lipton, Limited, last week that it is 'the universal custom of the trade to weigh tea with the paper in which it is wrapped.' We publish this week another batch of protests against the assertion, but it is to be feared that among the readers of some of the daily newspapers which did not give sufficient prominence to the contradictions of the statement quoted above, distruct of retail tea-dealers will be created."

TEA AND COFFEE IN AMERICA.—They are trying tea as a rival to beer in New York. Tea saloons have been opened where it is sold for a penny a pint, and the buyer may have it hot or cold. Colonel Hadley, the inaugurator of the movement, is going to try and convince the poorer class of consumers that: "Tea builds up; alcohol burns up. Tea quenches thirst; beer starts a thirst." The plan also includes a scheme to induce the beer-drinker to substitute tea and place the daily saving in a bank. To encourage this the society start the account with a gift of 4s, with the understanding that the money formerly spent for been less that spent for tea, shall be deposited daily. The would mean a saving, where a pint of tea is taken instead of a pint of beer, of £17 12, to which the society will add the balance to bring the year's saving up to £20. Coffee finds a more ready sale than tea in some quarters, because the former can be purchased at 4½d to 5d per pound, with a coupon for a gift in each package. This makes one gallon of coffee cost 2½d, while one gallon of tea of a poor sort costs 4d.

A NEW USE FOR TEA.—A correspondent who writes to a contemporary on the subject of fortune-telling "in the name of common-sense of society, and of religion," states that fees are now being extorted for the revelation of future events by the medinm of tea leaves. He tells us that a professional lady attends at private houses, bringing her own tea pot, and dares "to predict the future by the position of the tea-leaves when poured with due solemnity into a cup." These fortune-tellers have no preference for Indian and Ceylon tea unfortunately, and can perform their cabalistic mysteries with either high or low grade teas.

RUBBER IN TOGOLAND.—In Togoland, (a German colony in West Africa between the British gold coast possessious and Dahomey) regulations have been issued to prevent the wanton destruction of india rubber trees, and the dealers receive licenses from the Government. Only natives are allowed to collect this product, strangers being forbidden to ply the trade without a special license, which costs £50 a year. —*H. and C. Mail*, June 30.

PLANTING NOTES.

DURIAN PLANTS.—Three plants were raised from seed received from Peradeniya Garden. They are now about eight inches high and are making a promising growth and will be planted out on the first favourable opportunity. These may succeed where the imported plants have hitherto failed.—*Madras Agri-Horticultural Society's Proceedings.*

ANOTHER MARKET FOR OUR TEAS.—A correspondent writes:—We note that a large exodus of Moormen from Holy Utah is taking place, the much married saints leaving for Manitoba and north-west Canada generally. Here we have another market for our teas, if travellers were sent to tap it via Vancouver. With half-a-dozen dames of one "harem" sitting in solemn conclave to pick to pieces the characters of their dearest friends, the spouses of a neighbouring elder, the consumption of the cup that cheers, which is inseparable from the proverbial scandal on such occasions, ought to be considerable.—*The Planter.*

A Rubber Coagulating Machine.—It is learned from Messrs. Thomas Christy & Co. (25, Lime street, London, E.C.), that they have sold "a rubber coagulating machine which has given every satisfaction, and turns out a very fine class of rubber, quite free from dirt and foreign matter. One of its great advantages is that the rubber can be coagulated without the admixture of chemicals, except in certain circumstances, and can be got ready for export free from water and moisture, saving a great deal in freight and labor." It is understood that a circular describing this machine will be printed soon, and that it is not built on the Biffen centrifugal system,—*India Rubber World.*

Coffee Shade.—Read the following letter from Mr. J W Minchin, Honorary Secretary, Nilgiri Agri-Horticultural Society, Ootcamund, dated 7th February, 1899:—" Mr Rhodes James, of Coonoor, writes me that he wishes to obtain more seed of the Pithecolobium polyciphalum, which, he says, promises to be a very valuable shade tree for coffee. He reports that one tree from the seed, received through me from your Society in 1897, has grown well and is apparently a faster grower than even the Albizzia moluccana. Can you assist Mr. Rhodes James of this Society in getting any more of this seed". The seed asked for will be procured and supplied.—*Madras Agri-Horticultural Society's Proceedings.*

Camphor Plants.—Of the twenty-four plants received from the Royal Botanic Gardens, Calcutta, twenty-two plants have been distributed to members and others. Those planted out in our gardens two years ago are now two to three feet high. Mr. Winterbotham, of Meppadi, Wynaad, reports that the two plants we sent him in October 1896 are doing remarkably well; 4 feet high Mr. S M Pritchard, of Yercaud, in his letter of the 18th March, says that the one plant sent to him in August, 1898, made little progress till a month ago, when it began to make a vigorous growth. The elevation of Yercaud is not quite 4,000 feet; soil a virgin black, and the temperature never goes above 89″ in the hot and the rainfall averages fifty inches.—*Madras Agri-Horticultural Society's Proceedings.*

Black Pepper: a Profitable Crop.—The cultivation of black pepper in Wynaad is being largely increased, the crops harvested last season being the heaviest ever known in this taluq, while the price realised touched R600 per ton, the local quotations having been R180 per candy of 680 lb. This year the vines appear to be yielding even more largely, and 18 inch long cuttings of the best variety known as "Barlancottan" for transplanting purposes are selling at R5 per mile. Pepper in Wynaad is not usually grown from seed; cuttings being almost exclusively used; these are planted in pits about 15 inches in depth at the base of the tree or standard up which they are to be trained. Where natural standards are not available, stakes of the *Erythrina Indica,* or thorny *Indica,* are laid down, as this variety of indigenous tree appears to be most in favour for this particular purpose, as it strikes root readily, and, being deciduous for several months in the year, it gives a light shade, too much of which is inimical to the vines bearing well. At existing quotations, pepper is undoubtedly *the* most profitable staple to cultivate in Malabar, as after being well started, the gardens require but little labour for cultivation, and "locals" suffice for the purpose.—Ibid.

Chinese Competition in Tea.—It will interest exporters of tea in Calcutta to know that, owing to the competition on the Pacific, the new season's China teas are being carried from Yokohama at less than a cent a pound.—*Pioneer.*

A Madagascar Rubber-Tree.—M Henry Jumelle contributes to the *Comptes Rendus* for May 29th, a paper on the Guidroa, a rubber-tree of Madagascar. The writer mentions that the plant has hitherto been known only under its native name, but that now, thanks to specimens sent from Suberbieville (!) by M Périer de la Bathié, it has been possible to ascertain whether it is a new species, or can be identified with any that is already known. The conclusion arrived at is, that the Guidroa, though clearly belonging to the Mascarenhasia genus, does not exactly resemble either of the fifteen or sixteen known species, but may be held to be a new species, and may be named Mascarenhasia velutina, in allusion to the very characteristic velvety substance of the leaves. M Jumelle describes the manner in which the rubber is gathered from the trees by the Sakalaves. During the dry season, when the milky juice is very thick, they make, he says, numerous incisions in the trunks. The milky juice coagulates almost immediately below the wound, forming small bands of gum which the workers remove after an hour, and which they agglomerate into balls. In this way one man can easily gather a kilogram of the gum in one day. The caoutchouc thus obtained is of good quality, and even, it appears, superior to that gained by ebullition. Thus it seems likely that the Mascarenhasia genus, only found on the east side of Africa and in Madagascar (especially in the north and east), will play a more important part in furnishing caoutchouc plants than has previously been thought likely.—*Gardeners' Chronicle,* June 17th.

Castilloa Rubber Trees on Wiharegama, Matale, have done even better than Major Gordon Reeves recently reported. We now learn on undoubted authority, in a note from Matale, that the trees from which seed is now being gathered and which must be almost nine to ten years old, vary in girth from 40 to 46 inches at three feet from the ground. Of this size there are about 25 trees. Of trees about seven years of age there are some 25 also, average girth 20 to 22 inches; four years old trees about 45, approximate girth 12 inches. Of trees two to three years about 90 trees of varying girth, eight to twelve inches, besides, of course, a large number of younger sapling plants. Most of these larger trees have been planted along with or under cacao and Liberian coffee; and the manager sees no reason whatever to abandon the system. In regard to planting Castilloa rubber as shade for cacao, we find on reference to the *T. A.* of 2nd July, 1894, (Columbia) reports on cultivation of cacao, banana and indiarubber, in districts surroundings Sierra Nevada, and Mr. Munton followed the practice there established. The planting of Ceara rubber in cacao is certainly not desirable; the tree absorbs too much moisture and drops its foliage where the cacao has most need for shade. Dr. Morris, when Assistant Director Kew Gardens, we see by a footnote to this report, stated that the yield of Castilloa trees of ten years should be from four to seven lb. of rubber per annum!

Ceylon Rainfall.

The P. W. D. Meteorological Observations for June 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Padupola in the Central Province, 46·42 inches, and the lowest at Naulla in the Eastern Province 0·10 inch.

Western Province.

Negombo, Mr. Bucknall (6) ..	8·24
Kalutara Mr Gregson (36)	10·76
Labugama, Mr. Bond (369) ...	21·64
Henaratgoda, Mr. Silva (33) ...	14·13

Central Province.

Katugastota, Mr. Morgan (1,500) ..	7·41
New Valley, (Dikoya) Mr. Ward (3,708) ..	23·16
Helboda, (Pussellawa) Not received (3,300) ...	—
Yarrow Estate, ... Mr. Peto (3,400)...	15·71
Peradeniya Mr. ... MacMillan (1,540) ...	10·74
Duckwari, Mr. Adwin (3,300) ...	12·45
Caledonia, Mr Goork .. (4,273) ...	16·75
Pussellawa, Mr. .. Powell (3,000)	18 38
Hakgala, Mr. .. Nock (5,581) ..	7·48
S. Wanarajah Estate, Mr. Tatham (3,700) ...	29 21
St. Andrew's (Maskeliya,) Not received (4,200)...	—
Padupola, Mr. Ward ... (1,636)	46 42
Mylapitiya, Mr. Fletcher (1,7(7) ...	1 90

Northern Province.

Mullaittivu, Mr. Sanmukam (12) .	Nil
Jaffna Mr MacDonnell (8)	Nil
Mankulam, (N. Road) Mr. Sanmukam (167) ..	Nil
Elephant Pass, Mr. .. Silva (7) ..	Nil
Vangalachettykulam, Mr. Herft (179) ...	Nil
Point Pedro, Mr. Paravachasinghe (24) ..	Nil
Jaffna College, Mr. Cooke (9) ...	Nil
Kayts, Mr. Kretser (8) ..	Nil
Kankesanturai, Mr. ... Adams (10) .	Nil
Pallai, Mr. Silva (24) ..	Nil
Murlkandy, (North-Central Road) Mr. Silva —	Nil
Nedunkeni, Mr. Sanmukam (122) ...	Nil
Chavakachcheri, Mr. Silva (16) ...	Nil
Udupiddi, Mr. Hastings (35) ..	Nil
Marichchukaddi, (14) Mr. Thamotharampillay	—
Murungan, Mr. Blechingberg —	Nil
Vavuniya Mr. Sanmukam (318)	Nil

Southern Province.

Ella Vella (262) Mr. Smith	10·83
Kekanadura, (150) do	13·79
Denagama, (286) do	10·01
Udukiriwila Mr. Lourensz (235) ...	6·60
Kirama, Mr. Ismail (260)	16·77
Hali-ela (200) Mr. Smith	10·60
Tissamaharama, Not received (75) ...	—
Matara (15) Mr. Smith	7·30
Dandeniya, (157) do	6·91
Urubokka, (890) do	17·18
Elagala, Not received (121)	—
Tangalla, (94) Not received	
Mamadola, Mr. Cade (56) ...	6·01

Eastern Province.

Irrakkamam, (42) Not received	—
Devilana, Mr. Vanderstraaten (136)	Nil
Sagamata, Not received (40) ...	—
Ambare, do (65)	—
Kanthalai, Mr. Carte (50)	Nil
Allai, Mr. Carte (95)	Nil
Rukam, Mr. Vanderstraaten (120) ..	Nil
Periyakulam, Mr. Carte (20) ...	Nil
Chadaiyantalawa, Mr. Edge (57) ...	0·67
Kalmunai, do (12)	0·74
Rotewewa, do (30)	Nil
Lahugala, do (70)	Nil
Naulla, do (30)	0·10
Andankulam, Mr. Carte (41) ...	Nil
Manalpaddy, Mr. Vanderstraaten (21)	0·40
Maha-Oya-Tank, Mr. Vanderstraaten (190)	Nil

N.-W. Province.

Magalawewa, Mr. Gunaratna (176) ..	1·90
Maha Uswewa tank, Mr. Crabb (160) ...	0·85
Tenepitiya, Mr. Simmons (8) ...	13·43
Batalagoda, Mr. Madanapola —	7·04

N.-C. Province.

Kalawewa, (268) Mr. Carson	Nil
Maradankadawala, Mr. Carson (443) ...	0·29
Mihintale, Mr MacBride (354) ...	Nil
Horowapotana, Mr. MacBride (217) ...	Nil
Madawachchiya, Mr. MacBride (285) ...	Nil
Topare, (200) Mr. Jaywardane ...	Nil
Minneriya — Mr. Eves	Nil

Uva Province.

Bandarawela, Mr. Tocke (4,380) ...	1·35
Haldummulla, Mr. Viramuttu (3,160) ...	Nil
Kumbukan, (446) Mr. Emerson ...	0·57
Koslanda, (2,258) Mr. Emerson ...	Nil
Tanamalwila, Not received (550) ...	—

Sabaraoamuwa.

Ambanpitiya, Mr. Caldicott (729)	16·67
Pelmadulla, Mr. Clarke (408)	43·49
Kolonna Korale (Hulanda-oya) (203) Not Received	—
Avissawella, Mr. Jeffery (105)	21 5

CHINA TEA PROSPECTS.

The Hongkong *Daily Press* of 4th July has the following interesting deliverance :—

Experts in tea are agreed that the *desiderata* to retrieve the fortunes of the China tea trade are improved cultivation and manipulation, and a reduction in the cost of production. "So long, however," says Mr. Hughes in his Kiukiang Customs report, "as the present heavy taxation exists in China all along the route from the place of origin to the point of shipment—a taxation amounting to about 25 per cent. of the cost, whilst the tea of other countries (India, Ceylon, etc.) are free of duty, neither the improvement of the leaf nor the reduction of the original cost can be reckoned as prime factors in the question. The wonder is that an article so heavily handicapped as China tea is, in the matter of duty and taxes, should still hold a respectable place in the world's markets and still retain such a large share of foreign patronage. It would almost seem as if, even without any other alteration in the present state of affairs, China tea, with a wise removal of, say, half its fiscal burdens, could hold its own with its modern rivals, to the immense benefit of the Chinese Government and people." The 25 per cent. mentioned by Mr. Hughes as the amount of taxation to which Kiukiang tea is subjected is somewhat less than the amount given by competent authorities at other ports. Mr. Brenan, in the Canton Consular report for 1897, placed the figure at 35 per cent., while Mr. Cass, of Amoy, in a review of the tea trade supplied by him to the Consul and incorporated in the 1896 reported, said the reason for the decline was not far to seek: the entire crop realised $136,000, while the lekin paid amounted to $20,000 and the export duty to $35,000, or a total of $55,000, considerably more than one-third of the value of the tea. The result is that at Amoy the tea trade has practically ceased to exist.

The latest market report in the same paper is of interest :—

Shanghai, 3rd July.—(From Messrs. Welch Lewis & Co.'s Circular.)—Our last "printed" tea market advices were under date 16th instant. From Hankow we hear of an active demand from Russian houses for second crop Black Teas from the Liang Hu districts at prices which make early purchases of first crop Teas look cheap.

Green Tea.—It is perhaps a matter for congratulation to find that the fear of rejection by the United States Customs Inspectors is no longer oppressing the dealings in good sound common Teas, and it is hardly to be wondered at that the craving for common Teas, in most of the consuming centres should cause inflated prices here. Fine Teas are comparatively neglected, but lines which were going a begging last year at Tls. 12/14 are now eagerly taken at Tls. 20/21, and the lowest quotation for "skin" is Taels 14 a picul. We must not forget to say that there is no suspicion of adulteration about these Teas, and they are all sweet drawing. At the same time if these prices continue the supply of common Tea will be largely increased.

From the table of exports we see that the comparison in the case of shipments to the United Kingdom is as follows :—

			Black.	Green.
			lb.	lb.
Total to date,	1899	...	8,380,059	7,064
Do.	1898	...	5,914,986	10,068
Do.	1897	...	7,538,126	20,049

To North America, on the other hand, there is a slight falling-off this season so far, as also in the direct shipments to Russia.

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers
Agra Ouvah Estates Co., Ltd.	500	—	925
Ceylon Tea and Coconut Estates	500	—	500 n'l
Castlereagh Tea Co., Ltd.	100	100	102·50
Ceylon Hills Estates Co., Ltd.	100	—	30
Ceylon Provincial Estates Co.	600	—	485 xd
Claremont Estates Co., Ltd.	100	15	..
Clunes Tea Co., Ltd.	100	102·50	105
Clyde Estates Co., Ltd.	100	—	90
Delgolla Estates Co., Ltd.	400	—	150
Deomoo Tea Co., of Ceylon, Ltd.	100	65*	—
Drayton Estate Co., Ltd.	100	135	—
Ella Tea Co., of Ceylon, Ltd.	100	50	—
Estates Co., of Uva, Ltd.	500	—	350
Gangawatta	500	..	—
Glasgow Estate Co., Ltd.	600	—	975
Great Western Tea Co., of Ceylon, Ltd.	500	640	640*
Hapugahalande Tea Estate Co Ltd	200	250	—
High Forests Estates Co Ltd	500	240*	550
Do part paid	350	...	—
Horekelly Estates Co., Ltd.	100	—	85
Kalutara Co., Ltd.	500	400	—
Kandyan Hills Co Ltd.	100	—	45
Kanapediwatte Ltd.	100	—	90*
Kelani Tea Garden Co., Ltd.	100	...	65
Kirklees Estates Co., Ltd.	100	140	—
Knavesmire Estates Co., Ltd.	100	..	77·50
Maha Uva Estates Co., Ltd	500	—	575
Mocha Tea Co., of Ceylon, Ltd.	500	675	700
Nahavilla Estate Co., Ltd.	500	—	500
Nyassaland Coffee Co. Ltd.	100	..	90
Ottery Estate Co., Ltd.	100	110	—
Palmerston Tea Co., Ltd.	500	..	425
Penrhos Estates Co., Ltd.	100	—	105*
Pine Hill Estate Co., Ltd.	60	—	50
Pitakanda Tea Company	500	1,000	—
Putupaula Tea Co., Ltd.	100	..	100
Ratwatte Cocoa Co., Ltd.	500	350	500 n'l
Rayigam Tea Co., Ltd.	100	55*	...
Roeberry Tea Co., Ltd.	100	55	60
Ruanwella Tea Co., Ltd.	100	...	75
St. Heliers Tea Co., Ltd.	5 0	505	—
Talgaswela Tea Co., Ltd.	100	—	35
Do 7 per cent. Prefs.	100	80*	..
Tonacombe Estate Co., Ltd.	500	—	450
Udabage Estate Co., Ltd.	100	..	65
Udugama Tea & Timber Co., Ltd.	50	..	10 n l
Union Estate Co., Ltd.	500	—	300
Upper Maskeliya Estate Co., Ltd.	500	..	500
Uvakellie Tea Co., of Ceylon, Ltd.	100	..	65
Vogan Tea Co., Ltd.	100	—	87·50
Wanarajah Tea Co., Ltd.	600	1150	1150*
Yataderiya Tea Co., Ltd.	100	—	400

CEYLON COMMERCIAL COMPANIES

Name of Company.	Amount paid per share.	Buyers.	Sellers
Adam's Peak Hotel Co., Ltd.	100	..	60
Bristol Hotel Co., Ltd.	100	82·50*	..
Do 7 per cent Debts.	100	102·50	—
Ceylon Gen. Steam Navgt. Co., Ltd.	100	200	200*
Colombo Apothecaries Co., Ltd	100	...	130*
Colombo Assembly Rooms Co., Ltd.	20	..	12·50
Do prefs.	20	..	17
Colombo Fort Land and Building Co., Ltd.	100	..	82·50
Colombo Hotels Company	100	—	290
Galle FaceHotel Co., Ltd.	100	150*	150
Kandy Hotels Co., Ltd.	100	87·50*	—
Kandy Stations Hotels Co.	100	..	40
Mount Lavinia Hotels Co., Ltd.	500	..	400
New Colombo Ice Co., Ltd.	100	—	162
Nuwara Eliya Hotels Co., Ltd.	100	—	40
Public Hall Co., Ltd.	20	15	—
Petroleum Storage Co.	100		—
Do 10 % prefs.	100	35	40
Wharf and Warehouse Co., Ltd.	40	80	—

* Transactions.

LONDON COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers.
Alliance Tea Co., of Ceylon, Ltd.	10	8½—9	—
Associated Estates Co., of Ceylon Ltd.	10	..	6½—7
Do. 6 per cent prefs.	10	..	10—10
Ceylon Proprietary Co.	1	..	12·6—15
Ceylon Tea Plantation Co., Ltd.	,	..	26½—27
Dimbula Valley Co., Ltd.	5	—	6—6¼
Do prefs.	5	—	5½—6 xd
Eastern Produce and Estates Co., Ltd.	5	..	6½—6¾
Ederapolla Tea Co., Ltd.	10	.	8—9
Imperial Tea Estates Ltd.	10	..	6½
Kelani Valley Tea Asson., Ltd.	5	..	5—6
Kintyre Estates Co, Ltd.	10	.	8½
Lanka Plantation Co., Ltd.	10	4½	..
Nahalma Estates Co., Ltd.	1	.	½—1
Nuwara Eliya Tea Est. Co., Ltd.	10		10¼
Ouvah Coffee Co.,Ltd.	10	7	—
Ragalla Tea Estates Co., Ltd.	10	...	10½
Scottish Ceylon Tea Co., Ltd.	10	..	15
Spring Valley Tea Co., Ltd	10	..	5—6 n'l
Standard Tea Co., Ltd	10	..	12½—13
Yatiyantota Ceylon Tea Co., Ltd.	10	—	8—8½
Yatiyantota pref. 6 o/o	10	..	9½—10

BY ORDER OF THE COMMITTEE.

Colombo, 28th July, 1899.

RAINFALL RETURN FOR COLOMBO

(Supplied by the Surveyor-General.)

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897	1898	Av. of 29yrs.	1899
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch	Inch	Inch	Inch.	Inch.
January ..	0·81	1·45	7·39	5·42	0·62	5·00	2·92	3·81	2·32	3·09	6·98
February ..	4·36	2·81	5·32	2·36	0·52	0·81	0·35	1·68	1·98	1·90	2·78
March ..	5·34	9·43	1·52	5·15	7·44	1·84	5·64	3·66	4·21	4·92	0·88
April ..	14·27	5.93	13·92	20·39	12·51	9·34	5·93	10·97	22·81	11·47	6·66
May ..	6·48	17·65	3·00	10·32	3·00	10·09	9·31	8·30	5·80	11·89	17·73
June ..	1·87	9.79	6·62	11·01	11·32	13·99	8·37	10·14	10·94	8·34	9·23
July ..	3·32	4·59	1·10	2·20	1·72	0·52	2·85	5·24	6·15	4·49	1·11*
August ..	0·73	1·65	1·86	1·01	0·86	0·92	6·35	9·09	0·97	3·77	
September	1·50	4·42	1·14	1 99	0·78	4·09	10·99	4·58	6·90	5·13	
October ..	13·33	35·28	12·24	5·59	20·81	30·36	16·78	4·71	20·60	14·57	
November..	12·32	18·37	5·86	18·10	14·63	5·83	19.81	11·66	17·38	12·80	
December..	8·47	7·66	0·86	·13	3·25	9·44	11·76	8·89	3 65	6·45	
Total..	72·80	119·03	60·83	89·67	77·46	92·23	101·06	82·7	103·11	88·82	45·37

* From 1st to 25th July 1·11 inches, that is up to 9·30 a.m., 6th July.—ED. *C.O.*

COFFEE IN BRAZIL.—It is stated that near Cravinhos, S Paulo, a plantation with 50,000 coffee trees, formerly valued at 181,000$ has been bought by Dr. Alfredo Pujol for 22,000$. The journal from which we take this item estimates the growing crop at 30,900 arrobas ; but this is evidently a mistake, for, although there is no lack of individual instances in which trees bear even more than 20 lb of coffee each, we have never before heard of a whole plantation's averaging a third of that yield per tree.—*Rio News.*

COLOMBO PRICE CURRENT.

(*Furnished by the Chamber of Commerce.*)

Colombo, July 25th, 1899

EXCHANGE ON LONDON :—Closing Rates: *Bank Selling Rates* :—On demand 1/4; 4 months' sight 1/4 1-32; 6 months' sight 1/4 1-16.

Bank Buying Rates:—Credits 3 months' sight 1/4 ¼; 6 months' sight 1/4 11-32; Docts 3 months' sight 1/4 5-16; 6 months' sight 1/4 13-32.

Indian Bank Minimum Rates 4 o/o to 5 %

Local Rates : 2 o/o to 3 o/o Higher.

COFFEE :—

Plantation Estate Parchment on the spot per bus—R13.00

Plantation Estate Coffee, f.o.b on the spot per cwt R75.00

Liberian Parchment on the spot per bus—None

Native Coffee f.o.b per cwt. None

TEA:—Average Prices ruling during the week—Broken Pekoe per lb. 42c. Pekoe per lb. 36c. Pekoe Souchong per lb. 33c. Broken Mixed and Dust per lb. 26c.—Averages of Week's sale.

CINCHONA BARK:—Per unit of Sulphate of Quinine per lb 7c.

CARDAMOMS:—Per lb R1.70

COCONUT OIL:—Mill oil per cwt. None. Dealers' oil per cwt. R13.75; Coconut oil in ordinary packages f.o.b. per ton R307.50

COPRA:—Per candy of 560 lb. R43.00

COCONUT CAKE:—(Poonac) f.o.b. per ton, R82.50

Cocoa unpicked & undried, per cwt. R45.25

Picked & Dried f. o. b. per cwt. None.

COIR YARN.—Nos. 1 to 8 { Kogalla R17.25 / Colombo R16.00

CINNAMON :—Nos. 1 & 2 only f.o.b. 65c.

Do Ordinary Assortment. per lb 57c.

EBONY.—Per ton R185.00

PLUMBAGO:—Large Lumps per ton, R1,100

Ordinary Lumps per ton, R1,000

Chips per ton, R750 Dust per ton, R600 Dust Flying R150.

RICE.—Soolai per bag, { R7.50 to 8.00

,, per bushel, { R2.87 to 3.06

Pegu & Calcutta Calunda per bushel. R2.96 to 3.00

Coast Calunda per bushel, R3.00 to R3.05

Mutusamba per bushel R3.37 to 3.80

Kadapa and Kuruwe, per bushel—None.

Rangoon, raw 3 bushel bag. R9.40 to 10.00

Coast Kara per bushel R3.00 to 3.05

Soolai Kara per bushel R2.86 to 2.87

THE LOCAL MARKET.

(*By Mr. James Gibson, Baillie St., Fort.*)

Colombo, July 25th, 1899.

COFFEE :—

Estate Parchment :—per bushel	R11·00 to 13·00
Chetty do do	R8·00 to 9 00
Native Coffee } per cwt.	R35·00 to 40·00
do F. O. B }	
Liberian coffee:—per bushel	R3·50
do cleaned coffee:—per cwt	R20·00
Cocoa unpicked:—per cwt	R40·00 to 42·00
do cleaned do	R42·00 to 44·00
Cardamoms Malabar per lb	R1·00 to 1·25
do Mysore do	R1·65 to 1·95
RICE :	
Soolai per bag of 164 lb. nett	R7·50 to 8·00
Slate or 1st quality:—per bushel	R2·98 to 3·06
Soolai 2 & 3rd. do do do	R2·87 to 2·96
Coast Calunda	R3·00 to 3·05
Coast Kara	R3·00 to 3·05
Kazala	R2·86 to 2·87
Muttusamba Ordinary	R3·37 to 3·80
Rangoon Rice per bag	R9·40 to 10·00
Cinnamon. per lb No 1 to 4	R00·57
do do 1 to 2	R00·65
do Chips per candy	R90·00 to 92 50 scarce
Coconuts Ordinary per thousand	R35·50 to 38·00
do Selected do	R36·00 to 39·00
Coconut Oil per cwt	R13·75 to 13·87½
do do F. O. B. pe to	R275·00 to 277·50
POONAC :—	
Gingelly per ton	R85·00 to 87·50
Coconut Chekku do	R77·50 to 82·50
do Mill (retail) do	R80·00 to 82·50
Cotton Seed do	R60·00 to 65·00
POONAC: -	
Copra per candy	
Kalpitiya do	R44·50
Marawila do	R42·00 to 43·50
Cart Copra do	R40·00 to 41·00
Satinwood per cubic feet.	R2·00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R30·00
Palmyra do do	R8·00 to 17·50
Jaffna Black Clean per cwt	R13·50 to 14·00
do mixed do	R11·50 to 12·50
Indian do	R8·00 to 13·50
do Cleaned do	R10·00 to 17·50
Sapanwood per ton	R45·00 to 52·50
Kerosine oil American per case	R6·00 to 6·25
do bulk Russian per tin	R2·75 to 2·90
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R38·00 to 40·00
Kapok cleaned f o b do cwt	R24·00 to 24·50
do uncleaned do	R7·50 to 8·00
Plumbago per ton, according to grade { Large lumps	R600·00 to 1,050·00
do	R500·00 to 975·00
Chips	R300·00 to 750·00
Dust	R275·00 to 550.00

CEYLON EXPORTS AND DISTRIBUTION. 1899.

COUNTRIES.	Tea, 1899 lbs.	Tea, 1898 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cinchona Branch & Trunk lb. 1899. lbs.	Cinchona Branch & Trunk lb. 1898. lbs.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.	Coconut Oil. 1899 cwts.	Coconut Oil. 1898 cwts.
To U. K. ..	58469644	58180543	7017	..	7017	372703	398838	27842	217501	321085	444349	52534	54358
,, Austria ..	6816	11372	1	..	1	..	..	...	...	..	105926	1855	5327
,, Belgium ...	8883	8340	61	..	61	..	..	131	58	47260	95760	606	903
,, France ..	62351	50289	165	...	165	33	21808	3	...	42066	1750	..	4008
,, Germany ..	226748	194533	19	..	19	..	..	..	20490	197621	349096	401	6568
,, Holland ..	8270	6846	..	..	..	...	..	..	...	..	..	...	..
,, Italy ..	8716	2970	..	..	..	..	..	...	20	48300	100320	205	...
,, Russia ..	1958690	1251319	24	..	24	...	..	...	...	...	...	..	..
,, Spain ..	11300	24150	..	...	..	..	...	..	...	128400	18200	..	..
,, Sweden ..	29746	22584	..	..	..	..	..	...	4036	500	..	206	..
,, Turkey ..	10202	17144	1	:	1	..	...	..	...	...	..	..	..
,, India ..	271721	654339	68	..	68	..	..	1	31164	...		28754	63777
,, Australia ..	8219745	8657459	2054	..	2054	..	...	81	..	4900	15120	373	422
,, America ..	1443630	1213971	331	..	331	94005	147559	472	4977	60600	28000	56442	24711
,, Africa ..	173310	217256	...	..	..	..	724	..	616	400	1240	..	..
,, China ..	736711	694762	28	...	28	...	2026	...	2388	35000	...	2880	2222
,, Singapore ..	35087	32554	77	..	77	..	--	..	480	..	..	22333	61844
,, Mauritius ..	33415	7300	..	..	..	..	..	..	...	...	..	..	..
,, Malta ..	133487	116229	..	...	..	...	..	..	..	..	..	..	...
Total export from 1st Jan. to 25th July, 1899	71848472	71357960	9846	..	9846	466741	570955	28530	281730	886132	1159761	166589	224140

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From Lewis & Peat's Fortnightly Prices Current, London, July 12th, 1899.)

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ...	44s a 100s
Zanzibar & Hepatic ,,	Common to good ...	11s a 80s
BEES' WAX, ,,		
Zanzibar & Bombay { White ,,	Good to fine	£7 a £7 10s
Yellow ,,	Fair ,,	£5 15s a £6 10s
Madagascar ,,	Dark to good palish	£6 a £6 12s 6d
CAMPHOR, China ,,	Fair average quality	125s
Japan ,,	,, ,, ,,	127s 6d
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 7d a 2s
Ceylon.—Mysore ,,	Fair to fine plump ..	3s 8d a 4s
	Seeds ..	2s 2d a 2s 5d
,, Tellicherry ,,	Good to fine ..	2s 11d a 3s
	Brownish ..	2s 6d
,, Long ,,	Shelly to good ..	2s 6d a 3s 6d
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4d
Madras ,,	..	3½d a 3¾d
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	29s 6d a 40s
CINCHONA BARK.—		
Ceylon lb.	Crown, Renewed	5d a 7d
	Org. Stem	8⅞d
	Red Org. Stem	2¾d a 4⅜d
	Renewed	3⅜d
	Root	3¼d
CINNAMON, Ceylon 1sts	Ordinary to fine quill	10d a 1s 6d
per lb. 2nds	,, ,,	9½d a 1s 5d
3rds	,, ,,	9d a 1s 4d
4ths	,, ,,	7½d a 11½d
Chips	,, ,,	2d a 8½d
CLOVES, Penang lb.	Dull to fine bright bold	4¼d a 1s
Amboyna ..	Dull to fine	4d a 5¼d
Zanzibar and Pemba }	Good and fiue bright	3¼d a 4½d
	Common dull to fair	3d a 3 3-16d
Stems ..	Fair	2d
COCULUS INDICUS cwt.	Fair	9s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	104s a 120s
	Middling to fine mid ..	93s a 102s
	Low mid. and low grown	81s a 92s 6d
	Smalls	35s a 75s
Native ,,	Good ordinary	30s a 70s
Liberian ,,	Small to bold	26s a 37s
COCOA, Ceylon ,,	Bold to fine bold	72s a 85s
	Medium and fair	62s a 70s
	Triage to ordinary	42s a 6d 62s 6d
COLOMBO ROOT ,,	Ordinary to good	12s a 21s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair ..	£14 a £23
FIBRE, Brush ,,	Ord. to fine long straight	£10 a £21
Cochin ,,	Ordinary to good clean	£18 a £22
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	,, ,, very fiue	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	40s a 55s
CUTCH ,, ,,	Fair to fine dry	28s a 35s
GINGER, Bengal, rough ,,	Fair	21s
Calicut, Cut A ,,	Good to fine bold	69s 6d a 75s
B & C ,,	Small and medium	27s 6d a 49s 6d
Cochin Rough ,,	Common to fine bold	22s a 26s
	Small and D's	17s a 20s
Japan ,,	Unsplit	19s a 20s
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £15
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £8 15/
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ...	£4 8s a £8
	,, ,, red ...	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 55s
Turkey sorts ,,		70s a 85s
Ghatti ,,	Pickings to fine pale ...	12s 6d a 35s
Kurrachee ,,	Good and fine pale ...	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras ,,	Dark to fine pale ...	27s 6d a 35s
ASSAFŒTIDA ,,	Clean fr. to gd. almonds	40s a 95s
	Ord. stony and blocky	24s a 47s 6d
KINO ,,	Fine bright	4s
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	36s a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	17s a 20s
siftings ,,	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 1d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 2d
	Common to fine	1s a 2s 4d

	QUALITY	QUOTATIONS.
INDIARUBBER, *(Contd).*		
Java, Sing. & Penang lb.	Foul to good clean ..	8d a 3s
	Good to fine Ball ...	2s 8d a 3s 6d
	Ordinary to fair Ball..	2s a 2s 10d
Mozambique ,,	Low sandy Ball ..	1s 3d a 1s 6d
	Sausage, fair to good...	3s 2d a 3s 6d
	Liver and livery Ball .	2s 4d a 3s
	Fr. to fine pinky & whi...	3s a 3s 4d
Madagascar ,,	Fair to good black ..	2s a 2s 3d
	Niggers, low to fine ..	1s a 2s 6d
INDIGO, E.I. ,,	Bengal--	
	Shipping mid to gd violet	2s 10d a 4s
	Consuming mid. to gd.	2s 6d a 2s 9d
	Ordinary to mid.	2s 2d a 2s 5d
	Mid. to good Kurpah	1s 11d a 2s 5d
	Low to ordinary	1s 8d a 1s 10d
	Mid. to good Madras	1s 4d a 2s 2d
MACE, Bombay & Penang	Pale reddish to fine	2s a 3s
per lb.	Ordinary to fair	1s 5d a 1s 11d
	Pickings	1s 1d a 1s 3d
MYRABOLANES, Madras } cwt	Dark to fine pale UG	5s a 6s
	Fair Coast	4s 6d a 5s
Bombay ,,	Jubblepore	4s 3d a 6s 6d
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	1s 1d a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 18s
NUX VOMICA, Bombay	Ordinary to middling	4s a 5s 6d
per cwt. Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	5s 9d
CASSIA ,,	According to analysis	3s 11d a 5s 6d
LEMONGRASS ,,	Good flavour & colour	2¾d a 2⅞d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3¼d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1s 1/0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody ..	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf ...	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ...	5⅛d a 5¼d
Singapore	Fair	5¼d
Acheen & W. C. Penang	Dull to fine	4½d a 5d
PLUMBAGO, lump cwt.	Fair to fine bright bold	36s a 47s
	Middling to good small	18s a 25s
chips ,,	Dull to fine bright ..	20s a 27s 6d
dust ,,	Ordinary to fine bright	13s 6d a 22s 6d
SAFFLOWER ,,	Good to fine pinky ..	80s a 85s
	Middling to fair ...	60s a 70s
	Inferior and pickings	50s a 55s
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £35
Chips ,,	.. ..	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay ,,	Lean to good ..	£4 a £5
Madras ,,	Good average ..	£4 a £5 nom
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth ..	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	55s a 60s
SENNA, Tinnevelly lb.	Good to fine bold green	4¼d a 6½d
	Fair middling medium	3d a 3¼d
	Common dark and small	2d a 2½d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's	
	D's and B's	£4 a £5 15s
	Small ...	
Mussel ,,	Small to bold ...	£1 5s a £3 2/6
TAMARINDS, Calcutta...	Mid. to fine bl'k not stony	15s a 16s
per cwt. Madras	Stony and inferior ..	7s 6d a 8s 6d
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	18s a 23s 6d
TURMERIC, Bengal cwt.	Fair ...	18s
Madras ,,	Finger fair to fine bold bright	27s 6d
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger ..	17s a 17s 6d
	Bulbs ...	9s a 9s 6d
VANILLOES— lb.		
Mauritius and } 1sts	Gd. crysallized 3½ a 9 in	20s a 32s
Bourbon ... } 2nds	Foxy & reddish 4½ a 8 ,,	21s a 28s 6d
Seychelles 3rds	Lean and inferior ...	10s a 14s
VERMILION lb.	Fine, pure, bright ...	2s 3d a 2s 5d
WAX, Japan, squares cwt	Good white hard ...	30s 6d a 31s

THE

AGRICULTURAL MAGAZINE,

COLOMBO.

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for August:—

Vol. XI.] AUGUST, 1899. [No. 2.

THE ANNATTO DYE OF COMMERCE.

(Continued.)

THE use of annatto for colouring cheese and other food articles seems to have originated from the belief that it possessed certain antiseptic and peptic properties, but the country of its origin is not known. The West Indians were known to be using it as a medicine in the treatment for dysentery, while in East India, Mysore, the natives use it as a condiment in their curries. The Spanish mix the prepared dye in their chocolates—evidently not for the sake of the colouring but for its virtue as a digestive. The superiority of cheese made in Holland is no doubt due to a judicious use of the dye which it seems the Dutch keep as a secret. Manufacturers in Germany in attempting to imitate the Dutch product, overdid it so much so, that it was found necessary for the German government to enact special laws last year prohibiting the use of annatto in that country. In an extract from the *Journal of the Society of Arts* which appeared in the *Ceylon Observer of* 12th instant, it will be seen that annatto which is therein named "bixa orellana" formed one of the principal products of Togoland in German West Africa. After the new laws came into operation in the fatherland, the produce of those colonies evidently found its way to other countries, carrying with it the tendency of lowering prices and demoralizing the market. But this state of things should not continue long, for as oon as it is known that the variety of the annatto growing in Africa is different from those found in East India and Ceylon, preference will be given once more to the latter as has actually been the case once before when the West Indian product reigned supreme. In this connection it will be interesting to look back to the discussion which a sample of West African annatto seed sent to England had elicited. The following letter which appeared in the *Kew Bulletin* for July, 1890, speaks for itself:—

ROYAL GARDENS, KEW, TO COLONIAL OFFICE.

Royal Gardens, Kew, 29th March, 1890.

Sir,—I am desired by Mr. Thiselton Dyer to acknowledge the receipt of your letter of 22nd January last, forwarding a copy of a despatch from the Officer Administrating the Government of Lagos on the subject of an experimental consignment of annatto seeds forwarded to this country for valuation and report.

2. These seeds were duly received at Kew early last month, and samples were forwarded to several firms of annatto dealers and manufacturers inviting their opinion upon them for the information of the Government of Lagos.

3. Copies of the replies received are herewith enclosed. It appears that Lagos annatto seeds are not so good as those exported from Jamaica; they are smaller, less bright in appearance, and not so rich in colour. This may be owing to the fact that the Lagos seeds were gathered before they were fully ripe. In any case the market value is very low, and it is doubtful whether West African seeds can be shipped to this country at a profit.

4. The subject of annatto has already been very fully treated in the *Kew Bulletin* (July and September, 1887). It is a matter for consideration, if the export of the seeds will not prove remunerative on the West Coast, whether it would be possible to prepare the flag or roll annatto. There is a regular and steady demand for annatto in this form, and the charges for freight are con-

siderably reduced. The methods adopted in the preparation of flag or roll annatto are fully given in the *Kew Bulletin* for July 1887.

I, am &c.,

(Signed) D. Morris.

The Hon. R. H. Meade, C.B.

The supposition in that early period of the history of this new product in attributing the inferiority of the seed to premature gathering is quite natural; but since it has been pointed out in the June number of the *Agricultural Magazine* that there are more than two varieties of annatto growing in different countries, one inferior to the other as regards the quality of the colouring matter each contained, it may be safely inferred that the variety growing in Lagos is not the same as what we have in Ceylon. And if the seed now selling in the English market at 1d. per lb. is the same as the sample referred to in the above correspondence, I fear it wont pay the growers to send any more there!

In my next I hope to give some more interesting notes.

A. VAN STARREX.

Matale, 17th July, 1899.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF JUNE, 1899.

1	Thursday ..	Nil	17	Saturday ..	·15
2	Friday ..	Nil	18	Sunday ..	·28
3	Saturday ..	·38	19	Monday ..	·46
4	Sunday ..	1·05	20	Tuesday ..	·24
5	Monday ..	1·72	21	Wednesday ..	Nil
6	Tuesday ..	1·17	22	Thursday ..	Nil
7	Wednesday ..	Nil	23	Friday ..	Nil
8	Thursday ..	·98	24	Saturday ..	Nil
9	Friday ..	1·3	25	Sunday ..	Nil
10	Saturday ..	·64	26	Monday ..	·01
11	Sunday ..	Nil	27	Tuesday ..	·02
12	Monday ..	1·12	28	Wednesday ..	·25
13	Tuesday ..	·48	29	Thursday ..	1·09
14	Wednesday ..	·29	30	Friday ..	·6
15	Thursday ..	Nil	1	Saturday ..	Nil
16	Friday ..	·5			
				Total..	12·73

Greatest amount of rainfall in any 24 hours on the 5th inst., 1·72 inches.

Mean rainfall for the month ·68 in.

Recorded by Mr. J. A. G. Rodrigo.

OCCASIONAL NOTES.

The Colombo Agri-Horticultural Society's Exhibition was held on July 21st and 22nd and proved to be a great success. The attendance was large, being estimated on the first day to have exceeded 3,000. The exhibits of fruits and vegetables though not large in number were of a good quality. Special accommodation was provided for arts and manufactures and cattle, and both sections were well represented. His Excellency the Lieut.-Governor attended the first day and distributed the gold medals. On the second day Mrs. S. M. Fowler, wife of the Hon'ble the Govt. Agent, Western Province, distributed the silver medals.

Only nine gold medals (of exceptionally high value and finish) were awarded to the following:—

Mr. P. D. Siebel (collection of flowers and pot plants).
Mr. A. J. R. de Soysa (Cinnamon).
Mr. A. W. D. Jayasuriya (Paddy).
Lady de Soysa (Tea).
Mr. George C. Warr (Coconut Oil).
Mr. J. W. C. de Soysa (Native Bull).
Mr. T. Sanmugam (Poultry).
Mr. Weerakody (Collection of native fruits).
Mr. C. C. Barber (Cacao).

Mr. S. M. Burrows, the new Director of Public Instruction, will arrive before the end of the year and resume duties probably in November. While welcoming him we cannot but feel sorry to lose Mr. Harward, the Acting D.P.I., who has proved an ideal Director and won the esteem of all.

The report of the Agricultural Commission is now due and will no doubt be forwarded to Government within the month. It is being eagerly looked forward to, as the deliberations of the Commissioners have so far been of a private nature. We trust the best decision has been arrived at for the good of the agriculture of the Island.

The operations of the Paris Exhibition Committee are taking practical form, and Exhibits under the various sections are being now made up, and indeed are beginning to come in. The Hon. Mr. C. P. Layard has succeeded the Hon. Mr. Ellis as Chairman.

Foot and mouth disease broke out in the Government Dairy despite all the precautionary measures that are in force against the incursions of epizootics. There is no doubt that the dairy herd was infected at the Havelock Racecourse where the animals are daily sent to pasture. These grounds are, as a rule, over-run by stray cattle during the night, and the virus of the disease was most probably deposited on the pasture grass by these stray animals. The dairy is once again quite free from disease, though the occurrence of the outbreak has caused a serious diminution in the output of milk.

FIBRES.

It has already been noted as an interesting fact, though in no wise a remarkable one, that the most valuable commercial fibres of today were the prominent fibres of ancient times, illustrating, in a word, the survival of the fittest. Flax, cotton, hemp, the liliaceous fibres, many of the palms, reeds, and grasses were known and valued in past ages on both hemispheres, being employed in connection with the common animal fibres, as wool, hair and silk. When or how vegetable fibres first came to be used will never be known, but it is possible that they were first employed in aiding man to secure his food, as the natives of every country from the burning tropics to the frigid north have drawn largely upon the resources of the vegetable kingdom for their fish

lines and nets. And it might further be conjectured that the rude knotting of the twisted filaments of fibre in the form of nets may have first suggested weaving and the substitution of vegetable clothing for the skins of animals.

Flax has a greater antiquity than any of the fibres of which we have knowledge, for its cultivation goes back to the Stone Age in Europe. It is known to have been manufactured by the Swiss Lake Dwellers, a people contemporaneous with the long-extinct mammoth and other great mammals of the Quaternary Epoch, as specimens of the straw, fibre, fabrics, etc., prepared by them are preserved in the Museums. It is supposed that the species cultivated at that remote period of the world's history, concerning which no written records remain, was *Linum angustifolium*, which at a later period, though still remote by four or five thousand years, the Egyptians cultivated the species known today as commercial flax (*Linum usitatissimum*).

Before the books of Genesis and Exodus were written Egyptians were skilled in spinning and weaving flax, for both the culture and the manufacture of this textile are pictorially carved upon the bas-reliefs and upon the walls of palaces, temples, and tombs. Egyptian fabrics of linen 4,500 years old and preserved in the museums and among the mummy cloths, fabrics from the most delicate tissues to linen, like sailcloth, have been found, and as many as 350 yards were sometimes used to enwarp one body. The linens were both white and dyed in colors: yellow, red, and purple, and they were handsomely embroidered. Spinning and weaving in Bible times were household industries, as we are assured by many references to women and flax. The Phœnicians did much to extend the culture of flax and the art of weaving linen, as their ships plowed the Atlantic more than three thousand years ago, even journeying to Britain, for they were a nation of traders, and there is every reason to believe that the Chaldeans excelled in spinning and weaving flax, while the Babylonians, centuries before Christ, were noted for their luxury and the high state of developement of their textile art, flax, cotton, and wool being manufactured by them.

Wool was more grown in ancient Greece than flax, though the latter textile was produced in certain favourable districts and imported in large quantities for manufacture. There was a distinct linen industry, slaves being the operatives, as well as a household industry, for whether in the cottage or the palace, if possible, a special room was set apart for the occupation of weaving. In Homeric times not only were maids and ladies of high degree familiar with weaving, but with spinning and embroidery, and the distaff and spindle were often made of ivory or of gold. As in Greece, so in Rome, there were regular linen establishments, and at the same time a domestic manufacture practiced by maids and matrons. Woollen was earlier used for clothing by the Romans; then linen was employed, first for domestic uses, then as a dress material, the women adopting it before the men.

Regarding the early use of linen in our own country, the time when American history began to be made is so recent that the word ancient does not apply. It has been stated that both flax and hemp were known to the ancient Mexicans or Aztecs, though I can refer to no records which relate to their use.

While it has been shown that cotton was the ancient national textile of India, its cultivation and use were by no means confined to that country. Flax was the aristocratic textile of Egypt and was generally cultivated, but cotton was grown in the southern part of the country. Cotton and linen were sometimes woven together (flax warp and cotton woof), just as mixed "tow linen" is made in the mountains of Virginia and North Carolina today. These Egyptian mixed fabrics, as well as pure cotton cloths, were largely used in upholstery as the coverings of chairs and couches, and probably also as drapery hangings. The cottons of India were famous and Hindoo muslins were formerly produced that were so fine that when laid upon the grass and wet with dew they became invisible. The marvelous fabrics of Cos and Tarentum, by some said to have been made from cotton, were more likely silk, as they are described as floating like mist around the female form, disclosing the contour like gauze veil. There is also the record of a muslin turban 30 English yards in length, contained in a coconut set with jewels, which was also exquisitely fine that it could scarcely be felt by the touch. It is impossible to say how far back into the ages cotton was first used in India, and though it is referred to 800 B.C., we may be sure that the industry was old at that time. Cotton was a late introduction into Greece, though it was known 200 B.C., and even linen was an introduced textile, which came slowly into favor at a time when wool was almost universally used.

VELVET BEANS AS HUMAN FOOD.

The shelled beans have been used as food for cattle, hogs and chickens and even as a table vegetable. The writer has up to this time made no experiments to determine the suitability of the beans for feeding to different classes of live stock.

Inasmuch as there is on record one well authenticated case of injury following the use of green immature shelled velvet beans as a table vegetable, caution is advised in using the beans for human food. This case of apparent poisoning or acute indigestion following the eating of green velvet beans, boiled, was carefully investigated by Mr. V. K. Chestnut, of the U.S. Department of Agriculture. He has kindly permitted the writer to examine his correspondence with Mr. J. S. Sergeant of Florida, who reported the only case on record, where velvet beans proved decidedly harmful. With him green boiled velvet beans proved injurious, not only to men, but also to the poultry. Mr. Sergeant writes as follows concerning velvet beans as a substitute for beans:—"We have since used them as coffee two and three times a day for three or four months continually without observing any deleterious effect. If properly ground they make a very pleasant drink. The least bit of burning makes the beverage too bitter, and on the other hand too little browning, leaves them with an unpleasant taste and odor." Four Floridians who have

had extensive experience with velvet beans were consulted on the suitability of velvet beans for food of man and beast. All hold the opinion that they contain no poisonous principles, but three of these four correspondents agree that the velvet bean is not a desirable table vegetable. The fourth, Mr. E. J. Johnson, Leesbruy, Fla., writes thus:—For human food they are by all odds the richest and best vegetable I have ever tasted. If eaten in large quantities they will nauseate the stomach, not from poison, but from richness. They should be soaked in water over night. This separates the inside hull from the bean. They should then be parboiled in at least two waters. Then cook them as you do any other beans.

The air-dry shelled beans analysed by Prof. H. H. Persons, (Fla. Bul. No. 35), contained 6·29 per cent. of fat, 53·5 per cent of nitrogen-free extract (starch, etc.), and the very large amount of 18 81 per cent of protein or muscle forming material. This indicates that the beans are even richer in food materials than the cowpea, which ranks especially high as a food-stuff.

OBSERVATIONS ON THE AGRICULTURAL EDUCATION OF THE ISLAND OF CEYLON.

The necessity for the appointment of the present Agricultural Commission, if I am not mistaken, has arisen from the fact that a cry has been raised that the Colombo School of Agriculture is not doing what was expected of it, or in other words, that it has proved to be a failure. The reorganization of the School, therefore, with a view to devising a more liberal system of agricultural education among the native population of the island seems to me to be one of the most important duties that the Commission has to perform. Before proceeding further, it will therefore be useful at this stage to inquire,

1st. What was expected of the Agricultural School to do when it was first started.

2nd. What it has done so far, and

3rd. Why it has apparently been a failure.

It is of course impossible to show by statistics how much good an institution of this nature may do to a country, nor is it necessary here to enumerate instances in which this particular Institution has been of service to the island. From an educational point of view nobody can be blind to the fact that the School has done an immense deal of good. In this respect I may make bold to say that it has done more good to the native population of this island than either the Royal Botanic Gardens or the Colombo Museum, both of which Institutions absorb a much larger share of the revenue than the School of Agriculture. The School is purely a scientific and a technical one, and anybody who is not conversant with the sciences that go to help an agriculturist, nor anyone who has not studied the methods of cultivation as practised by our village goiyas is really unable to see what good an Agricultural School is likely to do to the people. The Hon'ble Mr. Mitchell once observed: "With regard to the good the school was doing nobody could be blind to that. Lads came from the country and studied Agriculture there and went back to their villages, and no one can be blind to the fact that very important results must follow from that in the course of time." A knowledge of Agriculture with its allied sciences such as Botany, Chemistry, Veterinary Science, &c., will at least enable a lad to go about with his eyes open, while the influence that he could exercise on the people among whom he moves is from an educational point of view incalcuable.

Mr. H. W. Green, the founder of this Institution, was always a keen observer of the various methods of cultivation as practised by our village goiyas, and he exactly knew in what directions improvements should be carried out. I am speaking with some authority, as I have had the opportunity of personally discussing these matters with Mr. Green on several occasions during my connection with the Agricultural School from its very commencement in 1884 and until 1890 as a teacher of Botany, Chemistry, &c., there. His Primer of Agriculture which is at present taught in every village Government School from the Vth Standard upwards is highly appreciated by the villagers.

The Agricultural School has at least succeeded in teaching our educated youths the dignity of labour. In the words of Mr. Elliott, the late Government Agent, "the young men who have passed through it are a credit to the school in which they were trained. They are capable Agriculturists and intelligent workmen who understand their work, and know how and when to plough, to sow, to water and to reap."

The iron plough which Mr. Green tried to introduce was undoubtedly a failure, and some people are under the impression that this was all that the School tried to do; and when the plough failed the school was also put down as a failure. The plough must be left out of account altogether in considering the resutls of the school. All that Mr. Green tried to do was to find out an implement by which the soil may be properly turned up and properly tilled and with the least expense to the goiya. That the soil must be properly tilled before anything can be made to grow on it successfully is an admitted fact; the point was to get a suitable implement.

It was expected that the youths who studied at the school would go back to their own lands and take up Agriculture as their profession; but even the big landed proprietors who have passed through it, with one or two exceptions, have not done so. The reason for this is not far to seek. Anybody who is acquainted with native character will be able to supply an explanation. It is however a mistake to suppose that simply because these young men did not take to Agriculture the School was a failure, and the money spent in teaching them was spent in vain.

Again, a promise was I believe held out by Government at the time that the school was started, that preference would be given to young men who had studied Agriculture in filling up vacancies as Korale Mudaliyars, Muhandirams &c. There is no instance on record in which any of the young men who passed through the school

ever attained to this distinction. This is not very encouraging.

Now I come to an important point. When Mr. Green started the school, he was anxious to have it as part and parcel of the old Normal School, the only training Institution for Government teachers. He succeeded in this, and it was placed in charge of the Principal and Science Master of the Normal School who was a European. Unfortunately, soon after the school was started Mr. Green, who was then the Director of Public Instruction fell ill and had to leave the island on furlough. The Vernacular Normal students who were trained to be village teachers were then taught Botany, Chemistry and Agriculture in addition to the ordinary school subject. Mr. Green's idea was to give these teachers a training in practical Agriculture also, so as to enable them to teach Agriculture to the villagers through the school boys. This was a capital idea. The influence that a good village teacher can exercise among the people with whom he mixes is great. The boys who pass through the village school will be the future men of the district, and what an opportunity a teacher who understands his duty has in forming the character and habits of the people and reforming existing methods of cultivation; while very little can be done by directly going to the older people. Agricultural reform must be made to pass from boy to man, and this can only be done through educational agencies. Mr. Green had recognised this fact before he started the school, but unfortunately during his absence in England the Government decided to abolish the old Normal School and to open village Training schools instead. A large saving was thus effected, but from then the Agricultural School had to stand alone. Mr. Green on his return to the island was apparently much vexed at this, and we read in his Administration Report that he never ceased to regret the closing of the old Normal School. He was, however, equal to the occasion, and decided to make teachers of the Agricultural students and the sanction of Government was obtained to appoint a number of students as Agricultural Instructors. So long as Mr. Green was at the helm things went on very smoothly. Passed students were sent out expressly with the view of showing improved methods of paddy cultivation to the villagers. The experiments conducted by these young men from all we gather from records proved successful in most cases, and the villagers in some instances learnt much from them. But in a country like this where the people are so conservative it is impossible to create a lasting impression upon them by experiments conducted in a haphazard manner here and there. A series of experiments for a great length of time at each place and under proper guidance should have been systematically carried out. Unfortunately this was not done. Young Instructors were in most cases placed under the guidance of the native chiefs of the district. These chiefs had not received any training in Agriculture, and they themselves were as ignorant as the ordinary villager. The Instructors were further much handicapped in their work, and were rather expected like the Hebrew of old to make bricks without straw. They had no money, no seed paddy, no implements given them, but were generally attached to an ordinary village school and expected to cultivate paddy in an improved style. Progress, under such circumstances, was of course impossible. Mr. Green's primary object in starting the school was to help small agriculturist and not the big one; small owners of little tracts of land who suffered distress from want of food. That want of food he had seen, and he was satisfied that it was caused by the people not knowing what to do with what they had. They threw away 3 bushels of paddy in sowing when 10 seers would be enough, and this saving of seed paddy would keep a family in comparative comfort for a month or six weeks: and that in a time of famine and distress was a great thing. In some of the Kandyan districts of the island the preparation of the land for paddy is apparently most carefully done, and weeding and transplanting are carried out. These methods are, however, confined to only a very small area of the island, and the people even here have as yet to learn a great deal as regards the most improved methods of preparing the land and various other details, such as the selection of seed paddy, &c.

The Agricultural Instructors are no more, and the step that the Government took in discontinuing their services is, I think, a mistake. These young men should have been properly guided, Their work should have been constantly supervised and reported upon by somebody who was competent to do so. In my opinion there were a few among them who were incompetent for the work, and they should have been dismissed; while there were others who were really capable men, and they could have done a deal of good if they had received sufficient encouragement to do so. I have, I think, so far partly explained the primary object in starting the Agricultural School, and have also to a certain extent pointed out what it tried to do and has done. I shall next attempt to show why it is that it has apparently been a failure in the eyes of the public.

(To be continued.)

INFECTIVE DISEASES OF ANIMALS.

The above is the title of the 1st vol. of a work on Veterinary Pathology, recently written by the German Veterinary Surgeons Friedberger and Fröhner, and translated and edited by Veterinary Surgeon Hayes. Among the commoner diseases treated of in this work are Septicaemia and Pyæmia, Strangles, Distemper, Ezootic Abortion, Dysentery, Anthrax, Foot and Mouth Disease and Rinderpest.

It is an up-to-date book containing the latest information on the discases treated of, and is considered one of the best authorities on the subject. The term *'infective diseases'* is used to include both contagious and infections diseases, a distinction which the translator calls in the appendix as mainly one of degree, as the difference in their mode of transference is often more apparent than real.

The following passage occurs under the head of rinderpest;—"During the year 1897, Koch and

Edington have more or less successfully carried out extensive protective inoculation experiments against rinderpest with infected bile. The most hopeful results, however, appear to be obtainable from the method of Danysz, Bordet and Theiler, a translation of whose report may be seen in the Veterinary Record of the 26th February, 1898.

"These observers at first confer comparative immunity by the injection of immune blood on experimental cattle, to which they then transmit rinderpest by natural infection, with the result that these partially protected cattle take the disease in a mild form, and, on recovery become immune for the remainder of their lives. In this, these pathologists act on the knowledge that the injection of blood serum obtained from cattle which have recovered from rinderpest, renders the experimental cattle capable, for a short time, of withstanding the effects of the disease more easily than they would otherwise do, although it does not prevent them from taking the infection. In this method, defibrinated blood is used in preference to blood serum, as it is more economical in practice, and is at least equally effective."

A more detailed account of this method of treatment can also be found on reference to the last October number of the *Agricultural Magazine.*

The distinctions drawn between rinderpest and other diseases will be found useful. It is thus differentiated from dysentery. "In *dysentery* the diarrhœa appears earlier and contains more blood. The intestine only is implicated and the affections of the mucous membranes (mostly eyes, nasal cavities &c.) are absent. The *post mortem* appearances are also different." Again, differentiating it from the gastric form of anthrax the authors say that the latter disease runs a much more stormy course and is not directly infectious. *Post mortem* and bacteriological examinations also materially help in diagnosing these diseases correctly.

The description given under the head of "Deer and Cattle Disease" is interesting, especially because it tends to throw light on a disease called *kandamalai* in Ceylon. It has hitherto been thought that this is a form of anthrax and was called gloss-anthrax. Of "deer and cattle disease" we read:—"It was usually mistaken for anthrax with the lingual form, of which it possesses in some cases great similarity. The question whether the majority of cases described as "anthrax of the tongue" or "gloss-anthrax" were not those of this disease is almost self-suggestive."

The following are the symptoms of the disease as it occurs in cattle:—Loss of appetite, diminution of milk, temperature very high; the soft parts of the head, especially of the face, intermaxillary space, dewlap and neck are swollen often to an enormous size. The swellings are tense, hard, hot, painful and unyielding. Symptoms of stomatitis and pharyngitis appear at the same time. There is salivation with difficulty of swallowing; the tongue hangs out and is swollen. Difficulty of breathing and even actual suffocation may occur on account of the great swelling about the throat. The visible mucous membranes are of a brown-red colour and infiltrated with hæmorrhages. Excessive dyspnœa and colic come on at the last stage,

This disease is distinguished from anthrax by the absence of the anthrax bacillus in the blood, absence of enlargement of the spleen and of the characteristic tarry condition of the blood, which are always present in anthrax. Deer and cattle disease can, unlike anthrax, be easily transmitted to pigs, scarcely to sheep and never to man. Death generally takes place within 24 hours.

Free incisions into the swellings with subsequent application of strong disinfectants is recommended by way of treatment.

Injections of a 5 per cent solution of creolin and the internal administration of creolin are also recommended.

One interesting and important feature of the volume under review is that, amongst others, it directs attention to diseases that can be communicated to man by milk, meat, infection, inoculation, &c., and is therefore useful to doctors as well as to veterinary surgeons. Among diseases of this description are aptha-epizootica, anthrax, tuberculosis, influenza, actinomycosis, diptheria, tetanus, glanders and rabies.

The second volume, which has not yet been published, will more particularly concern the veterinary surgeon, as it will deal with the diseases of animals purely.

E. T. HOOLE.

ABOUT THE KOLA NUT.

Most people are acquainted with the Kola nut tonic, so universally sold, but few know much of the great esteem in which the nut is held in the Soudan. As an article of commerce in Central Africa, it far and away exceeds in importance every other article of commerce throughout the whole of the Western and Central Soudan. Mr. C. H. Robinson, in an article on the Kola nut, in his book "Hausaland," says:—

Though not found originally in any part of the Hausa States, there is nevertheless no village or hamlet, however small or remote, in which it is not constantly used. The Kola nut is the product of a tree called *Sterculia acuminata*, which is found in the greatest perfection in the country to the back of the Gold Coast Colony. It is also found as far east as the River Gambia, and, with more or less frequency, in all the intervening country.

The fruit resembles a large-sized chestnut, and is encased in long pods, each containing 4 or 6 nuts. It grows like chestnuts, in bunches of 3 or 4 on the tree. Round the Kola nut there is usually a black line, sometimes two, at which it can be divided or subdivided. The colour is generally brick-red, though in some countries, especially in the Far West, there are all sorts of intermediate shades between red and white. In the country of the Bambara tribe the Kola nuts play an important part in private and public life. The colour in this case has a special significance: a white kola is always a sign of friendship and hospitality, whilst proposals of marriage, acceptances or refusals, defiances, declarations of war, &c., are conveyed by the sending of a number of kolas of the prescribed colour.

The Kola from Gandja, which is of a uniformly red colour, is the one most frequently brought to Kavo (the capital of Central Soudan), as it keeps better than any other. The most minute care and attention on the part of the merchant are necessary in order that the Kolas may reach the market in good saleable condition. They are carried for the most part in Kavo-made baskets, each of which contains 3,000 or 4,000 Kolas, whilst two of them form a donkey-load. If treated with the utmost care the nuts may be preserved fresh for 2 or even 3 years, but in order to secure this they must be kept constantly damp. If exposed to the air and allowed to dry the Kola opens along the black line mentioned above, wrinkles, and becomes as hard as wood. In this condition it has lost 90 per cent of its value. During the march the nuts are packed in baskets and covered with fresh green leaves. Every 4 or 5 days they ought to be repacked, in order that the leaves may be renewed and that the nuts which are touched with mildew may be removed.

The large profits obtainable on the sale of those which reach the various markets in good condition compensate for the risk and trouble of their carriage. At Gandja the average nut costs 5 cowries; at Say, on the Middle Niger, 70 to 80 cowries; at Sokoto, 100; at Kavo, 140 to 250; at Kuka, on Lake Tchad, 250 to 300.

What, then, one may naturally ask, are the peculiar virtues of this fruit, which forms by far the most important article of commerce in the Central Soudan? The fact that for generations past it has been eagerly sought after by rich and poor alike, and that men will constantly spend the last cowries they possess in buying one to chew, seems clearly to show that it is something more than a mere luxury. The scientific analysis of the nut shows the existence of a large quantity of tannin and of an alkaloid analogous to theine and caffeine. The natives believe that it keeps off the pangs of hunger and enables them to work for long periods without food. As a stimulant, it takes the place which tea and coffee with us, both of these being practically unknown. Owing to its extremely bitter and unpleasant taste, we were prevented from giving the sustaining power of Kola a fair trial. On the occasions, when, through lack of food we would gladly have made the experiment, we were unable to obtain the nut. Whatever its real virtues may be, it is certain that the commercial value of Kavo is to a very large extent dependent upon the millions of Kolas which its market contains.

On one occasion I met a caravan consisting of about 1,000 men, together with a large number of donkeys carrying Kola nuts up towards Kano. The value of the nuts in the caravan, which was only one out of several that annually came to Kavo for the same purpose, was little less than £100,000 sterling. The whole of this immense trade is at present in the hands of natives, as the course of the Niger is not such as to allow of the Kolas being carried by water any part of the way.

[The name of Mr. J. P. Williams, the well-known Seedsman of Henaratgoda, is always associated with Kola nut in this colony. Mr. Williams sent some excellent specimens of dry Kola nut to the Colombo Agri-Horticultural Society Show held last **month.—ED. *A.M.***]

A NEW SYSTEM OF SOIL CULTURE.

This is the title of an article in the *Rural Californian*, in which a great deal is written in praise of Mr. H. W. Campbell, the originator of the so-called new system of soil-culture. We would quote the following which is given as part of a report of the Northern Pacific Railraod Company, to give some idea of the new system referred to:—

"The Campbell method consists in a complete re-arrangement and pulverising of the top seven or eight inches of soil, and turning it as nearly bottom upward as possible. The plant food in the soil is found at the end of each season very largely concentrated in the top four inches. This plant food must be ploughed down into the bottom of a furrow seven or eight inches. From this depth it will be placed by the action of moisture, just where the little feeders of the plant roots want it. Immediately after ploughing, the lower four inches of the furrow-slice must be packed as firm as possible, for four important reasons:

"1. To completely obliterate all cavities. Where the furrow lies loose, the air circulates under the plants and the ground dries out. It must not be permitted to do this. It is ruinous to the crop.

"To cause moisture to gather from six to eight inches from the surface. Why? Because the stubble and manure, and other vegetable matter, is there, and water is necessary to rot it and fit it for the food of the crops. Unless this is done, the plants are robbed of their most valuable food.

"3. To get the right conditions for rapid root-growth in the early part of the season. For this a fine, firm, moist soil must be had. The lower part of the furrow-slice is the root-bed, and must be kept in just the right condition if we are to get a rapid and vigorous root-growth.

"4. By firming the root-bed we hold more moisture. More than this: The pores in the ground are made so small, that the water creeps through the soil readily by the force called capillary attraction. By increased capillary attraction moisture is drawn more rapidly and from a greater distance. This gives the plant food and drink at critical times, when the weather is hot; when the hot winds blow, and when the evaporation from the leaves is greatest. Your crop never suffers at such times if there is plenty of water for the roots. But a shortage of water at that point may ruin your whole crop in a day."

Large increases in crops are reported as the result of actual experiments carried out on the lines of this system. We shall refer to this subject in a future issue.

ORIGIN AND FORMATION OF ORGANIC MATTER IN PLANTS.

By the ordinary method of sand culture, in which the plant is grown in sand free from organic matter, it may be demonstrated that the plant accumulates considerable quantities of carbon and nitrogen during its growth. This carbon and nitrogen with the elements of water form the organic constituents of the plants, which with a small quantity of mineral ingredients make up the

roots, stem and leaves, and give the seed its valuable nutritive qualities. Since the soil did not contain either carbon or nitrogen, the plant must have drawn these two elements from the air. It is the purpose of this article to explain the nature of this fixation of the carbon and nitrogen of the air.

The classic experiments of Priestly, in 1771, established the fact that plants exhale oxygen. Later researches made by Ingenhous and by Tennebier explained the decomposition of the carbon dioxide of the air and the evolution of oxygen by the leaves under the influence of light.

The earth's atmosphere contains only three parts of carbon dioxide in 10,000 of air. It is evident, therefore, that in order that plants may obtain the carbon which they require from a medium so poorly supplied with it, rapidity of absorption by the tissues must compensate for the scarcity of the element in the air.

In the first place the absorption of carbon dioxide is favoured by the form of the leaves, which is such that they offer, as compared with their weight, an enormous absorbing surface. In a tree the leaves are at the extremities of infinitely ramified, flexible branches, which are agitated by the slightest breeze, thus facilitating contact of the leaves with the constantly renewed layers of air about them. That the absorption of carbon dioxide is very rapid may be shown by placing a leaf from which the air has been exhausted by means of an air-pump in an atmosphere of carbon dioxide in an apparatus which measures the change of the volume. It will be observed that absorption begins instantly, but that it is largely dependent upon the quantity of the water present in the leaf. Thus, the co-efficient of absorption of the carbon dioxide in old leaves of Japanese Euonymus, containing 66·3 per cent. of water was found to be 0·70 at 15°, while in young leaves of the same tree containing 75·4 per cent. of water the co-efficient was 0·83. A comparison, at different temperatures, of the co-efficient of absorption of carbon dioxide in the leaves with that in pure water shows the absorption in the leaves to be somewhat greater than in pure water. This indicates that the carbon dioxide is not simply dissolved in the water in leaves, but that it combines with the water to form a hydrate. It will be shown later that this fact is of great importance.

The carbon dioxide which is absorbed by the leaves is decomposed, and the products of this decomposition are utilised in the formation of the simplest primary organic compounds, from which the more complex constituents of plants are derived. To accomplish this the principal condition is that the leaf be perfectly healthy.

If it does not contain its normal proportion of water, *i.e.*, if the roots do not draw from the soil as much water as is given off through the leaves the decomposition of carbon dioxide is checked. Assimilation has ceased when, as at the end of a summer day, the leaves of the tobacco plant, for instance, are hanging down the stem, or those of the beet lie flat on the soil. In fact it has been found that the decomposition of carbon dioxide begins to decline even before the leaves have lost their turgescence.

Light is absolutely essential to the assimilation of carbon by the leaves of plants. The principal source of this energy is, of course, the sun, but attempts have been made to utilise artificial light, especially electric light, for foreign plants. Siemens in England, Bailey in America, and the author in France have made experiments of this character. Since there is no doubt that, with the increasing use of water power for the production of electricity, a large supply of electric light can be economically obtained, it is highly interesting to learn what its action is on plants. All observers have found that rays from an arc lamp without a globe exert an injurious influence, blackening the epidermis of the leaves. During the author's experiments in 1881 the epidermis exposed to the direct rays became black, while the parts protected by the upper leaves preserved their beautiful green colour. The line of demarcation was as sharp as in a photographic plate. The injurious influence ceased as soon as the lamp was surrounded by a white glass globe through which the ultra-violet rays passed with difficulty. To understand the influence which the heat rays situated at the other extremity of the spectrum exert on vegetation, we must recall to mind that in respiration leaves, like all other plant organs, absorb oxygen and exhale carbon dioxide, a process which is precisely the opposite of that which occurs in assimilation.

It must also be remembered that the activity of respiration increases with elevation of temperature, while rise in temperature has only a very slight effect on assimilation. Maquenne and the author some years ago made a careful study of the action of both light and heat rays on leaves. In this research two source of light were used, the Drummond light, which is obtained by rendering a piece of quicklime incandescent by means of the oxhydrogen blowpipe, and the Bourbonze lamp, which is composed of a cylinder of platinum wire gauze, which becomes incandescent when heated with illuminating gas, the combustion of which is promoted by a strong current of air. The leaves were introduced into tubes containing an atmosphere of known composition, and were placed very near the lights, but were protected by screens containing transparent liquids of varying diathermanous properties. In some cases water was used, which allowed the light rays to pass but retained the heat rays. In other cases the screens were filled with benzene or with chloroform, which are also transparent but much more diathermanous than water. Exposing the leaves to the action of the Drummond light, which is poor in heat rays, and surrounding them with a screen filled with water, promoted reduction, the proportion of carbon dioxide in the tube diminishing, while the oxygen increased. When the screens were filled with chloroform, however, and the Bourbonze lamp was used, which is rich in heat rays, the opposite effect was obtained, *i.e.*, the carbon dioxide increased and the oxygen diminished. In this case the phenomena of respiration took the place of those of assimilation.

Passing from the study of the chemical and heat rays to that of the light rays in the central part of the spectrum, we find that the latter produce very different effects from the former,

Draper demonstrated long ago that the orange rays are the most active in decomposing carbonic acid in the leaves. This conclusion was fully confirmed by the researches of Sachs, Cailletet, and the author, made nearly 30 years ago. The reason for this special action of the rays of this part of the spectrum were not investigated until the Russian physiologist, Timiriazeff, took up the subject. He found that the rays which are most active in decomposing carbon dioxide are the orange and yellow, which are absorbed by chlorophyll when the latter is examined with the spectroscope. The same fact has been beautifully demonstrated by Engelmann. He received a ray of light upon a prism so placed under the objective of a microscope, that on looking through the instrument the different rays of the spectrum could be seen. He then put a drop of water on a side and added a filament of green alga and some putrefactive bacteria, which were aerobic. It was observed that the bacteria congregated in great numbers on that part of the alga lighted by the yellow and orange rays. In the green region only a few were observed, and these finally collected in the blue portion. In other words, the bacteria collected in the different rays in numbers approximately proportionate to their activity in assisting the decomposition of the carbon dioxide by chlorophyll.

Evidently the rays which pass freely through the chlorophyll exert no action. So it happens, as shown above, that the extreme red or the green rays are without effect on the decomposition of carbon dioxide. On the other hand, the orange and blue rays are retained and absorbed by the chlorophyll, and thus made available for the work of decomposing carbon dioxide. The fact that orange rays are much more effective than the blue is easily explained. The decomposition of the carbon dioxide, with the evolution of oxygen, requires an expenditure of energy equal to that involved in the burning of carbon in oxygen. In order, therefore, that the rays may be effective for reducing carbon dioxide, they must be not only readily absorbed but sufficiently warm. The orange rays, which are situated at the side of the spectrum where the heat rays are concentrated, are far more energetic than the blue, because, in addition to being readily absorbed, they are warmer than the latter.

The decomposition of carbon dioxide can only be brought about by the aid of outside energy. This energy is supplied by the sun's rays. Since decomposition of carbon dioxide in the chlorophyll cells is the source of the organic constituents of plants, and since these substances are essential to the life of animals, we see that all living beings on the earth's surface owe their activity primarily to the sun.

RINDERPEST.

D. Hutcheon, Colonial Veterinary Surgeon, Cape Colony.

As Rinderpest has re-appeared in the Transvaal and Bechuanaland several months after it was believed to have died out in all the states and colonies south of the Zambesi, it is of importance that the farmers should consider what is the most satisfactory method of inoculation to adopt, should the disease again invade their herds. When writing my annual report for 1897-98, and reviewing the character of the work done up to that date, and the various methods of inoculation which were adopted for the purpose of arresting the spread of the plague, and saving as many as possible of the cattle exposed to its ravages, I remarked, with reference to inoculation, that if we had to commence the work over again, I had very little doubt that, profiting by the information which we had gained by painful experieuce, we could improve upon the results which we had previously obtained by the adoption of any one of the methods which had been tried. For example, in carrying out Koch's method of bile inoculation, if the biles were extracted and selected from affected animals in the last stages of collapse, or immediately after death, (a system which was carried out in Basutoland with such satisfactory results), a stronger and more uniform immunity would have been given than was frequently obtained. Again, our experience clearly indicated that if a larger dose than 10 c.c. had been given, or a second inoculation of bile injected, the immunity conferred by the bile would have been very much strengthened and the period of protection considerably extended. Further, it is very probable that if all suitable biles could have been kept in an ice chest fer some days before being used, infection would not have been conveyed to clean herds by bile inoculation, as was undoubtedly done in the majority of instances where fresh bile was used; and we would not now follow Koch's bile inoculation by an injection of virulent blood. As this is still advocated I will refer to it again. I, however, expressed myself as being still in favour of using an injection of virulent blood after inoculation with glycerinated bile; beginning with very small doses, and repeating the injection at short intervals and in increasing doses until a decided reaction was obtained, but I do not even advocate that now, for reasons which will appear later on.

With respect to the serum method of inoculation, it is a very interesting fact that although all the cattle in a herd are given the disease in a more or less modified form by this method of inoculation, it is comparatively rare that infection is carried from such a herd if ordinary precautions are taken, and quarantine regulations enforced. In the Cape Peninsula, serum inoculation was not generally adopted, nor carried out in a systematic manner in any locality. Individual herds were inoculated at different centres all over the district, yet the disease was not spread by that means. On the contrary, by the aid of serum inoculation, the disease practically disappeared from the Cape, Malmesbury and Tulbagh districts. I expressed the hope, therefore, that by the adoption of serum inoculation, systematically applied, the disease could be eradicated from the country.

Since the above was written, however, the disease has practically died out within the boundaries of the Colony, and until these outbreaks, which were reported from the Transvaal the other day occurred, we had no information of any cases of Rinderpest south of the Zambesi, a condition which the most sanguine optimist amongst us would hardly have ventured to predict. Such is our fortunate position, however, and the circumstances being entirely different to what we anticipated at such an early date, our opinion with

regard to the course which should be followed under the altered circumstances has undergone a corresponding change. For some considerable time, I have frequently been asked the question,—"If Rinderpest should appear either amongst my own cattle, or in my immediate neighbourhood, what method of inoculation would you recommend me to adopt?" In replying to this question I have readily and frankly given the individual querist the advice which I considered the best under the particular circumstances in which he was placed with regard to his cattle. Hitherto, however, I have been reluctant to publish advice to the public generally which would in any particular contradict the directions for inoculation which were drawn up by the Rinderpest experts at their last conference in Cape Town, and published for general information, until I felt convinced that the altered conditions necessitated some departure from the course then recommended. And in publishing these slightly altered recommendations to the public at the present time, it is due to my colleagues as well as to the public to explain that my opinion with respect to the efficacy of the preventive and curative treatment of Rinderpest thus recommended has not undergone any change. It is merely the altered circumstances which I consider require that a slightly different course should be pursued.

With respect to the serum method of inoculation, all the experts are agreed that, if Rinderpest should appear in a herd of cattle which have not been previously inoculated with bile, they should be immediately inoculated with strong immunising serum if it can be obtained. Every animal which indicates, by the thermometer, the presence of fever should receive a very large dose, while the healthy ones should receive the usual modifying dose. If serum cannot be procured, then blood freshly drawn from a salted animal and defibrinated shoud be injected in proportionate doses. And if neither of these can be obtained, then glycerinated bile should be used, as it has been shown to possess strongly curative as well as immunising properties similar to serum, when used in large doses, more especially when injected direct into the jugular vein.

(To be continued.)

GENERAL ITEMS.

Dillenia indica or *speciosa* (the Sinhalese Hondapara) is not known in Ceylon to produce an edible fruit. Dr. Trimen in his Flora merely refers to the fact that the fruit makes a lather with water and is used as soap. Dr. Watt, however, mentions that it is eaten by natives either raw or cooked—chiefly cooked in curries; adding that it is also made into a pleasant jelly, while the acid juice sweetened with sugar forms a cooling drink. Mr. Lewis Bernays, writing about the tree in the *Queensland Agricultural Journal*, says that the fleshy leaves of the calyx, when the fruit is fully matured, have an agreeable acid taste, and are eaten raw, cooked in curries, or made into sherbet; inside are numerous reniform seeds, surrounded by a pellucid glutinous matter, and used for making a palatable jelly, for a cough mixture, or a cooling drink in fevers, and otherwise. The bark and leaves are both astingent, and are used medicinally.

A Zanzibar paper says: Throw a bit of alum about the size of a marble, into a bowl of water and wet the hands and face and any exposed parts lightly with it. Not a mosquito will approach you. They hum about a little, and disappear.

The United States Government at the experiment stations has succeeded in grafting the tomato top on to the potato root, and strange as it may seem the growing of a crop of tomatoes does not seem to interfere with the growth of the potato, and we have no doubt that it will become common some time by this means to grow the finest tomatoes and potatoes both from the same plant.—*Exchange*

Mr. D. F. Turnbull, Martintown, Cairns district, writes to say that he has discovered a "wrinkle" worth knowing to keep cattle free from ticks. As it is important that every light should be thrown on the subject of cattle ticks, we print Mr. Turnbull's letter. He says:—"Of a few cows I have, one in particular seemed such a favourite of the ticks that I got tired of trying to keep her clean. She was down to skin and bone, when a neighbour, happening to see her, said she could not live above three days. Shortly after this, I thought of saltpetre and its effect on dead beef. I decided to try it on the cow. I ground a bit the size of two peas, with a little salt, and gave her this amount daily for three days, when half of the ticks disappeared. I then reduced the amount to one-half for the next three days, when I could count on my fingers the remaining ticks. After this, I gave her a bit—and still do so—the size of a pea twice a week, which keeps her in a thoroughly clean condition. Of course the cow put on flesh quickly, and was nearly fat in six weeks after the treatment began." This remedy, says the *Australian Exchange*, is not new. A Frenchman was travelling the colonies some time ago, who affirmed that he could cure ticks by the use of saltpetre. Mr. P. R. Gordon says that the matter was gone into by Sir Horace Tozer, and quantities of saltpetre were tried on cattle without the slightest effect. The presumption is that the cow above mentioned was just about getting clear of the ticks when the remedy was tried with such a satisfactory result. Mr. J. Irving, M.R.C.V.S., concurs in Mr. Gordon's opinion.

Veterinary Major F. Smith, M.R.C.V.S., says:—The mean ratio of carrying power to body weight is 1 : 5·757, that is to say, it takes, speaking roughly, 5¾ lb. of body weight to carry 1 lb. on the back during severe exertion (racing excepted). The rule therefore for ascertaining the carrying power of a horse is to divide his body weight by 5·757, and, if intended for only moderate work, add to the product 28 lb. It has to be noted that the observations were made upon military horses, and it is doubtful if it would work out so accurately if applied to all horses used for the saddle.

The fruit of *Aberia Caffra*, known as the kei apple, is used for making a most palatable jelly mixed with the ash' pumpkin pulp. Unripe, the kei apple is use for pickling. The plants form excellent hedges. In Ceylon we have *Aberia Gardneri* (Sinhalese kei-ambilla,) but we are not aware that any use is made of the fruit.

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GRAPHITE :

ITS FORMATION AND MANUFACTURE.*

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Early History and Recognition.

In the year 1779, Karl Wilhelm Scheele, a young apothecary in the town of Koping, Sweeden, a remarkable genius as an investigator, and then in the 37th year of his age, discovered that graphite had an individuality quite apart from molybdenum sulphide, with which it had been until then confounded. He discovered that when it was treated with nitric acid, carbon dioxide was produced, whereas molybdenum sulphide when oxidised produced a white earth, and he drew the conclusion that it must be some kind of carbon, likely of the general natural of coal.

Previous to this discovery by Scheele, a group of minerals including graphite and certain ores of lead, molybdenum, antimony, and manganese (lead sulphide, molybdenum sulphide, antimony sulphide, manganese dioxide) were believed to be one and the same substance, or, at least, members of the same family. This opinion was due to their outward resemblence, and the fact that they produced marks on paper. This confusion naturally led to the application of the same name or names to each of the members of the group, and as graphite had not been recognised by any peculiarity distinctively its own, it received the names molbdæua, plumbago, graphite, and black-lead, which were used in an indiscriminate manner for each of the several substances. The name molybdæna was dropped at any early date, probably immediately following the discovery by Scheele, and there is no known reason why plumbago and black-lead should not have followed its lead, for graphite is the only one of the series not misleading and entirely appropriate, meaning as it does "I write," from the Greek word *graphoe*.

* From Advance Sheets of the *Journal of the Franklin Institute*, June, 1899.

Graphite does not seem to have received any particu'ar attention from chemists from the time of the discovery by Scheele until the year 1800. During the last quarter of the eighteenth oentuary, the diamond was the subject of much interest, in a chemical sense, and in the hands of the French chemists it was shown to produce carbon dioxide when ignited in air. In 1796 Smithson Tannant showed that equal weights of charcoal and diamond yielded equal weights of carbon dioxide on burning and they were therafter associated together as carbon. In 1800 Mackenzie added graphite to the carbon group, by showing that it also, in equal weight, produced the same weight of carhon dioxide (Roscoe). Thus, in the opening year of the present century, graphite was proven to be an elementary substance Charcoal, diamond, graphite were then recognised as three district allotropic form of the element carbon.

Distribution.

Graphite, in a more or less pure state, is quite freely distributed over the earth, hut only in a few places is it found under conditions of purity, quantity, ease of mining, refining, and transportation to market that permit of a profitable business being made of it. Statistics for the six years 1890 to 1895, inclusive, give the world's production as 73,751, 57,220, 54,280, 55,810, 46,951 and 53,955 short tons. This is an average yearly production of 56,994 tons—over 156 tons every day of the year—of a material known to the majority of men as black-lead or plumbago, useful only for writing on paper and polishing stoves.

The production during the years mentioned was contributed to by Austria, Ceylon, Germany, Italy, United States, Canada, Japan, India, Russia, Great Britain, and Spain, the proportionate quantities furnished hy these countries being in the order given (*Mineral Industry*, 1898). It will be observed that Great Britain is, with but one exception, the sallest producer; indeed 45 tons cover the total amount reported, and this mined in 1895. For several centuries Great Britain was one of, or the largest producer; in fact, in the earliest days of the industry, it was probably the only one. The graphite from the Borrowdale mines in Cumberland was famous as the best for making pencils. In the sixteenth and seventeenth centuries these mines were so productive as to yield an annual revenue £40,000, although they were only worked a few weeks in the year for fear of exhausting them (Roscoe).

Great indifferences exist in the structure and purity of the graphites furnished from the various mines. Mother Nature was seemly not content with making carbon appear in three forms, charcoal: diamond, and graphite, hut extended her labours on graphite; and, to the further confusion of the metallurgist and the chemist, made it a family of two members, crystalline and amorphous, two district allotropic forms of the allotropic substance, graphite. The pro-

duct of the Ceylon mines is crystalline, of great purity, analysing in some instances over 99 per cent. carbon, while that of the Borrowdale mines is amorphous and also very pure.

The chief impurity in graphites iron; indeed, its constant presence and frequent large quantity led to the belief, in the early days, that graphite was a carbon-iron compound, and it was even sometimes called carburet of iron.

Uses.

It is quite probable that the first use made of graphite was an instrument for writing. The first account we have of its employment for this purpose is contained in the writings of Conrad Gessner on "Cossils," published in 1565. A picture of a pencil is shown, and, referring to it, he says:—"The pencil represented below is made for writing, of a certain kind of lead (which I am told is an artificial substance termed by some, English antimony), sharpened to a point and inserted in a wooden handle" (Roscoe). This pencil was probably made of graphite from the Borrowdale mines, which, we are told, were in operation in the sixteenth century. Its uses for other purposes than pencils are of much more recent date, probably all of them falling within the present century, and nearly all within the last few years.

The present uses of graphite include the manufacture of pencils crucibles, stove polish foundry facing, paint, mortar and dynamo bushes, antfriction compounds, electrodes for electro-metallurgical work, conducting surfaces in electro-typing, and covering the surface of powder grains. For most of these purpose it is used in the natural impure state, while for others it is necessary to render it quite pure and free from grit. Its purification is accomplished by a method worked out by Brodie, which consists in first grinding, or otherwise reducing the graphite to a state of fine subdivision, washing out the heavier impurities, mixing 14 parts with 1 part of potassium chlorate and 2 parts of concentrated sulphuric acid, heating on a water-bath for some hours, washing thoroughly and afterwards roasting at a red heat. If silica is present a treatment with hydrofluoric acid is added to the process.

The mining and manufacture of graphite into articles for which it has been found useful give employment to thousands of people. The mines of Ceylon alone, when working to their capacity, employ about 24,000 men, women, and children; the work, however, is done entirely by hand, and in a very crude manner (Watts' "Dict. of Chem.," 1890). In the city of Nuremburg, Germany, the home of the famous Faber pencil, are twenty-six factories, employing about 5,500 people in the making of pencils ("Encl. Brit.").

Manufacture.

The rapid increase in the use graphite, and consequent decrease in Nature's stocks, make the problem of manufacturing it to order a subject of much importance.

When we consider the hundreds of thousands of chemical changes men are constantly putting the elementary bodies through, and the very prominent part taken by carbon in these re-actions, it would be rather remarkable if at some point, Nature's method for producing graphite was not discovered. That it is not a very difficult act is evident from the fact that it has been accomplished, in a small way, in several instances.

Mr. Muir, in Watt's "Dictionary of Chemistsy," edition of 1890, mentions six recognised methods.

(1) By heating charcoal with molten iron, and dissolving out the iron with hydrochloric and nitric acids.

(2) By the slow decomposition of hydrocyanic acid, and boiling the product with nitric acid.

(3) By evaporating the mother-liquors obtained in making soda: these contain cyanogen compounds which are decomposed at a certain concentration of the liquid with formation of ammonia and graphite.

(4) By leading carbon monoxide over ferric oxide at 300° to 400°.

(5) By the de-composition of carbon disulphide at high temperature, in contact with metallic iron.

(6) By leading carbon tetrachloride over molten pig iron.

Whether or not any of these methods could be developed to a state providing a commercial process, I am not prepared to say, but am inclined to think not. They have always been considered accidents or chemical feats of the laboratory, and in some instances their formation was very objectionable.

The Cowles Bros., of Cleveland, O., are reported to have found that graphite sometimes occurred in or about the charge of an electric furnace. This formation is referred to in one of their patents, and a feature of the patent is a provision to get rid of the material, as it was very objectionable on account of its high electric conductivity. Its formation was not reduced to a method, the causes for, or the exact conditions under which it was made, not having been investigated. It was like some of those in the list of Muir, an accident, and a great nuisance.

Still another way of making graphite was described by G. Rose, in 1872. He exposed a cut diamond, bedded in charcoal, to a temperature equal to molten cast iron, whereupon the surface became coated with graphite. It is safe to say this process will never attain commercial success nor popularity.

Finally, in the "Encyclopædia Britanica" (1890) we are told that "by heating to the high temperature afforded by a powerful galvanic battery, both the diamond and amorphous carbon are converted into graphite." This statement I will refer to later on.

In a paper which I had the honour of presenting to the institute at its stated meeting of June 21, 1893 ("Carborundum: its History, Manufacture, and Uses"), reference was made to the formation of a black material consisting of a mixture of carborundum and free carbon during the operation of the carborundum furnaces. This was again referred to, and at much greater length, by Mr. Francis A. Fitzgerald, chemist to the Carborundum Company, in a lecture delivered before the Institute on December 11th, 1896 ("The manufacture and Development of Carborundum at Niagara Falls"), after it had been the subject of much thought and study, and when I had about concluded the formation of a theory covering the transformation of amorphous into graphitic carbon.

Very early in my experiments on the manufacture of carbonundum, I noticed that graphite occasionally formed in the portion of the furnace charge lying next to the cylinder of granular amorphous carbon which passed through the centre of the furnace and which became heated to an extremely high temperature, by the passage of a heavy electric current, and around which the charge was placed to receive the heat necessary for the formation of carborundum. Also that when ordinary bituminous coal coke was used to form the core, quite a large amount of it was converted into graphite, whereas, when petroleum coak was used, very little of it was made graphite.

By a careful study of these formations, it was found that the graphite formed outside of an surrounding the core was produced by the decomposition of the carborundum, which is chemically, a carbide of silicon, and by induction from a number of known facts, that that form within the core was also produced from a similar decomposition of carbides, which were created by the chemical union of the carbon of the core with its contained impurities. The facts from which I have drawn this conclusion are:—

1. Comparatively pure petroleum coke produces practically no graphite.

2. Impure bituminous coal coke produces large quantities.

3. The larger the known percentage of impurities in the bituminous coal coke, the greater the amount produced.

4. That only a part of the carbon of the core is converted into graphite. This not being increased, even by repeated use of the same grains, in successive carborundum furnaces.

The graphite found by the destruction of carborundum is remarkable in that it retains the form of the crystal of carborundum, from which it is, derived. It has, however, less than one-third the weight of car-

borundnm, and possess the characteristic metallic-grey colour of natural graphite; but in size and form it so closely resembles the original crystal as to be, in fact its skeleton pseudomorph in graphite. The graphite formed in the core is usually not so well defined, or distinct, as in that from carborundum, most of being disseminated through the body of the individual grains in which it is found, the amount contained in any one gain varying with the precentage of impurity originally present. In some instances the entire mass of the grain is converted into beautiful, graphyite this occuring, I think, in cases where the grain is lagely composed of slate, and it sometimes happens that one-half of the grain is completely converted, while the remainder is changed but little.

These two seemingly distinct method of producing graphite from carborundum and from coke, are in fact indentically the same; the first step in each is the formation of a carbide, the second its destruction. In making carborundum, silica and coke are mixed in the correct proportions to produce a true carbide, when heated in the electric furnace, without an excess of either constituent. In making this mixture, account is taken of the impurities contained in the coke, and the silica reduced proportionately. In the case of the core there is a natural mixture that produces a carbide from a portion of the carbon. The carbides formed under both of these conditions decompose when heated to a certain temperature above that at which they were formed.

This method of manufacturing graphite I would define as consisting in heating carbon in association wish one or more oxides, to a temperatnre sufficiently high to cause a chemical re-action between the constituents, and then continuing the heating until the combined carbon separates in the free states. It is not, however, limited to the use of oxides, as pure metals; their sulphides and other salts may be used, but for various reasons the oxides are to be preferred.

Theory of Formation

All of the methods of manufacture, thus far known; contain the same underlying fundamental principle. Each of the six methods described be Muir, as well as my own method, contain as a part of the process the expulsion or liberation of the carbon from a chemical association with one or more elements, and this occurs under conditions unfavourable to, or absolutely prohibitive of its re-association with the same or other elements. It is cast out free to take until itself such physical or other properties as, we must assume, properly belong to it in the free state, when formed under normal conditions. It has been shown by Moissan, that, when subjected to great pressure, at the moment of separation from cast-iron carbon has those distinctive characteristics that cause it to be called diamond; while Scheele shown in 1778, that the same carbon, separating from the iron without pressure, takes the graphitic form. Amorphous carbon, the third allotropic form, never occurs pure, and is invariably produced from carbor-held in chemical association with other elements, under conditions favourable to free chemical action between it and other elements.

The production of graphite by Rose's method—heating a diamond bedded in charcoal to the melting point of cast iron—is a beautiful illustration of the return of a body under strain to the form it takes under normal conditions. It will be noted that the diamond was heated to the teperature at which it is known to form, as shown by Moissan's experiments; also that it was fairly well protected from chemical action.

The statement in the "Encyclopædia Britanica" that both diamond and amorphous carbon are converted into graphite, when heated by a powerful electric current, is very commonly held—indeed I might say universally,—although Berthelot concluded from his investigations, that heat alone is without influence on carbon; that is to say, graphite is not changed to amorphous carbon, nor the amorphous to graphite, when heated to witness in an atmosphere of hydrogen or chlorine. That diamond will change to graphite, when protected from chemical influences, under the influences of high temperature is undoubtedly true, and, indeed, is what might be expected from other known facts; but that *pure* amorphous carbon will change to graphite as the simple result of heating, is not proven, and certainly it does not occur at, below, the temperature necessary for the transformation of the carbon in a carbide to graphite.

From the facts in hand I have deduced the following theory:—

1 Graphite is the form carbon assumes, when freed from chemical associations, under conditions of low pressure and protection from chemical influence.

2, Diamond is the form carbon assumes, when freed from chemical associations, under conditions of high pressure and protection from chemical influence. And, by inference,

3. Amorphous carbon is the form carbon assumes, when freed from chemical associations, under conditions of low or high pressure and exposure to chemical influence.

This theory does not, however, account for all of the observed facts, and must be supplemented by the hypothesis that catalysis occurs, under certain conditions, during the transformation of amorphous into graphatic carbon. The amount of graphite produced in the core of a carborundum furnace, and also in graphite articles I have made, is much too great to be accounted for by the theory that it is formed by the dissolution of the fixed carbides, formed by the contained impurities and carbon sufficient to satisfy the chemical formula, The most probable and satisfactory explanation is that a catalytic action occurs—a progressive formation and dissolution of carbides. The temperature being mnch above the point of volatilisation of silica, and all other possible impurities, a rapid dissipation of the active agents takes place, and is completed, in this case, before the conversion of all of the amorphons carbon can occur.

Commercial Manufacture.

As the result of my investigations and deductions, I think the only commercial way to make graphite is by breaking up a carbide by the action of heat. The carbon should be freed from chemical combination by what might be termed the evaporation of its associated elementary substances. I have secured patents covering this method, and these have been made the basis for the organisation of an incorporated company bearing the name "Acheson Graphite Company." The company has now under way the erection of works at Niagara Falls where necessary electrict current will be obtained from the Niagara Falls Power Company.

Several distinct forms of the product will be produced. One consists of forms or articles, made out of amorphous carbon, with the desired amount of impurity added thereto, which will afterwards be heated in an electric furnace, and converted, more or less, into graphite. I have been carrying on this line of manufacture for a year or more, using the furnaces of the Carborundum Company to produce the graphitisation, the articles having first been made by the arc-light carbon manufacturers. Over 200,000 carbon electrodes, measuring 15 inches in length, with about 1 inch cross-sectional area, were made for use in the Castner alkali process, nearly one-half of them having been shipped to Europe, to be used for this work in England and Germany. The life or efficiency of these graphitised electrodes is many times that of the same electrodes ungraphitised. I have also graphitised some tons of carbon plates, to be used in making dynamo and motor brushes, and a large variety of odd forms and sizes for divers purposes.

Another product—the one which will probably be of greatest importance—is an intimate mixtnre of pure amorphous carbon and graphite in fine powder. This will be put on the market for paint and foundry facing, and, as it has been formed at an extremely high temperature, it is quite pure, and posseses all of the qualities desirable for the purposes for which it is intended.

It is not the present intention of the company to enter into the manufacture of their product into finished form for the general market, but rather to encourage those who are now engaged in making up

the natural graphite into articles of commerce to become buyers of their material, substituting it for that now used.

The company's plans, now being carried out, provide for the erection of a brick-and iron building, 100 × 50 feet, on a plot of ground in Block No. 8 of the Niagara Falls Power Company's lands (adjoining the works of the Carborundum Company). Therein they will erect machinery for reducing coke to grains of tho desired size, an electric furnace through which the prepared grains will pass in a continuous stream, a pulveriser for reducing the grains as received from the furnace, and a scalping sieve through which the product from the pulveriser will pass, that particles exceeding the 1/200th of an inch diameter may be removed. The final flour or powder will contain an amount of pure graphite proportionate to the percentage of impurities in the original coke. It is quite possible that, instead of using high-grade marketable coke, the fine refuse from the coke ovens—which is at present a waste material—will be utilised in the manufacture of this product.

In this connection I would call attention to the need of a specific name for the new product. *Artificial*, as applied to a product, chemically and physically indentical with that made by Nature, is not pleasing: it conveys the impression that, failing to produce the real thing, a cheap imitation, a sham, is being palmed off as the genuine article. Not even the Century Dictionary's definition of artificial, as "made or contrived by art, or by human skill and labour; opposed to Nature," is sufficient to banish this feeling; for, after all, in the particular case in hand, being ignorant of the exact methods pursued by Nature, we may be simply forcing her to reveal her methods, to the final results of which we neither add nor subtract one jot or title. The same objections may be made to the expression *Artificial Manufacture* of Graphite, for we may not be sure that the process forced upon her is not identical with that of her own selection. *Manufacture Graphite* would be quite apropriate, were it not for the fact that it is popularly applied to articles made of graphite.

It may not detract from the general interest in this subject to call attention, in closing, to the fact that graphite first shown to be an elementary body, an allotropic form of carbon, in the first year of the nineteenth century, is in this, the last year, made to order in great quantities, and that it will, before the close of the century, become an article of ordinary commerce in its new form. Perhaps it will take its place as the primitive form of carbon—the one it assumes under normal conditions.

THE EUCALYPTUS.

THE SOIL AND THE GRAFT.

The information which has been recently published in these columns on the subject of the Eucalyptus, shows that the tree may be cultivated in this country even as far north as the country of Inverness. It is indisputable, however, that the risk is always great, except perhaps in certain favourable situations, not only on account of the climate, but also for other reasons, to which reference will presently be made. The Eucalyptus at Meadfoot Rock, Torquay, which is reported to be twenty years old, must ,for instance be growing under exceptionally favourable conditions, since it resisted the winter of 1894-95, when the genus was practically exterminated from the Island of Jersey. Many of the trees, moreover, had attained to a very large size, and seemed to be thoroughly acclimatised in the Island, where the average temperature is considerably higher, and the extremes of heat and cold considerably less, than in England. The question of temperature is, indeed, not the only one to be considered in the successful cultivation of the Eucalyptus and it is probably on this account that the limit of cold endurance of the tree is found in Western Europe to vary within comparatively wide limits as will be mentioned at the end of this article.

Some species are undoubtedly better adapted than others to certain soils and situations, and it should not be forgotten that in the Australian continent, which is the home of the Eucalyptus, different species thrive best under very different conditions. For instance, the spotted-gum of New South Wales, E. maculata, is generally found on stony ridges; the White-gum E. viminalis, attains to a great size in rich soil in mountain forests, but it thrives only moderately in poor soil; and the bloodwood, E. corymbosa, flourishes better in the mountains than on the coast. Some varities, again, are best adapted to the northern and warmer parts of Australia, and whilst some prefer swampy ground, others thrive best in sandy or calcareous soils.

So important, indeed, is the question of soil, that in the commercial cultivation of the Eucalyptus it is well recognised, as Professor Warren states in his work entitled *Australian Timbers*, that the strength and durability of the timber opened to a great extent upon the locality in which the trees are grown. Timber for example, of the same name, and presenting the same general characteristics, differs widely in quality when it is grown under different conditions of temperature, geological formation of soil, and amount and distribution of rainfall; or when it is grown on mountain ridges, or in swampy, low-lying ground. The Blue-gum, for instance, from a particular district of Victoria (Corner-Inlet), gives excellent results compared with the timber of the same species grown in other localities under less favourable conditions. Again the timber grown in swampy, low-lying districts is found to possess less tenacity of fibre than the product of the same tree grown at higher elevations, and in more favourable geogical formations; and the granite soils of Australia, it may be added, do not appear to produce any kind of good timber.

The Eucalyptus, moreover, is subject to a defect called gum-vein, which is caused by the extravasation of gum-resin in particular parts among the woody tissue, and where an apparent injury has been sustained; or in the concentric circles between successive layers of wood. If therefore, the Eucalyptus is so affected by local conditions in its native habitat, how much should they not be considered when the tree is grown in regions where frost is an additional, and its greatest, danger. It may be mentioned in this connection, as Senor Sempere has stated in his Monograph on the Eucalyptus, that the cultivation of the tree has been very successful in Spain, because it finds there three climatic conditions which it requires, viz., "the proper temperature, the necessary humidity, and the suitable quality of the ambient air."

The opinion of M. Felix Sahut is also of great value in this connection, inasmuch as he is one of the best authorities as regards the acclimatisation of the tree in Europe. He states that while the minimum winter temperate must first be considered, the relative atmospheric humidity and other local circumstances must not be overlooked as is indeed proved by the following circumstance. Fiftythree species of Eucalyptus were growing near Monttellier in the winter of 1864, when the temperature fell to 10.4o F., which completely destroyed twenty-eight species nine others being more or less injured, whilst sixteen completely resisted the cold. Moreover, other experiments made under different local conditions, showed that some of these species, in certain cases, withstood lower temperatures while under other conditions they suffered more when the cold was not so severe. It has also been found that several of the species which most successfully resist tho winters in the south of France are unable to exist in the soil of Provence. M. Sahut gives a very remarkable account of an Eucalyptus which, planted at Lattes in 1864, resisted 32o F. of frost during the memorable winter of 1870-71 nor did the tree suffer in any way, and even its leaves remained intact. It had been raised from a seedling among seed of E. Risdoni, and its identity was never traced. It grew to a height of nearly 40 feet during its comparatively short life, for at the age of twenty years it gradually began to show signs of weakness and ultimately it died. This tree which had been provisionally named E. lattensis by M. Naudin, indicated a species possessing cold-resisting qualities but as it never blossomed; M. Sahut's foresight le

him to draft it on an allied species with a view to its cultivation as an ornamental tree in more northern parts of France. Two methods were employed: one the cleft graft with moderate results only; and the graft by approach, or in arching, with much greater success. The stock being more susceptible to cold than the scion, the opperation was purposely made as near as possible to the root. The nion of the plants was practically perfect, and five or six dozen plants developed vigorously and with great promise. Some of them grew to a height of 6 feet during the first year, but during the next season they all began to fail, and at the end of the third year not one was alive.

The operation of budding was not tried by M. Sahut in these experiments, because he did not think it would succeed, and it is interesting to note that this method has been adopted with good resnlts elsewhere. The *Revue Horticole* published in 1893 an account of work of this character conducted in Palestine by M. Justin Dugourd, who budded E. Globulus on E. resinifera. The former variety is one with spreading roots, and is less resistant to the influence of the wind, &c., than the latter, which was used as the stock, because it grows into a strong tree. It appears to be necessary for the complete success of this operation to support the scion in some suitable manner, so that the sap may the more readily reach it. As the stock increases in growth. It is also desirable to remove any shoots which it may produce, unless the operation is unsuccessful, when the subject may then be allowed to grow. It should be mentioned that M. Sahut is of opinion that the E. Resinifera in question is the popular but incorrect name given by many French gardeners to a variety of E. rostrata, which is very generally found in the south of France, where it thrives best in the calcareous soils, and is more resistant to drought than many other kinds.

Considered in the light of past results in connection with other plants, M. Sahut is of opinion that the graft may be the means of greatly extending the cultivation of the Eucalyptus in Europe. He himself has proved that certain rare species of Pinus will not grow in a particular limestone district, except when grafted on P. halepensis, or P. nigra, or P. pinea. To quote M. Sahut verbally from his paper on the subject, in the *Annales de la Societe d' Horticulture de l' Herault*, the problem is as follows: "Given one or several species of Eucalyptus which develop vigorously in a certain soil, it is required to employ them as stocks whereon to graft species which will not themselves thrive threin." And he illustrates his proposition by the following evidence: Of the 1:0 species of Eucalyptus experimentally grown at Lattes the larger proportion were killed by the cold, others succumbed to the heat, while yet others, after languishing for several years ultimately perished not on account of the cold but because the nature of the soil was unsuitable and different from the mountain regions of Australia whence the trees originally came.

As regards the l mit of cold enduarance of the Eucalyptus it may be added that, with a view to the cultivation of the tree in America, the United States Government made an inquiry on the Subject through its consular service in the year 1894, and the reports received from various parts of the world are of very great interest. The officer at Marseilles reported that, generally speaking, some species which have been thoroughly acclimatised in southern Europe are capable of resisting a temperature as low as 8·6° F., but successful cultivation of desirable sorts cannot be hoped for in localities where the winter maximum of cold exceeds 21·2o to, 17·6o F.

The report from Rome statect he Eucalyptusi s killed by the cold in Italy when the thermometer marks 12° F. below Freezing. The consul at Madrid, writing in March, 1894, stated that E. Globulus and other allied species had resisted the climate of Barcelona and Madrid, where the temperature is frequently as low as 6o or 7o C. (20. 7o F.), without any diminution in vigour or vitality.

The consul at Zanzibar reported that an attempt had been made to cultivate the tree in his district but without success, owing to want of care or to the unsuitablity of the soil.

Further evidence could be given to show that the experimental cultivation of Gum-trees must be regulated by a consideration of various factors other than the temperature of the district. It may be added for instance, that in the Punjab, planting in groves gives a better chance of success than when the tree is planted singly along the roadsides, and that its general failure in that district is mainly attributable to three causes, viz, failure of the rains; injury to the young stems by sunburn; but principally to the white ants, which destroy the roots.

It may be interesting in conclusion, to give the following information from a comparatively recent Spanish work on horticulture.* E. Globulus is the favourite variety in Spain, where it thrives in humid soil, but not in humid air; E. resinifera is found to resist the wind remarkably well, and to accommodate itself to every soil; E. urnigera is suited to the mountainous districts and to low temperatures; E. Gunni and E. coriaceia are indifferent to cold; E. marginata is rather sensitive; E. amygdalina grows best in sandy soil, E. fissilis prospers in poor soil, E. odorata thrives in dry soil.

In Bois' *Dictionnaire d' Horticulture*, the following species are mentioned as extensively grown in Provence, and to be as rustic as E. Globulus:—E. calophylla, E. cornuta, E. Gomphocephala, E. robusta; and E. Gunni, E. polyanthema, and E. viminalis, which are also specially named as among the most hardy of the species.

A large number of species have been experimentally planted in the Landes of the southwest of France with unsuccessful results; and in the region of Paris the tree is taken to the temperate-house as early as the month of November. Hence, M. Bouquet de la Grye defines the northern limit of the Eucalyptus in Europe to be the same as that of the Orange—a statement with which many growers do not agree, and which is not unlikely to be disproved by cultivation of the tree under the selective conditions to which allusion has here been made. *Scion.*

EARLY ATTEMPTS TO CULTIVATE TEA IN ENGLAND.

I send you the following extracts from a book on the History of Tea, in Old English, by John Coakby Lettsom, M.D., London, printed by J. Nichols for Charles Dilly. First edition 1772; New edition, 1779.

It is a very interesting book with nice illustrations. It seems some attempts were made to cultivate the tea plant in gardens in England and in some colonies. The work also contains very valuable and curious information about the natural history of tea, and the rise and progress of tea consumption not only in England, but throughout the continent of Europe, in the seventeenth and eighteenth centuries. Here are a few of the extracts:—

"Within these three or four years we have been successful enough to introduce into this kingdom a few genuine tea plants. There was formerly, I am told a very large one in England, the property of an East Indian Captain, who kept it some years, and refused to part with either cuttings or layers. This died and there was not another left in the kingdom. A large plant was not long since in the possession of the great Linnæus, but, I am informed, it is now dead. I know several gentlemen who have spared neither pains nor expense to procure this evergreen from China; but their best endeavours have, in general, proved unsuccessful, for, though many strong and good plants were shipped at Canton, and all possible care taken of them during the voyage, yet they soon grew sickly, and but one, till of late, survived the passage to England."

"The largest tea plant in this kingdom is, I believe, at Kew; it was presented to that royal luminary by

* *Novisima Guia del Hortelano Jardinero y Arbolista.*

John Ellis, Esq., who raised it from the seed. But the plant at Lion House, belonging to the Duke of Northumberland, is the first that ever flowered in Europe, and an elegant drawing has been taken from it in that state, with its botanical description. The engraver has done justice to his original drawing, which is now in the possession of that great promoter of natural history, Dr. Fothergill, to whom I have been indebted for many dried specimens and flowers of the tea tree from China. * * * "

"Among several hundred specimens of dried tea flowers that I have examined, scarcely one in twenty was perfect. Some had three petals only, some nine, and others the several intermediate numbers. The greatest number consisted of six large petals, and externally three lesser ones of the same form. But the flowers which blossomed on the tea plant belonging to the Duke of Northumberland, from which this description is taken, consisted in general of six petals. One of the flowers indeed appeared to have eight petals; however, the numbers in the flowers in most plants vary considerably, which may account for the mistake of Dr. Hill and Professor Linnæus (who described this plant on Dr. Hill's authority), who make the green and bohea tea two distinct species, giving nine petals to the former and six to the latter. * * * "

"The best tea grows in a mild temperate climate; the country about Nankin producing better tea than either Pekin or Canton, between which places it is situated. It has been asserted that no tea plants have yet died in England through excess of cold, but the contrary, I know, has happened. The plant in the Princess Dowager's garden at Kew flourished under glass windows with the natural heat of the sun, as now do those at Mile-end, in the possession of the intelligent botanist, J. Gordon. The tea plant belonging to Dr. Fothergill thrives in his garden at Upton, exposed to the open air, and the plant introduced into the Botanic garden at Chelsea had one leaf which measured five inches and-a quarter in length. * * * "

"The bohea tea trees, now introduced into many botanic gardens near London; exhibit very obvious varieties. The leaves are of a deeper green colour, and so deeply serrated, the stalk is usually of a darker colour, and the whole shrub appears less luxuriant than that represented in the annexed plate of the bohea tea; but the botanical characters are the same. * * * "

"Father Labot next thought he had discovered the real tea plant in Martinico, agreeing, he says, in all respects with the China sort. He pretends also to have procured tea seeds from the East Indies and to have raised the plant in America; but, from his own account, this supposed tea appears to be only a species of Lysimachia, or what is called West India tea. Many other pretended discoveries of the Oriental Tea tree have been related, all of which have proved erroneous when properly enquired into. The genus of plant, called by Kaempfer Tfubakki, has the nearest resemblance to it. The leaves of several European herbs have been used at different times as substitutes for tea, either from some similarity in the shape of the leaves or in the taste and flavour; among these, two or three species of Veronica are particularly recommended, besides the leaves of sage, myrtle, betony, sloe, agrimony, wild rose, and many others. Whether any of these are really more salutary or not, is undetermined; and we now find that from the place to the cottage every other substitute has yielded to the genuine Asiatic tea. * * * "

"Many attempts to introduced the tea tree into Europe have proved unsuccessful, owing to the bad state of the seeds when first procured, or to a want of judgement in preserving them long enough in a state capable of vegetation. If this complaint arise from the first cause, future precautions about such seeds will be in vain. It is therefore necessary to procure fresh, sound, ripe seeds, white, plump, and moist internally. Two methods of preserving the seeds have put us in possession of a few young plants of the true tea tree of China: one is by enclosing the seeds in bees' wax, after they have been well dried in the sun; and the other, by putting them, included in their pods or capsules, into very close cannisters of tin and tutenague."

"See directions for bringing over seeds and plants from the East Indies, by J. Ellis, F.R.S., etc., in which particular directions are given, both to choose the proper seeds and to preserve them in the best manner for vegetation. See also the Naturalists' and Travellers' Companion, containing instructions for discovering and preserving objects of Natural History, Section III. We may observe here that the best method of bringing over the parts of flowers entire is to put them in bottles of spirits of wine, good rum, first runnings, or brandy."

"Most of the plants now in England were procured by these means; and though many of the seedlings will die, yet by this kind of management we may probably succeed in bringing over the curious vegetable productions of China, of which they have an amazing treasure, both in respect to use, show, and variety. If young plants could be procured in China, they might be sent over in a growing state in some of these boxes. * * * "

"The young tea plants in the gardens about London thrive very well in the green-houses in winter, and some bear the open air in summer. The leaves of many of them are from one to three inches long, not without a fine deep verdure; and the young shoots are succulent. It is therefore probable that in a few years many layers may be procured from them, and the number of plants considerably increased thereby. * * * "

"It may not be improper to observe here that many exotic vegetables, like human constitutions, require a certain period before they become naturalized to a change of climate. Many plants, which on their first introduction, would not bear our winters without shelter, now endure our harder frosts. The beautiful Magnolia, among several others, is a proof of this observation, and we have already taken notice (Section V) that the degree of cold at Pekin sometimes exceeds ours. We have hence reason to expect that the tea tree may in a few years be capable of bearing our climate, or at least that of our colonies; at length thrive as if indigenous to the soil; and, were labour cheaper, become an article of export, like the common potato, for which we are indebted to America or Spain. It is, however, better suited, for the climates of the Southern parts of Europe and America; but hitherto it has not been cultivated in an extensive manner in either of these quarters of the world, nor is it likely ever to be, whilst it can be procured from Asia at the present reduced price. It was introduced into Georgia about the year 1770. Hence the ingenious author of Onabi (Mrs. Morton) in her recent peom of Beavehill, in describing the products of this province, introduces the exotic of China:—

> Yet round these shores prolific plenty twines,
> Stores the thick field, and swells the clustering vines,
> A thousand groves their glossy leaves unfold,
> Where the rich orange rolls its ruddy gold,
> China's green shrub, divine Magnolia's bloom,
> With mingling odours fling their high perfume.

"It is indeed probable that the North American summers, in the same latitude with Pekin, would suit this tree better than ours, for, in China and some parts of North America, the heat in summer is such that vegetables make quicker and more early shoots, whereby they have time to acquire sufficient strength and firmness before the winter commances; but, in England, the tender shoots are pushed forth late, and winter soon after succeeding, they often perish in a degree of cold much less severe than at Pekin, or in colder latitudes of North America."—*Indian Planter.*

M. H. M.

AMERICAN FIBRE PLANTS.

Mr. G. E. Walsh, writing in the *Scientific American*, says:—Commercially there are 30 or 40 species of fibre plants found throughout the world, but botanically there are over 1,000 species the fibre of which can be made more or less useful in the arts and industries.

In view of the territorial changes produced by the war, the fibre industry is of peculiar interest to the farming and manufacturing world. The Islands affected by the war are all noted for the fibre plants raised on them; and taken together—that is, Porto Rico, Cuba, and the Philippines—they produce a large bulk of the best plants, except cotton, used in a commercial and manufacturing way for their fibre. Manilla hemp has long been familiar wherever cultivation exists; sisal hemp comes from Cuba, in times of peace, as largely as from Yucatan or the Bahamas; Cuba bast is essential to the millinery trade of the world; and Sunn hemp and cebu hemp are but trade varieties that come from the same islands.

The Philippines. in particular, are rich in fibre plants, with possibilities for development and expansion scarcely conceivable. Throughout the archipelago, it is estimated, all the fibre used in the manufacturing world could be produced at a cost that would annihilate similar industries anywhere else in the East. This is not entirely true, however, for neither cotton nor flax could ever find a foothold in the Philippines to compete with the United States. Our cotton is already seeking Eastern markets in ever increasing proportions and great prospects are anticipated for this trade. But in turn we must secure our hemp and jute, and other fibre-mateiral, from the lands where they best grow.

There are over thirty species of fibre plants that can be raised in this country, but most of them are unimportant in the commercial world, and most of the others thrive only very indifferently in the United States. Should we, however, extend our colonial possessions, so that in time they included Cuba and the Phillippine Islands, as well as Porto Rico, we would be the greatest fibre producing country on the globe.

At present the leading vegetable fibre that is imported into the United States, according to satistics of 1897, is sisal grass. Most of this sisal grass comes to us from Cuba, Yucatan, and the Bahamas. Attempts have been made to introduce its culture in Florida, and with some success; but its superior growth in its native islands, and their close proximity to the United States, will for ever preclude it from becoming an important industry here.

Next to sisal grass comes Manilla hemp in commercial importance. The imports of this amount to nearly $4,000,000 annually. This hemp has also been experimented with in this country, and in other lands, but the world's trade will always look for its main supply to the islands of the East, where it flourishes as naturally as cotton does in our Southern States. It can be produced and shipped to this country cheaper than our farmers can raise it at home. Cebu hemp comes from the Philippine Islands also, and is merely a trade variety that has its useful purpose in the manufactures.

Jute and "jute butts" stand third on the list of imported fibre plants. Jute comes from a variety of countries. Originally India controlled the trade in jute, but the West Indies and Cuba have entered the market in competition with her, and they are lusty rivals that cannot be ignored. The possibilities of Cuba in this line are only partly appreciated, for rebellions and wars have so long agitated the island, that little experiment has been made in anything outside of sugar and tobacco-growing.

Since 1890 the Department of Agriculture has been engaged in making experiments with fibre plants in various parts of the country, and farmers have been encouraged to grow certain fibre plants for manufacturing purpose. Nearly all the commercial fibre plants have been tested by the Department experts, and some of them have been recommended for general culture. This movement, started seven or eight years ago, has not exactly proved all that the inaugurators of it anticipated. Ramie has been raised to some extent in Florida; sisal-hemp from Yucatan has been established in a limited way in parts of the same State, and a little impetus has been given to the rejuvenation of flax culture—one of the oldest agricultural products in this country. Great efforts have also been made to utilise some of the plants that grow naturally here for fibre manufacturing. Thus the palmetto fibre and vegetable hair of the Spanish moss growing on the trees of the Southern States have found some use that makes the product of fair value. Several of the leading varieties of palms in Florida have been cultivated for the fibre in their stalks and leaves, and the palmettoes have been utilised for making brushes and brooms. Jute culture has been extended, so that we produce annually a fair crop. Yet this weed is natural to this country, and some varieties are the finest and best grown in the world.

It is possible to double the annual production of fibre plants in the United States, and thus increase the manufactures; but the history of many of our agricultural products hardly warrents one in predicting that we can raise successfully most of the fibre plants needed in this land. The flax industry was at one time an important industry in New England; but it has steadily declined for half a century now, because farmers could put their land to more profitable use in raising other crops. No amount of push and energy has ever been able to renew this industry, although spasmodic efforts have frequently been attempted. There was plenty of land in the world where flax throve better than in the United States, and it could be cultivated cheaper there than in this country.

Likewise the hemp industry in the South has been declining ever since 1870. It flourished and expanded in the early sixties, and just prior to the rebellion it was an important industry, promising in time to rank second only to cotton. But sisal and Manila hemp appeared in the market, and the Southern hemp could not compete with them. Our hemp lost its position in the manufacturing world, and sisal and manila were soon used in its place. No amount of study and experiment could rejuvenate the decadent industry.

While there are undoubtedly many native fibre plants growing in this country that will be found useful in many industries, it will be impossible to make them compete with the low-priced fibres that come from many of the tropical and semi-tropical islands. Nor shall we ever be able to introduce these foreign plants into this country, so that their culture will prove successful enough to supply us with the raw material for all of our manufactures. The world will still look to the Philippines, the West Indies, Cuba, Central America, and China and India for the fibre plants that supply material for cheap clothing, bagging, rope, and similar products.

In the islands that have been acquired from Spain however, we have the soil and climate to produce all the fibre plants that are lacking in this country. Their resources in this respect are so great that they could soon supply the world with all the raw material used for cheap textile goods, cordage, nets, and kindred necessities. In Porto Rico alone we could raise successfully a dozen of the leading fibre plants, while in Cuba and the Philippines there are many peculiar only to those islands.—*Journal of the Society of Arts.*

THE EUCALYPTUS GLOBULUS.

As a good deal has recently been written on this tree, perhaps I may be permitted to record my little experience regarding the same. When at Lucknow, I used to receive seeds of various kinds of Eucalyptus from the late Baron von Mueller. Of course, the E. Globulus was among them. I raised several plants of the latter, and planted a row of them. They made rapid progress, and in a few years gained the

height of between 20 and 30 feet, with a thick stem in proportion.

I began to be proud of having introduced this wonderful tree, which then had the reputation of draining marshes. Well, one monsoon came with torential rains, and every one of my beautiful E. Globulus died from too much water at the roots, and an atmosphere saturated with moisture. I began then to be sceptical about the supposed properties of this fast-growing tree of draining marshy land.

The only variety which I succeeded in growing was the E. citriodora, which, when it sheds its bark, leaves the stem as white as snow. It flowered and seeded; but I do not know what the result was after I left.

On another occasion I landed at Naples from Bombay in January. It was snowing, and the pools round the fountains were hard frozen—a very unusual occurrence in that latitude. On my way from Naples to Rome I saw a number of large Eucalyptus-trees—presumably E. Globulus—killed by frost.

The only place in India where I saw the Eucalyptus Globulus thrive was on the Nilgherry Hills at Ootacamund. The frost there is very slight, and occurs only on the highest ridges: and the drainage on the hill slopes is very good. It was a beautiful sight to see a hill-side covered with the young blue trees. The only use they make of the tree there is for firewood. As to the Eucalyptus-oil, a lady in London told me that when she caught a cold, she rubbed a little of this oil round her mouth and nose, and the cold was scared away. I thought I would try this wonderful oil the first time I caught a cold. I had not long to wait; and one night I rubbed some as directed, and got into bed. In a very short time my fact felt as if it were on fire. I had to jump out of bed and put my face in a basin of cold water, when I got some peace!

A friend of scientific culture assures me that in the City there is an insurance company who employ a large number of clerks. During an epidemic of influenza, the porter was instructed to go round and drop Eucalyptus-oil on the blotting-pad of each clerk, and my friend asserts that not one of those clerks got influenza. They were all the time inhaling an atmosphere containing the essential oil of Eucalyptus. Such a thing, it would seem, might easily be verified. I am not aware, however, that any scientific investigation has ever been made of the properties of this oil. When a new drug is introduced, the sellers of it exaggerate its curative properties to such an extent that it soon falls into discredit and neglect. There are few things in Nature that have not some use.

The history of the metal "thorium" is a lesson. It was very rare, and was thought to be very useless. Now, however, as Thoria, it is used everywhere for incandescent lights. The demand for this metal caused geologists and chemists to search for it, and it was found that, after all, it was not so very rare. When a thing is pronounced useless, it means that no use for it has yet been discovered.

In an article in the *Gardeners' Chronicle* on "Rome," it was stated that the Trappists near Rome can now live where, before they planted Eucalypti, they could not live. In the *National Review* for February, 1899, in an article on the "Rule of the Chartered Company," by H. C. Thomson, p. 901, this is stated:—"Look at Tasmania . . . with a glorious climate, in which it is difficult to feel ill, with Eucalyptus forests in which fever cannot exist," &c. Now is all this true, or is it mere hearsay? If Tasmania has such a glorious climate, why should the non-existence of fever be attributed to Eucalyptus forests.

Then in the *Standard* of February 14, 1899, it is stated that "Influenza has made its appearance again . . . and alike in church and on 'Change the odour of Eucalyptus is significantly perceptible."

Rightly or wrongly, many people evidently believe in the property of Eucalyptus oil of staving off influenza. Investigators of the future will have t find out what is true and what is not true, not onl in this, but in many other things. In a butcher's shop I saw a miserable-looking plant of E. Globulus in a pot. I asked why he kept it there? He said, "It keeps away flies." I thought I would try the experiment in my room, where flies abound in summer. I cut some branches off a blue Gum-tree I have, and placed them in a jug of water on the mantelpiece. Lo and behold, that very same evening there was a fly on the wall a few inches above the Eucalyptus leaves, and I have been told that flies have been seen to actually settle on its leaves! *E. Bonavia, M. D.*

OIL ENGINES AND TEA MANUFACTURE.

SIR,—In reply to Mr. Turbervill's query *re* oil engines and the cost per lb. made tea, "Petrol" only has vouchsafed an answer, but I do not wholly agree with him. I contend the cost per lb. made tea would (relatively speaking) rather depend upon the consumption of oil by the engine per H.-P per hour, viz. of an engine consuming one pint of oil per H.-P. per hour and that using only half pint per H.- P. per hour—than the outturn of made tea per hour (as per "Petrol') as this could be obviated by having two smaller sized engines of, say, 12 and 8 H.-P. instead of one 20 H.-P. engine, excess of power in one engine being economy on the wrong side wastage of power meaning the same in oil—hence an enhanced cost. Taking a six months' working, I find that oil has cost me ·*96 cents per lb. of made tea,* This includes transport of oil, &c., &c., and minus the rebate at 25 cents per gallon. (This is what Mr. Turbevill wants to get at.) The engine in use being a 17 H. P. Campbell's, and using one pint per H. P. per hour, and the consumption of oil being about 1.38 gallon per hour, my contention may be easily seen. Using an engine consuming only half pint per H.P. per hour, I should imagine 70 cents per lb. would be a safe figure for and estimate of cost.—Yours, &c.

W. R. SHELTON AGAR.

Mount Temple, Gampola, July 12th.

II.

SIR.—*Re* oil and oil engines and the information asked for by your correspondent, the cost per pound of tea must depend a good deal on the yield daily. But, taking a busy month, in my small factory, with an 8 H.-P. Tangye engine working a Davidson large sirocco down-draft, a large roller, and two small rollers, and sifter and roll-breaker, my made tea was over 18,000 lb., and the oil consumed, "Russian"—which is much inferior to American"—was 46 tins, or 23 cases, which cost me on the estate R5 per case. So We get R 115—say 11,500 cents for 1800 lb. of tea. I could have made more for the same money. Of course, when the yield is small, the cost is comparatively greater—for instance, to make 103,000 lb. of tea has cost me R1,124. Your correspondent will find oil a cheap motor-power provided the cost of the oil is not excessive.—Yours, &c.,

H. DRUMMOND DEANE.

Stagbrook, Peermaad, Travancore, July 10th.
—"*Local Times.*"

VANILLA CULTURE IN TAHITI.—The increase of Vanilla culture in Tahiti is said to be spreading rapidly; the natives, with few exceptions, are giving their whole attention to the growth of the plant, and curing of the pods. Its export, which in 1893 was 29,858 lb., valued at £3,938, reached during 1898 to 92,137 lb., but owing to a serious decline in its market value, that quantity realised only £20,468, as against £35,862 for 75,740 lb. in 1897.—*Planting Opinion.*

INDIARUBBER OR CAOUTCHOUC.

ITS ORIGIN, COLLECTION AND PREPARATION FOR THE MARKET.

THE LATEST PERADENIYA "CIRCULAR" WITH MR. PARKIN'S REPORT.

Such is the subject of a Circular just issued from the Government Printing Press, and received by us from Peradeniya, giving the results of the investigations of Mr. J. Parkin, M.A., of Trinity College, Cambridge, as carried on at the Peradeniya Gardens, with General Remarks by Mr. Willis, Director of the Gardens. "Prodigious" was our first exclamation on seeing this "Circular," and yet it by no means contains the complete results of Mr. Parkin's work which will be published at home. Still it certainly includes more than enough to satisfy the most exigent of Ceylon rubber planters, and the report reaches us just in time to be included in our "INDIARUBBER PLANTERS' MANUAL" due from the press at an early date. There is, of course, in the 60 pages before us, a great deal that is of scientific, rather than practical, interest; and we cannot help suspecting that the recent discoveries in Central America and Trinidad by Mr. Biffen, Mr. Hart and others may have interfered to some extent with the practical value of Mr. Parkin's patient and truly scientific investigation. At the same time the fullest justice is done to Mr. Biffen in prominently referring to his valuable work; while the paper in the *Tropical Agriculturist* of December last (taken from the "India-rubber World") to which we made pointed reference some weeks back, is also specially referred to and quoted (on page 118) as showing that the Castilloas growing in Trinidad seem to possess proper caoutchouc in their young stems, and this would, apparently, mark them out as a different species from the Castilloas of Ceylon. But clearly, further investigation and experiment are required to settle this very important point, and we have also to continue to watch very closely the outcome of Mr. Biffen's discovery in Central America, and of Mr. Hart's continuous experiments in Trinidad.

Meantime to revert to the Circular before us: it opens after a few lines of introduction with an explanation of the measurements and contractions used; and then Mr. Parkin's paper comes under the following heads:—

A.—Botanical.

B.—The Extraction of Latex. I.—Incision (1) Kind of Incision; (2) Instrument to Use; II.—Collection of Latex from Incisions; III.—Area of Trunk to be Tapped; IV.—Effect of Wounding on Flow of Latex.

C.—The Preparation of Commercial Rubber from the Latex. (1) Hevea; (2) Castilloa; (3) Manihot.

D.—Yield.

E.—Notes on other Caoutchouc-yielding Plants.

The "botanical" chapter covers some eight pages and notices, among other things, the possible successful manufacture of "artificial caoutchouc" though no one has, as yet, got beyond the stage of laboratory experiments. The great inducement to plant rubber-yielding trees at a time when raw rubber of good quality is selling at 4s a lb., is noticed, as also Mr. Biffen's special investigations in tropical America resulting in preparations from the milk with a loss in manufacture of less than one per cent. The problems which Mr. Parkin put before himself are thus given:—

> We want to know the trees which promise best for cultivation, both as regards quality and yield of rubber. We have to consider the best times and means of tapping them, and then of preparing the rubber from the collected milk.

We find special reference made more than once to *Alstonia scholaris* as "possessing copious latex (milky juice) in its trunk." This is not an uncommon tree in our low-country, and it ought at once, we think, to be exploited. One of the finest specimens in Colombo is near the Turret Road gate of Canella Villa, its trunk being covered with the "Colombo Agent" and other well-known creepers. In closing his botanical chapter, Mr. Parkin makes the following significant remark:

> Personally I am not inclined to look upon latex as playing an important part in nutrition, and should imagine that if it were possible to extract all the latex from such a tree as *Hevea brasiliensis* without greatly injuring the other tissues, it would not be seriously harmed. I am inclined to regard the laticiferous system more as channels for holding water in reserve to be called upon during times of drought or during the dry season

We come next to the "extraction of the latex," and here we have a large number of rubber-yielding trees specified, with the different modes of extracting the caoutchouc, and special mention of certain new African kinds with thick underground stems full of latex, which Dr. Morris suggests might, if cultivated, give early returns. These are *Carpodinus lanceolatus* and *Clitandra henriquesiana*. Then comes an important statement:—

> The only other parts of the plant besides the trunk and main branches of such trees as Castilloa or Hevea, which might be used for the extraction of rubber, are the young shoots. If these could be used profitably, then a return on the capital could be obtained in a year, either by growing crops of seedlings or by coppicing permanent plants. Our attention has been applied to this with, however, no encouraging results.
>
> *Hevea brasiliensis* will not answer at all, as far as our experience goes.

Now, here is where notice is taken of the different results obtained from young stems of Castilloa in Trinidad as fully related in our *T.A.* for December and March last and subsequent numbers. Finally, Mr. Parkin says:—

> In our opinion it seems hardly likely, at any rate as far as Ceylon is concerned, that rubber can be extracted profitably from the leaves, twigs, &c., so we must return to the consideration of the main stem and consider the best means of extracting the latex from this.

But we suspect this is arriving at a premature conclusion, and we cannot see why eventually Ceylon should not do as well in this way as Trinidad. Mr. Parkin next proceeds to consider, in great detail, the best kind of incision. the best instrument, the collection of the latex from the incisions, the area of the trunk to be tapped and the results of experiments made at Henaratgoda in March last. All through here he is deal-

ing with the Hevea or Para, and we may quote the concluding statement:—

The reason why the base of the trunk should yield so much more latex has, I think, something to do with the thicker and softer bark at this region. This peculiarity has not been only observed in Ceylon. In Colonel W. J. Seaton's report on the Para rubber trees of Tenasserim, Burmah, dated January 28, 1889, he remarks: "It was observed that the exudation of milk was greatest near the ground, where the bark was thickest, while at a height of six or seven feet it was almost *nil*."

Mr. Parkin next, takes up the Castilloa tree as grown in Ceylon, and gives the results of his experiments as to the outflow of the latex. Further on, we have "the effect of wounding on the flow of the latex," with a further series of experiments in tapping, extending up to June 6th last. We do not give the details and results, because as we reproduce the Circular in full in our monthly periodical as well as Manual, planters specially interested can carefully study it there. Suffice to say that the result seems satisfactory, although in conclusion we are told:—

Probably it will be found that under some conditions it is best to tap daily, while under others it is best to tap at intervals of two, three, four, seven, or even ten or twelve days. A large number of experiments on different methods of tapping have been made and are still being made in the Botanic Gardens, and their results will be published later. Those planters who are beginning to tap their trees might well repeat some of the experiments described above on a larger scale. The success or failure of the cultivation depends chiefly on the yield of milk, and it has been clearly shown that this is extraordinarily different in different trees of the same size and age, and that it may be enormously affected by different methods of treatment. Each man must find out for himself the method absolutely best suited to his trees, in the light of the above observations and of his own and those of other workers.

We now come to "the preparation of Commercial Rubber from the extracted latex," and we read:—

The two chief points with respect to the preparation of commercial rubber are to have it free from moisture and putrefaction. The first can be effected by drying the rubber particles in thin sheets; the second by either removing the proteid matter or by the addition of some antiseptic substance which prevents the growth of bacteria and mould.

And again:—

Considering that the caoutchouc in latex exists in the form of minute globules suspended in a fluid, and that they are lighter than water, it is rather surprising that no one till now has thought of the idea of separating the caoutchouc and so preparing rubber by centrifugal force, such as is used for separating the butter fat of milk. The credit of applying the idea is due to Mr. Biffen of Cambridge University, who, in connection with Mr. Erme Howard, recently undertook an expedition through the rubber-producing districts of America. With a modified centrifugal milk-tester they tested the possibility of extracting the caoutchouc from several latices with great success.

Then experiments made by Mr. Drieberg at the Agricultural School with a cream-separator are referred to; but sufficient speed could not be got to operate successfully. Next:—

In connection with Mr. Biffen's discovery a company has been formed and a large tract of land laid down in Mexico in Castilloa, with the purpose of producing commercial rubber by centrifugalisation. A patent has been taken out on the machine, and consequently it remains to be seen at what price it will be put on the market. It may be somewhat prohibitive. In the meantime, let us consider what other means there are for preparing good rubber from the latex of Hevea and Castilloa.

Accordingly we are told of "Coagulation by acetic acid," "Extraction of Caoutchouc by means of Mercuric Chloride (corrosive sublimate)". Next we have the effect in dealing with "Castilloa," and again we are reminded that our Ceylon species "Markhamiana" probably differs from "C. elastica" in the properties of its latex; but on the whole greater success was attained than in the case of Para. Nor is the Ceara to be despised, since we read:—

Manihot Glaziovii (Ceara Rubber Tree).—This latex has been shown by Biffen to be also capable of yielding its rubber by centrifugalisation, as well as by churning.

Finally, we come to the "yield," and we are told "there is a great individual difference in the trees in the yield per incision. Out of the 32 trees of "Para" at Peradeniya, two flow much better than any of the rest without any apparent reason. Six times the largest quantity of latex got from a Hevea in a single incision, has been got from a Castilloa rubber tree. (It is extraordinary how a prejudice could have been formed some years ago against the cultivation of Castilloa trees in Ceylon!) On the other hand, however, the Castilloa latex, as a rule, contains only about half the percentage of caoutchouc that than of Hevea does. And the results of experiments are summed up as follows after giving details of tapping of Castilloa trees at Henaratgoda at the beginning of March:—

What time should elapse before the trees flowed as well again, has not yet been ascertained. Perhaps the trees would not be worth tapping more than twice a year. In that case the yield of rubber per tree per year from a trunk 3 ft. in girth and 12 ft. in length would come to about 300 grams or 10¾ oz., a small amount compared to the results stated for its native country. In fact, the weight of rubber, would not be much greater than from Heveas of corresponding size tapped ten to twelve times in the year, but the expense of extraction would be very much less. Further experiments in tappings—both in Government Gardens and on private plantations—are clearly necessary. We are promised a note of results from the Kalutara district.

In his last chapter Mr. Parkin gives us some notes on other rubber-yielding trees growing at Peradeniya and Heneratgoda, none of which, except the African *Landolphias* seem to be worth much. At the end Mr. Willis gives us some "general remarks" on Mr. Parkin's Report, the cream of which we extract in the following, although Mr. Willis has a good deal more to say:—

The ideal rubber-yielding tree would be one in which there were many laticiferous vessels, all communicating freely with one another, and containing only caoutchouc in an emulsion with water. The trees cultivated in Ceylon do not reach this standard, but depart from it in different ways. Hevea contains very pure latex, but its laticiferous vessels do not seem to communicate freely, so that a large number of incisions are needed to get all the milk; Castilloa has much freer communication, but a more impure latex, and less percentage of caoutchouc therein;

Manihot has poor communication and very impure latex, containing a small percentage of rubber. The objects to be aimed at in practice are principally:—

(1) To get a good quickly growing tree, which will yield a large quantity of rubber after as few years as possible.

(2) To obtain the latex with as little labour as possible, and with the greatest possible cleanliness, as all impurity lessens its value.

(3) To obtain from this latex as pure caoutchouc as possible, with the least practicable labour and cost.

(4) To get the caoutchouc as dry and antiseptic as possible. With regard to the first point, we have at present three trees which do well in Ceylon: Hevea Castilloa, and Manihot. The second desideratum is best supplied by Castilloa, which yields latex very freely from a small number of incisions, and also gives a very fluid latex. Hevea is second best in this respect, and Manihot worst.

Here we must take leave of this very full, instructive and suggestive series of papers. The conclusions arrived at are by no means final; but there is a great deal of light thrown on problems of much practical importance to Rubber planters who all ought to feel, as we do, specially indebted to Mr. Parkin and Mr. Willis.

BOGAWANTALAWA DISTRICT TEA COMPANY, LIMITED.

ANNUAL REPORT.

Report presented at the Second Ordinary Annual General Meeting of the Company, held at the Office of the Company of Wednesday, 28th June.

The Directors have the pleasure to submit the balance sheet and accounts of the Company for the year ending 31st March, 1899, duly audited.

Notwithstanding a deficiency of some 25 inches in the rainfall, the aggregate yield of tea exceeded the estimate, and the gross price obtained in London was 8·71 per lb. against 8·20 per lb. in the previous season.

The working expenditure compares favourably with the estimates, and in spite of a higher average rate of exchange the cost of production was lower, being 25½ cents against 26½ cents per lb. last season.

Since October last the Bridwell leaf has been manufactured at the Bogawana factory, and the sum of £954 18s 11d expended thereon to complete the extensions, has been charged to capital account. On the other hand, a sum of about £650 expended on renewals and improvements to existing factories, and in opening 75 acres new land to be planted with tea, has been charged to revenue account.

The total yield was 1,031,782 lb tea plucked off 2 081 acres, of which 86 acres are only in partial bearing, being at the rate of 495 lb. per acre all round, costing free on board Colombo 25½ cents or 4·12d per lb. The gross average price of the 1,024,646 lb. sold in London was 8·71d per lb., as stated above.

The crops for the current season are estimated at 1,020,200 lb. tea.

The gross average at which drafts were negociated was 1/4 5-32 per rupee, against 1/3 9-16 per rupee the previous season.

The Directors desire to place on record their appreciation of the services of their manager and his staff in Ceylon.

	£	s.	d.
The Profit for the year, inclusive of Interest and after providing for General Expenses amounts to ..	15,033	15	11
To which has to be added the Balance from last year of ..	958	14	4
And Interest	54	5	8
	1,013	0	0
Less Income Tax (season 1897-98) ..	435	1	4
	577	18	8
	15,611	14	7
Interest on the Mortgage Debentures has been paid, *less* Income Tax	406	0	0
Dividends on the 6 per cent. Preference Shares for the 12 months were paid on the 12th October, 1898, and 1st April, 1899, *less* Tax	5,394	0	0
An Interim Dividend of 2½ per cent on the Ordinary Shares was paid, *less* Tax, on the 11th Jan. 1899 ...	2,416	13	4
It is proposed:—			
To pay a final Dividend of 5 per cent. on the Ordinary Shares, making 7½ per cent. for the year, which will require, *less* Tax ..	4,833	6	8
To transfer to Reserve Account ..	1,500	0	0
And to carry forward to next year the balance (out of which Income Tax has to be paid) of.. ..	1,061	14	7
	£15,611	14	7

In view of the expenditure on buildings and clearings charged to revenue account, and of the fact that all buildings and machinery are in a high state of efficiency, the Directors no not consider it necessary to write off a specific sum for depreciation.

The Director who retires on this occasion is Mr. John Geoffrey Fort, who, being eligible, offers himself for re-election.

Mr. John Smith the Auditor also retires, and offers himself for re-election.

SCHEUDLE OF THE COMPANY'S ESTATES.

Estates.	Tea full bearing.	Tea partial bearing	Tea, not in bearing.	Forest.	Grass.	Chena and Patana.	Total acres.
Kirkoswald ..	756	—	—	*109	12	—	877
Bridwell ..	382	—	—	*71	5	15	473
Elbedde ..	559	46	100	27	15	—	747
Bogawana ..	298	40	4	*70	6	18	436
Total ..	1,995	86	104	*277	38	33	2533

THE DIMBULA VALLEY (CEYLON) TEA COMPANY, LIMITED.

ANNUAL REPORT.

Directors' Report submitted to the shareholders at the Third Annual Ordinary General Meeting, to be held at the Cannon Street Hotel, on Monday, the 3rd day of July, at 12 o'clock noon.

The Directors beg to submit the General Balance Sheet and Profit and Loss Account for the year ending 31st March last.

After bringing forward £226 16s 9d from last account, and providing for general expenses, for

* About 75 acres felled and prepared for planting with tea.

London office expenses, and £500 for depreciation, the net amount at credit of Profit and Loss is £15,709 4s 9d.

Dividends aggregating 6 per cent., less Income Tax, have been paid for the 12 months on the Preference Shares, amounting to ..	£3,440 2 6
An Interim dividend of 4 per cent., less Income Tax, ou the Ordinary Shares, has been paid, and amounted to	£4,586 12
It is proposed to pay a final dividend of 6 per cent. on the Ordinary Shares, making 10 per cent. for the year, and which will amount to	£6,879 18 0
Thus leaving to be carried forward to next year a balance of	£802 12 9
	£15,709 4 9

The past season in Ceylon has probably been the worst ever recorded as regards the yield of tea. The crop from the Company's estates, owing entirely to untoward weather, has turned out some 70,000 lb. under the estimate, so preventing the full profit which your Directors were justified in looking for. The result, however, cannot but be said to be very satisfactory, and your Directors consider that great credit is due to those responsible for the management of the Company, both in Ceylon and London.

The total crop for the past season amounted to 930,281 lb. which sold for £39,127 13s 4d, or an average of 10·09d per lb., as against the previous year's crop, 833,874 lb., which realised £30,923 7s 4d or 8·90d per lb.

The Estates are in a high state of cultivation, a liberal expenditure, as will be seen by the summary below, having been allowed. The tea cost f.o.b. about 29 cents. of a rupee per lb., distributed as follows:—

General	·039 cents.
Cultivation	·072 ,,
Plucking and Manufacture ..	·171 ,,
Buildings (upkeep)	·005 ,,
Capital Account on Buildings Machinery, and Tea Clearings	£2,056 6 7

The freight, warehousing, and selling in London, cost ·93 of a penny.

Exchange averaged at the rate of 1/4·29, as against last year at 1/3¾, and 1/2 9·10 the previous year.

The outlay on capital account exceeded our intention of a year ago, but as practically the whole of this was laid out on factory extensions at Tillicoultry and Belgravia, the better prices realised have fully justified the outlay.

Mr. McDonell retires by rotation, but, being eligible, offers himself for re-election.

Messrs. Singleton, Fabian & Co., the Auditors to the Company, retire, and, being eligible, offer themselves for re-election.

GAME AND THE PARK COUNTRY IN CEYLON.

(*From Mr. D. Blair's Report, Survey Department,* 1898.)

PARK COUNTRY.—The park country is situated in scattered areas among the forests. One of the largest is the Hingurawatdamana situated between the Kandulla and Minneriya-oyas, covering not less than 10,000 acres. Another great park extent lies between the bund of the "Prakrama Sea" and the Ambanganga, and even between the Amban-ganga and Mahaweli-ganga along the road from Kotawela to Dastota. East and north of Polonnaruwa, too, there are thousands of acres of park country extending in a broken series to Kumadi village. The park country varies in openness. When very open it is possible to see for a mile through the trees dotted over the plain, while at other times they are so close as to be of the nature of an open forest. The trees are seldom of great size, and among them are many lovely blossoming varieties such as satin, ehela mee, damba, &c., and when many of these are in flower before the grass land is scorched it is the most lovely country in the Island to travel through.

GAME.—The chief big game in Tamankaduwa are elephant, buffalo, bear, leopard, sambur, cheetah, spotted deer, red deer, and pig. In the rainy season, when water is to be found in every "dola," the elephants are scattered over the whole country and seem to travel about considerably, but as water becomes scarce they retreat towards the Mahaweli-ganga and the vicinity of the great "villus." The steep banks of the river are worn into steps and stairs by these animals constantly descending to drink, and the marshy ramba grass land along its banks is pitted with their footprints. Buffalo are not plentiful and their destruction by sportsmen is discouraged by Government. They usually frequent the marshy pools near the park country far from human habitations, but they have often been known to attach themselves to a herd of tame ones. Leopards are found wherever their quarry is, be that where it may.

Bears are most common in the park country when the fruits and flowers they feed upon are ripe, but the search for honey takes them everywhere, and the marks of their claws made in climbing trees are met frequently. Their favourite haunts are in the vicinity of bare rock hills and boulders and caves as in the country south of Kotawela. They are the most dreaded of all the denizens of the forest by the inhabitants, and the number of the horribly disfigured and scarred bear victims among them show good reason for the dread.

Sambur are met with all over the district, but they are oftenest found in the hills or feeding in the park country. They rarely go in large flocks; a buck and two or three does with a fawn or so being the usual numbers met with, though occasionally the stag alone is met, and he is then most easily approached. Their breeding season is during the rains, and the young fawns are oftenest seen in the early months of the year.

Spotted deer are more numerous in Tamankaduwa than the other varieties, and in the dry season they are met with in herds of a score or so in the park country—the does being by far the most numerous. Their breeding season does not seem to be so well defined as that of sambur. In January and February many young fawns have been met, but again fawns are not uncommonly found in September at the end of the dry season.

Red deer are probably least common of all deer in Tamankaduwa, but they shun the open country and frequent the forests in pairs or often singly. No direct evidence of their breeding season was noticed.

Wild pig frequent the vicinity of paddy fields and abandoned but not quite empty tanks, in which they wallow. Among the Moor villages and in the low-lying "ramba-damanas" along the Mahaweli-ganga they roam in great droves of twenty or thirty, tearing up the ground as they go in their search for roots.

CHINA TEA—OR POISON?—An analyst records that there are over sixty substances used by the Chinese in colouring and weighting much of the tea that finds its way to this country. These substances include subacetate of copper, indigo, and tumeric mixed together to make a bright vegetable green; sulphate of lime or gypsum, to give the tea a greyish, smooth, glossy appearance; glucose of gum arabic water, to make the gypsum adhere to the tea; Prussian blue, Dutch pink, soapstone, graphite, rice, and starch.—*Daily Mail.*

NILGIRI TEAS.

PRICES AND AVERAGES: POOR JATS: WYNAAD SHIPMENTS.

In common with the rest of India, the Nilgiris have shared in the benefits of the remarkable recovery in the London market during the last few months. It is gratifying to note, besides, a marked improvement all round in manufacturing methods in the district—an improvement which, though inaugurated some half-a-dozen years ago, has not till lately attained its full development. That there is still room for very considerable improvement in methods of manufacture, pruning, and cultivation cannot of course be denied by any one conversant with the latest modes obtaining in Assam and Darjeeling. But the spirit of progress is in the air, and on all sides we hear of up-to-date machinery being imported, and a general inclination to drop for good and all the backward methods and appliances that in past years did such serious damage to the tea industry in the district.

Last week's sale report included shipments from six Nilgiri estates, the average price obtained being 7·72d per pound, less than a half-penny below the average for all India, and only one-fifth of a penny under the Ceylon average. The best prices were realized by New Hope, which has made such very gratifying progress in the last two or three years—with the very good all-round rate of 8¾d per pound. The shipment too was a large one, consisting of 340 packages, and on the whole, was fairly representative, the only grades not included being Pekoe Souchong and Dust. Kodanaad stands next with an average of 8¼d, with Pykara Falls 7¾d, Seaforth 7½d, Genmorgan 7¼d, and Hocorra 7d, following in the order named.

The Wynaad shipment was, however, still better the average being 8·16d, while even Travancore ranked higher than the Nilgiris with a rate of 7·81d per pound. The Wynaad, of course, though handicapped to a certain extent by the climate, has the advantage of all new tea districts in being planted up with the best possible variety of tea, a point in which the Nilgiris are so lamentably behind the times. It seems strange that even now, when the great advantages of the Assam *jat* have been proved up to the hilt, that extensions should still be made with hybrid varieties.—*Indian Planters' Gazette.*

SILVER GOLD AND PRICES.

The extraordinary fall in the prices of commodities during the past twenty-five years is put down by bimetallists to the depreciation in the value of silver; by monometallists to improved methods of production and transport. We are not going, in a few lines, to attempt to discuss such an intricate subject, but we subjoin some striking figures, taken (with the exception of the value of the silver produced, which is our own estimate) from a recent publication of the Gold Standard Defence Association. Judging from all previous experience, the enormous increase in the production of gold must, sooner or later, have a marked effect in raising the prices of other produce. There have been strong evidences already of a tendency in this direction, which may become more marked in the course of a year or two. Broadly speaking, if there are two sovereigns where there used to be one, the two will not, in the long run, buy much more than the one did. The tendency of prices to rise has been masked by the greater demand for gold from countries which had not a gold currency previously, or which wished to build up a war chest.

Silver Production of the World.

	Weight.	Price per oz.		Value.
1873 ..	63,000,000 oz.	59¼	pence	£15,553,125
1878 ..	73,000,000 do	52 9-16	do	15,987,760
1893 ..	165,000,000 do	35⅝	do	24,492,187
1898 (approx. estimate)	190,0000 do	28	do	22,166,666

Gold Production of the World.

1875	£20,000,000
1892	30,000,000
1899 (anticipated yield) ..	60,000,000

Average Prices of Commodities (on Mr. Sauerbeck's basis for the prices of 45 commodities.)

1873	113
1894	63
1895	62
1896	61
1898	64

—*Produce Markets' Review*, June 17.

PLANTING NOTES.

Peanuts.—This nut, so common in the United States, is very rarely eaten roasted in France and nearly all that enter the port of Bordeaux are imported from Spain, Italy and Africa. The variety is small and uninviting-looking and exorbitantly high, the price, being about three times that asked in America. The taste for these nuts as a food is growing; it is practically certain that if the American varieties were put upon this market at a reasonable price, they would find a ready sale. Many tons of peanuts are imported from the west coast of Africa, India and Malayan Archipelago and are sold in Marseilles and other European countries; these are principally for the oil, which is extracted from them. Peanut oil is used for cooking purposes and as an adulterant and substitute for olive oil.—United States Consular Reports, Dec. 1898, p. 539.

Spanish Peanuts: A new variety of Ground Nuts.—*(Arachis hypogæa).*—This is a special variety of peanuts, grown largely in North Louisiana for forage purposes. Its growth is erect and, at maturity, the pods adhere very tenaciously to the stalk when the latter is uprooted. In sandy, or light, loamy soils, this operation of uprooting can easily be accomplished without hardly the loss of a pod. By gathering them in this way while the leaves are still green and curing the entire plant with adherent pods into hay, a large quantity of excellent forage of high feeding value can be obtained. This plant, as can be seen later on, has an enormous power of gathering nitrogen. It stores much of it in the fruit. It matures easily, and two crops upon the same soil have been made in one year at Audubon Park. This crop is frequently planted, and hog permitted to gather it is maturity. Its feeding value is very great, and this is abundantly corroborated by numerous experiments in feeding by practical farmers. The value to the land of this crop is very great, and the yield of nuts is sufficient, if grown in large areas, to justify a considerable commerce with profit to the farmer at present prices—three cents per pound in Norfolk Virginia.—*The Louisiana Planter and Sugar Manufacturer*, 11th March, 1899, *p.* 146.

PRODUCE AND PLANTING.

Weighing Paper with Tea.—The Lipton case, the first stage of which was decided last week, is subjudice, as it will shortly come before a higher court. It is pointed out on behalf of Messrs. Lipton that a mistake had crept into some of the reports of the proceedings, in which it is represented that the deficiency in a 1lb packet amounts to as much as 2oz. White the company make no secret of the fact that their 1lb packets include the weight of the paper, it is of course, quite wrong to imagine that the paper weighs anything like 2oz. The explanation is that drachms have been mistaken for ounces in the reports in question. It was stated during the hearing of the case before the magistrate that including the weight of the wrapper in the weight of the tea was a custom of the tea trade "from time immemorial." This has hurt the feelings of a number of firms who do not follow this custom. So many packet tea trading firms have denied this soft impeachment that it is necessary to remove the impression that it is a general custom to include the weight of the paper with the tea. It is stated on behalf of Messrs. Lipton that the £17,000 mentioned as profit on this method of selling tea during a year's operation is greatly exaggerated, and that the sum of £2,000 would be nearer the mark. It is also argued in defence of those who sell the paper with the tea that if a buyer goes into a grocer's shop and buys a pound of sugar, in the ordinary way, the grocer places a piece of paper on the scale, puts the sugar on it, and when the scale is turned, does the packet up and sells it. No doubt if the buyer wanted it he would give the sugar without the paper, and the buyer would get a little more. It is the same in regard to packet teas and all other articles sold in packets. This is ingenious, but not conclusive.

Interesting Figures.—Apropos of the Lipton case, a correspondent writes that the turnover of Lipton's business is estimated at 3,000 chests per week. It follows that if, as was proved when the company was convicted for selling at short weights, the gain is 3 per cent, there would be three pounds of tea in every chest which would virtually cost nothing. This, on the turnover of 3,000 chests, would equal ninety chests gained per week. Taking the value of the quantity gained at 1s per pound duty paid, the money value would be £450 per week, or £23,400 per annum.

Natal Tea.—Indian and Ceylon tea planters have not taken tea growing operations in Natal seriously, at present looking upon tea cultivation in that colony more as an interesting experiment than in the light of competition. Doubtless the supply of Natal tea in Mincing Lane will be on a small scale for some time to come, but it cannot be denied that tea planting in Natal can be profitably conducted. A correspondent of the "Grocer," who is very enthusiastic about them informs the tea trade that "Natal tea will soon be definitely on the market," and that the analysis of these teas is "really first-rate." He says: "There is a due amount of caffeine present which should make them mild, yet sufficiently strong in the invigorating properties. The low per-centage of tannin should make these teas welcome to the dyspeptic, and indeed to everyone who thinks much about his digestion. In each case the perceutage of tannin appears to be much lower than that which is found in samples of Indian tea. The other items in the analysis are quite normal; but when we come to the ash we find a rather unusual ingredient, for it contains a notable percentag; of manganese. This is undoubtedly derived from the soil, in which manganese is fairly widely distributed. I am not aware that there is any soluble salt of manganese in the tea which could be dissolved out by the water, and if there is I do not know what the precise effect upon the system would be to anyone drinking it. So far as can be gathered, the amount which would be taken in a cup of tea if it really does dissolve, is so insignificant as to be practically without any importance whatever, and so it may be disregarded. On the other hand, if the manganese only exists in the tea leaves and is not dissolved out, then of course it has no significance whatever to the tea-drinker."

Brazil Coffee.—The British Consul at Rio de Janeiro, in his report received on Brazilian affairs, speaks in hopeful terms of the coffee planting industry, and expresses surprise that, although some hundred millions sterling of British capital are employed in public funds and enterprises in Brazil, so little has been invested in the profitable pursuit of coffee planting. It may be due, he thinks, to a feeling of insecurity as to the protection afforded to the property of foreigners in the interior of the country; but he notes with satisfaction that the President of the Republic has made a powerful appeal to the State Government to extend full protection to all immigrants and foreigners.

Cocoa.—The consumption of cocoa is increasing rapidly. In some countries this is very noticeable. Germany has doubled her consumption of cocoa since 1882, and England has considerably more than doubled hers. In France the consumption was in 1868 about 15,000,000 lb, which figure has now been more than doubled. The annual consumption in the various countries was, according to some recent statistics: France, 30,500,000 lb; United States, 26,400,000; England, 22,100,000; Germany, 19,900,000; Holland, 17,000,000; Spain, 12,800,000; Switzerland, 4,800,000; Belgium, 3,600,000; Austria-Hungary, 2,200,000; Russia, 1,900,000; Denmark, 1,400,000; Italy, 1,100,000; Swepen, 800,000; Norway, 300,000; Portugal, 200,000. Reduced to annual consumption per individual Holland heads the list with three and a half pounds per head, Switzerland comes next with one and three-fifth pounds, and France third with four-fifths of a pound.—*H. & C. Mail*, June 23.

MINOR PRODUCTS REPORT.

London, June 15.

Cardamoms.—A fair "jobbing" trade has been done this week at well maintained prices, the demand being especially for seeds.

Coca Leaves.—There are numerous enquiries to be met with but little or no actual business. Truxillo leaves are offered at 10d and Huanuco at 1s 3d.

Oil of Citronelle.—A fair business has been doing this week the tone is slightly better. Drums are offered on the spot at 11½d and tins at 1s to 1s 0½d.

Oil of Lemongrass.—Still quiet, and purchasable at 2¾d spot.—*British and Colonial Druggist* June 16.

London, June 23.

Canella Bark.—Fair bark can be bought at 35s per cwt.

Cinchona.—The auctions on Tuesday were not animated in the sense that the tea sales next door were, for tea buyers have a style of their own which is a hybrid between a bear garden and the Chicago Wheat Exchange. The offerings at the cinchona sales were limited to five catalogues, and much of the stuff had been seen before. It was also notable that the usual large buyers on this occasion stood down, not caring to go to the extreme rates which the ultimate purchasers paid. The cinchona bark auctions to be held in Amsterdam on July 13th will consist of 5,6?1 packages of Ledger and hybrid, of 577 cases and 677 bales of succirubra. The stock in first hand at Amsterdam consisted on June 20th, of 2,044 packages Government bark, and 8,259 packages private bark, including the quantity to be offered in the next auction.

Lemon Oil.—Dearer by 3d to 6d per lb, according to holders. Super is quoted 3s spot, and extra super 3s 8d f.o.b. Messina; these are the lowest prices in the classes mentioned.

Kola Nuts.—Firmer, West Indian having sold at 2½d, and more was wanted for African.

Vanilla.—Tahitis were offered today, apparently as a matter of form, for only 1 tin sold at 6s 6d per lb., 4 inch to 6 inch beans.—*Chemist and Druggist*, June 24.

FACILITIES FOR MAKING TEA IN CEYLON:
IN CONCLUSION.
DIVERSE OPINIONS ON THE VALUE OF MANURING; PRUNING AND JÂTS.

We find three returns from well-known planters have escaped attention in our series of summaries on this subject. One of these writers who has had much experience in the systematic manuring of coffee as well as tea, in answer to our enquiry, "Would manuring improve the tea and be profitable in your opinion?" says:—"Yes, manuring is profitable. I can't say it improves the tea; but it makes you pretty independent of the weather, for manured tea flushes, when the other through climatic causes has got shut up"; while a second, also a practical observant Manager replies:—"Yes, both in quality and yield, and systematically carried out, manuring is profitable, with decent prices." The third answer comes from a Visiting Agent with a wide area of observation, who remarks:—"Manuring improves quantity of yield, but it is disputed as to its improving quality. It is only profitable where estates yielded a profit previously." Here then we have perhaps the last word upon "Manuring" until the scientists and especially Mr. Kelway-Bamber demonstrate how both quality and quantity may be secured by carefully adopted manuring and appropriate cultivation. By the way, there is a rumour that in regard to the kind of application suited to Ceylon tea estates, there is a good deal of difference of opinion among Analytical Chemists, each of whom have testimonials from different districts as to the good effect of diverse manures. All will, no doubt, be made public in due season, and perhaps the old saying may come true that in "a multitude of counsellors, there is safety."

As regards other elements towards successful cultivation, it is noteworthy that while our "V.A." critic considers that machinery as a rule is now sufficient to the needs of factories—some, of course, being better provided, especially in regard to withering room, so getting a higher average,—he adds that there are really very few factories in the island that have a sufficient reserve of withering accommodation to cope with "the rush of leaf" which is experienced in most districts during one or other month of the year. In the same gentleman's opinion there should be no complaint of want of sufficient "motive power" now-a-days, in view of the great improvement in oil engines and the grant of a Customs rebate on machinery oil. About "pruning" the same authority does not think that planters use the knife before there is the necessity nor that they prune severely where lighter pruning should suffice. In other words we have arrived at the stage in Ceylon where the superintendents of tea plantations have—through instruction, example, observation and experience combined—acquired that practical acquaintance with their work in all its details, which in years gone by, placed them or their predecessors in the very forefront of the world's cultivators of coffee. Of course there are exceptions; but we take it this is what our correspondents generally mean to imply. As regards "jât" we are shrewdly reminded that "a good jât tea as a rule gives more strength; but medium jâts give a better appearance and sometimes better flavour"—to which may be added the fact that "indigenous" and so-called high class jât tea, has undoubtedly been found in Ceylon more subject to "blight" than the hardier Assam-hybrid. In judging of the older planting districts, we must always remember how most of the estates were made out of old coffee or scrub land, and yet a good authority declares that estates within a ten mile radius of Kandy can hold their own as regards "quantity," though the average price for their tea can never be a high one. Tea of a good fair medium strength (says a planter within the radius) can be made; but there are too many competitors in the same grade, to benefit much thereby. On the other hand, he adds:—"we have the advantage of cheap transport which is not enjoyed by some other medium districts." The influence of "fine plucking" as regards quality and of particular seasons as respects both quantity and quality, must not be overlooked; while no doubt from "Dan to Beersheba" the cry of "the poor but honest and industrious planter" will find an echo, when he says:—"We can all grow tea, but it is a hard struggle to grow it so as to leave a margin of profit with low prices and high exchange." Nevertheless, let us hope that an increased demand for Ceylon tea in North America, Russia and the Continent generally may make the "margin" a real and constant factor; for as the old song has it:—

> "We've lippen'd aye to Providence,
> An' sae will we yet.

Only the tea planters of Ceylon know well, and act on the knowledge, that Providence generally helps those who help themselves —so, let the "Tea Cess" continue to be wisely administered and may our Indian planting neighbours do their best to get a similar Cess collected on their tea, so as to secure the means for driving out 'China's and 'Japan's' from North America and the Continent of Europe, at the earliest possible date.

MANURING FRUIT-TREES IN HOLSTEIN.—A method of fertilising fruit-trees in vogue in Holstein is suggestive, and not unworthy of a trial. The trees, it is said, receive no cultivation, and the fruit is large, sound, and produced in abundance. Every two years a few holes are dug in the ground about 4 or 5 feet from the trunk of the tree, and about 1 foot deep, closer and shallower in the case of young trees. These holes are filled with liquid-manure about four times during the winter months, and for young trees this is diluted with water. If there is more liquid-manure than is wanted, it is distributed over the surface of the orchard, using an old street sprinkling-waggon for the purpose. There is no reason why manure water should not be used once or twice after it is seen what the crop is likely to be; of course, not affording any at that season to trees not bearing a crop, or which are carrying only a few fruits, as to dose them would be to encourage, probably, an unnecessary growth of shoots. But in this matter, the cultivator must be guided by the condition of the trees, and of the soil.

ALLEGED CEYLON TEA CONFISCATED IN LONDON.

There is more in this matter than we understood at first and we hereby call on the Chamber of Commerce or "Thirty Committee" to investigate the same. It seems from all we have been able to learn that the tea actually confiscated and destroyed in England, *was landed there in bags* and is alleged to have been discharged by one of the "Maru" boats. Now, we understand that no such shipment was made by any steamer from Ceylon: and Ceylon tea is never shipped in bags. Either "an enemy hath done this"—some one from Japan sending the stuff on and labelling it as from Ceylon—or the London Customs has made a mistake as regards the port from which the bags came. Could not the Agents of the "Maru" boats be asked to make inquiry in London and ascertain on what documents the Customs officials fixed "Ceylon" as the country from which the stuff came? We do not think the matter should be passed over, as it ought to be easy to trace where (if not by whom) the shipment was made.

JAVA QUININE.

Mr. C. W. van Heeckeren, Director of the Bandoeng factory, has written a very long letter to a Java paper to protest against certain serious insinuations made in that journal, in which it was alleged that the Bandoeng works had carried on a private speculation in quinine made by them for Java planters. It was said that the factory had led the planters to believe that this quinine was held in stock for the planters' account, whereupon in reality it had been privately sold by the factory. Prices subsequently rose, and when the planters gave orders for their quinine to be sold, it transpired that it had already been disposed of mouths ago, whereof the planters decided to break off relations with the Bandoeng works, and to consign their barks to Amsterdam as before. The statement was made that the German quinine-makers, out of their enmity to the Bandoeng works, had purposely engineered a rise in the market as soon as they got wind of the aforesaid speculation, so as to bring about a breach between the planters and the Bandoeng works. Mr VanHeeckeren denies all these allegations. He says that the factory is debarred by its articles of association from trading in quinine, all that the works make being sold through to Messrs McNeill & Co., of Samarang. The accounts between the works and the planters are settled in March of each year, when Messrs McNeill are in possession of the account sales for the whole of the preceding year. No one could have foreseen the sudden rise of quinine to 1s 9½d last March, and Messrs McNeill before that rise had sold at from 12½d to 14d per oz on delivery. On January 1st about 5,000 kilos of quinine had been made by the factory, for which the owners had not yet received an account sale. Of this only 120 kilos were at the works, 1,000 kilos were at Batavia, and 3,600 were on the way to various ports. During January and March about 3,200 kilos made at Bandoeng were sold. Mr Van Heeckeren complains that the Bandoeng factory is badly supported by the Java planters. Some of them habitually belittle it, and carp at its working. The total production of the Bandoeng factory between January 1st and March 13th was 320,000 oz, of which Messrs McNeill had sold in the same time 253,580 oz, at an average equivalent of 7c per unit gross. Incommenting upon Mr Van Heeckeren's letter the Java paper maintains its allegations, although it acknowledges that the speculation was not undertaken for motives of illegal personal gain, but was merely an ill-considered speculation in the interest of the planters, who, unfortunately, have turned out losers over the affair.—*Chemist and Druggist*, June 24.

AGRICULTURAL PRODUCTS OF TOGO-LAND.

The principal products of Togoland (a German colony in West Africa, between the British gold coast possessions and Dahomey) are oil palms, coco palms, india rubber and coffee. The most important from the European point of view is the kola nut, to the cultivation of which great attention is being paid. Regulations have been issued to prevent the wanton destruction of india-rubber trees, and the dealers receive licenses from the Government. Only natives are allowed to collect this product, strangers being forbidden to ply the trade without a special license, which costs £50 a year. It is not allowed to give natives an advance on the year's yield. According to a recent report by the Second Secretaries of H.M Embassy in Berlin, the cultivation of the oil palm has not yet been undertaken by Europeans, and remains in the hands of the natives. Good building wood is supplied by the following trees:—*Chlorophora excelsa, borassus flabelliformis* and *eryodendron anfractuosum*. There are six coffee plantations, the number of trees varying from 30 to 3,000. The yield is given as 4,300 kilogrammes (9,479 lb.) Coconuts last year were grown in five plantations, varying from from 33 to 1,000 in each, and the yield was 10,000 nuts. New undertakings are in view. In the mountains, five days journey from the coast, the natives are growing coffee with success, and plantation on large scale with European capital will shortly be commenced. The india-rubber tree (*manihot glaziovii*) is grown in the coffee and coconut plantations. It does fairly well, but suffers from a blight (*Loronthocos*) which does much damage. Cassava (tapioca), yams, maize, and earth nuts are also cultivated with success. An experimental plantation is carried on at Sebbe. It has been found that the trees which do best are mangoes, eucalyptus, banana, bixa orellana, oranges, and coffee. Mulberry trees do well in the rainy season, but three-quarters of them die in the dry season. A new garden is being started at Lome, where native gardens are being trained. Coffee, manihot, *kikxia africana, inophyllum, &c*, are being raised from seed. The following annuals are being grown:—*Ricinus, sesamum indicum*, oil plants, maize, *andropogon* and *corchorus capsularis*. —*Journal of the Society of Arts*.

COFFEE AND TEA IN THE NILGIRI: OOTY, June 3rd.—A doleful year this is likely to be, my masters, for planters of coffee, for prices are falling, falling every day, and there seems no end to the depths into which they are plunging. And to make matters worse, if worse they could be, the rain on the open blossom has done immense harm to crops. Kotagiri way they are still hopeful, but there hope is getting thin. Coonoor,—well there is an end of hope for them, and the damage to the coming crop is put down at one-third to two-thirds of the whole. On the western slopes, in the Ouchterlony Valley and Nallacottah, things are a great deal better, one enthusiast declaring his 1899-1900 crop will be one of the best on record. Tea, of course, is sharing in the general improvement in prices, and the season is, moreover, and exceptionally favourable one. New Hope, one of the Valley estates, is attaining quite a respectable position in the home market, and for very good all-round breaks too. Another estate, long known for its excellent prices, Nonsuch to wit, on the Coonoor side, is also coming forward again after a year's slum.—*The Indian Planter's Gazette*, June 10.

PENRHOS ESTATES COMPANY OF CEYLON, LIMITED.

REPORT.

The report of the directors for the past year which is as follows was taken as read :—

"The Directors have pleasure in laying before the Shareholders their Report and Accounts for the year ended 30th June, 1899.

The amount of Tea secured was 201,020 lb.—158,106 lb. on Estate account, as against an estimate of 165,000 lb. and 42,914 lb. manufactured from bought leaf.

In view of the severe drought during the latter half of the Season, the crop may be considered satisfactory.

The following figures, shewing the results of the past three Seasons, will be found interesting.

	Crops in lbs.	Cost laid down in Colombo in cents.	Or without Manure.	Nett Average Price.
1896-97 ...	155,625 ...	27·52 ...	26·31 ...	36·42
1897-98 ...	145,250 ...	26·23 ...	25·65 ...	39·12
1898-99 ...	158,106 ...	25·41 ...	24·05 ...	41·03

These figures refer to the Estate tea only.

As regards the Season under review, the total crop secured has cost, laid in Colombo, cts., 26·43, and has realized a nett average price of cts 40·27.

Included in the proceeds of tea is a sum of R506·80, being balance proceeds of tea unsold at 30th of June last year and estimated for.

After payment of the Interest on Debentures, namely, R 3,030·00, the amount at credit of Profit and Loss Account is R23,237·52, which is equal to 15½ per cent on the Capital of the Company, as against 9 per cent last Season, and 5¼ per cent the year before ; this may be considered very satisfactory.

The Directors recommend that this sum be apportioned as follows :—

By the payment of a dividend of 10 per cent for the year	R	15,000·00
By the payment of a bonus to the Superintendent	,,	1,000·00
By placing to Reserve fund ...	,,	7000·00
By carrying forward to the next Account	,,	237·52
	R	23,237·52

The Directors desire to place on record their appreciation of Mr. J. E. Martin's management of the Estates during the Season under review.

It is proposed to open a further 10 acres in Tea during the coming Season, and another 20 acres in 1900-1901, there being sufficient Capital in hand to do this.

The Acreage of the Company's Estates is as follows :—

Old Tea	508	Acres
Tea under four years ...	25	,,
Tea not in bearing ...	24	,,
Forest	51	,,
Waste and Patna Land ...	212	,,
Total	820	acres

In terms of the Articles of Association, Mr. W B. Kingsbury retires from the Board of Directors, but, being eligible, offers himself for re-election.

THE FUTURE OF COFFEE,

(By a Planter in India.)

The whole of my argument turns on the supposed increase in consumption, the check on production, and the probability of a rise in the rate of Brazilian exchange. As regards the first condition, I rely mainly on the analogy of 1881-86, but there is plenty of direct evidence that consumption is increasing. It is true that

THE CONSUMPTION OF COFFEE

in the United Kingdom has not increased with the population, but the *Westminster Gazette* reports an enormous increase in the year ending March last in the number of cups of coffee sold in refreshment rooms. One firm alone used 134 tons of coffee in 1898-99 for this purpose, against 48 tons in 1897-98. Still, it is to the great coffee consuming countries of the Continent and America that we must mainly look to dispose of the increased production. The average annual consumption in ounces per head of popolation of late has been as follows :—Holland, 370 ; Denmark, 247 ; Belgium, 176 ; United States, 155 ; Switzerland, 112 ; Germany, 78 ; France, 53 ; Austria, 32 ; Italy, 17 ; Great Britain, 11 ; Spain, 9 ; Russia, 3. The British Consul at Hamborg, which is the great importing centre for Germany and its immediate neighbours, reports that, as a natoral consequence of the low price of coffee in 1898 (about 9*d.* a lb. in spite of high import duties), there is a largely increased consumption in Germany and other countries. The following figures for deliveries in the United States are from the *American Grocer* :—

	1896-7	1897-8	1898-9	
Avg. monthly deliveries.	424,049	503,026	497,435	bags.

In 1897-98 the deliveries were the highest on record and unduly stimulated by the fear of a duty, but those of 1898-99 show little falliog off. Yet with these heavy deliveries, the *American Grocer* says, there was no gain in stocks, showing that the coffee actually went into consumption. This consumption was per head of population :—In 1896, 8·7lbs ; in 1897, 10·9lb.; in 1898, 10·7lb. The New York correspondent of the *Grocer* gives the following consumption of made coffee per head of population :—In 1893, 14 gallons; in 1898, 19 46 gallons. He attributes the increase to the great roasting firms selling coffee at 5*d.* a lb., and estimates that nearly four times as much coffee is drunk as there is tea, because coffee is the cheaper beverage. The English retail price of coffee has remained at about 1*s.* 8*d.* a lb, for the last 25 years, whether the wholesale price was high or low. If cheap coffee was pushed in England as in America, we might see a great increase in the consumption of the United Kingdom.

Turning next to the

CHECK ON PRODUCTION,

the following facts will showI considerably understated my case. From Mexico, Ceylon planters who have tried coffee cultivation there are returning and reporting in the *Ceylon Observer* that cultivation is unremunerative at present prices. A local (Mexican) paper says :—"The present price of coffee offers no margin to planters worth talking about. It is plain therefore that plantations will be abandoned and the crops reduced until prices rise again. It will be remembered that about 15 *years ago, under very similar circumstances an extensive area went out of cultivation.*" From Ecuador and Venezuela it is reported coffce is being abandoned for new industries. Probably the same is true of the other Central American countries, as we know they all complain of the scarcity of money hampering trade ; and a disease has appeared in Guatemala and Nicaragua "which has made many plantations valueless." The British Consul at Rio reports the same movement toward new industries, and says :—"On more than one occasion the current price of coffee did not cover the carriage from the interior, so that it is fully expected by those interested that, owing to neglect in clearing the trees and the abandonment of new plantations every year will show a gradual diminution of production." In spite of the optimistic views of the Presidents of San Paulo, the Brazilian papers do not hesitate to say, that "the coffee industry is no longer a paying one," and that even estates like the San Paulo Coffee Estates, bought at comparatively low prices and worked by cheap European capital, are not remunera-

tive. The Santor correspondent of the *Brazilian Review* reports that planters are trying to combine to reduce wages, but that the Italian labourers are leaving the estates and are settling in the towns. We all know by experience that an attempt to reduce wages when labour can go elsewhere is a policy of desperation!

Nearer home it is reported by Mr. Elliot and the Coorg Planters' Association that

A LARGE ACREAGE OF NATIVE COFFEE

has been abandoned in Mysore and Coorg. From the Straits, the *Malay Mail* and Sir Græme Elphinstone, a Ceylon planter settled in Perak, report that planters are being driven by low prices to abandon coffee for coconut cultivation. The British Consul in Java reports that sôme plantations are being disposed of and more are likely to be abandoned if no improvement in prices takes place. In fact, not only is there a decided check on the increase of production all over the world, bnt a prospect of an actual diminutiou of production. And East Indian planters have this advantage on the present occasion. Fifteen years ago East India prices fell *pari passu* with those of Brazil; but the prices of all rough coffee began to fall heavily in 1897, wheras East India prices were not seriously affected till this year. So that, taking into account only the effect of the natural increase of consumption and check on production caused by low prices, it should, on the analogy of 1881-86, take only two years more for prices to rise again. This is the actual time named by the *American Grocer* as that during which grocers can reckon on low prices.

This calculation, however, leaves out the factor of

A RISE IN BRAZILIAN EXCHANGE

which is almost certain to occur. The following figures will show that the value of the millereis depends almost entirely on the amount of paper money in circulation:—

	Paper money in circulation.	Rate of Exchange	Population (including Indians.)
In 1887-9	about 200,000 contos	22*d*. 27*d*.	14,000,000
In 1892	„ 556,000 „	12*d*.	15.000,000
In 1898	„ 790,000 „	8*d*.	17,000,000

For an increase of population under 25 per cent. the paper money was nearly quadrnpled, and Exchange fell in 1897 to under the quarter of the par value which obtained in 1889. The quadrupling of the paper money made no difference in the gold value of the circulation per head of population, which was almost exactly the same in 1898 as in 1889. This fatal over-issue of paper money was due to false ideas of the value of money, to the weakness of constantly changing Governments, to reckless extravagance in the cost of administration, and to gross laxity in the collection of revenue. In December, 1896, an attempt was made to raise the value of the millereis, and a law passed assigning certain funds to the redemption of paper money; but practically very few of these funds were applied to this purpose up to 1898. In that year the President-Elect paid a visit to Europe and arranged with Rothschilds the following scheme, which came into force on the first July, 1898:—£10,000 000 is to be advanced by Rothschilds on the security of the Customs revenues, and the interest on the Government debts, amounting to nearly £3,000,000 a year, is to be funded for three years. As funding bonds are issued, Government undertakes to deposit an equivalent amount in paper money at the exchange of 18*d*. per millereis with certain Banks. This paper money is to be destroyed, or used to purchase Bills in London when Exchange is favourable, that is, at or over 18*d*. per millereis. By this means it is proposed to reduce the excessive paper money by 133,000 contos (thousands of millereis,) when it is expected the millereis will rise to 18*d*., "the rate agreed on." Strict economy is also to be practised by the Government, and the revenue is to be duly collected, when it is expected to yield much more than it has hitherto done. Up to March last, or for nine months since the scheme came into force, Government has burnt 9,000 contos of paper money; has paid off 31,000 contos of debt instead of as usual incurring fresh debts, and had a credit balance of 2,600 contos with the Banks in place of the usual debit balance. Up to the end of 1899 the benefits of the scheme will be retarded by the debts contracted in 1897, but from 1900 onwards the full benefits of the scheme will be realised.

Although since the new President came into office the Government has faithfully fulfilled its obligations, it is obvious that this scheme cannot be judged by its effect on Exchange in the first nine months of its existence. As a matter of fact, Exchange was raised at once from about 6*d* to 8⅝*d*., and though it receded a little below 8*d*. for a time it now stands at 8 3-32*d*. But the Government of India's scheme for fixing Exchange failed to be of any beneficial effect to Indian Exchange for the first two years of its existence, and yet succeeded in the next two years in raising the value of the rupee to the desired level. So probably every year the Brazilian scheme is kept at work its influence will increase in geometrical progression. We may fairly hope that the Brazilian Government, having begun so well, will carry out the scheme without wavering—more especially, if it does not raise the millereis to 18*d*. in three years time, it will be face to face with bankruptcy.

There is another reason which has not yet been touched on why coffee prices cannot long remain at a low level, and that is

THE INCREATED COST OF PRODUCTION

all over the world. Twenty-five years ago coffee was grown in India chiefly without manure. Now manuring is almost universally necessary, and this has increased expenses quite 50 per cent while the yield has not increased. In Brazil, the substitution of Italian for slave labour, the exhaustion of land near the sea board, and the opening up of districts in the interior seems to have increased the cost of production about 75 per cent in the last 15 years, for Brazil coffee is now worth in millereis quite that much more than in 1885 and yet does not pay any more than it did then. Thus:—

	Gold price.	Exchange	Millereis price.
1885-6 ..	48 francs	19*d*.	24
1798-9 ..	34½	8*d*.	41

Similarly the cost of growing in Central America must have about doubled, as the rate of Exchange in nearly all Central American States is about half what it was 25 years ago, and yet present prices are unremunerative.—*Madras Mail*, July 17.

THE "STATIST" ON TEA PROSPECTS.—The following are the material parts of the article we referred to on Saturday:—

We think, that the prospect before the tea-growing industry of India and Ceylon is a favourable one at the present time, and that the moment is opportune for considering investments in the shares of sound companies. In this industry, as in others, there is no lack of "wild-cat" enterprises; but there are also good and sound ventures which may be brought to give a comparatively high yield, and at the same time afford a reasonable measure of security. We give below some notes on companies which have recently issued their reports, which will assist readers in making a selection. As the fall in last year's profit is due in the main to temporary causes, there seems a prospect of larger distributions in the future, and some may be inclined to invest in the shares as a somewhat speculative lock-up.

Ceylon Tea Plantations.—This is one of the older companies, which has the recommendation of having maintained a dividend of 15 per cent. on its Ordinary shares for many years. Profits for 1898 were £41,381, as compared with £42,199 in 1897, the slight decline being due to the crop being rather below that of 1897 and to a rise in exchange. The issued capital of the Company is as follows:—

£	Shares.	Nom. value. £	Price.	Yield per cent.
167,380	Ordinary	10	26¼	5¾
81,080	7 Per cent. Pref.	10	18	4

The reserve fund now amounts to £95,000. At present prices, both the Ordinary and the Preference merit attention.

Correspondence.

To the Editor.

AN ANSWER TO "QUERIES FOR TEA MAKERS":

MR. THORNTON PETT'S ANSWER.

Elpitiya, July 11.

Sir,—I have just come across a letter in your last weekly edition, signed "Enquirer" asking "what errors in the manipulation of tea leaf could cause the *dry* leaf to have a reddish brown appearance." Here are a few suggestions, at his service, towards an answer:—

Under-withered leaf kept rather long in wet weather, gives, as you say in your note, a large percentage of red leaf.

Over-withered coarse leaf also gives a very large percentage of red and reddish leaf.

One seldom gets a good colour on tea made from fields in which the bushes have run a long time from pruning. Leaf carelessly treated in the withering lofts, left in heaps, and trodden on by coolies also turns out a reddish tea; so does leaf that has got heated in bags or baskets whilst in transit to factory. The remedy for these is obvious.

I believe it is the almost universal experience in Ceylon, and I know it is a fact in several districts at medium elevations, that leaf plucked during a prolonged drought, and especially if there is any wind at the time, gives tea with a very pronounced reddish tinge, however fine the plucking may have been and though there may be no actual red leaf in it. This tea, though wanting in black appearance, generally sells well as the flavour is decidedly augmented: this is notably the case in Uva, witness the sale prices of teas made on estates there in July and August, the dry months of that side of the country.

Re your correspondent's second query: "Does the handling of the leaf in the drawers of drier cause greyness of the dry leaf?" If he fills his drawers or trays properly, there should be but little handling required, and the *necessary* amount of such handling will not perceptibly "grey" the tea. A mistake some tea makers are apt to make, under the false impression, that they are saving time, is allowing the firing coolies to lump on to the drawer or trays as much rolled leaf as they possibly can, when a good deal of turning over is, of course, required to get all the leaf fired equally. Trays should always be spread thinly, and pushed or worked through quickly. It is well to bear in mind the rule that was in force when we used chulas, *i.e.*, that it should be possible to see the fire through the leaf on the loaded tray. Leaf *saturated* with water just before being put into the drier will, however, come out rather grey if much handled by the firing coolies, and a sort of black "soot" or bloom will be found adhering to the coolies' hands and the mesh of the tray. I have ascertained this from actual experiment. This bloom is, of course, sap from the leaf cells broken up in the rolling, and which has got diffused over the surface of the leaves. It follows from this, I think, that leaf which has been carelessly fermented, and allowed to get dry during the process should be only slightly moistened with water before firing and not saturated as I have seen it done by some tea makers.—I am, &c.,

GEO. THORNTON PETT.

TEA: AN INDIAN AND CEYLON DISTRIBUTING AGENCY.

Madulkele, July 19.

Dear Sir,—Could not the present moment, whilst the Indian and Ceylon trade in tea is at a standstill, be seized as an opportunity for starting an Indian and Ceylon Distributing Agency, and break down effectually the combination against us? The Agency's duty should be to buy tea as required in the London market (no draft allowance) and supply outside dealers, grocers, and even take private orders of not less than a chest or box. Advertise in every paper supplies direct from importers at wholesale rates, expenses of starting to be guaranteed by Indian and Ceylon Planters' Association—latter out of Thirty Committee funds. Surely with such good men on the spot as Rutherford, Henry Bois, Leake, Campbell for Ceylon and others for India, the thing could be done. The Agency started and properly organised at once, and a Company of Indian and Ceylon men would doubtless come forward afterwards to take over the going concern.

I think the attempt to do away with the 1-lb allowance has been a mistake, and has been undertaken without sufficient forethought or preparation and at an unfortunate time. I don't believe that the new arrangement, if carried, will benefit growers one bit. It is not wise to interfere with the channels through which trade passes; but now that the channel is blocked why not make a new one?—Yours truly,

CUSTOS.

LOCAL ALLOWANCES ON TEA.

July 19.

Dear Sir,—Here is a resolution that has been omitted at the Tea Traders' Association meeting to be held today:—

"That before we take any active steps *re* 1-lb. draft in London, we must wash our hands clear of the allowance we have imposed on sellers in our local market."

PLANTER.

[Will "Planter" tell us plainly what he means? Does he want his tea sold without any samples being given out?—if so there will be little or no chance of bids. Does he grudge 3 lb. for samples out of 1,500, or 1,000, or 500 lb.? If not, to make all his breaks up to that weight is the only remedy we can see. A merchant, who is himself a proprietary planter, declared in our office yesterday, that 3 lb. is now-a-days scarcely enough for sampling: so many buyers have to be attended to, in Colombo. "I wanted the other day" he said, "to see a little more of a certain tea than the wee sample I had got so I went round to the Brokers, and found they had less left than in the days when only 2 lb. were taken for samples."—"But is it

not hard," we remarked, "that 3 lb. should have to be taken out of 100 lb.?" "Well, whose fault is that, save the planter's, who is idiotic enough to send so small a break for sale?"—The remedy therefore is solely with the planter so far as we can judge, unless he cares to instruct his Brokers to give out no samples.—Ed. *T.A.*]

RUBBER IN MEXICO: CASTILLOA ELASTICA.

Henaratgoda, 21st July 1899.

Dear Sir,—I beg to enclose particulars on Castilloa Elastica cultivation supplied by a leading Rubber planter in Mexico at my request, who has several plantations of his own. I trust that the particulars will be nsefulto the readers of the *Observer* and *Tropical Agriculturist.* He writes:—"A good many plantations of this tree are being started all over the Southern part of this country now, but owing to their being still young, seeds have still to be gathered principally in the forests."—Yours faithfully.

J. P. WILLIAM.

"CASTILLOA ELASTICA."

(*To Messrs. J. P. Wiillam & Co., Ceylon.*)

Mexico, June 1.

The fresh seeds are sown with or without the surrounding pulp in the nursery bed at one foot's distance, giving them some shade, and keeping the ground well drained. The best soil is considered to be alluvial sandy loam, but I have seen very large rubber trees growing on clayey soil, and in many localities the trees seem to grow with preference on the hilly ground and not down in the bottom of the canyons.

When one year old the young plants are transplanted in the rainy season to holes dug previously in the ground, and if the tap-root is very long, as is apt to be the case if the plants, as done in some places, are left in nursery till two years old, it is simply cut, leaving it only ten or twelve inches long and letting it bleed profusely before planting it, as it is said that the clogged milk impedes its taking root quickly. Transplanting without cutting the root is however preferable, as is also transplanting "en-pilon" that is with the lump of earth surrounding the roots; but this is not always practicable when transplanting to a long distance. Cuttings are very seldom planted, and seem not to give good resnlts.

As for planting in the sun or in the shade, there are different opinions as to the proper course. Some claim that they ought to be planted in the forest in the shade of other trees, and that the sun hurts its milk-production, makes its rind thicker and prevents its growing old and strong. The other side claims that the young trees planted in the sun grow much more vigorously than in the shade, and that not only the greater facility and convenience in looking after the plantation, but also the actual increased growth favors plating in the sun. It is rather difficult to decide which is true in the absence of large old plantations formed on both plans, but I for my part am of the opinion that it depends greatly on the climate of the locality where the plantation is made, for whereas on the Pacific Coast and part of the Atlantic coast there is a long dry season, sometimes fully six months during which the sun may inflict somo damages on the trees and where consequently shade would be preferable, in other places as for instance on my own plantation there are rains in ten months or more in the year, and the moist atmosphere consequently prevents the sun from damaging the vitality of the trees, and especially if the altitude is from 200 to 500 meters over sea-level, as on my place, where a heavy shade would not be beneficial to the trees, since they would not get the necessary heat, and this is borne out by the fact observed by myself, that the young trees planted in the snn grow much quicker and stronger there than those left in the shade. Several planters in the State of Chiapas, however, claim just the opposite resnlt, their plantations heing sitnated almost at sea-level and farther south than mine. On the other hand I have seen a plantation of yonng trees grow nicely at a height of over 700 meters altitnde, but these I am inclined to think that the ahsence of the necessary heat may have an adverse influence on the latex of the grown tree. I have fonnd that lime and green mannre seem to help the growth of the trees very much.

The distance hetween the trees varies much. Some give them as much as 20 feet, bnt the average seems to be 15 feet. Some few give only 12 feet bnt without planting anything else between the trees, and a few are trying the Trinidad system of planting at 8 to 10 feet only, intending to uproot and thoronghly bleed one half later. Of course, in selecting the distance, the quality and configuration of the soil and the climatic conditions have all to he taken into consideration. Where the gronnd is very wet and inclined to form pools, it seems advisable to follow the system of forming a hill around the foot of each tree, as, contrary to the "Hevea" excessive moisture and swampy land seem to hurt it.

I do not think the Castilloa Elastica onght to be tapped till in its eighth year to avoid injuring the tree, nor do I think that planters onght to effect snch fahulous yields as five or more pounds a year, as some enthusiasts promise. Here we generally make the safe estimate of one to two pounds of rubher per year, and rather the former than the latter.

Plumbago.—We have received copy of a valuable paper on "Graphite: its formation and manufacture" by a competent scientist, which will be given in full in our *Tropical Agriculturist.* It is curious to read that the only difference between the diamond and graphite—both being carbon—is one of *pressure*, the former being the result of high, and the latter of low, pressure. A formula we have already published runs:—(1) Diamond, (2) Plumbago or Graphite, (3) Amber, (4) Coal, (5) Peat, (6) Petroleum.

The Camphor Monopoly in Formosa.—A Taipeh correspondent writing to a Hongkong paper on 29th June says:—

Preparations for the operation of the camphor monopoly law, which will come into force on the 5th August next, are now in progress, and it has been announced that six camphor offices will be established, namely at Taipeh, Tekcham, Miori, Taichu, Rinkeho, and Giran. It is the intention of the Government to improve the present method of packing by making the chests of pine instead of camphor-wood as hitherto and lining them with zinc, so that the contents can be kept for a long time without loss by evaporation. If all the stills now in use are well managed they have a capacity of turning out some 150,000 piculs a year, while the world's consumption is roughly estimated at forty or fifty thousand piculs only. The Government therefore intends to greatly decrease the present number of stills so as to keep a fair proportion between demand and supply and to ensure a fair price for the drug. As regards the manner in which the Government will sell its camphor nothing definite has been decided, but according to a competent authority the Government will not sell the drug at all for the present but will allow an interval of six months or a year to elapse, when it is anticipated the article will fetch three times the price paid for it to the producers. Owing to the importance of increasing the general revenue to make it balance the expenditure the Government, it is stated, desire to get a million yen out of the monopoly.

A VISIT TO THE RAJAKADALUWA COCONUT PLANTING DISTRICT.

THE YEARS' EXPERIENCE OF COCONUTS.

CHILAW RESTHOUSE is placed in an exceptionally healthy situation, on a rising bank facing the sea, and it is neatly and substantially built; but with an entire disregard of ventilation in respect of the bedrooms. Either window or door must be left open at the risk of thieves, or closed with a lack of fresh air. The Malay resthouse-keeper, who has had eight years' experience, is one of the best managers in the country, second only, perhaps, to the veteran at Negombo who has had 23 years' service, but is still the active, bright, intelligent Sinhalese he has always been from Sir Charles Layard's day onwards and yet only an Arachchi when he ought long ago to have been made a Muhandiram! Mr. Ellis, however, cannot overlook so faithful a servant—since he has known him since he (Mr. Ellis) was a young Police Magistrate at Negombo.

On the long creeper-covered, sandy, backwater bank in front of the gaol, resthouse and other buildings at Chilaw, an interesting experiment is being made in growing coconuts, shelter being provided. This shelter is indispensable in the South-West monsoon, as the difference between trees in front and behind the resthouse will show; but I am surprised the experiment does not extend to palmyras which would probably suit the soil and climate better, judging by the splendid clump of mature trees in one corner. Has any European planter in Ceylon ever gone in for

A CLEARING OF PALMYRAS?

I suppose not; the greater number of years than in coconuts, required to arrive at maturity, being a deterrent. But certainly the experiment ought to be made around and North of Chilaw. Mr. Martin, the leading Proctor (and son of honest John Martin, who with Carry and Lamont was long the best known of Negombo and Chilaw planters), has a good opportunity of making a fine avenue of palmyras on his plantation property stretching from the town to the Deduruoya.

Very delightful is the early morning—between 5-30 and 7-30—for a drive along a good road in this comparatively dry coast region of the island with the South-West breeze blowing. In 1895 I found Mr. Ingles, of the Survey Department, busy with his celebrated triangulation tower in front of Chilaw, and it was a coincidence that we should meet here again, Mr. Ingles meditating the erection of another tower after a permanent form to serve for observations, the top of the lofty and widely-known Chilaw R.C. Church (which Capt. Donnan and other mariners utilise) being now rendered unfit for triangulation purposes. Mr. Ingles was always one of the most active, and he has now become one of the more experienced, officers of his Department; and it was a pleasure to note his enthusiasm over the work going on in the triangulation, as well as in cadastral and topographical departments. His colleague, Mr. T. Hampton—son of an old friend, the late Mr. J. L. Hampton, so long proprietor of Penrhos and Hentleys estates—is busy with "boundaries and applications," the distracting work for which the Surveyor-General thinks a separate staff ought to be provided, so as to have his trained men free to go on uninterruptedly with the responsible undertakings now entrusted to them. Early as was our start northwards to Rajakadaluwa, it was not too early for industrious Tamils to be out attending to herds of cattle dotted over their

TOBACCO GROUNDS

for manuring purposes. All is fallow or in the rough at present; but to the extent to which manure can be got, this tobacco is cultivated freely, and is one of the most paying of industries. Why does not an artificial manure maker try an experiment on a Chilaw tobacco field—an acre would not involve much risk, and the object lesson that would show an artificial mixture to give better results than cattle manure, would attract universal attention. Nor would an experimentalist require to go so far afield as Chilaw: there is quite a large number of tobacco fields cultivated by Sinhalese North of the Mahaoya near Nyamadenai.

The road to the

DEDURUOYA

and beyond, is in much better order than in days of old. Mr. Simmonds, who built the bridge in 1894-5, is, I understand, still in charge of the district—left here, I am told, because he is supposed to be fever-proof! Be that as it may, he has made many improvements in the numerous small bridges or culverts and in general attention to his roads. His big river bridge is ready for a 2½-feet gauge light railway, and we had full evidence in a succession of crowded passenger coaches starting thus early for Puttalam, of plenty of traffic being available. The Deduruoya is a strange river; you never know where to find it! It has shifted its course greatly in the four years and so concentrated its full force against one end of the bridge that a series of wooden breakwaters had to be formed with piles to check the rush of floodwater in washing out the bank and perhaps the foundation! Between Chilaw and Rajakadaluwa, over six miles, there is far more evidence of life and cultivation than we can recall on our first visit ten years ago. There is an almost continuous line of gardens or plantations, frequent boutiques or bazaars, where all was loneliness in the "eighties," and where a cheetah quietly crossing the road in front of one's bullock cart was an ordinary afternoon's experience a decade back.

Plantain and coconuts are the favourite products, and I am told the whole roadside via Battuluoya to Puttalam is now fairly well occupied.

But I have to do with

RAJAKADALUWA

district and its 25 coconut plantations and gardens covering some 3,500 to 5,000 acres of planted land from the new clearing to fields 14 to 15 years old—from Amalgamated Tea Estates Co.'s (Messrs. Finlay, Muir & Co., Agents) Nellunkuliya of 400 to 500 acres with regular work for 200 labourers down to the

garden of 30 or 40 acres. There is, moreover, quite a group of Sinhalese villages with thousands of population scattered throughout the neighbourhood, who have benefited greatly by the money spent in planting coconuts; although more than half the permanent workers—perhaps two-thirds—are immigrant Tamils.

The pioneer of Rajakadaluwa was the late Mr. G. D. Miller, who originally came to Ceylon under the auspices of the Eastern Produce and Estates, or rather of the then Ceylon Co., Ld., and had experience as a coffee planter in Matale, before (while visiting Horrekelly) he became interested in the country North of the Deduruoya for coconuts. He got his land on the roadside at upset price and made a good start, though he was inclined, perhaps, to take too much out of the soil in plantains, and though he made a big mistake by planting his first clearing too close, the palms being four to six feet too near each other. What a difference this makes (the common practice in nearly all native gardens) was never better illustrated than in neighbouring fields—close and wide planted—on Mr. Miller's place: the trees are well grown on both, but the bearing qualities of the palms are vastly different. We first heard of Mr. Miller's pioneering work in 1887; and looking out at the time for a Coconut investment for relatives in England, we allowed him to purchase two lots, aggregating 166 acres, adjoining his own Rajakadaluwa which, with fees, &c., cost R2,125. This was called by one of the lady proprietors

TOYNBEE

(after the well-known philanthropist who gave the name to Toynbee Hall, in Whitechapel) and for its size and age (after a good many vicisssitudes) it is now one of the show coconut places in the district. Mr. Miller did good work in opening and planting Toynbee—though taking too much out in plantains for our taste—for two or three years; then he lost his health—a great deal of fever prevailing at times, especially while the soil was being turned and opened for planting—and during the last period of illness and our absence on furlough in England, the Toynbee fields got terribly neglected; and after poor Miller's sudden death from fever in Colombo hospital, there had to be a large expenditure to meet, in order to retrieve the mischief done, while the plantain contractor had bolted, leaving some R1,500 unpaid for fruit harvested by him! The first operation was to clear out all the plantains, make trenches and bury the stems, which, no doubt, both as an act of cultivation and means of nutrition, did much to benefit the young palms; but the number of supplies required was disheartening; and not till 1895 was there much pleasure in looking at Toynbee. Unfortunately "iluk" grass had been allowed to get in at one or two corners; and poor Miller's place became so neglected after his death, that some parts became a breeding-ground for beetles which swarmed over to adjacent plantations. Weeding, clearing stumps and logs and burning, and beetle hunting were, however, vigorously pursued, as well as careful supplying and the change wrought during 1895 and succeeding years under the careful direction of an experienced Negombo planter, who put conductors on the place and supervised them by periodical visits, was wonderful to see. Better or more economical work no property has ever had done for it. One thing for which credit may well be taken was the number of trees, supposed to be fatally injured by beetles which were saved by the complete cauterizing and scooping out of the part attacked, and then tarring the inside—so that now there are palms to be found with a full crop of nuts, whose hearts, for two or three feet, are all gone—whose sides in fact look as if someone had, for pleasure, cut out the figure of a canoe, leaving but a shell in half the stem. Nevertheless, this shell is found sufficient to sustain a vigorous growth and mature a good crop of nuts, and now there is not a beetle (or beetle's work) to be seen, unless a stray one should come over the high fence from where there may still be neglect and decay. Less success has attended the eradication of the "iluk": it is a most persistent, detestable weed and has cost from first to last an extraordinary outlay; but there is good hope that 1899—after a seven years' campaign—will see the last of it.

Mr. Jardine visited Toynbee during the first year and again two years after: his report was all that could be desired as regarded the immediate prospects and he made it clear that the place had a wonderful preservative against drought, in the brackish damp subsoil, which seemed to indicate that this region is the old site of a backwater, the land rising between it and the sea. This has been proved to be correct by experience; for the palms never droop even in the most prolonged drought. But Mr. Jardine—we may now mention—in 1888 and 1890—doubted

THE "STAYING" QUALITY

of the soil,—in other words, if it had substance enough to carry the palms to a healthy full maturity and give crops for many years. So far as it went, in its mixture of humus and brackish sand, it was perfection for young coconuts; but "How long would its sustaining powers continue?" was his question. Undoubtedly cultivation and the digging in of an extensive area of plantains, must have improved and strengthened the soil; for another "coconut" veteran, Mr. W. H. Wright in visiting and reporting at the end of 1895, though by no means prejudiced in favour of the district, after a very careful inspection and examination of the soil in the different fields of Toynbee, gave a most hopeful report on the prospects of the trees and plantation, if only justice were done in careful cultivation and, by-and-bye, in judicious manuring—which, of course, was also Mr. Jardine's panacea for the deficiency he feared.

No product—as old W. B. Lamont has well said, laying down the law 30 years ago, —no product in Ceylon responds to, or repays, so well for

MANURING, AS THE COCONUT PALM;

but few proprietors, we should say, will care to incur a cent of outlay in manure, artificial or otherwise, so long as there is no crop of nuts. Let something first be harvested, in the shape of crop, and surely then it is

time enough to call out for a little outlay on manure. For nine weary years, it was all expenditure on Toynbee without a cent of return. We are not at liberty at present to quote figures of outlay; but we may shew how the

CROPS OF NUTS

have increased since the trees began to bear. The seasons count from July to June and in 1895-96 came the first pluckings worthy of notice aggregating a crop of 33,788 nuts (22 nuts were gathered in June 1894, and 1,541 between that month and May 1895). The oldest trees were under 7½ years at the end of season 1895-6. The rise then may be given as follows:—

Season.		Age.		Crop nuts.
1895-6	...	7 years	...	33,788
1896-7	...	8 „	...	108,372
1897-8	...	9 „	...	200,125
1898-9	...	10 „	...	296,000

It is reckoned that little more than 6,000 trees on an average contributed to the last crop giving a return of say 49 nuts per tree; while, altogether, Toynbee should have 10,000 trees and plants of all ages growing, so that a large proportion has yet to come into bearing. But what about the "staying" character of the soil, it may be asked? Well, there is nothing in the appearance of the heaviest-bearing trees (and from some as many as 70 to 80 nuts have been got, in this last May-June plucking alone) to indicate any failure, or approach to failure, in regard to means of sustenance. The palms are all green and vigorous, although with few exceptions—to be noted hereafter —they have had little or no manure. One evidence of the neglect and suffering of 1891-2-3 is very evident throughout one or two fields in the irregular stems of the palms—the shrinking and less circumference noticeable at mid-height, no doubt indicating the check and loss of proper feeding which they sustained during the years when the plantains were allowed their own sweet will, as well as the weeds and beetles. Nevertheless, Toynbee, as a whole, is a most encouraging picture of a ten to eleven year old

LOWCOUNTRY COCONUT PLANTATION,

covering, we may say, 166 acres, all planted. It is by no means such a model of neat, almost perfect cultivation, as is Mr. W. H. Wright's far-famed Mirigama estate; but in crops, we suppose, it will, so far, compare with any plantation, we, at least, have ever heard of, with authentic crop returns in Ceylon. Still, let no one suppose that anything like big *net* returns are even now being got by the proprietors. The accounts have not yet been closed; but even with a crop of 300,000 nuts from, say, the equivalent of 100 acres, the outlay on the whole 166 will not leave

A PROFIT

exceeding R25 per acre probably, which would be laughed to scorn by certain of our "tea" friends with their R100 or even £10 sterling per acre of profit.

But there should be a future before Toynbee, more especially now that the era for

MANURING

has arrived. This was begun in November 1898 on certain selected plots of about four acres each, in different fields—two plots to each kind of manure and six plots in all. First, we have an artificial manure—"Baur's special fertiliser"—6 lb. per tree being applied in two marked plots (situated in two different parts of the estate); Second, another but even stronger (in nitrogen) artificial preparation from Mr. Baur (who owns the adjoining fine Palugaswewa coconut property), of 4½ lb. per tree and this was applied on two plots under similar conditions; while, Thirdly, 3 lb. bone-meal and 6 lb. castor-cake per tree were applied over exactly similar plots. No examination of results or proper comparison can be made, it is thought, much under two years from the time of application. Some useful data ought then, however, to be available, as the crop for each plot (number of trees and yield) is being carefully recorded.

The only other manuring attempted was over a few acres by village cattle, two or three years ago; and in 1896 ten ewes and a ram were secured as the beginning of an experiment in

SHEEP

manuring. These bred up to 50 (besides sales of several rams at about R9 each*) when an epidemic broke out and reduced the stock to 35. The great advantage is that sheep do not touch young coconut plants, while they keep down grass, cost nothing; but the herding, and, of course, their manure was of service. Now, however, that nearly all the supplies are out of danger, it is intended to begin a stock of Sinhalese or cross-bred

CATTLE

getting up to 60 or 70 head from a nucleus of a dozen, as there is really good pasture between the rows of palms and a couple of cattle can be reckoned to manure effectively an acre quite in a year. It will be instructive to watch the result over 20 or 30 acres, and compare it with the plots artificially treated.

One curious feature in Toynbee is the exceptionally numerous bunches of nuts on the young trees which require

TO BE SUPPORTED BY FORKED STICKS

with the other end pointed and fixed against the stem of the tree. Quite a constant work this has become for two or three Sinhalese men, and blame is cast on Mr. Miller for not leaving one or two acres of jungle from which such sticks could be cut, in place now of having to buy the same—a warning to other young planters! As the trees get older, it is expected they will be able to bear their heaviest bunches unsupported. Everything points to estates in the Rajakadaluwa district being in their prime between their 15th and 18th years. Unfortunately the oldest (Mr. Miller's place) which

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* Mr. Wright of Mirigama presented Toynbee with one of his young cross-bred rams which, developing a tremendous pair of horns, has become rather a nuisance through his love of constant butting, none of the others being, of course, able to stand against him!

is about the former age, cannot be taken as a fair test, through a large part being too closely planted and most of it being neglected; at any rate there has been an absence of proper cultivation for the past eight or nine years. Still, it is wonderful how, in spite of little being done for the palms, they go on cropping on this place and the story of their dying out, except it be when young from beetles, is not correct.

We do not say that crops on Toynbee are to go on increasing after the rate of recent years per tree; but if present appearances continue, there is no reason, we suppose, why the proprietors should not count on a crop of 550,000 nuts by 1904, and perhaps of 750,000 nuts when every one of the 10,000 palms is in full bearing. How long should such crops continue? That will depend on careful cultivation and judicious manuring. Meantime, the little place along with its neighbours has been

A BLESSING TO THE PEOPLE

of the district and of many immigrant coolies. The money spent during the past fifteen and especially the past six, years has enabled the Sinhalese to live far more comfortably than ever before. The

MESSRS. DE MEL

have three fine, young and extensive coconut plantations—one on each side of Toynbee—and all promising exceedingly well. On a young place, Karukkuliya (Mr. Manuel de Mel's) which we inspected, the planting has been most carefully attended to, and the plantain cultivation confined to a square in the centre space where it could not possibly injure the young palms. Wilpotha plantation (belonging to Mr. Jacob de Mel and his son-in-law, Mr. Barrister Pieris) under the skilful management of Mr. Edward MacCarthy, is older than Karukkuliya (two or three years younger than Toynbee) and promises exceedingly well, having 300 acres planted with 100 more to go in this year. It is a very valuable property. Mr. Baur has some 400 to 500 acres planted at

PALUGASWEWA,

the oldest field a year younger than Toynbee and which must prove a very valuable property. Still further inland, Messrs. Finlay, Muir & Co. are covering some 600 acres with the palm on Nellunkulia, under the experienced direction of Mr. Jardine as Inspector and Visiting Agent. Then there are the properties of Messrs. Mason and Manchip (being much improved under the latter's care), of Mr. H. J. Pieris, of Mr. Muttiah, of Mr. de Soyza, of Dr. Hallock, etc. Altogether there are 25 estaes, employing 1,200 coolies and covering 5,000 acres, perhaps, and the district altogether promises well. The feverish time of the year in the older properties is confined to November-December when the malaria-laden land-wind makes it very trying for coolies and Superintendents. The proprietors have been anxious this year to get the Government to open a Dispensary; but Dr. Perry thinks Battuluoya—half-way between Chilaw and Puttalam—the proper site. Rajakadaluwa, however, should have a

DISPENSARY

of its own to serve 1,200 to 1,500 of a cooly population and some 3,000 villagers. A few of the leading proprietors could readily erect a residence and dispensary and guarantee a salary, provided the supply of medicines was got free; but then comes the question whether coconut plantations so far north—even when employing immigrant coolies—come under the privileges granted in the tea and cacao planting districts? This must be inquired into. Here is an estimate done up by a resident planter:—

The undermentioned are the estates which would be directly benefited by a Dispensary at Rajakadaluwa:—

	Coolies.		Coolies.
Toynbee	50	Adv. Chitty's	10
Jacob De Mel's (Wilpotha)	70	Samarakoon Mudaliyar's	25
Miller's	40	Jacob De Mel's (Paniadikulam)	40
Manuel De Mel's (Karukkuliya)	15	C. P. Silva's (Johanawatte)	20
A. Baur's (Palugaswewa)	150	Messrs. Finlay, Muir & Co.'s (Nelunkullia)	200
Muttiah's	50	Messrs. Mason and Manchip (Sitamadama)	30
U. D. S. Gunasekara's	30	Dr. Hallock's	50
H. J. Pieris's	100	Seena Moona Shagoo Varusay's	50
S. G. Perera's	25	Ana Kana Modelali's	25
P. Fernando's	25	Varusay Modelali's	15
J. J. Lorage's	5	Goonoo Saiboo's	10
C. De Soysa's	40	Don Juan Appu Rendarâla's	30
Manuel De Mel's	50		

The time, too, has come when there ought to be an extension of Tamil Cooly and Sinhalese Itinerating Missions to the district and schools opened for the children. There is one Sinhalese grant-in-aid school at Karukkuliya, close to Rajakadaluwa, but no Tamil school yet.

Turning back to Toynbee, we should give a word to the convenient

COPRA DRYING HOUSE AND BARBECUE

—capable of holding the copra of 25,000 nuts, or 24 candies—a model erection for the rest of the district—the fuel being coconut shells (heat without smoke); copra store and drying ground. When the last is extended, the hope is that all the drying of copra can be done in the sun, so saving any discolouration. Hitherto, the nuts have been sold about equally to the Agents of the Horrekelly Desiccating Mills, and for the manufacture of copra, in both cases, the purchaser, after carefully checking, and rejecting perhaps, five per cent of a plucking of nuts as too small, light, empty or otherwise deficient—dries his copra or removes the nuts to the mills, leaving the husks on the estate. These latter are being utilised freely as surroundings for plants as also for filling up trenches.

The boundaries are generally marked by a

SAPANWOOD

fence which, perhaps, grows too freely, interfering sometimes with the first line of coconuts. We intended in the early days getting Mr. Miller to make a substantial experiment with American cotton and sent him some fine

seed; but we can only trace one surviving plant, also with "kapok," and of this there are some handsome rows of trees.

THE CHANGE.

The change in the appearance of the coco-palms and other trees in 3½ years, since our last visit, is very great. In 1895 even, a planter then resident in the district, we now hear, declared that Toynbee was only fit for a fire-stick, with its beetles and weeds! This gentleman ought to see it now. Another younger man, after a short time in the district has been spreading reports that it is no good for coconuts as trees die out before getting to maturity. We have been unable during the present visit to trace any cases of the kind even on Mr. Miller's neglected place. As regards the district, as a whole, no doubt, the building of the

DEDURUOYA BRIDGE

has had its effect in development since 1895. We can recall the inconveniences and occasional dangers of the old ferry, between 1888 and 1894. But this development is not confined to Rajakadaluwa, but extends right along the road to Batuluoya and even to Puttalam. Given a light 2½-feet gauge railway, and there is no question that very soon after its opening, a continuous scene of prosperous cultivation such as now marks the region from Negombo to Chilaw, would cover the whole 30 miles from

THE DEDURUOYA TO PUTTALAM.

Whether we may see cultivation arise alongside the broad-gauge Northern line in a certain number of years is a hard question to answer—at least for 50 out of the 80 miles between Kurunegala and Anuradhapura, if we are to judge by what planters, surveyors, road-officers and sportsmen tell us. However, for the first time in its Railway policy, the Government has chosen to leave the line of population and traffic and to construct a line through poor, unoccupied country,—the responsibility of this course is mainly with the local authorities while that of the broad-gauge employed rests with Mr. Chamberlain. The Colombo and Puttalam 2½-feet line (in connection with the Kelani Valley line) when it comes in the early part of the next century(?) will be found one of the most successful Railway Extensions in Ceylon and will help to make up for financial deficiencies elsewhere.

THE CLIMATE OF RAJAKADALUWA

is undoubtedly a dry and hot one: a rain-gauge has only just been established on Toynbee; but the estimate is of an average annual fall of about 60 inches, but this is aided by the moist character of much of the subsoil. The temperature can be very considerable; but the hot season is not unhealthy,—that is reserved for the land-wind (malarial) months of November and December.

Speaking of the great benefit to the local villagers which the employment afforded by a new series of plantations confers, we are reminded of the great similar benefit derived from the establishment of

DESICCATING MILLS

in our rural districts. To Messrs. Vavasseur & Co., the Colony is indebted for first introducing this new manufacture and industry, as also, we believe, for pioneering with the shipment of bristle and palmyra palm fibre, and of whole coconuts on a large scale from Ceylon. Their Colombo Mills was the first and largest for desiccating purposes and they have now established Mills at Lunuwila on the North of the Mahaoya, giving employment to some 1,200 men, women and children; and spending money amongst them, which is changing the face of the villages and their surroundings (where the people keep from arrack drinking). Then this is true also of the

ORIENT COMPANY

with its Veyangoda Mills, and now with its second venture so far North as Horrekelly; while the Ceylon Tea Plantations Company has its Mills at Hunupitiya, near Negombo. Altogether, we may suppose some 6,000 natives to be directly interested in these ventures; besides the large indirect number engaged in carting, buying nuts, etc., etc. All success to our CEYLON DESICCATING MILLS.

CACAO SOILS.

ANALYSES FOR TRINIDAD AND CEYLON.

We are greatly indebted to Mr. Cochran for sending us remarks on certain Analyses of Cacao Soils which have reached us from Trinidad, and still more for supplementing these with analyses of certain Ceylon Cacao Soils. Professor Carmody in Trinidad, after analysing no fewer than 23 samples, had a difficulty in making up his mind about them, so that Mr. Cochran may be pardoned if he is not dogmatic about the results in the two cases on which he has worked. Still, there are certain well-marked features which appear prominently and we feel sure Mr. Cochran's paper will be read with interest by all our cacao planters:—

I have now pleasure in sending you a few remarks on the analyses of cacao-soils made at the Government Laboratory, Trinidad, and published in the "Proceedings of the Agricultural Society" which you were good enough to send me recently. These are analyses of soils said to be of *average* fertility. It may be well, therefore, first to refer to another set of eight analyses of cacao soils from various parts of the West Indies made at the Government Laboratory, in the year 1897; as these, we were told, were types of really fertile cacao-soils. The report on them was to the effect that, "as a rule, these fertile cacao-soils are rich in nitrogen, and contain a somewhat high amount of potash, of which a relatively high proportion was found to be soluble in 1 per cent citric acid solution, whilst the proportion of phosphoric anhydride seems to be of lesser importance. They can, we consider, be safely regarded as reliable types of the composition of really fertile cacao soils." In another part of the report it was stated "we are led to the conclusion that a good cacao soil should be one capable of yielding to the tree in the course of years a somewhat high proportion of the important constituents of plant good without exhaustion, and also capable of rapidly rendering again available

the huge quantities of manurial matter returned to it in the form of prunings, leaves, fallen and broken pods. It must, in addition, be one, in which the course of nitrification readily takes place ; in other words, a fairly rich, friable and well-drained soil."

Instead of quoting in full the analyses of the eight samples of fertile soils, I shall simply indicate the range of some of the significant constituents of the soil, and state the average amounts of the more important of these present :—

FERTILE CACAO SOILS.

		per cent.		per cent.	Avge. p. c.
Water retained in air-dried soil ..	From	1·8	to	14·3	8·650
Organic matter and combined water ..	do	3·046	,,	10·993	
Oxide of Iron ..	do	3·910	,,	18·672	
Alumina ..	do	2·038	,,	17·140	
Oxide of Manganese...	do	·127	,,	·435	
Lime ..	do	·356	,,	4·981	1·695
Magnesia ...	do	·217	,,	3·367	1·276
Potash ...	do	·118	,,	·619	·300
Phosphoric acid ..	do	·044	,,	·293	·118
Chlorine ..	do	nil.	,,	·007	
Nitrogen ...	do	·100	,,	·309	·236

These figures show that these soils are characterised by a high percentage of lime, magnesia, potash and I may add, nitrogen; as only one of them has less than ·2 per cent of this substance The amount of phospheric acid in most of them is rather low. In five out of the eight samples it is under ·1 per cent. The one, however, which contained the largest amount of phosphoric acid was a sample from Nicaragua, and is described by Mr. J. H. Hart F. L. S., who supplied the sample, as a very fertile soil. Mr. Hart also vouched for the high fertility of a Trinidad sample, which contained only ·084 per cent of phosphoric acid.

The water retained by the air-dried samples varied to a great extent, viz., from 1·8 to 14·3 per cent. As some of these differences could not be explained by chemical composition only, they must be due to a considerable extent, to a different state of division of the soil-particles.

The amounts of chlorine in the samples are so low, that in two cases the chlorine is recorded as "nil," and in five cases as "traces" only, and only in one sample is there a numerical expression of the amount. All the samples contained appreciable amounts of oxide of manganese.

Professor Carmody, the Government analyst, considering that the data collected with regard to cacao-soil analysis was insufficient for anything like a classification of these soils according to their chemical constituents, had an offer, or rather the second offer, made through the Agricultural Society to estate owners, to the effect that samples of cacao-soils sent to the Government Laboratory would be analysed free of charge. Professor Carmody was anxious not only to be furnished with fertile soils; but with soils in which the cultivation of cacao had been unsuccessfully tried. The report of the analyses you have just sent me is that on the samples sent in response to this second invitation. There are 15 analyses in all, one of which is specially referred to and marked "Venezuela good soil." the others are regarded as soils of average fertility.

Professor Carmody's report on these analyses is so brief, that I may quote it in full. It shows that he still requires more data before he can draw general conclusions from the analyses :—

Government Laboratory, Trinidad, April 28, 1899.
The Secretary, Agricultural Society.

SIR,—I have the honour to forward the results of the analyses of samples of cacao soils sent by members of your Society, in response to an invitation from this department.

In requesting your members to forward samples, the main object in view has been to obtain not only good soils, but also those in which cacao has refused to grow, or to give satisfactory results. The Trinidad soils sent are ordinary cacao-soils of average quality, but I hope that now a larger number and variety of soils will be sent, and will include some bad cacao soils.

General conclusions drawn from the results of the analyses of a few samples are not safe; and, at present, I would simply direct attention to the comparatively large proportions of lime, magnesia, potash chlorine and nitrates in the Venezuelan soil, which is said to yield cacao of excellent quality. The small proportion of phosphates and total nitrogen it contains are also worthy of notice.

My long absence in England during last year contributed to the delay in completing these analyses, which have been made under my supervision by Dr. Ince, Assistant Government Analyst.—I am Sir, your obedient servant, P. CARMODY, F.I.C., I.C.S., Government Analyst.

Here again, instead of quoting the 15 analyses in full, I shall indicate the range and average amounts of several of the constituents of the 14 soils of average quality, and I shall quote in full the analysis of the Venezuelan soil specially referred to as yielding cacao of excellent quality:—

CACAO SOILS OF AVERAGE FERTILITY.

		per cent.		per cent.	Average per cent
Water retained by air-dried soil ..	From	1·040	to	9·48	5·048
Loss on ignition ..	,,	2·870	,,	9·00	
Oxide of iron and Alumina ..	,,	4·410	,,	14·920	
Lime ..	,,	·084	,,	·700	·309
Magnesia ..	,,	·076	,,	·493	·264
Potash ..	,,	·114	,,	·267	·217
Phosphoric acid ..	,,	·096	,,	·237	·156
Chlorine ..	,,	·004	,,	·009	
Nitrogen ..	,,	·067	,,	·165	.111
Nitrogen as Nitric Acid ..	,,	·0009	,,	·00335	·00175
Readily available potash and phosphates—					
Potash ..	From	·059	to	·1698	·115
Phosphoric acid ..	,,	·049	,,	·104	·0767

If the foregoing two sets of figures are gone over, it will be found that, in all important ingredients save phosphoric acid, the fertile soils are distinctly the richer, whether we take the minimum, maximum, or average figures ; whereas in the case of the soils of only average quality, the minimum and average amounts of phosphoric acid are higher to a marked extent than in the more fertile soils. This is not a little puzzling, and, indeed, before accepting this result, one would fain have the assurance of the analyst or analysts that the same analytical process was followed in both cases as otherwise the results are not strictly comparable. In the second set of analyses, the analyst has gone to the trouble of making two determinations of potash and phosphoric acid, with a view to form some idea of what proportion of these two substances is readily available. Roughly speaking, the readily available is about half of the total, according to these results, but this does not help us to account for the apparent anomaly of the more fertile soils being poorer in phosphoric acid than those of average quality, seeing that the minimum readily available phosphoric acid in the average soil is higher than the minimum total in the more fertile soils.

Supposing the samples to be fairly representative of the soils and the results of the two sets of

analyses to be strictly comparable, the legitimate conclusion is that the minimum amount of phosphoric acid in the fertile soils viz. ·044 per cent is still so much above what is required for the immediate future, at least, that it is just as capable as a higher proportion of meeting the wants of the cacao-trees; and, certainly, if we go into the calculation of the ratio of supply to demand in the case of the minimum amount of potash and the minimum amount of phosphoric acid, we find that the ratio of the supply of phosphoric acid to the demand is much the greater. For the calculation to prove this we may assume that 0·1 per cent of a soil-ingredient to a depth of three feet weighs four tons per acre. The minimum amounts of phosphoric acid and of potash to a depth of three feet, in the fertile soils analysed will thus weigh respectively 3,942 lb. and 10,572 lb. per acre. In my analyses of the parts of the cacao tree, I estimated that, between the ages of 4½ and 9½ years, a year's demand* of an acre of cacao trees was for phospheric acid 13·41 lb., and for potash 78·32 lb. Dividing the supply in each case by a year's demand, we get the ratio in the case of phosphoric-acid as 294 times, and in the case of potash only 135 times that of the year's demand.

However, the minimum amount of phosphoric acid was not associated in the same soil with the minimum, but with ·169 per cent of potash.

If the same form of calculation as before is made with this percentage of potash, we find the ratio of supply to demand to be 193, still much below that of the phosphoric acid. Again, if the calculation he made based on the average, or maximum of either the total or readily available amounts of phosphoric acid and potash in the two sets of analyses the advantage in favour of supply of phosperic acid is accentuated. It would thus appear that there is a greater likelihood of potash than of phosphoric acid being deficient in cacao soils.

The following is the analysis of the sample of Venezuelan good soil referred to in the Government Analyst's report:—

COMPOSITION OF AIR-DRIED SAMPLE OF VENEZUELA GOOD SOIL.

Water	10·74
Dry soil	89·26
	100·00

COMPOSITION OF THE DRY SOIL.

a Loss on ignition	7·610
Iron oxide and Alumina ..	6·200
Lime	·594
Magnesia	·782
Potash	·392
Soda	·177
Phosphoric acid	·147
Sulphuric acid	·036
Chlorine	·016
Insoluble silicates	84·046
	100·000
a Containing nitrogen	·071
,, Carbon equal to humus ..	·250
,, Nitrogen as nitrates ...	·00636

* By a year's demand or requirement is meant the plant food appropriated by the annual increment to the trees and by a crop of fruit, *i.e.*, seeds and pod-husks. If the pod-husks were left out of the calculation, as returnable to the soil, the ratio in favour of the phosphoric acid supply as compared with that of the potash would still be much the greater, viz., in the proportion of 337 to 178.

READILY AVAILABLE POTASH AND PHOSPHATES.

Potash	·1707
Phosphoric acid	·0820

Why Professor Carmody refers to the proportion of phosphoric acid in this sample of soil as small is not obvious, as the amount is higher than in any of the eight fertile soils, save one. It is, however, slightly below the average of the 14 average soils, with which he is dealing.

As a set-off against the low percentage of total nitrogen, it has the highest proportion of any of the fifteen, of nitrogen in the form of nitric acid, thus suggesting that the soil is possessed of good nitrifying power; but the amount of nitric acid found in a soil is not always an index to the nitrifying power. Nitrates being very soluble substances, the rain carries them down in the soil so that the same soil sampled in different states of the weather would yield differing results on analysis in respect of nitrates.

Warrington and others now employ a process for determining the nitrifying power of soils which is partly bacteriological and partly chemical. It consists essentially in seeding a convenient culture-solution with a few grains of soil and noting by chemical tests at intervals of five days the vigour with which the nitrifying process proceeds after it is started. If the culture solution is not affected, this is taken as evidence that there are no nitrifying organisms in the soil.

In most of the West Indian samples of cacao soil, the moisture in the air-dried earth is higher in proportion to the organic matter and alumina present than in our Ceylon soils. Take, for example, the sample of good soil from Venezuela. Its chemical composition is such as we would associate with about 3 per cent of moisture, whereas it contains 10·74 per cent. The large amount of moisture must therefore be mainly due to the physical condition of the soil.

The high percentage of chlorine referred to in the report on this sample of soil cannot, in view of the very small proportions found in the eight fertile soils, be regarded as an important indication so far as fertility is concerned; but it is of importance as affording a sanction for the use of chloride, that is muriate, of potash as a manure which is a cheaper salt of potash than the sulphate.

I trust Professor Carmody will continue his interesting series of analyses of cacao soils, giving us some results obtained by the analysis of soils in which cacao has failed to grow or to yield satisfactory results.

The following is the portion of Mr. Cochran's report and analyses referring to Ceylon soils:—

Amongst samples of Ceylon soils recently sent to me for analyses, two were Cacao Soils. It may be interesting in the present connection to quote the analyses of these: No. 1 is the analysis of soil from a Forastero cacao field.

No 2 is the analysis of soil from a Caracas cacao field.

The sender of these soils has been good enough to furnish the following description of the fields. "The field where No. 1 sample was taken from has never yielded much cocoa per acre for some reason. The land is steep, and a fair amount of rock in it. The soil is free and deep."

"The soil in the fields from where the second sample came looks much better than No. 1 sample; but the fields have been much longer in cultivation. There are lots of small patches throughout the fields where the cacao has died

out not from cacao disease. In most of these patches the shade is bad, and, judging from what you say in your report, the trees suffer from want of nitrogen. The land is flat with a stiff dark, brown soil mostly, and has not been manured much for past six years. Where cattle manure has been previously applied, the trees look much better even now."

ANALYSES OF TWO SAMPLES OF CEYLON CACAO SOILS IN THE AIR-DRIED STATE.

MECHANICAL ANALYSIS.

	No. 1. Forastero Field. Per cent.	No. 2. Caracas Field Per cent.
Coarse Earth	60·75	39·25
Fine Earth	39·25	60·75
	100·00	100·00

CHEMICAL ANALYSIS OF THE FINE EARTH.

Moisture	2·950	3·200
a Organic matter and matter lost by ignition	7·994	5·150
Oxides of iron	6·793	5·855
Alumina and oxide of Manganese	8·021	8·253
Lime	·793	·700
Magnesia	1·130	·632
Potash	·884	·274
Phosphoric acid	·062	·192
Silica, insoluble silicates and matters not determined	71·373	75·744
	100·000	100·000
a Containing Nitrogen	·193	·070

The mechanical analysis shews a great difference in the proportions of fine earth in the two samples, which is sufficiently accounted for by No. 1 sample representing steep land, and No. 2 representing flat land.

The only constituent that is apparently deficient in No. 1 is the phosphoric acid, this deficiency being relatively greater, on account of the small proportion of fine earth in the soil. It is true the proportion of phosphoric acid is decidedly higher than that of the minimum of the West Indian fertile soil; but the Grenada soil, which contained only ·044 per cent of phosphoric acid, had 14·3 per cent of water in the air-dried soil, shewing that the physical condition of the soil must have been very different. In sample No. 1 it is to be noted that the proportion of potash in the fine earth is exceptionally high.

In No. 2, the only constituent that is apparently deficient is the nitrogen or nitrogenous organic matter; hence the beneficial effect observed on this soil from the application of cattle manure. It is to be noted, however, that the nitrogen in this soil, when calculated to dry soil, as in the case of the West Indian Analyses, is fully as high as in the sample of Venezuelan good soil. The phosphoric acid is also higher, but the Venezuelan soil has more potash and a higher power of retaining moisture. The sender of these soils makes no complaint of cacao-fungoid diseases. It would be interesting to know how far the trees on these soils which are well-furnished with lime and magnesia are really free from cacao-disease. All of the West Indian fertile soils analysed are well supplied with lime and magnesia. In two of the average soils lime or magnesia is rather low; but in none of them are both lime and magnesia low.

M. COCHRAN.

HOW TO MIX FERTILISERS.

Fertiliser mixtures, uniform in quality and equal in every respect to the best factory-made fertilisers. can be made on the farm without milling machinery, A tight barn floor, platform scales, screen, showel and hoe are the only utensils needed. The materials having been weighed screened, and lumps pulverised the most bulky stock is spread in an oblong pile from six to twelve inches deep; upon its levelled top the next material is placed, and so on until all have been added like layers on a layer cake. Commencing at one end, the pile is shovelled over, the operator reaching clear to the bottom every time. The pile is then levelled up, and the operation repeated three times. The mixture may then be screened again if desired. In thus mixing his fertilser the farmer knows definitely what he has purchased. Each ingredient can be tested by itself if desired, and inferior materials are not likely to be palmed off on him. He can also vary the proportions of the ingredients to suit the requirements of varying soils.—*Farmer and Stockbreeder.*

THE COLOMBO AGRI-HORTICULTURAL EXHIBITION.

From an early hour on the 21st July, the grounds of the Agricultural School presented a busy scene, the finishing touches to the decorations being all worked off some time before noon. That things were so far forward, as the earliest visitors (the majority of whom were judges) found then this morning was due to the untiring efforts of the energetic Secretary, Mr. C. Drieberg, who has worked with the utmost zeal towards the success of the Exhibition. Exhibits began arriving early yesterday and amongst the visitors then taken round were Mr. Fowler, Acting G.A., Western Province; Mr. F. H. Price, Mayor of Colombo; Mr. Cookson, and Capt. Lowndes, of the Police; to whose plans the efficiency of the police arrangements this afternoon are due. Mr. Nock also visited the School buildings yesterday —ever among the first and, indeed, the most indispensable gentlemen, where a show of our island's products are concerned. Having taken a careful look round in every section we may say that the success of the Exhibition was never quite so marked as this year. In individual sections, more notably the Horticultural ones, there is a regrettable lack of competition. For instance, the Ferns in Pots were conspicuous by their scarcity and those who remember the wealth of "fernery" that adorned the verandahs at the further end of the buildings last year, will have been taken aback today by the want of display in this the most attractive of the finer kinds of greenery. There are numbers of residents in Colombo with excellent ferns in their bungalows, which, for want of a little confidence or enterprise on the part of their owners, might have been seen adding materially to the completeness of the Exhibits. But taken all round, there was a marked improvement, both in quality and quantity of the exhibits. This was seen most especially in local fruits and vegetables, *e.g.* jaks, pumelos, gourds, pumpkins, and brinjals—bananas alone forming a most surprising exception.

But to take things in order. Approaching the Agricultural School down the long avenue, one of

the most charming in the city of Colombo, the eye is caught at once by the splendid pandal that has been erected at the gate. At the top, the figures of 1899 are entwined in a circle and below the inscription reads :—

AGRI-HORTICULTURAL
SHOW

Welcome

TO HIS EXCELLENCY
SIR E. N. WALKER, K.C.M.G.
THE LIEUT.-GOVERNOR OF CEYLON.

Up the drive the road is lined with the slender rustling arches of young coconut leaves, bent over and fixed into bamboo stems. The front of the School buildings are also suitably decorated. Entering one finds the room devoted to food products on the left. Down the whole length of the left-hand side lie numerous collections of paddy, in which article there was evidently great competition. A highly finished exhibit was in No. 6 (Section III.)—a collection of 15 kinds of grain set in an elegant light wooden case. On opposite side the bales of cinnamon (25 lb. each) and exhibits of cacao and of tea in 2 classes (grown below and above 1,500 ft.) are conspicuous. Amongst the bundles of cinnamon, also, one is noticeable from its being enclosed in a carefully constructed wooden case. The variety of native sweets arranged on the table gave the judges a deal of difficulty. One overheard remarks like the following: A.—"A very striking taste!" B—"Rather pungent, though?" A—"Yes, but acceptable to the natives, perhaps." B.—"Oh ! to judge from their point of view,—yes." A.—"I think it should be awarded the prize." B.—"I agree, though I shouldn't choose it for dessert." Along the main and apples from the local Australian stores—bore the happiest appearance. In the first yard on the left were the poultry (Section IV—Class B) most striking of which seemed to be a cage on the extreme left, No. 6—six village-reared fowls—and three other cages, No. 7, of 2 pairs of pigeons reared in Ceylon : in the latter were contained some pretty Fantails (white and black), Egyptian and English pigeons, and Pouters, Jacobins and Nuns. The next rooms, (right and left,) are devoted respectively to Vegetable Products, where picked specimens of coir and other native fibres may be seen, and Arts and Manufactures: here there were half-a-dozen lace women with exceptionally good examples of work on the pillows before them, but the outstanding object was a magnificently carved dressing-table and cabinet, symbolical of harvest. In the centre is Messrs Cave & Co's classic photograph of a single palm by the moonlit-shore—the emblem of the immemorial mainstay of the island's prosperity—while on either side are stout lusty figures, the anatomy of which is so carefully done as almost to fail to attract notice; some minutes' study, however, of the workmanship, of the arms and legs especially, recalled to us the classic casts of the Louvre in Paris. One or two ebony exhibits showed the most finished chiselling and shaping, but the central piece we refer to was a real creation of mature thought, and a design achieved with remarkable success. A fine ebony cabinet too should be noticed. There were some splendid bulls among the cattle exhibits ; but the gem of these was a tiny little bull, calf with silver caps on its horns, and scarcely higher but not less proud than the little eight-year-old podian who stood beside it. The Horticultural Room was the chief centre of attraction this afternoon. There were three exhibits of high quality for the Gold Medal, and the award gave general satisfaction. Most charming perhaps in the whole room, however, was the single exhibit of six orchids, the mauve Dendrobium Phalenopsis and Catteleya Bowringiana taking the palm for delicacy of colouring and form. Of the Cannas, the *Papa* and *Allemania* showed magnificent blooms, adding materially to the colouring of the radiant display. The ceiling of the room was decorated with greenery and festoons at the junctions of which hung bouquets of blossoms. A large porch-pandal had been erected at the entrance to this, the Flower Section, and the pillars were entwined with spirate greenery. It was here that His Excellency was to alight this afternoon at 4-30 p.m., thereby signalling the opening of the Show. Below will be found the list of Judges, Exhibits and Awards, a Silver Medal being understood in the latter list (which is complete all but about a dozen awards) where no specific mention of a prize is to be found.

LIST OF OFFICERS.

The following are the officers for the show :—

Patron: His Excellency the Governor. President: His Excellency the Lieut.-Governor.

COMMITTEE.

The Hon. F R Ellis (Chairman); H.E. Major-General Hobson, the Hon. Justice Lawrie, the Hon. Justice Browne, the Hon. F R Saunders, the Hon. H L Wendt, Sir Harry Dias, Mr. F Beven, Mr. P Coomaraswamy, Mr. C Drieberg, Editor "Dinakaraprakasa," Editor "Sarasavisandaresa" Mrs. F R Ellis, Messrs. J Ferguson, W H Figg, J C Huxley, F G A Lane, F C Loss, S D Mahawalatenne, Jacob de Mel, W Nock, S C Obeyesekera, James Peiris, Henry A Perera, F H Price, J Clovis de Silva, W A de Silva, G W Sturgess, H VanCuylenburg, J C Willis and Dr. Vandort. Hony. Secy. Mr. C Drieberg.

COMMITTEE OF MANAGEMENT.

The Hon. G M Fowler, (Chairman), Messrs F H Price, W Nock, H Macmillan, P D Siebel, T Sammugam, E C Davies, J W Vanderstraaten, James Peiris, Henry A Perera, A FBroun, H T S Ward. Hony. Secretary and Treasurer: Mr. C Drieberg.

The gathering this afternoon was a very large and representative one and among those present were:—Mr. F. H. Price, Mayor of Colombo, Mr. and Mrs. J. Ferguson, Mr. and Mrs. W. E. Davidson, Mr. W. T. Pearce and Miss Pearce, Mr. and Mrs. S. C. Obeyesekera, Mr. and Mrs. H. L. Daniel, Dr. H. M. Fernando, Mudaliyar John F. Perera, the Misses de Mel, Mr. H. J. Soysa, Mr. W. M. Soysa, Mr. and Mrs. Arnold Dias, Mr. and Mrs. Tudor Rajapakse, Mr. and Mrs. Owen de Run, Mr. J. W. Vanderstraaten, Rev. and Mrs. Corlett, Mr. and Mrs. J. Morton, Dr. Attygale, Mr. Sam W. Soysa, Mr. Francis Perera, Mudaliyar Philip Perera, Mr. Meedeniya, R.M., Mr. L. de Livera and the Misses de Livera, &c., &c.

LIST OF AWARDS.

FLOWERS AND PLANTS.

FLOWERING PLANTS IN POTS.

Judges:—Mr, G M Fowler, Mr. Nock and Mr. Macmillan.

Orchids, Foreign (six)—Hon. Dodwell F Browne.
Asters (six)—Mr. P D Siebel.
Cannas (six)—Miss Lily Vanderstraaten.
Chrysanthemums (three)—Mr. H W Grieve.

CUT FLOWERS IN BOXES, STANDS, OR GLASSES.

Judges :—Mrs Fowler, Miss Grenier, and Mr Nock,

Roses (twelve of different varieties)—Mrs H A Pieris.

Roses (six)—Mr. J R Grieve.

Zinnias (six)—Mr. J R Grieve.

Double Dahlias—Mr. J R Grieve.

Cannas—Mr. H O Beven.

Chrysanthemums—Dr. H Huybertsz.

Carnations—Miss E C Elliott.

Pinks—Mr. P D Siebel.

Pansies—Miss Mary Grieve.

Tube Roses—Dr. H Huybertsz.

Violets—Mr. K Abram Saibo.

Buttonholes—Mrs. R Samaranayeke.

Cross or Wreath—Mrs. Samaranayeke.

Hand Bouquet—Miss Jessie Siebel.

Bridal Bouquet—Mrs. S Siebel.

Flowers in Ice—Messrs. J P Morton & Co

Best decorated Dinner-table—Miss N Drieberg.

General collection of Wild Flowers (2 ft. square) Mr. Jusey Appu.

General collection of Cut Flowers arranged for effect (12 square ft.)—Mr. H M Alwis.

Special Prize for best collection of Pot Plants and Flowers to include the following :—12 assorted Pot Plants, 3 boxes Cut Flowers, 1 Table Bouquet, 1 Hand Bouquet. 3 Buttonholes, gold medal—Mr. P D Siebel.

CUT FLOWERS IN BOXES, STANDS, OR GLASSES.

Best collection of Jambu (twelve of each variety) —Mr. A J R de Soysa, certificate.

Best collection of Namnam—Mr. E A Salgado.

Best collection of Guavas, Uguressa, Lovi-Lovi, Masan, and Nelli (twenty five of each)—Mr. Andris Mendis.

Best Rambutans (one hundred)—Mr. E de Levera.

Best collection of Imported Fruit—Mr. W H Thompson

Fruits in Ice—Messrs. J P Morton & Co., recommended for gold medal.

Special Prize for the best collection of Ceylon-growing Fruit (not less than twelve varieties)—Mr. S Weerackody.

FOLIAGE PLANTS IN POTS.

Judges : Mrs. Broun, Mr. Macmillan, and Mr. Percy Bois.

Begonias (six of different varieties)—Jusey Appu, Colombo Museum.

Anturiums and Allocasias (six of different varieties)—Mr. P D Siebel.

Caladiums (six of different varieties—Mr. R Samaranayeke.

Palms (size of different varieties)—Mrs. Tudor Rajapakse.

Colei (six) — certificate, Jusey Appu, Colombo Museum.

Best specimen of hanging Pot Plant—Mrs. Tudor Rajapakse.

Tastefully arranged Group of Plants for effect (space allowed 100 sq. ft.—Mr. P D Siebel, silver medal.

FERNS IN POTS.

Judges : Mrs. Broun, Mr. Macmillan and Mrs. Percy Bois.

Adiantum Farlyense (two)—Mrs. Tudor Rajapakse.

Best collection of twelve different kinds—Mrs. Tudor Rajapakse.

FRUIT AND VEGETABLES.

FRUITS.

Judges :—Sir Harry Dias, Mr. Broun and Mr Macmillan.

Best Jaffna Mangoes (twelve)—Mr. J R Greve.

Best collection of Mangoes (six of each variety)—Mr. Andris Mendis.

Best Oranges (twelve)—Mr. Adris Mendis.

Best Mandarin Oranges (twelve) — Mr. L S Cabral.

Best Lemons (twelve)—Mrs. E M. Gray.

Best Citrons (six)—Mr. Andris Mendis.

Best Limes (twelve)—Mr. J C Drieberg.

Best Pomelos (six)—Mrs. H A Pieris.

Best Mauritius Pineapples (three)—Mr. H A Pieris, Mudaliyar.

Best West Indian Pineapples (three)—Mr. Andris Mendis.

Best Custard Apples (six)—Mrs. H A Pieris, udaliyar.

Best Mangosteens (twelve) L de Fonseka.

Best bunch of eating Plantains—Mr. J P Salgado.

Best Sapodillas (six)—Mr. Alfred Perera.

VEGETABLES.

JUDGES:—Mr. Nock, Mr. W A de Silva, Mr. P D Siebel.

Best collection of Native Vegetables (twelve distinct kinds)—Mr. K Abram Saibo, Mr. R S Cabaral and Mr. R W Fernando (certificate.)

Best collection of Exotic Vegetables (twelve distinct kinds)—Mrs. W O Garth.

Beans (Exotic, four varieties, 25 of each)—Master G A Garth.

Beans (Native, four varieties, 25 of each)—Mr. M J Fernando.

Yams (six edible varieties, two of each)—Mr. R A Dassanayaka.

Gourds and Pumpkins (six kinds, two of each)— Mr. Andris Mendis.

Best Tomatoes (twelve) Mr. D C Jayawardana.

Lettuces (three cabbage, three cos)—Master Kidston Garth.

Potatoes (dish of nine tubers) Mrs. W O Garth and Mohamed Ibrahim Saibo (certificate.)

Sweet Potatoes (twelve tubers) Mr. H A de Silva.

Chillies—Mr. J R De Soysa.

Cucumbers (best pair)—Mrs. Jeronis Pieris.

Ceylon-grown Onions (5 lb.)—Mr. J W C De Soysa.

Breadfruits (six)—Mr. J P Salgado.

Jak (largest single fruit)—Mr. B W Gunawardena.

Jak (single fruit of best quality)—Mr. J D Perera.

Brinjals (twelve)—Mr. H A Pieris.

Collection of Leaves of Native Plants used as Food. Mr. C D S Jayawardena.

Turnips—Miss M E Garth.

Carrots—Mrs. W O Garth.

Best Beetroots—Mr. K Abraham Saibo.

Celery—Miss Caroline F Garth.

Cauliflowers (three head)—Mr. J M Garth.

Cabbages—Mr D C Jayawardena.

Cabbage (heaviest head)—Mr. D C Jayawardena.

Peas (best dish) Miss C E Garth.

Rhubarb—Master Garth.

VEGETABLE PRODUCTS.

Judges:—Mr. Cochran, Mr. Broun and Mr. S C Obeyesekere.

Coconut Oil (two gallons)—Gold medal, Mr. G C Warr; silver medal, Mr. A P Goonetilleke; certificate, Mr. H L F Dharmaratne.

Kekuna Oil (half gallon)—Mr. G C Warr.

Lemon and Citronella Grass Oils (one bottle of each)—Messrs. Winter & Sons.

Cinnamon Leaf and Bark Oils (one bottle of each) —Mr. H Salgadoe.

Best general collection of oils (two dozen of each) —1st, Mr. W H Fernando; 2nd, Mr. G C Warr, certificate; 3rd, Don G Kapurubanda, special certificate.

Best general collection of Gums and Resins—Mr. D J Samerawira.

Coir Fibre (one pound)—Mr. D A D S Gunaratne

Kitul Fibre (one pound)—Mr. W H Fernando

Palmirah Fibre (one pound) Mr. A J R de Soysa.

Collection of Native Fibres (quarter pound of each) —Mr. J H Meedeniya, R.M., certificate.

Ceylon-made Cigars from Country Tobacco (twenty-five)—Mr. W P Burnard.

Best sample Ceylon Annatto—Mr. A VanStarrex.

Best commercial sample of Rubber (half pound) —Lady de Soysa.

FOOD PRODUCTS.

Judges: Mr. F Waldock, Mr. P Coomaraswamy and Mr. H L Daniel.

Commercial sample of Coconuts (twelve)—

Collection of Coconuts (space one hundred square feet)—Mr. J W C De Soysa.

Arecanuts (twenty-five)—Mr. Julius Perera.

Judges: Mr. Seneviratne and Mr. W A de Silva.

Sample of Paddy (quarter bushel)—Mr. R E De Soysa; Mr. R de Saram, certificate.

Best collection of different varieties of Paddy—Gold medal, Mr. A W D Jayasuriya; Mr. A P Gunatilleke.

Best collection of the following Grains:—Kurakkan, Mineri, Amu, Tanahal, Muneta (one measure of each)—Mr. A P Gunatilleke.

Indian Corn (two measures)—Mr. A J R De Soysa.

Sugarcane (six sticks)—Mr. C E A Dias.

Betel (one hundred leaves)—Mr. H W D Bandaranayaka.

Nutmegs with Aril (two dozen)—Mr. Andris Mendis.

Judges: Mr. Macmillan, Meedeniya Ratemahatmaya and Mr. Francis Beven.

Vanilla (one pound)—Mr. Walter Dias

Pepper (five pounds)—Mr. J W C De Soysa, 1st; Mr. C C Barber, special commendation.

Arrowroot (five pounds)—Mrs. Arnold Dias.

Cardamoms (five pounds)—Mr. James Westland.

Judges: Mr. Cochran, Mr. A W Abrew, Mr. Francis Beven

Cinnamon (twenty-five pounds)—Gold medal, Mr. J W C De Soysa; silver medal, Mr. H W de Silva.

Judge: Mr. George Vanderspar

Cacao (ten pounds)—Gold medal, Mr. C C Barber.

Judges; Mr. Lionel Leefe and Mr. James Forbes.

Liberian Coffee (five pounds)—Mr. A J R De Soysa.

Ceylon Pickles: Cabbage, Cucumber and Mixed (one bottle of each)—Mrs. H L Daniel.

Judges: Mrs. F Beven, Mrs. W G Vandort and Mr. Keppel Browne.

Ceylon Chutnies: Mango, Tamarind and Lime (one bottle of each)—Mr. G C Ponam.

Ceylon Preserves: Mango, Pineapple and Embarella (one bottle of each) Mrs. E M Gray.

Judges: Mr. Keppel Browne, Mrs. W G Vandort and Mrs. F Beven.

Ceylon Crystallized or Candied Fruit (three kinds) Mr. J P Salgado.

Sample Loaf of Bread (one pound)—Mr. H Don Simon.

Rich Ornamented Cake (two pounds)—Miss L Vanderstraaten.

Tray of Native Sweetmeats—Mrs. Arnold Dias.

Tea grown above 1,500 feet (10 lb.); Bargany Estate Deyanikelle Estate highly commended.

Tea grown below 1,500 feet (10 lb.), Salawa Estate, Gold medal: Yahalakela, highly commended.

CATTLE AND POULTRY.

CATTLE.

(Only Animals bred and born in Ceylon can compete.)

Judges: The Mahamudaliyar, Mr. Chinniah and Mr. A Y Daniel.

Best Bull of Indian breed—Mr. E L F De Soysa, gold medal.

Best Cross-bred Native Bull—

Best Cow of Indian breed—

Best Cow (Cross-breed English)—Mr. A J R De Soysa.

Best Buffalo (Bull)

A special certificate was recommended by the Judges for the dwarf bull exhibited by Mr. R E S De Soysa.

Best Bull of Native breed—Mr. J W Chas. De Soysa, gold medal; Mr. A S W D Bandaranyaka, recommended for silver medal.

DAIRY PRODUCE.

Judges:—Mrs. Vigors and Mr. Cochran.

Basket of Fowls' Eggs Mr. C. Andree,

Basket of Ducks' Eggs (one dozen) Mrs. A. R. Amaranayaka.

Basket of Turkey's Eggs—Mr. Chapman Dias.

Special Case of Goose Eggs—Mr. P C J Fernando, certificate.

POULTRY, &c.

Judges:—Mr. E C Davies, Mr. W La Brooy, and Mrs. F L Daniel. Cage of Native or Indian Fowls reared in Ceylon (two pairs), Mr. W H Dassanayaka (game fowls.)

Cage of Fowls of Foreign breed reared in Ceylon (two pair), Mr. C P D Bandaranayaka.

Best cage of Turkeys reared in Ceylon (one pair)—silver medal, Mr. George Thomson.

Best cage of Geese reared in Ceylon (one pair) —Mr. George Thomson.

Best cage of Ducks reared in Ceylon (one pair)—Mr. W Chapman Dias, Mr. George Thompson.

Best cage of six Fowls reared in villages by Sinhalese. Tamils, or Moormen.—Mr. A R Samaranayaka.

Best cage of Pigeons reared in Ceylon (two pairs) —Mr. Edwin de Livera.

Best pen of Poultry in the Show—Mr. T Sanmugam, Gold medal: Mr. Arnold Dias, certificate.

ARTS AND MANUFACTURES.

Judges:—Mrs. J Ferguson, Mrs. S Bandaranayaka, Mrs. H L Daniel, Mr. H W Cave, Mr. H H Cameron and Mr. E Vandort.

Best Native Grass Mats (two)—Mrs. A J R De Soysa, silver medal.

Best single specimen of Ceylon Rattan Work—Messrs Jaldeen & Co.

Best single specimen of Ceylon Wood Carving—Mr. P E Pieris, highly commended.

Best single specimen of Ceylon Ivory Carving—Mr. Kandappa.

For the best specimen of Pillow Lace (six yards, six inches wide)—Mr. Sederahamy.

For the best sample of Embroidery—Mrs. A J R De Soysa.

Judges for Kalutara baskets, models, masks &c:—Mrs. Ferguson, Mrs. S Bandaranayaka, Mrs. A Y Daniel, Mr. H W Cave, Mr. E Vandort, Mr. H H Cameron.

(No entries in the seven classes.)

For the best specimen of Kalutara Basket Work—Mr. J A Weerasooria.

For the best set of Flower Pots (six) Mr. A S W D Bandaranaike.

SUPPLEMENTARY (FOR WHICH NO PRIZE WAS GIVEN.)

Arrack, Mr. Arnold Dias.

Furniture, Messrs. H Don Carolis & Sons, Mr. R de Soysa.

SPECIAL EXHIBITS NOT IN CATALOGUE

Electric Bell, Mr. J L Dharmaratne; Bambara and Beehives, Mr. Alex. B Heral; Madu Plant with Flower and Fruit, and Flour and Cakes made out of it, Mr. C E Samaranayake; Glass Bottle made in Ceylon, Mr. B J ... nares; Collection of Birds' Eggs, Mr. F C Potger, Mr. G Mendis; Kola, undried (five pounds), Mr. J P Williams, Messrs. J A P Williams and Bros.; Plantain Flour, Mr. Chas. Stouter; Ceylon Ointment in Case, Mr. Don Gregoris Kapurubandara. Special contrivance by which Coconut Plants may be protected from being damaged by Cattle, R15. Dr. P M Muttukumaru, Mr. Karl Beven, Mr. Francis L Daniel.

Curious Walking-stick.—Mr. John Abeykone, President, Village Tribunal.

Silver mounted Tea Pot made of a Woodapple.—Mr. John Abeykone, President, Village Tribunal.

Straw Watch Chain.—Mr. E Jayatilleke.

Ceylon Curios.—Mr. O D Vigors.

Coconut Poonac.—Messrs. Stevenson Brothers.

Medical Oil (202 kinds).—Mr. Don Gregoris Kapurubandarasinha.

Hat worn by Colombo Chetties.—Mr. Kandappa.

Antique Boxes, edges bound with Silver carved work.—Mr. Kandappa.

Copper Tittle Deed bearing the Initial of Sri Wickrama Raja Sinha.—Mr. Kandappa.

Complete set of Sinhalese Head dresses in Silver, —Mr. Kandappa.

SPECIAL EXHIBIT FROM COLOMBO MUSEUM.

Butterfly.—Kallima Philarchus, Westwood "This Butterfly, when at rest with closed wings, mimics a dead leaf."

SCHIZOCEPHALUS ?—" A Mantis that imitates grass."

COFFEE LEAVES RUINED BY TINEID MOMTH (Gracilaria Coffeaifoliell , Nietn).

POLISTES STIGMA.—(Wasp with nest).

SPECIAL LIST.

1 The best specimens of pillow lace. Podinona, Paris Exhibition prize.

2 Brasswork, name not mentioned first prize, R30.

3 Model electric apparatus for lighting, Mr. D. J. Wimalasurendra, special prize, R30.

4 Set of Masks, Muhandiram, E. J. Gunesekera, first prize ; Mudaliyar, Leveris de Fonseka, second prize.

5 Best model arrack distillery, Mr. Arnold Dias, first prize.

THE OPENING CEREMONY.

The Show was open to the general public at 3 p.m., but it was not till 4-30 that the formal opening ceremony by H.E. the Lieut. GOVERNOR, Sir E. N. WALKER, took place when, after presenting the gold medals to the successful competitors, he addressed the gathering. He said :—Ladies and gentlemen, I have great pleasure in responding to the invitation of the Government Agent of the Western Province and the Chairman of the Committee in coming here today, and in having the opportunity of seeing this Show and joining in the distribution of some of the prizes that have been gained. I think that on a comparison of this Show with the one last year we may congratulate ourselves on its success. It is difficult in a large crowd and in a few hurried minutes to make an accurate comparison, but I think that we may comfort ourselves with the assertion that the Show is quite as good as last year, and those who have worked to bring about this Show and the exhibitors are to be congratulated. I am sure it would have given great satisfaction to the Government Agent (the Hon. F. R. Ellis) if he had been present to-day to see the success of that to promote which he has expended such energy. Mr. Ellis seldom puts his hand to anything which does not turn out a success, and when he takes up a thing he generally carries it to a successful issue. I think we may say that he has done so on this occasion. I would, as President of this Society, say that this Society was erected on the Show of last year, and I hope that subscribers will continue, encouraged by the success and pleasure of the meeting to-day, to give it their support and make it one of the established and permanent institutions of the country. As President of this Society I cordially thank all the exhibitors and visitors for the practical manner in which they have contributed to the Exhibition. As an Officer I may say I am only perhaps an official figure-head. I have had nothing whatever to do with the organization of these arrangements, and therefore I have no hesitation in saying that the Committee have been very successful in the Exhibition that we have seen to-day, and in fact I congratulate them upon their labours. I have also to thank Mrs. Fowler, the Government Agent's wife, for having consented to distribute the prizes. (Applause).

Among those present at the opening ceremony were:—H.E. Admiral Bosanquet, the Hon. G M Fowler, Acting Government Agent, Western Province, and Mrs. Fowler, the Hon. L F and Mrs. Lee, Mr. F H Price, Mayor of Colombo ; the Hon. W W Mitchell, Sir Harry Dias, and Mr. C Drieberg (Principal of the Agricultural School and Secretary of the Exhibtion); Mr and Mrs. J Ferguson, Mr. C T D Vigors, A.G.A., Kalutara, and Mrs. Vigors, Mr. and Mrs. W L Kindersley, Miss Lucy Ferguson, the Hon. A C Lawrie, Acting Chief Justice; the Hon. Justice Browne Messrs. F W and P Bois, Mr. W E Davidson, A.G.A., Nuwara Eliya; Messrs. W Anderson, G H Alston, J E Alston, Dr. Attygalle, Mr. and Mrs. C Baur, Mrs. Andrec, Mr. Advocate Keppel Browne, Mahamudaliyar Don Solomon Dias Bandaranaike and Mrs. Bandaranaike, Mr. H O Beven, Mr. and Mrs. M Cochran, Mrs Clark, Miss Swan, Miss Aitken, Major and Mrs. Carey, Mrs. Campbell, Dr. Cinniah, Mr. and Mrs. E Chapman, Major and Mrs. E C Davies, Mr. Felix Dias, Mr. Owen de Run, Mr. Advocate Dornhorst and Mrs. Dornhorst, Mr. C Brooke Elliott, Dr. and Mrs. Ebell, Mr. and Mrs. J Clovis de Silva, Mr. R Freeman, the Misses Garvin, the Misses Gratiaen, Dr. and Mrs. Garvin, Mr. Advocate C M Fernando, Mrs. Greenhorn, Mrs. Hayward, Mrs. Heinnemann, Miss Joyce, Mr. and Mrs. E H Joseph, Mr. Jacques, Dr. and Mrs. Johnson, Mr. Advocate H Jayewardene, the Hon. C P Layard, Mr and Mrs. J P Morton, Mr. and Mrs. James McIntosh, Mr. R H Morgan, Mr. W Nock, Mr. Advocate Maartensz, Mr. S C Obeyesekere, Miss Obeyesekere, Mrs. Potger, Miss Cora Potger, Mr. Potger, Mr. Advocate J Peries, Mr. A C Rudra, Mrs. and the Misses Rockwood, Mr. and Mrs. R F de Saram, Miss Rene de Saram, Mr. Shelton de Saram, Dr. Allan de Saram, Mr. T Sanmugam, Mr. A Thomson, Mrs. F J de Saram, Miss de Saram, Captain Taylor, Miss Swan, Misses Saunders, Mr. Vanderstraaten, Mr. W P D Vanderstraaten, Mr. H M Waldock, Miss May Walker, Mr. W R Waller (Dikoya), Hon. H L Wendt, &c.

His Excellency who drove up in an open carriage accompanied by Capt. Wyndham, A.D.C., and Capt. Cum Grahame, P.S., and accompanied by mounted orderlies, was received by the Committee under a beautiful pandal at the rear of the buildings, the Volunteer Band, playing the opening bars of the National Anthem. A tour was then made of the exhibition at the close of which the presentation of gold medals was made. At the close of his remarks His Excellency sent for Mr. P D Siebel and personally congratulated him on his magnificent exhibition of flowers, a compliment that was in every way thoroughly deserved.

His Excellency then inspected the cattle, after which he partook of tea in a special marquee erected near the Lecture room, taking his departure at 5-30, the band playing the National Anthem uncovering. We must not omit to mention that Mr. C Drieberg, the energetic and courteous Secretary, was also thanked for his labours.

22nd July, 1899.

The show opened at an early hour this morning and there was soon a sprinkling of visitors, gradually augmented as the morning progressed who were able to leisurely examine the exhibits. Some of these had, especially in the floral department, had lost their freshness and much of their beauty : but care had evidently been exercised by those in charge of the exhibition to do what could be done to preserve the flowers, plants, &c., until the close of the show. Of course a considerable portion of the articles shown are not affected in this way and the exhibits in the art and manufacture classes, as

well as the highly interesting exhibits in the classes devoted to "food products," were examined carefully by the more thoughtful class of visitors.

(*From a Lady Correspondent.*)

This is the first Show of the kind which I have had the pleasure of attending since I came to Ceylon and I must say that it was rather an "eye-opener" to me. I did not, of course, expect to find such a display as I have seen at flower-shows at home and I was surprised to notice the height of perfection to which natives had attained in the culture of the fruits and flowers of the island. Some of the vegetables, particularly carrots and beet-root, were the best I have seen in Colombo, and I thought the display of fruits was exceedingly creditable. The oranges looked very tempting, so did the mangosteens and I don't think that the people of the country could have passed without admiration the display of jaks. A word of praise is due to Messrs. Thompson and Co. for the very fine and neatly laid out show of Australian garden produce, and one cannot wonder that the firm has gained so much popularity in Colombo. While speaking of fruits I must not forget to mention the delightfully cool, refreshing, skilful and artistic work exhibited by Messrs. J P Morton and Co. In the fruit section, there were two nicely moulded pillars of ice in which were frozen an extra large pine-apple and a big bunch of bananas respectively ; and in the flower section there were two similar blocks containing a varied collection of the blooms and leaves that are common in Colombo and of the arecanut flower, which, if I may be allowed to say so was the best of Messrs. Morton's exhibits. The display of table decorations seemed to me to be particularly good, but I had expected to find a much better collection of palms and ferns considering the wealth of those in Colombo. Art Work rather took my fancy and I was very envious of the fortunate possessor of the large and magnificently carved side-board which occupied the centre of the room devoted to this section. I had not before seen lace-workers engaged at their occupation and I watched with great interest their deft and industrious fingers turning out the delicate work for which the women of this country are famed. Poultry appeared to me to be a poor show, but I thought the bulls exhibited in the cattle section were a splendid collection. I did not see any that I could praise for speed, but for draught purposes I think those shown would be hard to beat. I had expected to see an imposing spectacle at the opening ceremony, but must confess to having been somewhat disappointed : it was so simple and so brief. Everywhere there was a delightful harmony of colour, not only in the exhibits but in the dressess worn by the ladies, some of them showing exquisite taste and design. I thought we might have had a little more music from the band during the time we were waiting for the arrival of His Excellency. It was a monotonous time, and a sweltering time and anything soothing in addition to Burdayron's ices would have been grateful and comforting.

COFFEE IN NORTHERN INDIA.

More than twenty years ago a well-known Assam planter—the late Mr. C. B. Anderson —visited his brother, Mr. T. C. Anderson, who was at the time resident on Annfield, Dikoya; and he was so struck with the splendid growth of tea bushes in an avenue leading to the bungalow, that he then and there wanted to start a tea "garden" in Ceylon. Well for him if he had done so! The "avenue" arose from some seed sent from Assam to Mr. T. C. Anderson, which he treated as if it were an ornamental plant, and without the slightest belief in its commercial possibilities in Ceylon. Apart from this want of faith, there was the fact that (although the "leaf-fungus" had already been seven or eight years at work) coffee was at the time "booming"—prices were specially high and no one had the least fear of such young districts as Dimbula, Dikoya and Maskeliya not growing coffee profitably for several decades to come. Accordingly Mr. C. B. Anderson was simply laughed out of his conceit of establishing a tea-garden in Ceylon, some 23 years ago. The Dikoya planters of that time would not hear of it, and, instead, some of them absolutely persuaded Mr. Anderson to take back with him to Assam a select parcel of Ceylon coffee seed and to plant out 100 acres in a favourable situation on behalf of a little Syndicate who joined him in the venture. The coffee grow all right; but so did the inevitable "leaf-fungus" which by 1880, had changed the entire prospect in Ceylon. Mr. Anderson, we believe, abandoned the Assam clearing before anything like a decent crop had been gathered on it and nothing more was heard of the venture. But very bitterly, we have no doubt, did Mr. T. C. Anderson and some other Dikoya men of the "seventies" regret that they had not allowed Mr. C. B. Anderson, with all his Assam experience, to open out a pioneer tea garden in Ceylon, at a time when prices were so good, and competition so limited in the tea market for the India and Ceylon product.

We are led to recall this true reminiscence of a strange experience in our planting world, by the revival of a cry at this time to plant "coffee" freely in Assam and some other parts of Northern India. We have grave doubts of any appreciable success attending the venture. Fifteen degrees on each side of the equator is usually the limit of coffee growing; and the coffee bush is by no means so hardy as tea in respect of standing frost, &c. On the other hand, here is the very encouraging report from a planting correspondent of the Indian *Planters' Gazette*, who writes of what he has seen or heard on good authority :—

Any bushes I have seen in Upper Assam or Sylhet seemed to be in perfect health, and bearing crops which it would simply be impossible to beat. I have it on the best authority that Arabian bushes have been growing in South Sylhet in the planters' bungalow compounds for the last ten years or so, and that they have been fruiting all these years. When this is the case there can be no earthly reason why they will not grow and fruit for forty years. I think the real reason that coffee has not been gone in for more is simply that, from the very start, tea has had full sway, and as it has, as a rule, proved a fairly remunerative investment hitherto, there was no special reason for the tea planter to turn his attention to anything else. There can be no doubt that if tea was wiped out of existence in Assam through any cause, that the Assam planters would be equally as capable of rising

to the occasion as the Ceylon planters were when their coffee was all but annihilated by disease. As tea is not now what it used to be—and there can be no hopes whatever that it ever will be in the position it occupied 20 or 30 years ago—I think you do well when you advocate the planting of coffee, or for the matter of that anything, as an auxiliary to tea. Even if the tea districts of Assam could grow sufficient coffee to supply the consumption of the eastern part of India it would always be something, and a very big something, as by all accounts the consumption is large and increasing.

We, in Ceylon, should be very glad, indeed, if planters in any part of Northern India were able to supplement their tea with coffee and to grow the latter profitably. We wish them a full measure of success; but our doubts can only be overcome when we learn of a 100-acre field of Arabian coffee at four to five years old giving a paying crop of the berry without showing signs of exhaustion from the dread leaf disease (*Hemileia vastatrix.*)

INDIAN AND CEYLON ASSOCIATIONS.

TEA IMPORTERS AND THE DRAFT ALLOWANCE:

(Special Report for "Ceylon Observer.")

A meeting of growers and importers of tea was held on Monday, July 3rd, in the Council room of the London Chamber of Commerce, Eastcheap, to receive the report and recommendation of the joint Committee of the Indian Tea Association (London), and the Ceylon Association in London, on the proposed abolition of the 1 lb. draft allowance on tea. There was a crowded attendance, and late-comers had difficulty in finding standing-room. Sir H Seymour King, M.P., K.C.I.E., presided, and there were present:—Messrs. H K Rutherford, J N Stuart, D Cruikshank, Begg, Dunlop & Co.; H Cholinsley, Chargola Tea Association; E L Sparks, Messrs. P R Buchanan & Co.; John M Holt, Messrs. Stewart, Holt & Co.; W Johnson, New Sylhet Company; Douglas R Smith, G G Anderson, Scottish Ceylon Tea Company; Geo. Stehn, Messrs. Wilson, Smithett & Co.; Jas. F Anderson, Messrs. Lyall, Anderson & Co.; W H Anderson, New Dimbula Company; R Gordon Shaw, F D Mitchell, Jno. J Edelsten, W J Thompson, Jnr. John McEwan, D M Stewart, W Watson, T C Owen, Messrs. Rowe, White & Co.; A Thomson, Wm. McKenzie, P Oswald, C C McLeod, R S Corbett, P G Spence, C A Goodricke, R A Cameron, W S Bennett, Jno. Hamilton, J L Anstruther, H Earnshaw, A Bethune, G J Gibson, J M Smith, J L Shand, H J Vollar, R C Dowling, W J Skene, G A Talbot, F Pook, H S J Oscar Thompson, F H Cumberlege, E H Gregory, Alford Want, A Bryans, Messrs. P R Buchanan & Co.; F W Holt, Geo. W Christison, H A Hancock, A B Tomkins, J H Dickson, Robt. Anderson, Hugh Fraser, A Crabbe, G W Payne, A L Hutchison, W G Smith, Scottish Trust & Loan Company; Jas. Sinclair, W McDonald, J Hughes, M P Evans, A W Stopford Sackville, G H Austin, R Hart, J Steel, J W Sidey, A E Butler, W S Warren, K Brown, D Wilson, J A Roberts, C E Strachan, R B Magor, Messrs. Geo. Williamson & Co.; Geo. White, G Seton, S H Smith, Carolina Tea Company; Alfred Brown, T S Dobree, T A Williams, Blackwood Coffee Company; Geo. G Playfair, Lebong Company; H L Tottenham, A Ledington, L H Pieris; Duncan W H Skrine, N W Grieve, R C Lyall, Lumsden, G A Dalby, Henry Bois, Sanderson, Jas. Wilson, Arthur Thompson, Adams, Doake, A Collingwood Small, C Milner, A MacLanghlin, C F Hunt, E G Rock, Doom Dooma Tea Company; A E Watson, Messrs. Geo. Williamson & Co.: C W Wallace, Messrs. G R Shaw & Co.; representatives of Messrs. Geo. Dunlop & Co.; Messrs. Finlay, Campbell & Co.; Messrs. Lister & Biggs; Messrs. Blyth, Greene, Jourdain & Co.; and the Kelani Valley Tea Association; Messrs. Ernest Tye, Secretary, Indi n Tea Association; and Wm. Martin Leake, Secretary, Ceylon Association in London; and many others.

SIR SEYMOUR KING'S SPEECH.

The Secretary of the Indian Association (Mr. Ernest Tye) having read the notice convening the meeting,

The CHAIRMAN said:—Gentlemen, the numbers in which you have attended today show that this meeting is one of a historic character in the tea trade. It is one, which must for good or ill influence the course of the history of that trade for a long time to come. We meet here to receive and to deliberate on the report of the Committee of the two influential Associations representing the Indian and Ceylon trade. I owe the accident of having the honour of presiding over your deliberations today, gentlemen, to the fact of my being the honorary president of the Indian Tea Association, and I trust you will forgive me if I do not in every way meet your expectations while I am in a position that might have been filled by others who are more competent to represent the interests of which we have to speak this afternoon. I said this is a historic occasion. We are met to consider the abolition of an ancient custom. There is no doubt as to the antiquity of that custom; there can, equally, be no doubt in the minds of tea growers as to the unreasonableness of the custom (Applause). I have never yet heard, gentlemen, of any custom which long maintained its sanction which necessitated a person giving away, for nothing, a part of what he produced (hear, hear). We are met to consider the question of the one lb. draft on each chest or half-chest of tea which it has been the custom to exact from the growers. If the growers had remained prosperous, perhaps, the question would not have been raised. But there is no one in this room who does not know how real is the necessity for pinching economies in the tea industry, and for casting about for some means of making a "living wage" out of it. The growers and importers have therefore had to consider whether they cannot save a considerable sum every year by the abolition of the 1 lb. draft. (Hear, hear.) They would, I feel sure, welcome some change in the present method of weighing the tea, but that seemed impracticable. The method of weighing already inposes a heavy toll on the producer, who feels that that toll is sufficient without the addition of the 1 lb. draft allowance, (hear, hear.) At the same time we have to remember that those who purchase from us are worthy of every consideration and cultivation on our part. One cannot well exist without the other. Perhaps the producer is more necessary to the retailer than the retailer is to the producer, because, after all, the retailer does not buy our tea because he loves us, but because he must have tea to sell to those who want to drink it. (Hear, hear.) But at the same time it must be obvious to everyone that friendliness, courtesy and

pleasant relations between both parties are essential for the smooth and profitable conduct of the industry—(hear, hear)—and I venture to think your joint Committee—as you will hear when the report is submitted to you—has done all it could do to promote good feeling and harmony. Both sides must recognise that it is a question that appeals to the pockets of both, and that, therefore, it is necessarily a disputable question, and one that will be fought out. But there is no reason why it should not be fought in a pleasant spirit. The retailer must recognise the position into which the industry has drifted. We wish the retailer a prosperous time. But there is nothing to be gained by threats to boycott tea sales and to cease dealing with those who produce what the retailer must have. (Applause.) Has there ever been in the history of the tea industry such unanimity as has been displayed on this occasion? I venture to say, never. (Hear, hear.) There have been in the past many questions that have moved the trade deeply, and to deal with which special committees have been appointed. But on no subject has there ever been such an approximation to absolute unanimity as on this particular question. Now, I think that must impress the retailers and the public at large. (Hear, hear.) Nothing, I venture to say, but dire necessity, the compelling necessity of the *res angusta*, could have possibly driven the producers of tea into line like this. I think that the amount of Indian and Ceylon tea imported into London last year was about 227,000,000 lb., and those responsible for 215,000,000 lb. of that total have already signified their assent to the present movement, and fresh assents are still coming in. So that practically the Indian and Ceylon tea-growing industry is unanimous. Then we have to see what the other side have got to say. Their argument seems to be, "We have always received this little tip for buying your teas, and therefore it must remain a factor in all our dealings." Time will show which side to prevail. I have now only to thank you for the kindness with which you have listened to these few remarks of mine, and to ask you to listen carefully to those who will follow, and then to signify your opinion as to the course that should be pursued. (Applause.)

MR RUTHERFORD'S VIEWS.

Mr. H. K. Rutherford:—As chairman of the joint committee of the Indian and Ceylon Associations appointed to consider this matter it falls to me to present to you the committee's report, which is already in your hands, and to announce to you the recommendation of that committee. But I daresay, there are some few here who will ask, "What is the use of such a meeting seeing that you have all signified your assent to the proposal?" Well, in its deliberations the committee realized that the more this question was studied the greater appeared the injustice to the importer (hear, hear); and we also wish the importers who are present today to thoroughly understand the matter. We want as much light thrown upon the subject as possible, not only on behalf of yourselves, gentlemen, but of the dealers, the Government and the public. (Hear, hear.) All of these parties are concerned and interested in the weighment of tea. This question of the abolition of the draft cannot be taken apart from the system of weighing-out tea. We must insist upon that. (Applause.) At the mass meeting of dealers and retailers held on June 7th reference to the system of weighment of tea by the Customs was studiously avoided. Now, we held that the two questions are inseparably connected. (Hear, hear.) It is well that we should all know something about the history of weighing-out tea by the Customs. In October, 1885, a joint signed written agreement was entered into by the Indian Tea Association of London and the Wholesale Dealers' Association—there was no Ceylon Association in those days—that all teas should be weighed net. That, gentlemen, I take it, was an honest attempt to get at an accurate and true system of weighing-out teas. That agreement was in force for 3½ years or so, and then the Wholesale Dealers gave notice that the trade would in future, from June, 1889, refuse to buy any more teas weighed on that system. A joint Committee of the Indian and Ceylon Associations and the Wholesale Dealers' Association was then appointed to consider the subject and if possible to come to some mutual understanding. While that Committee was at work the Wholesale Dealers' Association approached the trade, and then intimated to the Indian and Ceylon Associations that it was useless further discussing the subject as the trade had come to a unanimous conclusion that they would absolutely refuse to buy any teas that were weighed net, and that all tea must in future be weighed gross and tare—a system that on an average gives them 1 lb. more in every package than they pay for, in addition the 1 lb. allowed for draft. You will see by this that it was the Wholesale Dealers who broke away from the joint signed agreement, and the system which they thus arbitrarily brought into force continues at the present time. In October, 1890, Her Majesty's Customs, finding they were losing by this system a certain amount of duty, ordered that in future all teas must be weighed and charged for duty to the halfpound. (Hear, hear.) That was the second attempt to get at a just system of weighing, and it had the support of the Indian and Ceylon Associations. But the trade resolutely opposed the proposal of the Government, and the Government were weak enough—I suppose in view of a general election being near at hand (laughter)—to withdraw or to suspend the operation of their own order, and it has been suspended since that time. Well, you will see from these facts that it has been impossible to get the dealers to accede to any reasonable proposals for the proper weighment of our tea. (Hear, hear). That brings us up to the origin of the present movement. From time to time the Indian and Ceylon Asssociations have been approached by the various representative bodies in India and Ceylon, and also by individual growers and importers in this country, asking if nothing could be done to mitigate the great loss in weight the teas suffered when put up for sale in London. Well, after the attempts made by the Associations to get something done they did not see what further they could do in the matter. However, owing I presume to the lessened profits from tea cultivation, owing to the various causes of exchange and low prices, the planters recently approached the Asssociations more strenuously than ever, and their demands became more accentuated. In March last, the two Associations conferred together to see what was best to be done in the circumstances, and they came to the conclusion that it would be hopeless without the good offices of the Government to try again to get anything done to bring about the proper weighing of the teas. And they came to the conclusion that to meet the case they must approach the

dealers in order to have the draft allowance on teas abolished. (Applause.) It was obvious, of course, that no great change such as this could be effected without the entire support of the importing community, and as you have seen by the circular that the Committee has issued that the support is practically unanimous. (Hear, hear). I may also add that the Planters' Association in Kandy have passed a resolution entirely approving of this movement, and last which we received a telegram from the Chamber of Commeree in Colombo, informing us that they gave the movement their entire support. (Applause.) Well, gentlemen, such an overwhelming acquiescence in onr proposal is a convincing proof, if any further proof were wanted, of the injustice of this 1 lb. draft allowance in addition to the allowance already made in the weighing-up of our teas. (Hear, hear). I need not tell you anything further about the movement as the account of it is set forth in the Committee's circular to you. That, therefore, brings the whole thing up to date. With your permission, however, I would like to make some remarks as to the arguments of the dealers in opposing this proposal. The reasons they give for their opposition to the abolition of the draft are two: one is that the draft allowance is an ancient custom; the second is that the allowance is necessary, in order to pay for the loss they sustain in leakage of packages, by bad bulking, and by the presence in the packages of nails and lead as well as the loss of weight incurred in the process of packing the tea in small quantities for the retail market. We admit it is an ancient custom, coming as it does from an ancient people. In China tea is subjected to squeezes all through, and the last squeeze was made by Englishmen—though what they took from the Chinaman in this last case they had to give back when the tea got here. (Hear, hear,) But in London the dealers have to deal, practically altogether, direct with the growers of Indian and Ceylon tea. At least 90 per cent of tea in London is in the hands of the producers, and I think we are made of sterner stuff than to submit to be squeezed as the Chinaman does. (Applause). In recent years India and Ceylon have developed markets for their teas in Australia, Canada, and other colonies in Amerca, and in Russia and other parts of the continent of Europe. In none of these countries are we subject to this 1 lb. draft. It seems a most extraordinary thing that only in this free country of England are we countervailed to this extent. (Hear, hear.) We are on the same line as our brother planters in sugar; we want to trade on right terms with all countries alike. (Hear, hear.) As to the re-weighment of tea in small quantities, we were all staggered the other day by the evidence given by some large tea-dealers, who said it was an ancient (not an honourable) and universal custom for tea to be sold short weight to the public. (Laughter and hear, hear.) Well, gentlemen, is it high time that this "ancient trade custom" was swept away. (Hear, hear; and a voice: "But it isn't a custom.") We were told in the police court that it was a custom. Growers have always thought it a mystery how the dealers were able to sell so cheaply to the public. (Hear, hear.) But the recent proceedings have unmasked the mystery. (Hear, hear.) If any of you growers calculate the value of tea given away in draft, the value given away in extra weight by the Customs' system of weighing, and the loss the Government suffer in the amount of duty not paid on the extra weight, but which the retailer adds to the value of his tea when he sells it, and if you assume that only 50 per cent of the retailers sell short weight to the public, you will find the value amounts to no less than £380,000 per annum! Whether the abolition of the draft is carried through or not, or whether it is equalised by an arrangement of price, still I think that all this indefensible system of carrying on the tea trade of the country ought to be done away with, and the trade put on a more euquitable footing all round. (Applause.) The other argument is that the draft goes to cover defects and the presence of foreign substances in the packages. That is the weakest argument of all, because the incidence of the penalty falls on the importer whose work is in good order, more heavily than on the man whose work is defective. (Hear, hear.) If the 1 lb. draft were removed the importer who does his work badly could be made to suffer; while it remains the same defects will remain. This draft allowance is a premium on bad work, and a penalty on those who do their work well. (Hear, hear.) I therefore propose for your consideration the recommendation of the Committee, which is:—"That it is the unanimous recommendation of the joint Committee of the Indian and Ceylon Associations appointed to deal with the question of the 1 lb. draft abolition on tea, that notice be immediately given to the Tea Brokers' and Wholesale Dealers' Association that on and after the 17th inst., all teas shall be sold on the condition that the 1 lb. draft allowance shall not be made to the buyers." (Loud applause.) I trust, gentlemen, this recommendation will meet with your entire and unanimous approval and support, and that we will be able to show the trade that the great tea-planting interest of Indian and Ceylon have at length awakened to the fact that they must have a voice, that they insist on having a voice, in determining how their produce shall be offered for sale. (Loud applause.)

THE FIRST RESOLUTION.

Mr. C W WALLACE (Messrs. R G Shaw & Co.) moved the following resolution:—"That this meeting adopts the unanimous recommendation of the Committee, that on and after the 17th inst. all teas shall be sold on the condition that the 1lb draft allowance shall not be made to the buyers." (Applause.) The speaker said he agreed with the Chairman when he alluded recently to the applicability of the phrase of Rudyard Kipling about "The men who bear the white man's burden in a foreign land" to the tea-growers in Assam and Ceylon. I hope to steer clear (the speaker proceeded) of anything that sounds either bellicose or hostile to any section of the trade in London. For, sir, I hold that it is necessary for every section of every community to treat every other section with forbearance and good will. But there *will* arise occasions in every community when from some reason or other it is found that one section is appropriating too many of the loaves and fishes which belong to the whole. (Hear, hear.) This may arise in various ways—some fair, some unfair. Those of which I speak today are perfectly fair, but they are none the less hard. In most cases this sort of thing comes about owing to the survival of an "ancient custom," or because changes necessary to the evolution of society have at last made a former practice intolerable. A statement which has been made is that we lose 1lb in the weighing,

The tea itself is not weighed at all. The package is weighed gross, no fraction of a pound avoirdupois being used, and the turn of the scale being always given *against* the package. If the gross weight of a chest of tea is 130,001lb or anything from that up to 130.999lb it is entered as 130lbs only. Then the tea is turned out and put aside, and the box, the lead, etc., are put together on the scale. Again, no fractional weights are used, but instead of the turn of the scale being now given against the buyer, to counterbalance the effect of the turn on the gross weighing, it is still given against the package. It is like hitting a man on the nose and then hitting him on the back of the head to make up for it (Laughter). If the tare is 30,001 lb it is reckoned as 31 lb. So that by neither of the processes does the grower gain anything; he must on an average lose half-a-pound on each weighing, which means a loss of 1lb on each package of tea. Next he loses 1 lb on the draft. Both these imposts we have borne patiently, with just an occasional grumble, the reason being that up to a few years ago there was shown a fair profit, enabling us to bear a burden, that did not rightly belong to us. But still it was a burden and it was not a just one in either case. I know it is said that some producing companies still manage to pay a large dividend. But, gentlemen, I would point out to the buyers and to you that these dividends which sound very large by percentages are, owing to a curious custom in the tea industry are, not reckoned upon the cost of the gardens, machinery, etc., but upon the capital. The capital is not watered, and the custom in the industry is to re-invest the profits in increasing the profits, in increasing the output, and so on. If you take the dividends and divide them over the gardens, with what they have cost in buildings, machinery, etc., they would work out at something nearer 3 and 4 per cent than the 12 to 15 per cent that has been spoken of. There are a great number of gardens which cannot make both ends meet, far less earn dividends of 12 and 15 per cent (hear, hear.) The facts are there, and can be ascertained by reference to the newspapers of London and Calcutta and Colombo. We are accused of trying to take the buyers' profits and perquisites. That is not so. Long before this movement was started the growers of India and Ceylon set themselves the task of reducing expenditure in every possible item and that not only in Assam and Ceylon, but in London, as far as their own people were concerned (hear, hear). Commissions have been reduced all round, and every other kind of expense has been reduced (hear, hear). In London I know of many directors of tea concerns returning their fees in the hope of better times, if better times should ever come. Establishments on the other side have been reduced, and in the last cold weather over 200 planters were in Calcutta seeking work without avail. With all this before us, can it be truly said that as soon as our profits are reduced we seek to take the profits and perquisites of the buyers? No, we made all the reductions we possibly could in our own countries of production first, and now we find it necessary to come to London to see if we cannot reduce charges and imports which are far too heavy (hear, hear). Foremost among these imposts are the present system of weighing and the 1 lb. draft. You might say it doesn't matter which of the two we amend. But if we amended the system of weighing, either we should have to incur an extra charge for weighing, or we should have to get the Government to amend its weighing system, and if the latter then the Government tax upon this article of necessity would be increased. Whether you be all Liberals—and I hope you all are (laughter and "No")—well, some of you may be Conservatives (laughter)—but whatever you are I am quite sure none of you love our Government to the extent of wishing to increase the duty which, by an "ancient custom," is levied upon this necessary of life as if it were a luxury like wine or spirits, or tobacco (laughter.) I therefore come to the 1 lb. draft. Let the buyers leave us that and be satisfied with the 1 lb. extra per package that they already get in the weighing (hear, hear.) That has been felt to be the right course by all the growers and their representatives, and such is the resolution I have just read out to you. There are one or two misconceptions that I should very much like to remove, for the benefit of those outside. There are two misconceptions, and we have throughout had two charges brought against us. The first is a want of courtesy to the buyers, and the want of good faith. As to want of courtesy, I am sure, I carry you all with me when I say that nothing would distress me more than to deserve such an imputation. What are the facts of the case? The Chairman of the Committee has given you the history of this 1 lb. draft movement, and I would only add that the Committee was appointed not with the case prejudged, but appointed to look into the matter and report to us. They have reported to us today, but what have they done in the meantime? They met the buyers and consulted them, hearing all they had got to say; they did not even draft their report till they had heard the buyers' side of the question. It is now for us to say what we will do. The Committees of both Associations have been called bad names and neither of them has even gone so far as to say "You're another" (laughter). The charge of discourtesy is certainly not proved. There are two parties to every agreement or contract, and for one party to alter the terms without the previous consent of the other party is certainly evidence of a want of good faith. That is a truism to which I assent. But there is this fallacy in our case—there is no contract at all (hear, hear.) In our case there is no contract till the fall of the auctioneer's hammer. The Committee proposes that we should do as we please with teas which are at the present moment our absolute property, to do what we like with. If we like we may ship them to America; we may burn them if we like; we may drink them (laughter). None of these courses could lay us open to a charge of bad faith. And how can the carrying out of our present proposal lay us open to the charge? Our teas have an intrinsic vlaue, and if we offer them at public auction, offer them to the world at large, and one man won't buy them —well, other men will (applause). Not the most timid grower need be afraid because one set of buyers abstains from attending one sale (laughter and hear, hear). If these buyers who have made their fortunes out of our teas abstain from buying any more—(laughter)—another set of buyers, of other new companies, will come forward to buy them (hear, hear). I hope the buyers will try to look at the matter from the growers' point of view as well as from their own. (Applause.)

THE SECONDER'S SPEECH.

Mr. Arthur Bryans (Messrs. P R Buchanan & Co.):—I rise to second the resolution. As a member of the Committee I should like to say that

it is only dire necessity that has brought us, to this pass. (Hear, hear). We had to consider the two points to which reference has been made in order to see what we could do to meet the bad times. There has never been such a year for tea-growers as the past year, and the question of the sale of our teas naturally came under consideration—the two points that came before us being, of course, the system of weighment and the 1 lb. draft. Our duty was to consult you. We asked you what your opinion was, and we received from you what I consider practically a unanimous mandate to go on with the movement for the abolition of the draft allowance (applause.) It was so unanimous that it seemed we could do nothing but move the resolution we have brought to your notice today, unless there was some strong reason against it. Unless this strong reason could be adduced, we as a committee, it seems to me, had no alternative but to proceed. The only way to get reasons against our proposal was to meet the trade. But there was considerable delay. The trade held a mass meeting, and they threw over the Wholesale Tea Dealers' Association and at last appointed a committee representing the retailers and the buyers to meet us. I had great hopes of that meeting, and was woefully disappointed. What was the answer we got? It was simply an answer of *non possumus*: the only plea the trade put forward was "We can't and won't meet you.' Some one suggested the possibility of a compromise: they would not listen to such a thing. Under those circumstances I do not see what we could do other than we have done. (Hear, hear.) I am one of those people who consider that we have a right to sell our goods on our own terms (applause), prvoided those terms are fairly just, and I cannot conceive that making a present of 1 lb. of tea in every chest and half-chest is just, or that to abolish the custom can be called an injustice. (Hear, hear.) One thing that took place at our meeting with the trade took my breath away; I think it took away the breath of the whole committee. The trade said, "We don't get and extra weight at all." (Laughter.) They told us, "You are the sinners, and we are the sinned—against." One importer produced a most elaborate weighment return of a very large number of chests, done to the ounce in his own presence, to show that his loss was 1¾ per cent for the whole lot. It was handed to them, and they returned it and pooh-poohed it, and implied that they did not believe a word of what he said. We are not all dreaming: it *can't* be possible that we don't lose any tea on these transactions. (Laughter). In calculating our averages for many thousands of chests I have always to make an allowance of two per cent to cover loss of tea that we are not paid for. (Hear, hear.) I have found in the course of many years' experience that less than two per cent will not cover it. The trade representatives said, "Oh, but you can't weigh your tea properly." But they know it is not we who weigh the teas, but Her Majesty's Customs. I don't like the system, because it tells against me; but it is not likely that Her Majesty's Customs would cheat themselves. I hold in my hand a letter from the manager of one of the warehouses, in which he says that "the weighment of tea and the 1 lb. draft given from two to two-and-half lb. per chest is against the importer, and the Customs also lose ...e in duty on each chest." I don't think ...n have any stronger evidence that the trade ...t more than they pay for. Let me draw attention to the extraordinary notice issued on Friday last, the like of which I have never seen in the City of London. (Applause.) It is issued without signature, and it proposes to condemn, by not buying at the auctions this morning, a resolution to be submitted for approval this afternoon. (Laughter). Surely this can be only one thing—a threat; it can be nothing else. I have ceased to be surprised at the actions of the body that is manœuvring the opposition to our proposal. There has been made the unwarrantable assertion that there was an understanding that the abolition on draft would not be forced upon the trade against their wishes. I know the whole of the negociations, and the committee will bear me out when I say there never was such an understanding, and I hope there never will be. Hear, hear). I revert to my original proposition: we have the right to offer our goods for sale on our own conditions. Some of the conditions of sale want revising. In two cases I admit they tell hardly against the trade. One clause is very badly drawn, and the sooner it is altered the better. Seeing the lower value obtained for tea, it would, I think, be much fairer that the deposit, instead of being a fixed deposit of £1, should be an *ad valorem* deposit, with a maximum of £1. That is a change that we should insist upon at once. I go further. I say that three days is not sufficient for the trade to inspect their purchases. I would be inclined myself to allow a period of five or six days. (Hear, hear). We do not want to sell them something that is not tea. If they are correct in their statement that extraneous matters are found in the chests, let us, as Mr. Rutherford said, get at the real offenders. We want to sell nothing but pure tea. But we insist upon being paid for every pound of it. (Aapplause.) As to the loss in distribution—in the reweighing in small packages—it is not a fair argument. We importers also have a lot of loss in our own factories. But it cannot concern us what loss there is on our teas after they have ceased to be ours. It is said that there are large profits in the tea trade. But it is not the growers who are making the large profits. (Hear, hear). Turn to the reports published today, last week and the week before, of the large heavily-capitalised concerns of retailers, and you will see who are the people who are making the money. But we, growers and importers, have never been in such straits. The fatal error of the "shilling canister" throughout the country is shelling ruin for us. (Hear, hear.) It is not we who regulate the price for tea; it is the trade. As long as this underselling of tea continues it will redound to our loss. Let us be unanimous today. Let the dissentients from this proposal be only those who have other interests to conserve—the interests of retailing. But let the growers and importers be unanimous. (Hear, hear). Let us continue our present unanimity, and then the abuse will be corrected and this unjust tax abolished. (Applause.)

Mr. John McEwan:—You said, Mr. Chairman, that 215,000,000 lb. of tea out of 227,000,000 was on the side of this proposal. I believe, I represent 8,000,000 lb. of the deficiency. There are some points in this movement that have not been adduced today. I admit that we, as growers and importers, apparently lose 1¼ per cent on our turnover, taking into account the half-chests, on which we proportionately lose more. But I am not prepared to forego a loss of 1¼ per cent at an expense of 2½ per cent. If you adopt this resolution I think

that the dealers with the new conditions coming into effect will lower their bids ("Oh, no.") It is impossible for a dealer with a loss of the 1 lb. draft to bid at the same rate as one who had before got the allowance. I refuse to agree to this proposal for the abolition of the draft. In the price the buyer pays the draft allowance is allowed for. I do not like the system, but the point in favour of the alteration is really the need for more simplicity in our books. Had the buyers been approached differently and the matter put to them differently, in all probability they would have agreed to the change. I think we could have approached them saying we wanted to do away with the draft in order to get more simplicity in our books, and we could have said that we expected to receive lower bids on account of the abolition. (A laughter.)

The motion was carried with only one dissentient.

The proceedings ended in a vote of thanks to Sir H. Seymour King for presiding, Mr. Stopford Sackville, who proposed it, remarking amid laughter that the buyers at their mass meeting had produced a Lord Mayor, but that the growers had gone one better, for they had played the King.

THE GEOLOGICAL SURVEY.

It is, as we supposed: the services of Mr. Oldham have neither been lent by the Indian Government nor is he under an engagement to stay in Ceylon at this time. Mr. Oldham is on furlough, and, having been in correspondence with His Excellency Sir West Ridgeway as to a Ceylon Survey, he has utilised part of his holidays to visit Ceylon in order to get an idea of what is expected by the Ceylon Government, to have a look at the country and, perhaps, to give his opinion as to how a Survey should be carried out. In the first place, it is no secret that Mr. Oldham is of opinion that, in Ceylon, a Geological should be combined with an Agronomic Survey—as has been done in some parts of India with markedly useful results. This brings the work into close connection with the future Agricultural Department or Board, if such should be the outcome of the Agricultural Commission. It should be remembered that Agriculture often benefits even more than Mining by a Geological Survey, not simply from what may be said (agronomically) of soils; but in the discovery of phosphatic rocks or deposits. Besides plumbago, Mr. Oldham is interested in the mica of Ceylon, and he tells us there is one kind exported from this island—probably that found in Uva, below Haldummulla?—which is very rare in India and is much prized; while the more ordinary kind (probably found in our Western districts?) is commonly associated with phosphates which are of speical value in agriculture. Will any of our readers acquainted with mica deposits or workings in the island, kindly inform us of the same, so that Mr. Oldham may be able to judge whether he can visit the place or places during his present stay in Ceylon?

THE AGRI-HORTICULTURAL SHOW.

So much has been written by way of description in our columns that we have only left the pleasant duty of congratulating the Committee—and especially the Working Committee—on the great success attained with the present Exhibition. Whatever minor defects may be pointed to by critics, no one can deny that the Show as a whole gratified the very large gathering of visitors and admirably answered the end of bringing together, for purposes of comparison, useful products and works of art as well as specimens of live-stock. If we may trespass on the rôle of our reporters, we would remark especially on the floral display, which was very delightful; while regretting with Mr. Nock (who was as usual enthusiastic in his work of arranging and judging) the inadequate show of ferns. For Colombo this was certainly inadequate. In one or two other sections there was room for improvement and we may agree with one gentleman that a little more advertising immediately before the Show would be good. Say for a month previous that a single prominent line about the coming Exhibition appeared in the daily press. But really the wonder is that the indefatigable Honorary Secretary, Mr. Drieberg survives his many and prolonged labours. It is questionable, in fact, whether Government does not want to kill off this most useful officer; for even now, what with Exhibition and Commissions, Mr. Drieberg will be as three single gentlemen rolled into one, even after he has got his hands clear of the present Agri-Horticultural display. May he survive them all and get the substantial reward he will have so fully earned, apart from the comforting assurance that his work is one directly and decidedly for the public good. We trust further that the Colombo Agri-Horticultural Exhibition may be considered to be established on a firm basis as an annually recurring event, whose influence for good is bound to widen and increase with each succeeding year.

THE INSECT ON YOUNG TEA IN THE MORAWAK KORALE.

A LOCAL EXPERIENCE—NOT LIKELY TO SPREAD.

The attack on young tea in a corner in Morawak Korale must be quite a local matter, of no special importance as regards the industry generally even in the district referred to. We must, however, confess that we have not yet identified the insect concerned and that from the account given to us lately by the Visiting Agent, it is a novel as well as mischievous and very disagreeable visitor. It cannot be called a beetle, for its motion is crawling after the fashion of the lowest form of life. It is discovered crawling up the tea bush in all sizes from a green speck up to a creature half-an-inch long by one-fourth at widest, nearly oval, green like the tea-leaf save for one or two reddish or orange specks; but the striking peculiarity is in small bristles on the back and sides which when touched give a decided electric shock. This, of course, prevents the coolies from touching them with their hands and the process of gathering is therefore a slow one. There is no sign of the surrounding jungle being affected by them; but they do not despise

cinchona leaves, while the tea leaf they devour, from the toughest to the tenderest. Still, an insect of this kind attaining an appreciable size can be dealt with as a local matter; a deep trench may perhaps prevent its crossing from one field to another, as its locomotion is so slow and altogether it is a very different matter from a fungus pest blown about by the wind, or even from helopeltis which spread and multiply so quickly and resist wind. Still such insects as the present one can do much harm while their day lasts—ten acres of tea stripped to the bare stems and branches (no wood is touched) is no joke; but in Darjiling we read in one year of a 100 acres of young tea being destroyed as soon as planted by a sudden outburst of a white grub beetle. We can see nothing in Cotes' "Tea Insects of India" to answer to the Morawak Korale visitor. We are inclined to think it must be of the weevil family, and here is what Nietner says of one of the kind which had consumed every leaf of coffee on fields in Maturata:—

Arhines (?) destructor.

This is a beautiful green weevil, 2½‴ long and 1″ broad, oval, narrowed in front, covered all over with closely set but isolated gold-green scales, winged. The head is rather short and blunt; antennæ apical, elbowed at the middle, the part beyond the middle being composed of eleven joints, forming a club towards the end, the third joint from the tip being the thickest: they are brown, hairy beyond the middle; the thorax is plump, subconical; the anterior legs are the longest, the second pair the shortest, the tibæ and tarsi of all are hairy, the tarsi with hairy brushes underneath, especially thick at the third joint which is deeply 2-lobed; the tibiæ of the second pair are long, serrated inside, curved and 2-hooked at the apex. The insect varies considerably in size and colour.

This pretty beetle is common during the dry weather, but I have never found it do any injury to the coffee. Mr. James Rose, of Maturata, who first directed my attention to it, wrote to me:—"The mischief they do to the coffee is really frightful, and if they were as plentiful as the bug, they would be our worst enemies. Five or six acres were completely covered with them, and they consumed almost every leaf. Year after year they appeared upon the same place. This year they appeared upon a neighbouring estate in great force, and ran over at least forty acres. The same thing occurred on three other estates." Mr. Rose conveys a pretty picture to the mind of the entomologist by stating, that in May, when these insects disappear, the logs and rocks may be seen strewed with their bright green elytra.

The family of the weevils is one of the most extensive amongst the beetles, and many of its members both here and in Europe do much injury to agricultural produce. I have seen nearly the whole sweet potato (*Batatas edulis*) crop of the Negombo district destroyed by one of them, the *Cylas turcipennis*. The common rice-weevil, *Sitophilus oryzae*, is another instance, and one of the coconut destroyers of the low-country belongs also to this family, the *Sphoenophorsus planipennis*.

We now await further specimens from the Morawak Korale to send to Mr. Haly of the Museum to examine under the microscope.

TEA-DRINKING IN RUSSIA.

(Special for "Ceylon Observer.")

"With regard to Russian tea and tea-drinking," a young engineer and surveyor, who was recently Assistant Engineer to a large Railway Survey party in Eastern Russia, writes to us by this mail:—"The tea comes from China principally and is brought overland. I suppose the [Siberian] Railway will carry it soon. A Russian offers you tea immediately you go to see him, whatever hour of the day or night it may be. The *samovar*—a big brass kettle soup-tureen arrangement—is brought in, full of boiling water which is kept at boiling point by red-hot charcoal in a hollow inside. The tea is made in a small China tea-pot—about one to two inches deep of tea is poured into a glass tumbler and the rest is filled up with water from the *samovar*; a slice or two of lemon put in, and a couple of lumps of sugar thrown in, completes it. It is very weak, of course, with so much water; but they swill so much of it that if it was strong they could not stand it. It is more straw coloured than English tea. It wants some practice to hold the glass, because it is jolly hot; the spoon always stops in the glass and the first finger of the hand holding the glass holds the spoon against the side opposite one's mouth when drinking. I understand that the Ladies of the higher aristocracy now drink it out of cups and with milk. Not being acquainted with any L's of the H.A., I have not seen this."

[Our correspondent's last letter appeared in our issue of January 24th, and his account of further experiences of railway surveying in Asia Minor will be given in another issue.—ED. *T.A.*]

WEST INDIA FRUITS.—The report of the Commission which was sent to the West Indian Islands to inquire into the causes of the bankrupt condition of the various industries in the colony was published in these columns at the time of its issue, and it was felt that the Government would be justified in holding out a helping hand in order that a fresh start in life might be given to people who had suffered long and struggled manfully against adverse fortune. There had been too much of the one-basket system; our Government is about to help to inaugurate a new state of things, and we may here briefly epitomise what it is the Colonial Department has made up its mind to do. A contract has been signed by Mr. Chamberlain with the Jamaica Fruit and Produce Association for direct fruit and passenger service between this country and Jamaica, and there are now four steamers being built on the Clyde and the East Coast to run between Southampton and Jamaica, the running to begin in May of next year. This contract will last for five years, and the ships will run fortnightly. The steamers will be fitted for fruit carriage, and will have storage sufficient for at least 20,000 bunches of bananas; a few passengers will also be carried. The subsidy proposed to be paid is £10,000 per annum, of which the Government will contribute half, to be increased to £12,000 if more passenger accommodation is required. Of course fruit other than bananas may be carried, but taste seems to have set that way, and we are asked to believe that 3 lb weight of baked bananas are quite equal to seven times that weight of wheaten bread. It is further stated that banana flour may be profitably utilised for the nursery as well as the adult *cuisine*; but the flour could, of course, be most profitably manufactured where the fruit is produced, as sugar where the cane is ripened.—*Gardeners' Chronicle*, July 15.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899 :—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30.

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Castilloa Elastica (Panama or Central American Rubber).—Seeds and Plants supplied; price and particulars as per our Circular No. 32.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; seeds.

Santalum Album (Sandlewood).—The cultivation and felling of the tree is entirely under Government monopoly in India, Sandlewoods to the value of over £100,000 being annually exported to various countries from India. The cultivation of this useful tree is now receiving increased attention in other countries; seeds and plants.

Eucalyptus Marginata (Jarra).—Large quantities of this most valuable timber are being annually exported from Australia to London and various parts of the world for street paving and other purposes. Price of seeds on application. 7,846 pieces of Jarra timber has already arrived for Ceylon use,

Seeds and Plants of Cinnamon, Nutmeg, Clove, Kolanut, Pepper, Cardamom, Vanilla. Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world,

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price List of Seeds and Plants of Fruit Trees now being prepared and will be ready shortly.

Agents in London :—MESSRS. P. W. WOOLLEY & Co., 33, Basinghall Street.
Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address :
WILLIAM, VEYANGODA, CEYLON.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
HENARATGODA, CEYLON.

ANGLO-CEYLON AND GENERAL ESTATES COMPANY, LIMITED.

Report of the Board of Directors, presented to the Stockholders at the thirteenth annual ordinary general meeting, held at 20, Eastcheap, London, E.C., on Tuesday, July 18th.

The Directors herewith submit their Report, and the Accounts, for the year ending the 31st March, 1899.

The net profit, with the balance of profit carried forward from the previous year, as shewn in the audited accounts annexed hereto, amounts, after payment of the Debenture Interest, to £18,650 7s 10d, and the Directors recommend the payment thereout of a Dividend of 4 per cent. on the Consolidated Stock of the Company. This Dividend will, if assented to by the meeting, be payable on the 1st August, 1899, at the London Office of the Company's Bankers.

In Mauritius the prices for Sugar in the course of the year under review sank, owing to the collapse of the Indian Market, to the lowest point ever known. Fortunately, however, the crop was remarkably abundant, and the cost of production per ton of Sugar was from this and other causes considerably reduced.

Towards the end of the financial year the Indian Market revived to some extent, in consequence of the confidence inspired by the legislation of the Indian Government, by which the foreign bounties were countervailed; the Money Market in Port Louis became easier, and serious difficulties in the Island were averted. 141,619 tons of canes were handled on all the estates in which the Company is interested, producing a crop of 13,526 tons of Sugar as against the very short crop of 8,916 tons in the year 1897-1898.

It is hoped that a condition of greater stability will prevail in the Indian Sugar Market, favourable to Mauritius interests, as an effect of the legislation to which reference has just been made.

In Ceylon the crop of Tea from the Company's Estates fell very short of the estimate owing to the persistent drought and cold wind experienced throughout the tea growing districts; and it amounted to 1,566,812 lb., only as against 1,584,236 lb. plucked from a less area in the previous year. From the same causes the Cocoa crop was reduced from 2,100 cwts. to 274 cwts., being less than one-seventh of its predecessor. The drought caused considerable damage on the Cocoa Estates, and the mortality among the young coconut trees was large; the Cocoa trees in bearing, however, are now reported to be looking well, and the Spring crop just harvested is stated to be satisfactory.

The prevalence of higher rates of exchange, as shewn below, further reduced the Company's profits in Ceylon, which were accordingly much below those of the year 1897-1898.

The gross price of the Company's Tea was 8.59 pence per lb. in London as against 8.17 pence in the previous year, and the gross price of the Company's Cocoa averaged 70/1 per cwt., as against 71/- per cwt. previously.

The result of the working of the Estates in Ceylon and Mauritius respectively is given in the Profit and Loss Account, calculated at the average rate of exchange of 1/4¼, as against 1/3⅝ in the year 1897-1898.

The Chairman visited the Company's properties in Ceylon, the Straits and Mauritius, during the year, and the Board is confident that improved results will accrue from this inspection.

The condition of the Estates, both in Ceylon and Mauritius, is reported to be excellent, and the prospects for the current year to be encouraging. A statement of the acreages is given in the schedule annexed hereto.

Mr. Quintin Hogg, under the provisions of the Articles of Association, retires from the Board, and being eligible, offers himself for re-election.

The Auditors, Messrs. Welton, Jones & Co., also retire from office, and have expressed their readiness to act if re-elected.

TEA BLIGHTS—AND PLANT DISEASE.*

Just as we were about to publish a brief review of Mr. Massee's important little book on "plant diseases," there comes to hand a special circular by Mr. Willis on "Tea Blights" and how to deal with them, which we fully reproduce in our Daily and *T. A.* It will be very interesting now to compare what Mr. Massee and Mr. Willis say not only in description of the fungus pests affecting tea, but also as to "preventive means." Our tea planters are unusually fortunate in having the opinions of two such good authorities given simultaneously. We now proceed with our review of the book before us.

MR. George Massee, F.L.S., Principal Assistant (Cryptogams), Royal Herbarium, Kew, is recognised to be at the head of his own Department in reference to diseases caused by parasites of vegetable origin, and from India and Ceylon, again and again, have references been made to him in regard to fungoid or other pests affecting tea, cacao or other products. His text-book of Plant Diseases will, therefore, be widely consulted; and as it is thrown into the form of a handy book of reference and is, moreover, freely illustrated with descriptions and advice put into plain language, it is just the little book —costing under five rupees in Ceylon—that ought to be in the hands of responsible planters. The preface opens as follows:—

> The aim of this book is to enable those directly occupied in the cultivation of plants, and with but a limited period of time available for study, to determine the nature of diseases caused by parasites of vegetable origin; to apply in the most approved manner those curative and preventive methods which experience has shown to be most successful in combating the particular form of disease under consideration; and finally, to include in the daily routine of work precautionary measures which, without being costly, frequently prevent a slight disease from assuming the proportions of an epidemic

An instructive introduction may be gauged from the following summary:—

> Amount and kind of knowledge required by practical men—Familiarity with names and habits of parasites—Preventive measures—Cures—Rule-of-thumb methods of doubtful value.

And no less suggestive are the headings for the chapter on "Fungi":—

> Nature of fungi—Saprophytes—Parasites—Mode of growth of fungi—Reproduction of fungi—How parasitic fungi infect their victims—How the spores of fungi are dispersed—Modes of dissemination of disease that can be prevented—Danger connected with pruning—Selection of shade trees.

There are chapters on "Lichens," "Algæ," "Myxogastres," and "Bacteria." Of more general interest is what is said of "Fungicides":—

> Nature of Fungicides—Solutions—Powders—Bordeaux mixture—Ammoniacal solution of copper carbonate —Potassium sulphide solution—Iron sulphite solution—

* A Text-book of Plant Diseases caused by cryptogamic parasites by George Massee, F.L.S., Principal Assistant (Cryptogams), Royal Herbarium, Kew. London, Duckworth & Co. New York: the Macmillan Company, 1899.

Permanganate of potash solution—Sulphur—Lime—Resin wash—Jensen's hot water treatment for wheat and oat smut—Paraffin—Formalin—Lysol—Resin compound—Fumigation with hydrocyanic acid gas—Sterilising soil—Poisonous properties of fungicides.

After this we are treated to some "Economic Considerations" on "Statistics relating to losses caused by grain rust in Prussia—loss through rust of wheat in Australia—destruction of vineyards in the United States caused by fungi"; and to an account of "Various methods of spraying—spraying apparatus"; and still again to "Descriptions, with preventive and curative methods, of the various kinds of parasitic fungi attacking plants of economic importance." Various useful indexes conclude the volume.

But now, in regard to the two products and their diseases in which Ceylon is at this time most concerned, namely tea and cacao, we reproduce all that Mr. Massee has to say even at the risk of some repetition. Here are three pests of tea:—

"BLISTER BLIGHT" OF TEA PLANT.

(*Exobasidium vexans*, Massee.)

Dr. Watt, who investigated the pests and blights of the tea plant in Assam under instructions from the Government of India, says of the present parasite; 'One of the very worst blights on tea is known to the planters as Blister blight. I have seen hundreds of acres completely ruined by it.'

The fungus attacks the leaves, first appearing as a minute pink spot, which continues to increase in size: the under surface of the leaf at this point becomes depressed, forming a circular pit, a corresponding bulging out appearing on the under surface of the leaf at the same point. Several of these warts of blisters frequently form on a leaf. The convex surface of the blister eventually presents a minutely velvety or woolly appearance, due to the formation of the fruit of the Fungus on the surface of the blister. The first fruit consists of small, one-septate conidia, which often commence germination *in situ*. These are followed by basidia, usually bearing two spores each. Sometimes fruit is also produced on the concave side of the blister.

When the disease has gained a foothold on the leaves, it also frequently attacks young shoots.

PREVENTIVE MEANS.—Dr. Watt states that the disease 'invaribly appears on tea that has not been pruned in the autumn. About April it extends to the pruned tea, which has by then come into leaf.' As to whether it would not be wise under the circumstances to prune all plants, lack of practical knowledge prevents me saying; however, the statement suggests that the mycelium is perennial in the branches, and produces the first crop of spores the following season, which are carried by wind to the pruned trees. In addition to collecting and burning diseased leaves, it is absolutely necessary to cut off all diseased branches.

Ascertain that the fungus is not also present on wild plants in the neighbourhood of the tea plantations.

Watt, *The Pests and Blights of the Tea Plant*, p. 419.

Massee, *Kew Bulletin*, 1898, p. 109, figs.

"GREY BLIGHT" OF TEA PLANT.

(*Pestalozzia guepini*, Desmaz.)

Said by Dr. Watt to be one of the most destructive and dangerous of parasitic fungi to which the tea plant is liable. It occurs in Assam and Cachar, and probably in all the tea districts of India, also in Ceylon. The disease first appears as minute, brownish-grey spots on the upper surface of the leaves. These spots gradually increase in size and coalesce, forming large, irregular blotches, which finally become grey and sprinkled with minute black points, the fruit of the fungus. During the increase in size the blotches are often bordered by a dark, slightly raised line. Diseased leaves are not at all blistered or swollen; in fact the grey patches are thinner than the uninjured portion of the leaf, owing to collapse of the tissues.

Dr. Watt states that the disease commences for the most part on one side of a bush, very often on the same side of all the bushes over an effected plot—a circumstance that may be taken as indicative of the germs having been wind-conveyed.

In addition to growing on the tea plant, *Pestalozzia guepini* also occurs as a parasite on other species of *Camellia* and on *Rhododendron* in India; in Europe it is not uncommon on cultivated camellias and rhododendrons. In the United States it also occurs on introduced species of *Camellia* and *Citrus*, from whence it possibly passed on to the native *Magnolia*. Finally it is known to occur on indigenous plants (*Niphoblous*) in New Zealand, and on *Alphitonia* in Queensland.

PREVENTIVE MEANS.—The remarks I offered in the *Kew Bulletin* are repeated here. If the diseased leaves were collected with the amount of care and intelligence exercised in collecting sound leaves, and burned at once after being collected, the disease would soon be stamped out, as the mycelium of the fungus is not perennial in the tea plant; consequently infection and a recurrence of the parasite depends entirely on inoculation by the numerous conidia or reproductive bodies of the fungus present on diseased leaves. Remembering the very different kinds of plants on which the fungus is known to be parasitic, it is very probable that it also occurs on wild plants growing in the vicinity of the tea-gardens. If such proves to be the case, all such plants should be removed if practicable, as the conidia of fungi are carried considerable distances by wind, birds, and insects, and no amount of attention in the way of removing the parasite from the tea plants would avail if the supply of conidia requisite for inoculating the tea plants were formed on other plants growing in the neighbourhood.

Watt, *The Pests and Blights of the Tea Plant.*

Massee, *Kew Bulletin*, 1898, p. 106, figs.

THREAD BLIGHT OF TEA PLANT.

(*Stilbum nanum*, Massee.)

Indian tea-planters have known this most destructive fungus for at least the last thirty years. The name 'thread blight' is given on account of the very thin strands or films of white mycelium that are firmly attached to the branches and under surface of the leaves of the tea plant. The mycelium also runs under the surface of the branches, living in the tissues of the bark, and coming to the surface here and there to spread over the outside of the leaves and twigs.

The fruit only appears to be formed on very old, rotten branches that have fallen to the ground and become decayed, and resembles pins in miniature—a very slender stem and a round head, the whole not half a line high. Repeated observation proves the fruit to be very rare, and infection from spores may be left out of consideration, except in the case of reclaimed ground, where the trees have been neglected for some time.

The amount of evidence forthcoming seems to suggest that the mycelium travels underground, and first attacks the root, afterwards passing up the stem, either externally or internally, always finally coming to the surface.

PREVENTIVE MEANS.—It seems to be generally admitted that thread blight is common in the jungle on various plants; and to prevent its spread to the tea plants, narrow trenches should be kept open. These need not be very deep, as underground mycelium runs near the surface. By similar means, diseased patches in the plats should be isolated. Prunings should be burned and not buried, as each buried mass may prove a centre of infection. If quicklime is available, and not in other respects injurious to the tea plant, a shallow trench should be made round the stem, filled with lime, or lime mixed with sulphur, and covered over with soil.

Spraying with Bordeaux mixture or with potassium sulphide would check the external spread of the mycelium on the plant.

Watt, *Pests and Blights of the Tea Plant*, p. 433.

Cunningham, *Scientific Mem. Med. Officers of Army of India*, pt. x. p. 20.

Massee, *Kew Bulletin*, 1898, p. 111, figs.

We now take over what Mr. Massee has to say on Cacao and Coffee diseases. As regards "Cacao," we are told of:—

CACAO POD DISEASE.

(*Phytophthora omnivora*, De Bary.)

This disease has been recognised for some years past but has recently become much more general and destructive to cacao pods in Trinidad. The same fungus is probably the cause of the cacao pod disease in Ceylon.

The symptoms of disease are a darkening of the 'shell' of the pod, which almost invariably commences at one end, and gradually extends over the entire surface. After a while the fruit of the fungus shows on the surface as a delicate white mould, often appearing first in the furrows on the surface of the pod.

The white mould represents the conidial form of reproduction, and lasts for some weeks, the numerous conidia produced being carried by wind to other pods, which in turn become diseased.

The mycelium of the fungus permeates and destroys the entire substance of the pericarp or 'shell,' and often also attacks the seeds. Numerous resting spores are formed in the diseased fruit, and are liberated when the tissue decays, when they germinate and start the disease the following season.

Preventive Means.—Spray with dilute Bordeaux mixture, commencing when the fruit is quite young, and continue at intervals as required.

Remove all diseased fruit from the trees, as when once attacked it is valueless, and only serves to spread the disease if allowed to remain.

Do not allow diseased fruit or shells' to remain on the ground in the plantation, as the commencement of the disease each season depends on resting spores present in such material.

The fungus is known to attack a large number of different plants; and it will be important to ascertain whether it is present on other plants in the neighbourhood of the plantation. Seedlings are often attacked.

The disease is most abundant in low, damp situations, or where the trees are much shaded.

Massee, *Kew Bulletin*, 1899.

CACAO DISEASE.

Mr. J. B. Carruthers, who has spent some time in Ceylon investigating the destructive disease attacking the cacao tree, has published his report, of which the following is a summary. The name of the fungus causing the disease is not given, but the account leaves little doubt that it is a species of *Nectria*, allied to the species causing canker in the wood of the apple tree.

The first indication of disease is a darkening of a patch of the cortex; if this patch is cut out it is found to be soft and of a claret colour and full of moisture. At a later stage minute white pustules appear, especially in cracks; these eventually become pink. During the white stage very minute oval conidia are produced in immense numbers, and later on larger, crescent-shaped conidia appear. Finally, when the cortex is dead, or nearly so, a third ascigerous form of fruit develops; the sporangia being globose, crimson, and grouped in clusters.

The disease often spreads rapidly; in one instance a diseased patch more than two feet long, and reaching almost round the tree, had formed ten days after inoculation.

Preventive Means.—The most satisfactory method is to cut out the diseased patch, along with a margin of apparently sound cortex. Covering the wound with tar is not recommended.

Carruthers, *The Tropical Agriculturist*, Nov. 1, 1898, p. 359.

Finally, here is how our poor old coffee and its bitter fatal foe are treated:—

COFFEE LEAF DISEASE.

(*Hemileia vastatrix*, Berk, and Broome.)

This terrible scourage, which was first observed in small quantity on a single estate in the Madulsima district, which occupies the south-western portion of the hilly country of Ceylon, is now widely distributed—India, China, Malay Peninsula, East Indies, Philippines, Natal, German East Africa, and probably wherever coffee is cultivated in the old world.

The leaves are most frequently attacked, spots being also sometimes present on young shoots and even on the fruit.

On the leaves the earliest stage of the disease is indicated by the presence of more or less circular, discoloured spots. These continue to increase in size for some time, retaining their irregularly circular outline, become pale yellow, and studded with bright yellow clusters of spores, which soon change to a bright orange colour. The patches show on both surfaces of the leaf, but the spores are confined to the under surface.

The spores are produced in dense clusters on the tips of hyphae which come to the surface of the leaf through the stomata. Those surfaces of the spore that are in contact when the spores are growing are smooth, whereas the outer, free portion of the surface is coarsely warted.

Preventive Means.—Very little success in this respect attended the efforts of those investigators of the disease, whose primary object was to discover, if possible, some means of checking the epidemic. Probably some of the modern fungicides, as Bordeaux mixture, etc., might prove more effective. Diseased leaves should be collected and burned on all occasions.

Full notes respecting the distribution of the different species of *Hemileia*, along with the dangers arising from want of discrimination in the selection of 'shade trees,' will be found on page 27 of this book.

Berkely, *Gard. Chron.*, p. 1157 (1869.)

Morris, *The Coffee Leaf Disease of Ceylon and Southern India.*

Marshall Ward, *Sessional Papers*; xvii., Colombo, Ceylon, 1881.

There are also two other "coffee diseases" reported, the account of which we may as well quote:—

COFFEE TWIG DISEASE.

(*Necator decretus*. Massee.)

Bursting through the epidermis of young shoots as minute white spots, which soon become orange-red and gelatinous. Said to be a destructive parasite on coffee trees at Singapore. Commencing at the tips of young branches and extending downwards. Removing diseased branches checks the spread of the disease.

Massee, *Kew Bulletin*, 1898, p. 119.

AMERICAN COFFEE DISEASE.

(*Stilbum flavidum*, Cooke.
=*Pistillina flavida*, Speg.)

This disease is almost as destructive to the coffee industry in the New World as *Hemileia vastatrix* is in the Old World.

The symptoms of the disease are unmistakable; circular whitish blotches occur on the leaves, often in considerable numbers, and are equally marked on both surfaces. Using a pocket-lens, very minute fungi resembling a minature pin in shape, and of a clear yellow colour, can be seen grouped on the spots on the upper surface of the leaf. The berries are also sometimes attacked, being marked with circular spots. On the young shoots the pale diseased spots are elongated.

The disease occurs in Costa Rica, Venezuela, Guatemala and New Granada.

Preventive Means.—Although by no means a new disease, no serious attempt appears to have been made to arrest its progress. Being quite superficial, it is quite probable that spraying with Bordeaux mixture, or with ammonical solution of carbonate of copper, would prove effective. All diseased leaves and fruit should be collected and burned, otherwise spraying is of little avail.

Stilbum flavidum, Cooke *Grev.*, 1890, p. 11.—Forming circular bleached spots on living leaves, the bleached patches pass quite through the leaf; sporophores occur on upper surface of the leaf, gregarious on the patches, very minute, entirely clear yellow, 1-2 mm high, stem

very slender, straight or flexuous, head globose; conidia elliptical or subglobose, 2-2·5 × 1·5-2 *u*.

This is considered by Spegazzini to be a Basidiomycete, and renamed *Pistillina flavida*; however, I have failed to find basidia, and so prefer to retain the species under *Stilbum*.

These are but samples of Mr. Massee's valuable work which we have much pleasure in recommending to the attention of our planting readers,—a supply of the book is shortly expected.

TEA BLIGHTS.

CIRCULAR FROM THE ROYAL BOTANIC GARDENS, CEYLON.

TEA BLIGHTS.—The following notes on tea blights have been prepared at the request of Mr. F G A Lane, Chairman of the Planters' Association, and to a large extent in consultation with him. The immunity from disease that tea has enjoyed in so marked a manner for many years is now disappearing; many insect and fungus enemies, some of local origin, some introduced from Assam and elsewhere, are now attacking tea in many parts of the Island, and it behoves all interested in the cultivation to be upon the watch to recognize the signs of disease as soon as possible after they appear and to at once attack and as far as practicable eradicate the disease. The diseases are here, and all experience of cultivators in all ages and lands shows that such disease come to stay; they cannot be completely eradicated, but they can be kept in check if taken in time. Of course this involves a certain expenditure, but if the disease be early recognized and properly attacked this need not be large. Planters should make it a regular part of their work to learn to recognize the diseases and to teach this knowledge to conductors, kanganies, and coolies, and should remember that one diseased estate may reinfect all its neighbours in a few days, if there be any wind, and thus cause them much loss or trouble.

The two chief fungus blights that are attacking tea in Ceylon are the Gray Blight, well-known in Assam, and a blight which has so far only been noticed in Ceylon, and which I have called the Brown Blight. Both are now to be found in most of the districts, but the latter is the more common of the two. It is not always easy to distinguish without the aid of the microscope which of the two diseases is present in an affected leaf, but this is of less practical importance, as the effects of the two are the same, and also the methods to be adopted for their treatment. Several other fungi have been observed attacking tea, and careful watch should be given in case of any spread of these. When a disease is observed to be spreading, no time should be lost in dealing with it.

GRAY BLIGHT.—This disease is due to the attack of a parasitic fungus, known to science as *Pestalozzia Guepini*. It attacks tea in Assam, from which country it has very probably been imported with tea seed. It also occurs on camellias in India and Europe and on citrus (orange and lime genus) in America, as well as on other plants in various countries.

It is purely a leaf disease. It is found chiefly, if not only, on mature leaves, and does not affect the flush by direct attack, but reduces it by injuring the older leaves, on whose proper performance of their duties the rate of flushing largely depends. If many of the old leaves are attacked by the disease, the amount of flush may fall to less than half what it was before the attack.

The first thing to look out for is leaves showing dead portions. If part of a leaf is dead and shows a gray or brown colour, the probability is that it has been attacked by one or other of the blights we are now considering. Of course we know that drip of water on the leaf will produce this result, and it may also follow from the attack of insects, and sometimes from other causes. If the appearance results from any other cause than the attack of an insect or fungus blight, it is of little or no importance, is not infectious, and will not spread, and consequently the removal of the few leaves that may come under this category need cost little in time or trouble. The blights are foes of a different order, and spread so quickly, when once started on an estate that they should be at once attacked. Therefore, bearing in mind that the blights in question are present to some extent in nearly all the districts, it will be good policy for planters to make a point of getting all injured leaves plucked and destroyed, as explained below.

In the case of the gray blight, the injured portion of the leaf usually turns of a light gray colour, which is fairly characteristic of the disease. The edge of the injured part where it joins the green part of the leaf is usually dark brown, and the edge of the yet living part where it meets the dead portion is yellowish when held up to the light owing to the destruction of the green-colouring matter which is going on under the attacks of the fungus, which spreads from the dying portions into the living. When the fungus starts from one spore only upon the leaf, the disease appears as a small gray spot, which widens rapidly, but remains approximately circular, except where its growth is interfered with by the veins or edge of the leaf. Most commonly, however, the fungus spreads from several places at once and forms an irregular patch, which may at length occupy almost the whole leaf. The patch is, however, usually bordered by a dark line, behind which, in the dead portion, may often be seen other faint lines concentric with it. These when present are very characteristic of the attacks of blights. As the attacked part of the leaf dies, it turns grayish or whitish in colour on the surface. On the dying portion the spores or reproductive organs of the fungus are produced in vast numbers. Millions may be formed on one leaf, and each one may, if it reach the surface of another leaf, cause an attack of blight there. The spores are extremely small and light, and consequently float in the air like fine dust, and may be carried a long way by wind, especially in dry weather. One estate may thus easily infect others to leeward of it, though the wind belts, now so general, will tend to largely check this. When a spore reaches the damp surface of another leaf, it promptly germinates and a few days a patch of disease appear on the leaf and new spores begin to form.

BROWN BLIGHT.—This is also due to the attack as a parasitic fungus, which appears to be new to science, and has been named by Mr. G. Massee, of Kew, *Colletotrichum Camelliæ*. To the eye it closely resembles the gray blight: the chief distinction is that the attacked portions of the leaf turn to a reddish or chocolate brown colour as they die. The edge of the diseased part is, as in the case of gray blight, bounded by a dark line, and the adjacent edge of the green part of the leaf, into which the fungus is growing, shows a yellowish colour when held up to the light. The spores are chiefly formed on the under side of the leaf, and appear near the edge of the diseased portion as little reddish eruptions, about the size of a very small pin's head. In all other respects the appearance of leaves attacked by brown blight is practically much like that of those suffering from gray blight.

OTHER BLIGHTS.—Several other fungus blights may at times be found attacking the leaves of the tea plant, but the result is always much like that caused by the gray and brown blights—a more or less irregular diseased portion, the centre of which is dead and at the edge of the dark part an extension of the fungus into the still living portion of the leaf, which shows a yellowish colour where first attacked. One very common blight, found in all parts of the island, is the "Spot Blight," the affected leaves being covered with small, roundish gray spots, rarely as large as a 10-cent piece. This blight does less harm than gray and brown blights, but is troublesome enough, and is worth keeping down by the same methods as will be used for the others.

GENERAL PRINCIPLES OF TREATMENT.—When the disease has been recognized on leaves that have been largely damaged by it, a close study should be made

of the features described above, and early stages should be looked for on other leaves until the attack can be recognized at a very early stage, even before the gray or brown colour has begun to show (when this shows it means that that part of the leaf is dead or nearly so and is beginning to form spores to spread to new leaves). By tracing backwards this way a series of stages may often be found, and it will be seen that when the disease first begins it is indicated by the leaf at the points af attack beginning to turn yellow, especially at first upon the upper side. This appearance can be produced by artificially infecting the leaf with spores from a diseased leaf: the yellow colour will make its appearance in a few days after rubbing with a diseased leaf, unless it be very dry weather. This experiment is best tried indoors with a branch of tea cut and placed in water, and as soon as the leaves begin to turn dark-coloured they should be burnt before they can produce any new spores.

The general principle to be kept in mind in any attack on the leaf parasites we have been describing is this: the disease is confined to the leaf, and is not perennial there; to survive for more than a limited period it must be able to form spores, which may reproduce the disease on new leaves. If, then, we can destroy all leaves bearing the disease, we shall at oncereduce the extent of the attack very much. There will still be many spores about, however, and these will soon cause a fresh outbreak. If the new crop if diseased leaves be plucked and destroyed, a further reduction of the disease will be made, especially if the destruction be carried out before any new spores are formed. The next crop of disease will be smaller, and if we go on upon the same lines the disease may at length be practically stamped out. In theory this would be quite possible, but in actual practice the expense would be prohibitive, and we must simply do the best that can be done within reasonable limits of expenditure, remembering that the great object in view is to destroy all existing spores and prevent the formation of any new ones. Leaves begin to form new spores soon after the gray or brown colour appears, and leaves which drop from the bush will produce spores as they lie on the ground.

Methods of Treatment.—The chief measure recommended is constant plucking and burning of all diseased leaves. On most estates, at moderate or high elevations, the cold prevents the very rapid formation of new spores, and probably if the diseased leaves be plucked at the same time as the regular flush this will be found sufficient. On low-lying estates, especially in warm damp weather, or where the blight is very common, probably at first it would be well to pluck twice as often. The regular pluckers may be provided with bags, or special podiyans put on to pluck the diseased leaves.

The leaves should be taken off right at the base, so as to leave no portion in which the disease may continue to grow.

The bags or baskets used should be airtight, otherwise the spores on the diseased leaves they contain will be simply sown all over the estate as the bags are carried about.

The contents of the bags should be immediately burnt when brought in and never left lying about, and the bags themselves should not be kept anywhere that they may infect tea bushes. It would be well perhaps to disinfect them before putting them away by aid of a little Bordeaux mixture or other poison.

The pluckers should be instructed to pluck diseased leaves by taking hold of the healthy portion. If they touch the diseased part they will be liable to get a number of the spores upon their hands, and then afterwards they will deposit these upon other leaves. Remember that fungus blights are very infectious. Do not allow an uninjured leaf to be touched by a diseased one or by hands which have touched a diseased one, if it can be helped.

Plucking of diseased leaves should be done through the estate in the direction of the wind as far as possible. If the diseased leaves be removed from a field which has other diseased fields to windward of it, the former will be reinfected from the latter. Special care should be taken not to allow fields that lie to windward of other estates to become infected with disease.

If the ground be covered with dead leaves on a part of the estate where there has been blight, many of these are sure to be covered with spores. They should be swept up and burnt or buried with a little lime, say, an ounce for each bush.

Special on slaught should be made upon disease at pruning time. The diseased leaves, including those that show any sign of the yellowing above described, should be plucked and put with the prunings, and the whole, together with all dead leaves and twigs lying on the ground, should be burnt or buried. If a little manure is buried with the prunings their decay will be more rapid, and the fermentation set up will help to destroy the spores.

The most common method of attacking leaf parasites —spraying—is impracticable in most cases on tea estates on account of the steepness of the ground, the cost of application, and the great difficulty of getting a fine enough spray to cling to the hard glossy leaves of the tea. If only one small patch of disease is found on an estate, however, it might be worth while to spray the bushes there and all those round them, after plucking and burning the diseased leaves, with Bordeaux mixture, as described in the circulars on cacao canker. Care must be taken that the spray is so fine that it hangs in the air like a mist, otherwise it will form drops on the leaves and run off. The spray should be applied to the *debris* on the ground as well.

These notes have been hasitily put together from incomplete knowledge of the diseases as present in Ceylon. Planters would confer mutual benefit upon one another by making notes upon the extent of the disease, the methods tried for reducing it, their effect, and so on, and communicating these to me on my return towards the end of the year.

John C. Willis,
Director, Royal Botanic Gardens.
Peradeniya, June 6, 1899.

COCONUT PLANTING IN VEYANGODA.

A planter writes:—"We have not your quick growth of Rajakadaluwa to show. In this district, the soil, which is generally stiff, has to be quite conquered by the roots before the palms are in full bearing—or say 10 to 15 years to *come* into bearing, and 20 to 25 to get to *full* bearing, which should last 40 to 50 years under care and cultivation; and then the decline might commence. That is my idea and observation. Trees slow of growth last longer than quick growers—nature's compensation; and I believe our trees will last longer than those of Rajakadaluwa; but I agree with you that trees on soil like the latter can be maintained in good heart, long enough to be a really good investment by liberal treatment. In a reclaimed paddy field and in a sandy loam patch, my trees have come into bearing in five and six years, but that is exceptional. The village theory is that the trees here benefit by proximity to the clouds! This estate was opened in patches, first by Sir R. F. M., 27 or 28 years ago; then completed by H. D. Andree 17 or 18 years ago. Little was left for me; and my patches of five to eight years are very promising.

"My best recommendation for nuts here is that Mr. Jardine is a buyer of local seed. He took 4,000 last February, and last week we sent him 4,000 more. I wish the natives understood the exchange and improvement of seed better.

"My acreage in bearing is about 120 acres of coconuts, and I got 292,000 last year; and my June

crop this year was 92,000, so that I shall be safe for about 325,000 this year. I shall be quite content to get 750,000 nuts from my 250 acres; but prices here are generally good. Rajakadaluwa seems more hopeful; and the experience recorded with a 10-year plantation fairly justifies it; while mine is 18 to 28 years."

We have had the pleasure of visiting the estate referred to, and may add that the trees, doubtless as a result of utmost care expended on them, show an exceedingly solid build. The straightness of the trunks was remarkable, and, though slow of bearing, on the older trees almost without exception we saw fine clusters of large nuts. The grass beneath the palms seemed of excellent quality and kept exceedingly clean, so much so that it brightened up one's dimmer recollections of an English garden far more than the bare earth of the tea-field could ever do. The cinnamon shrubs looked exquisitely fresh and green, and the prospering verdant growth of these bushes seemed to drop into the place of the border of laurels beside an emerald lawn in the home country—the land of many a spacious park and smiling hedge-row.

THE FUTURE OF CINCHONA.

The note which we published last week regarding the trouble in the Company which established the Bandong Quinine Works, was fair evidence that all is not happy there, but more recent news which has come to hand indicates that the trouble has been smoothed, if not settled, and, a decision arrived at which will have a far-reaching influence upon the supply of cinchona bark and quinine to the world. On the 16th ultimo, a meeting of bankers and cinchona-planters was held at Bandong to consider the whole question of the export of cinchona and quinine, when it was decided to establish in Batavia a regular cinchona market, whence the bark will be sent and sold by auction to exporters. At the same time an agreement was entered into with the Bandong Quinine Factory, under which that Company agree to send to the Batavia market before the end of January, 1900, not less than 10,000 kilos. (350,000oz) of quinine sulphate for disposal by auction, and the Company also undertake to supply advance samples of the quinine, so that samples may be distributed to buyers in the neighbouring colonies, and in Australia in October next. These are the brief details which have come to hand by cable. Brief as they are, it will be seen that they embody a principle which has not hitherto been recognised by the cinchona planters, and it is evident that, if the planters are all in it, and stick together, the days of cheap bark and quinine under 1s per oz. are practically over. It is well known that the planters live by virtue of advances made to them by bankers and financiers, who have always grumbled at the want of control over the European markets. This new proposal seems to supply what they lacked, for it will at least give them the grip on the local market, and ensure minimum rates for the bark—always assuming, of course, that there is in Batavia a sufficient number of buyers to ensure the competition requisite for fair prices. The Java people have learnt by the incidents of this year that the world is practically dependent upon them for this indispensable drug, and although speculators are mainly responsible for the great appreciation of bark and quinine, the speculation was based upon the insufficiency of Java supplies. Seeing, therefore, that the supplies to the European market will, in future, pass through the Batavia gauge, and that that gauge will be controlled by those having pecuniary interest in keeping it big, it does not seem likely that we shall see a return to penny units. India and Ceylon are now out of the running in cinchona production. They cannot grow the rich Ledger trees for want of the suitable soil at the requisite elevations. Gradually India is dropping all the species except Officinalis, and although Mr. Standen's visit to Java may help him to more hopeful experiments on the Indian Government plantations, no market influence can be looked for from that quarter during the next dozen years—if ever. We are in the hands of Java, and the Batavians know it. When the new Convention comes into force the despatch does not say, but we imagine that it is forthwith.—*Chemist and Druggist.*

SCIENCE AND TEA.—Replying to various enquiries made by Sir Patrick Playfair, Dr. George Watt, Economic Reporter to the Government of India, has stated at some length his views in regard to the employment of a scientific officer for the tea districts. His remarks—says the *Madras Mail*—will be of considerable interest to planters throughout India, for they are an exposition of the need that there is, not for one scientist but for several. Dr. Watt says, in fact, that he would urge "that there is not scope for one scientific expert for a few years but for half a dozen for a life-time." As, however, it is improbable that the Indian Tea Association can afford to employ more than one, and as the Government does not appear disposed to do more than assist the Association in regard to one scientist, we need not at present travel beyond the question of what particular branch of agricultural science that one should deal with. After showing that one man could not be an expert in the several very important branches that need investigation in the tea districts of Northern India, Dr. Watt brings the matter to a point by saying that if funds will not admit of the whole question being dealt with, the Association should decide whether it wishes to secure a biologist (*a*) to investigate pests and blights and discover remedies; (*b*) to bring to light practical improvements in the quality and treatment of the plant, or (*c*) to suggest improvements in methods of manufacture. As regards the investigations conducted by himself in Assam, Dr. Watt explains that they lasted only two months and a half and were conducted in only one district—Assam. On the point of probable cost he states that if an officer were employed permanently, it might be possible to get a Doctor of Science with special qualifications in the chemistry of plant-life for R1,000 rising by annual increments to R1,500. If only engaged for a term of five years, the expert should receive not less than R1,500 a month, all expenses paid to and from India, and customary travelling allowances. A central head-quarters is desirable—Shillong, if work is to be conducted in Assam alone; if it is to extend to Darjeeling, the Duars, Assam, Cachar, &c., Darjeeling might prove to be the best place for the head-quarters laboratory, if Calcutta be thought too far off; but in that case there should be small laboratories also at Dibrugarh and one or two other centres. A distinct period of every year should be spent on tour, and every garden under the Association visited in turn. A hard and fast rule should also be made that every discovery made by the scientist becomes the property of the Association, and that he should not be allowed to patent any process or method within a fixed term of years.

PLANTING NOTES.

THE MOROWAK KORALE TEA PEST.—The further specimens of the devastating pest that has been at work on Silvakande, which we received—included as we stated several cocoons. These we submitted to Mr. Mackwood, as before, for inspection, and the verdict tells of the fertility of the pest. The fact that several of the 'caterpillars' are found clustering together in forming their cocoons shows that they have been allowed to spread far too prolifically. Other specimens of cocoons of the same pest have been received in Colombo today and a careful examination of them shows that the moths have escaped from *every one*! Nothing but the severest measures, cutting down the bushes and burning the prunings—cocoons and all, will prevent a large extension in the work of the "grub."

PLANTING AND AGRICULTURAL PESTS.—The absolute necessity for a Cryptogamist as well as Entomologist on the Government Staff is every day becoming more and more apparent. The sooner the "gray" and other blights are investigated on the spot, the better for all concerned:—*taxpayers and Government* as well as the planters. We speak unto wise men (if there are any such in the Executive),—judge ye what we say. A leading planter writes today on the serious character of the tea blight in some parts and the need of speedy investigation. He adds:—"Planters are burning and burying prunings—it must do good, but it will add to cost of production, and we do not seem to have any chance of a rupee less than 1s 4d. The only good thing about the rate is that it may check extensions into tea in India." There is plenty for Cryptogamist as well as Entomologist to attend to, in respect of the staple and other industries of the country.—Since writing the above the letter from Mr. Chas. Gibbon comes to hand, taking the same strong view with regard to cacao.

THE MOROWAKKORALE TEA PEST.—We have two interesting letters on this subject, and both writers consider that a caterpillar is responsible for the mischief described on the 10-acre field of Sylvakande estate. Mr. Geo. Thornton Pett identifies the insect as the *Parasa lepida* described by Mr. E. E. Green, while "Thosia Recta" considers another caterpillar of this name is to blame. One difficulty is to reconcile Mr. MacLean's description of the insect (and the absence of any sign of cocoon or moth) with either of these caterpillars. Mr. Pett refers to Nietner's *Limacodes Graciosa*, and we quote what he says in our daily and *T.A.* The only thing to settle the matter now is to get fresh specimens from the Superintendent of Sylvakande, and we are glad to see Mr. F. Mackwood mentioned as able to help in identification as Mr. Haly may be absent from Colombo. Mr. Mackwood is inclined to think the caterpillar must be the *Parasa*; but he can only be sure on seeing specimens which we hope will come by an early post. Meantime he advises the tea attacked to be pruned down to the ground and all the prunings burnt, lest there should be an outburst of moths flying all over the estates and depositing their eggs.

TEA CONSUMPTION IN GERMANY.—Mr. Frederic Harford, Second Secretary in Her Majesty's Legation at Munich reports that the consumption of tea in Germany, which averaged ·05 kilo. per head up till 1897, rose to ·07 kilo. per head in 1898, and the imports of tea from 2,660 tons in 1897 to 4,116 tons in 1898. This increase is chiefly due, he says, to the import of tea from China, rising from 1,661 tons in 1897 to 2,593 tons in 1898, from which it would appear that Indian teas are not so much appreciated in Germany as Chinese teas. In any case coffee is still the national drink of Germany, and not tea, *which is twice as dear as it is in England*. [We italicise the last few words, as a hint to South Indian planters and Ceylon.—ED. *T.A.*]—*Planting Opinion.*

THE TEA CRISIS.—Here is how the *Indian Daily News* refers to this subject. It will be observed that the system of "outside" sales in Calcutta is considered as more objectionable than the open sales of Colombo:—

Yesterday's Meeting of the Tea Association which was convened to "discuss the situation with reference to the stoppage of public auction sales of tea in Calcutta in connection with the proposal to abolish the 1 lb. draft allowance on teas sold by public auction in London," has afforded another sad exhibition of the lack of organization which has unfortunately distinguished the campaign so far. Nothing definite was decided upon, and as far as we can see, the meeting has only served to further impress buyers, and dealers' agents with the weakness of the growers' position. It was announced that the Ceylon men definitely refuse to stop the Colombo tea sales, thus affording the London dealers an easy means of filling their requirements.* How the Indian Association ever came to open the campaign, without first assuring themselves of the co-operation of Ceylon, is a pitiable example of the lack of the most ordinary business caution, and Indian growers, especially those who usually sell on the Calcutta market, have, we consider, a very genuine grievance against the Association, for the false position in which they have been placed. We understand the Committee have recommended a sale here next week for outside markets only, and meanwhile are wiring the London Association suggesting that sales and exports of Indian teas should be suspended for a fortnight. We are of opinion that these outside market sales are a great mistake, and should not be held. If sales must be held then have them open as in Ceylon. There is no doubt that at present Calcutta sellers are greatly dissatisfied at the way their business has been upset by the precipitate action of the Association, more especially as the majority of the Committee are not interested in this market, and are hurrying their crop to London, where the trouble will probably have ended one way or the other, by the time the teas arrive. Failing combined action, such as we have suggested by suspending all sales and shipments, we think the Association should immediately throw up the sponge and let the auction sales go on as before. If it be desirable to put an end to the system of giving 1 lb. of tea per chest to the London dealer, the sales in that city can be made under the condition that this privilege is to cease. This only means that buyers will give a proportionately lower price than they would have paid had the 1 lb. been given. The matter is as long as it is broad and makes no difference to the growers. What is urgently required is a campaign against the wharves, the successful issue of which would help both growers and dealers. Why does the Association shirk this duty? For no selfish reasons we hope.

* Not so easy as our tea sales have been very limited in quantity and chiefly for the benefit of other countries than Great Britain.—ED. *T.A.*

THE PINE HILL ESTATES COMPANY, LTD.

The sixth ordinary general meeting of this Company was held on the 11th, Aug. in the office of Messrs Mackwood& Co. Mr. Bowle-Evans occupied the chair [and the others present were : Mr. T B Campbell, Mr. McGillivray, Mr. R E Prance ; by proxy Messrs. Yeoll Thorne, Frederick Hunter, S H Dyer, Mrs. J Kennedy, Mr. C D M Hunt, Mrs. Prance, and Mrs. E L Owen.

The report was submitted as follows :—

The Directors have the pleasure to submit their Sixth Annual Report.

The unsuitable weather experienced on the estates both in the first and second halves of the year has resulted in a considerable shortage of crop, 124,000 lb., being manufactured against an estimate of 150,000 lb., exclusive of bought leaf.

In spite of this, the profit and Loss Accounts after writing off fifteen per cent for depreciation on machinery, shows a balance of R10,627·77

Which the Directors propose to use in paying at once a dividend of five per cent, absorbing	R10,437·00	
And carrying forward to the present season ..	190·77	
		R10,627·77

NEW CLEARING.—The 101½ acres has been nearly completed, and the Visiting Director reports that the work has been carefully carried out.

The Directors are of opinion that improved Teas might be made in a larger and better equipped Factory, and as this new expenditure will be necessary in any case when the new clearing comes into bearing they have authorised the expenditure of some of the uninvested capital on Factory extension, machinery and water-course. The work has already been begun and the estimate of cost is R12,200·00.

The Directors in view of shortfalls of crop in recent years, think that a regular system of manuring should be adopted, and suggest that one-third of the Estate should be taken in hand annually. Ninety acres for this year has already been begun.

According to the Articles of Association Mr. H. St. C. Bowle Evans retires from the Board of Directors, but being eligible offers himself for re-election.

On the motion of Mrs. KENNEDY, seconded by Mr. DYER, the report was adopted.

On the motion of Mr. PRANCE, seconded by Mr. CAMPBELL, a dividend of five per cent was declared.

Mr. Bowle Evans was unanimously re-elected a Director as was Mr. Guthrie an Auditor, and the proceedings terminated.

CEYLON INVESTMENT ASSOCIATION.

GENERAL MEETING.

The ordinary general meeting of the Ceylon Estates Investment Association, Limited, was held recently.

Mr. Robert King, Chairman of the Association, presided. In submitting the annual report, the Chairman said that the result of the year's working was £344 better than the previous year. It was still disappointing, however, owing entirely to the smallness of the crop through unfavourable weather. The crop for the past year was 237,152 lb., as against 255,820 lb., a decrease this year of 18,668 lb. While the crops were smaller, however, prices had been higher. For the current year the crop harvested since 1st April was 13,172 lb in excess of that harvested for the same date last year, so that, if it only kept up, the future prospects were very good.

The report was adopted.—*Dundee Courier.*

THE SCIENTIFIC OFFICER FOR THE TEA DISTRICT.

VIEWS OF DR. WATT.

The following is the text of the letter from Dr. Watt to Sir Patrick Playfair on the subject of a scientific officer for the tea district :—

DEAR SIR PATRICK PLAYFAIR,—I shall answer your enquiries categorically. You ask my opinion regarding the proposal to employ a Scientist to investigate numerous difficulties connected with the cultivation and manufacture of tea. Hitherto I have been consulted mainly as to the employment of an officer to investigate the problems that hinge on the pests and blights of the tea plant. It is true these would be very nearly covered by the investigation of the difficulties connected with cultivation, but I presume are altogether unconnected with the problems of manufacture. It would thus seem to me that the first step would be to definitely fix the field of operations contemplated for the proposed Scientific officer. If the Association expect to find a man capable to deal as an expert with every aspect of tea I venture to think that they are mistaken. It might be possible to secure a Biologist who could conduct useful and practical investigation into pests and fungal blights of the tea plant (but even here Entomology and Mycology are two widely different studies, and no single person can be an expert in both sciences). But that a Biologist could be an expert chemist at the same time, is contrary to all experience in such matters. Some few years ago the Association brought to India a chemist (Mr. Bamber), and he furnished a report which no doubt most of the members of the Association have read. Its practical value is, therefore, a point I need not deal with. At the present moment the Ceylon planters have engaged Mr. Bamber as Chemist, but they have secured also the services of Mr. E E Green, an Entomologist of the very highest European repute. Mr. Green is himself a tea planter of many years' experience, but has consented to become Government Entomologist mainly with the view to devote his entire energies to the investigation of the pests of the tea plant. With a Chemist and Entomologist at work, Ceylon may reasonably hope to make some progress, but I do not look with much favour to a scheme that would secure one officer, in the hope that he would be an expert on every scientific problem of tea planting. I should, therefore, recommend the Association to carefully consider whether they want a Chemist or Biologist as the first and most important consideration.

You ask me whether I approve of the proposal. Yes I do, subject to the qualification involved by the above remarks. That those responsible for the tea industry should bestir themselves to (*a*) discover remedies for the pests and blights, (*b*) to bring to light practical improvements in the quality and treatment of the plant, and (*c*) to perfect their methods of manufacture seem to be truisms that I should hardly be asked to state. I know of no industry of a similar magnitude where empiricism is allowed to have such limitless sway. In my report I have given numerous illustrations of diametrical opinions held by well informed and successful planters on almost every aspect of the industry. And this statement is admissible because of the immense capabilities and vast powers of endurance of the plant. Both opinions may be equally wide of the mark and the profits obtained far short of the practical possibilities. But there is a limit to this blindfold trusting to Providence and to the endurance of the plant, and that limit, in my opinion, is not very remote. I would, therefore, urge that there is scope for not one scientific expert for a few years but for half a dozen for a life time. If funds will not admit of the whole question being dealt with, the Association should decide whether they wish to secure a Biologist to investigate (*a*) above, or an Agriculturist to enquire into (*b*) or a Chemist to suggest improvements in (*c*).

You next ask me, could the officer work in connection with my Department. I have no doubt he could, and that I should be able to suggest many lines of enquiry that would save him from much loss of time through fruitless investigations. I was asked a similar question on a former occasion, and the Government of India submitted to your Association the appended passage from my reply (of which for convenience of reference I furnish herewith a copy). It will there be seen that I assumed chemistry was to be the primary qualification of the officer. That I also proposed (para 5) his association with the laboratory of this office, but that he would require several other laboratories and a camp laboratory to conduct investigations while on tour through the tea districts.

You next ask me how far my investigations would render the employment of such an officer desirable or unnecessary. My personal investigations were conducted in one province only—Assam. They lasted for 2½ months, and were and are now intended purely and simply as denoting the urgency of the work. If they serve the further purpose of affording a useful programme for detailed and final operations they will fulfil all that I ever contemplated. I may add, however, that my report has been so favourably received that I have been looked upon as more or less an expert and have been constantly consulted, since its appearance, by planters all over India. As the result, much new information has been brought to light, so that already a second edition (if called for) would be a considerable improvement on the first.

What remuneration should the scientific officer receive?

The answer to this question turns on the term of years for which employed. If the Association were to seek for the services of an officer to be permanently employed the course which I should recommend—it might be possible to get a doctor of science with special qualifications in the chemistry of plant-life for R1,000 rising by annual increments to R1,500. This appointment would of course carry no pension, therefore would have to commence at a higher figure than would be the case with a Government servant. But if the appointment is to last only five years and it is desired to secure an officer of made reputation, the Association would have to offer not less than R1,500 a month, with all expenses paid to and from India. The Government of India engaged an agricultural chemist and paid R1,500. That circumstanc, I think, is a fairly good reply to the question you put to me. Of course whether permanent or temporary, provision would have to be made for travelling-allowance, framed on the scale granted by Government to its servants, *viz.*,—double first class ticket by train or steamer. This covers servants, excess luggage, etc. A halting allowance of R5 a day while away from head-quarters should also be made. In Assam everything is very expensive, hence the rates allowed in that province are higher than in most other provinces. The planters would no doubt assist the Scientifice officer very greatly, but I may say that with all the assistance rendered to me, I was out of pocket by my tour in Assam, over and above the allowances made to me according to rules under which I come. I mention this circumstance in order to show that the scale I have proposed is the lowest possible rate that should be contemplates. In some instances Government commutes travelling allowances into a monthly grant, but I should think the Association would be safe in putting down R300 a month as sufficient to cover these charges.

Where should his headquarters be? That is a very difficult question to answer. Were he to be employed in Assam only I should instantly have said Shillong. There is no occasion that he should be confined to an unhealthy climate, or one in which laboratory work would be difficult if not impossible. But as he would, I presume, have to investigate tea in Darjeeling, the Dooars, Assam, Cachar, etc., Shillong might not be the most central. I half think that if Calcutta itself was thought too far off, he might be located in Darjeeling. But he should have a small house with laboratory constructed in Dibrugarh and in one or two centres as well. I should insist that he spent a distinct period of every year on tour and visited in turn every garden under the Association. I should also lay down a hard and fast rule that every discovery he made, connected with tea, became the property of the Association. In other words he should not be allowed to patent any process or method within a fixed term of years.

I think the above fully disposes of all the questions raised by you, but if there were other points on which you wish my opinion, I shall be happy to be of service.—*Planting Opinion*, July 22.

WHITE SPOTS ON PASSION FRUIT.

Mr. A F T Somerville, of Kurrajong Heights, mentions, that nearly all the passion fruit in his district is affected to some extent by a little white spot. Mr. W J Allen, Fruit Expert, reports, that the spots are due to a fungus disease, which may be kept in check by spraying occasionally —when the fruit is small—with Bordeaux mixture, and later with ammonia carbonate of copper. The vines should be pruned well back once a year and receive in all three or four sprayings. Such treatment will entirely prevent the appearance of the disease.—*Agricultural Gazette*, July.

FERTILIZERS FOR FRUIT-TREES.

The manuring of fruit-trees has recently undergone considerable modification, it having been found that the plant food whose application is most beneficial is potash, and that it pays best to considerably increase the amount of this ingredient, the phosphoric acid and nitrogen being of less importance. It is better to limit the amount of nitrogen applied, and to apply this ingredient in quantity only if the tree requires it, and then in the form of a top-dressing, before the flowers are out, and not at a later stage. All manures for fruit-trees should be well worked into the soil.

For Citrus Fruits.

No. 7.

	Quantity per half ton. lb.	Cost. £ s. d.
Bone dust	520	1 3 3
Superphosphate ...	250	0 10 6
Sulphate of potash ...	350	2 7 3
	10 cwt	£4 1 .

This contains—

Nitrogen...	2 per cent.
Phosphoric acid ...	15½ per cent. (4 per cent water—soluble).
Potash	18 per cent

Apply at the rate of 4 lb. per young tree, at a cost of little under 4d per tree, or £1 12s per acre of one hundred trees.—*Agricultural Gazette* (New South Wales), July.

THE COORG COFFEE CROP.

The official forecast of the coffee crop in Coorg for 1899-1900 is calculated at 1½ cwt. per acre for European estates and ¼ cwt. per acre for Native estates, and it is estimated that the total out-turn will be about 2,800 tons—2,100 from European and 700 from Native esates. The estimated average yield per acre of ordinarily well-cultivated coffee in full bearing for the present year is only 2 cwt. as against 3 cwt. last year. Last year's yield was estimated at 4,200 tons, and the toll-gate returns showed that 4,134½ tons had been passed through. The amount of coffee exported during the ten previous years was 33,268 tons, or an annual average of 3,326 tons. No particular reason is assigned for the comparatively small crop expected this year.—*M. Mail*

Correspondence.

To the Editor.

MOROWAK KORALE TEA PEST.

July 27.

SIR,—The caterpillar alluded to as having done damage on Silvakande is most probably *Thosea Recta*. If the Superintendent will examine his bushes, he will probably find that a certain number of the caterpillars are spinning their cocoons. If he places a few cocoons in a box, he will (after they hatch out) be able to identify the moth, or butterfly. This is small and insignificant, but, if observed in large numbers, a look-out should be kept in the spots where they are seen; and the trees (on which the eggs are laid) pruned down, and the prunings burnt *before* the caterpillar hatches out. Prevention is better than cure, which is difficult. As the caterpillars can only crawl, a cordon of quicklime is about the best thing to stop their advance with. Carbolic spray and disinfectants appear to be of very little use. When the caterpillars begin to spin up their cocoons the affected bushes should be pruned and all prunings burnt.

The writer has seen two severe attacks in 1885 and 1897, on different estates at 1,500 odd feet elevation. In neither case was there any repetition of the attack in the following year. Neighbouring estates (rather than the one attacked) should be on their guard.

Mr. Frank Mackwood could probably tell a good deal more than the writer about this pest.—Yours, &c., THOSEA RECTA.

THE TEA PEST AT MORAWAK KORALE.

Pati Raja Estate, Elpitiya, July 23.

SIR,—Is it not possible that the tea pest now reported to have done such damage in the Morawak Korale is the blue striped nettle grub (Parasa lepida) described on page 66 of a little book by E E Green, called "Insect Pests of the Tea Plant," published by the "Independent" press in 1890. Mr. Green mentions that Nietner included the pest under the name of Licomodes graciosa, in his "Enemies of the Coffee Tree." Will you kindly look up Mr. Green's article on this pest and reprint it if you think the description applies.—I am, etc.,

GEO. THORNTON PETT.

THE BLUE-STRIPED NETTLE GRUB (*Parasa lepida.*)

There is a family of caterpillar (the *Lima* colidæ) many species of which are armed with stinging hairs, and which for this reason may appropriately be called 'nettle grubs.' There are several kinds that feed upon the tea plant, the most conspicuous amongst them being the larvæ of the *Parasa lepida.* They are gregarious and are sometimes present in such large numbers as to completely defoliate the trees upon which they are feeding. A neighbour who sent me specimens told me that more than fifty of them had been removed from two adjacent tea bushes, in another instance a group of four or five trees were left quite bare, and the superintendent, seaching for the cause of the mischief, received practical demonstration of the stinging properties of the caterpillars.

The same species is frequently found on coffee and occasionally upon cinchona trees. Mr. Nietner included it, under the name of *Licomodes graciosa* in his catalogue of "Enemies of the Coffee Tree."

Upon the first occasion that I saw a cooly stung by this caterpillar, I had the curiosity to experiment with it upon myself. I touched it lightly with the back of my hand and immediately felt a sharp stinging sensation similar in kind to, but rather more intense than, that produced by the common stinging nettle. Small white lumps were raised where the poison had penetrated the skin. The pain though severe at first did not last very long.

The eggs are generally attached to the under surface of the leaves. Their form and colour make them very difficult to see. From fifteen to twenty are laid together closely overlapping each other like the scales of a fish, which they resemble also in their flattened oval shape. They are almost transparent; the dull-yellow ring-shaped embryo can be seen through the shell.

The full grown larva is of a brilliant yellow green colour, with a rich lilac stripe along the middle of the back, and a bright blue stripe on each side, each stripe bordered by a darker line of the same tint. The poisonous spines are arranged in tufts along the body: they are pale green, four tufts near the head and another pair near the tail tipped with SCARLET: there are four large black spots at the hinder end of the body.

Specimens of this kind of caterpillar that have been feeding upon tea are much more brightly coloured than those that have been reared upon coffee leaves. The latter are ornamented with green stripes and shines upon a pale greenish white ground, they might easily be mistaken for a distinct species. Another peculiarity of these caterpillars is the rudimentary condition of their legs. *Their movements are more like those of slugs and snails than of ordinary crawling insects.* The cocoon of the 'nettle-grub' is hemispherical, of a dark brown colour, closely resembling the tea stems upon which it is usually placed. It is thin but very compact, formed of silk strengthened with a tough cement secreted by the insect.

The moth escapes from the cocoon by a lid-like opening at one end. It is a gaily coloured insect; its front wings are chocolate-brown with a broad emerald-green band stretching obliquely across them, the hind wings buff, tinged with chocolate at the margins; front and side of the thorax emerald-green, and a small spot of the same colour at the base of the two front legs.

As in the case of most of the leaf-feeding caterpillars, the injury to the tree is only temporary. The grubs when found should be removed and destroyed, but, under the circumstances, some other method than 'hand picking' will be found advisable.

July 29.

DEAR SIR,—The Superintendent of the estate attacked is apparently satisfied that it is the 'nettle-grub' described by Mr. E Green, and so-called on account of its painful stinging capabilities. The term 'grub,' by the way, is rather misleading, as it is usually applied to caterpillars which live underground. The 'nettle grub,' which is occasionally found feeding on cacao trees, and is apparently slowly increasing on that product, may easily be identified by its *excreta* which are cup-shaped. If the Superintendent of Silvakande is right, his simplest remedy is to prune every branch of tea, or other vegetation, on which either the caterpillars or cocoons can be found, and burn them before the moths emerge from their cocoons and a new brood developes. The caterpillars when disturbed cling very tightly to the leaves instead of dropping, as many species do, to the ground.

There must be something wrong in the condition of the affected tea fields to predispose them to such wholesale devastation as has been described, and the forking of the soil and the application of lime and wood ashes would probably be of great

benefit. Every tea-field in the neighbourhood should be carefully examined for caterpillars and cocoons. Specimens should be distributed through the district, especially to native gardens.—Yours faithfully, STUDENT.

B. C. AFRICA : TEA AND COTTON.

REPORT OF EXPERTS AS TO QUALITY.

Mlanje, B. C. Africa, June 9, 1899.

Dear Sir,—I send you a report on tea and cotton grown here, which may be of interest to your readers. The tea was rolled and fired by my cook in the oven, so that would account for any defects in the samples sent home. I have for some years made tea from time to time, and my servants know how to do it as well as I do; but the African Negro wants more looking after than the Asiatic: in fact you can never trust the best of them.

Mr. Moggridge made some very nice tea quite as good as your medium elevation teas from some leaf grown here and pronounced it a very good marketable article, and this gentleman has had considerable experience, at least more than I have had, of tea in Ceylon. I am going in for extending in tea, and have considerable nurseries laid down. So Ceylon may have a dangerous competitor in the course of years in this country, for our climate and soil is A1 and our labour average only 1½d per diem.

Many planters in British Central Africa would plant tea if they could get the seed into the country. The Nyassaland Co. imported a lot of seed with praiseworthy enterprise, but it turned out a failure as not a single seed germinated.

The only tea in this country is from a few plants originally imported by the Blantyre Mission and Mr. J. Lindsay of Limbe estate, who got his lot from Messrs J. P. Williams Brothers, of Henaratgoda. This is a good hybrid, but the jât does not come up to most of the teas I have seen on estates in Ceylon with fine large dark green leaves; but it is quite good enough and seemingly quite suited to our climate. H. B.

Copy.

41, Mincing Lane, London, E.C. Dec. 22, 1899.

Dear Sir,—In reply to your letter of yesterday we have to report that on examination of the accompanying samples of tea from Thornwood estate, Mlanje, British Central Africa, we find them to compare unfavourably with the low grades of East Indian British grown and Java teas.

The sample of No. 1 is a very small one, but it appears to be rather better leaf and not quite so mixed as No. 2, and in the present strong market for the lowest grades would be worth 4¾d or 5d per lb. in bond. No. 2 is an unassorted tea rather rough in leaf worth about 4½d or 4¾d per lb. The liquors of both are practically identical, being thin and flavourless, but quite clean and marketable.

The defects in the teas, both as regards leaf and liquor, are, however, in our opinion capable of removal and appear to be due rather to faulty manipulation than to any lack of virtues in the leaf. In the first place the plucking does not seem to have been very carefully performed, there being too much stalk and a coarse leaf. Again neither withering nor fermentation seems to have been satisfactorily carried out. From the brown appearance it would appear to have been withered too long and to have been *dried* rather than *withered* and the fermentation seems to have been very irregular. A few of the infused leaves are of a good *coppery* colour, but the general appearance of the outturn is too dark, although in some measure this is due to some of the leaves having been scorched in the firing; a lighter fermentation however would we think, give more point and pungency to the liquors. The rolling process also does not seem to have been quite effectual enough. If after withering the leaf, the leaf had been rolled sufficiently hard, enough to break the cells of the leaf, the made tea would have drawn stronger liquor and have had a better "twist,"

With due attention to plucking and manufacture we see no reason why the tea from this estate should not prove of good commercial value.

We are etc., (signed) Wilson, Smithett & Co.
The Director of the Royal Gardens, Kew.

Copy.

Secretary, Manchester Chamber of Commerce, to Royal Gardens, Kew.

Iam now able to report to you upon the sample of raw cotton from Mlanje, British Central Africa, received from you a short time ago.

The gentleman by whom it has been examined states that it is very difficult to form an accurate judgment of the quality and market value of cotton in the seed. This you can readily understand since the process of ginning alters, often substantially, the characteristics of the cotton-especially with regard to the length and evenness of the "staples" and the presence or absence of impurities.

With this reservation the report is that the sample represents a long silky and fairly strong fibre and that in the ginned state it would be worth in Manchester today from 3½d to 3⅝d per lb.

"A BAMBOO IN BLOSSOM."

Dea Ella, Madawalatenne, July 21.

Dear Sir,—Not long ago I read in one of the Ceylon papers that a bamboo (Ceylonese unagaha) in blossom was a rare curiosity. Is this true? I have seen a bush on this estate blossom almost yearly, and even today I got one brought to the bungalow, simply because I read it was a thing worth possessing. Would any of your observant readers kindly let me know if they had ever experienced a thing like this?—Yours faithfully,

W. L. VAN D. S.

[We read in *Tropical Agriculturist* of September 1881 that "Bamboo blossoms every 15 years." Let our correspondent collect seed carefully and send it to the Director, R.B. Gardens, Peradeniya; also some flower specimens. As regards the dwarf mountain bamboo and other small species, the late Dr. Trimen thought they might flower yearly. Not so the larger kinds.—Ed. *T.A.*]

GALLE AGRI-HORTICULTURAL SHOW: A CORRECTION.

Kollupitiya, 31st July, 1899.

Dear Sir,—The gold medal for the finest plumbago in the Island was awarded to me at the Galle Agri-Horticultural Exhibition and not to Mr. A. P. Perera, as was stated by a mistake in the local papers recently. He is the manager of my branch establishment at Galle, who on my behalf sent the article for the Exhibition.—Yours truly, N. D. P. SILVA.

MR. CARRUTHERS: GOVERNMENT CRYPTOGAMIST.

Dear Sir,—At last Cacao is to have another innings after all. Now that we have influential men at home alive to the importance of Ceylon having its own Government Fungologist, we may hope the N.D.P.A. will forward on a strong resolution promptly, and urge the importance of Mr. Carruthers' immediate return as Government Cryptogamist. *Immediate*, because the year before last he, arrived rather too late for N.-E.

monsoon work, when the canker fungi flourish most, and we want him *in the island* early in October.

The Chairman, N.D.P.A., should call a general meeting at once as there are other important matters for discussion: Rinderpest, Murrain; Cruelty to animals; Cacao traders licensing; Supply of medicines to dispensaries; Road-metalling and Labor Federation district rules.

I hope the Kelebokka, Madulkele, and Knuckles men will rally to our aid now, if they do not wish to follow the example of Rangala, and join and strengthen the Northern districts. Unity among ourselves and the Spirit of Federation is all that is wanted to reduce labor troubles to a minimum.—Yours truly,

CHAS. GIBBON.

THE TEA DUTY AND DIRECT SUPPLY.

London, July 21.

Dear Sir,—In regard to the question of the sale of tea in this country, the demand of the one pound on each package is a remnant of an old regulation which ought to be done away with. It is what is called in China a "squeeze." I have no doubt you will have one of Messrs. W. J. and H. Thompson's circulars, and under the head of "Ceylon" you will see that, although there was not much sold in the room, still the sales went on, and I am convinced that if independent sales were made of tea at 14 days, the same as other produce, the planters would find it greatly to their advantage. The old regulations of giving long credit, added to the loss in the docks, and the sweepings, all go to reduce the return to the planters. It is well-known that it answers remarkably well the purpose of houses here who nurse their tea along, to effect private sales. The Customs arrangements favour the liberal free trade in tea, and anyone who purchases tea in Ceylon or in India can have it through the Customs, and as soon as the weights are known and agreed, there is no necessity for re-packing or bulking, and you take delivery without any loss whatever. There is a very strong feeling in England at present that the Government will have to yield on the question of duties, and if they do not take off the 4d at any rate that 2d will be knocked out in the next budget, to be followed in a later budget by another 2d. The public are getting enlightened on the subject of tea, and they see in the Press that such a large proportion of tea is sold at 6d to 8d per lb. in bond and they are well able to calculate that 4d duty means 50 per cent., which is considered not only a frightful tax upon the consumer but that it militates very much against the producer in India and Ceylon. There is no doubt but that the large firms here who are getting their own warehouses will reap enormous profits when tea is free.—Your truly,

THO. CHRISTY.

A PLANTAIN PEST.

Dear Sir,—I am somewhat surprised that none of the public have called attention for the fact that you can seldom now get a bunch, or even a "ring," of plantains without many of them being more or less diseased, the disease showing itself as a dark brown spot, penetrating from the skin into the fruit. Is our tea pest to be supplemented by a Plantain Pest? Will any of our scientists look into this matter, and advise as to what should be done? Pity it is that our Botanical officers do not bestow a little attention to our native friends or rather island fruit, and vegetables and endeavour to improve them. Then our Agri-Horticultural Shows would be worth,—so far as these products are concerned, going to see.—T.

The Gold Prospecting Syndicate.—The representative of the Syndicate in Ceylon, Mr. Goldie, has we learn, ceased operations for the present in the Rakwana district, where he has been working for the last year and more with "Lockhart's Patent Separator," but he hopes to recommence work again shortly. In many respects, we learn, the Separator has exceeded the expectations formed of it, and it is capable of dealing with 40 to 50 tons of gravel a day. The trouble has been in finding sufficient *illum* to feed it, for it has not been possible to work more than one pit at once, as the mines requires European supervision to prevent theft, and Mr. Goldie has only one European assistant. The sifting of the residum supplied by the eight separators keeps Mr. Goldie pretty busy while the machine is at work; while it is also necessary to see that the separators are not fed too fast, or with unsuitable gravel, for in such case they stop working automatically. Mr. Goldie has sunk his pit as deep as 120 feet, and says he could go to 200 feet with his present appliances, but after that ventilation would be necessary. Great credit is due to those who, like Mr. Goldie, have sunk money and given their time and abilities to put our mining industries on a better footing, and we trust they will receive valuable assistance from the geological survey of the island which Mr. Oldham has come down from India to see about.—Local "Times."

Strange Recovery from Snake-bite.—A remarkable case of recovery under the "Calmette" method of dealing with snake-bite, we hear, has recently occurred at Meerut under the care of Major Rennie, R.A.M.C. Since the introduction of this remedy, some three years ago (the first case treated in this country was, if we remember aright, also at Meerut), its efficacy has been abundantly proved by experiment in the laboratory and also in actual practice; but the present instance is specially noteworthy in that it would seem to demonstrate that the serum may be used with success in an apparently hopeless case, the patient, we are informed, being practically in the last stage of all when he came under treatment. It should be noted that the evidence of the poisonous nature of the snake is absolutely unquestionable, though the reptile was not actually caught. The well-known symptoms of the poison had fully developed themselves; in fact to such an extent that the patient was to all appearance dead, and was kept alive only by artificial respiration until the serum remedy had had sufficient time to permeate the whole system, and counteract the colubrine virus. This fact is vouched for by six medical officers, amongst whom was the Civil Surgeon, and the case was also seen by the Commissioner and by the Cantonment Magistrate, who, although not professional men, are men of long experience in India.—*Pioneer*, July 21.

KANDAPOLA TEA COMPANY.

The report of the directors for the year ended December 31st last, states that the profit and loss account shows a profit on the working of the estates of £1,843, and adding transfer fees and the amount brought forward from last year, there is a total of £2,103. The directors paid during the year the interest on the debentures and sundry charges, and the balance after these payments amounts to £467. The directors propose to pay off £250 of the preliminary expenses, leaving £250 to be provided hereafter, placing to coast advance reserve account the sum of £133 to provide for doubtful eoast advances, carrying forward the balance of £84. The directors regret that the season's operations have been so unfavourable. The profits have been reduced principally by a heavy loss on working the Frotoft group of estates, which amounted to £1,058. The estimated yield of tea for the season was 503,000 lb., but owing to the unfavourable season, the actual yield was 369,994 lb. the shortfall, amounting to 133,006 lb. being 79,466 lb, less than the previous year.—*Grocers' Journal*, July 15.

COONOOR NOTES.

COFFEE seems to be improving under the conditions and preparing for a good *late blossom*. Let us hope that two cwt. per acre will be added by a September blossom. Cultivation has not been much abated, in fact upon this estate it is being vigorously pushed. More power to it. When prices were high some stuff made up of three parts dry pulp and one part broken coffee was sold in the Coonoor market at six annas a measure; now the finest parchment beans can be had for that and broken at annas 2/6. This will stimulate demand among the poorer natives very much. A native can go without food a whole day if he can get coffee ad lib. He can drink a gallon a day of weak coffee made up with jagherry.

THE NILGIRI RAILWAY improves daily and is becoming more and more popular. The one 3rd class carriage is generally quite full and many passengers have to be accommodated in the 2nd class. The 2nd class going into the 1st, one half the 1st class carriage being reserved for first. One engine is burning

PETROLEUM

and can run a train up in 50 minutes from Hill-Grove including a stoppage of 6 minutes at Runnymede, the distance being 6 miles. With this fuel steam can be got up in a few minutes and the engine arrives with her fire almost out, there being thus no waste. The furnace in the oil is carried in a reservoir over the boiler, a jet of steam is admitted into it, which forces the oil into the furnace in the form of a beautiful spray, which ignites into an intense flame from some eoal kept burning at the bottom of the furnace box.

A dense smoke issues from the chimney at the start, and this lasts a few seconds after which there is hardly any smoke at all to be seen. It is charming to hear the beat of the pistons as compared with the laborious sound with ordinary fuel. It would be a help to many if

CHEAP CARRIAGE FOR FUEL

be arranged down, during the slack season to Coimbatore. The price at Coonoor is now R4, per ton, at Coimbatore perhaps 7 a ton. This leaves a margin of R3 for railway carriage.—*Nilgiri News*, July 22.

THE ANAMALAI HILLS.

CEYLON MEN OWN HALF THE ESTATES OPENED UP.

(From a Correspondent of the Madras Mail.)

With the rapid extension of tea and coffee cultivation in Southern India, any information throwing light on the tracts of land still available for such enterprise should prove welcome and valuable, especially to those anxious to invest in either undertaking, and who may be on the *qui vive* for latest details on the subject. The districts which hitherto been exploited include Coorg, Mysore, the Nelliampathy Hills, Travancore, Wynaad, the Shevaroys and Pulueys, while more recently the Anamalais, or Elephant Mountains, have been coming into prominence. The first four tracts lie outside the limits of British India, while the other group is situated within the coufiues of British territory, and of these the least known, though in many respects the most important for planting purposes is the Anamalais. It seems explicable that the Madras Government should have for such a lengthened period pursued the fatuous policy of allowing the magnificent Forest tract on the Anamalais to remain unoccupied while other districts have been developed and the exports from the country materially increased, but until the last seven or eight years, Government to all intents and purposes, passively acquiesced in persistently iguoring the most obvions interests of the planters. As instances, Waste Land Rules were framed, which literally discouraged the enterprise of the European planter, and during the past 40 years the planting industry in Southern India has been severely handicapped by the inadequacy of the Labour Law (Act XIII of 1859) then introduced, and which, so far as its effective working is concerned, practically offered a premium to unscrupulous maistries and coolies to defraud their employers. Fortunately, H E Sir Arthur Havelock, who enjoyed much valuable experience in Ceylon, fully realises the importance of the planting industry. So it came to pass that, nearly three years ago, the Board of Revenue recommended to the Madras Government the leasing of lands on the Anamalai Hills, and the report indicates that by September, 1896, applications had been received from several Madras firms and planters, and from a well-known firm largely interested in Ceylon, and with a still greater stake in Travancore. The applications embraced tracts of forest from 500 to over 12,000 acres in extent, and aggregated 63,500 acres, or somewhere about 100 square miles. The Government disposed of the matter by assigning 1,000 acres apiece to each of the original 15 applicants. These selections have since been demarcated, and inclnde some of the richest land in India, thoroughly suited in every way for growing coffee, tea, pepper, rubber trees, and other products, while ranging from an altitude of 3,500 to 5,500 feet and enjoying a well distributed rain-fall from 100 to 120 inches. The experience of planters who have resided there during the past two years is that the climate is delightful and exhilarating. The plateau commands magnificent scenery, and at 7,000 feet offers unique advantages for the establishment of a sanitarium in this region. Although the Madras Government restricted the first leases to some 15,000 acres, should the properties now being developed prove a success, a further allotment of similar lands, purchaseable at auction, will no donbt be initiated. In fact, several snch blocks for 844, 717 and 400 acres, respectively, are already advertised for sale by public auction at the Collector's Office, Coimbatore, on the 2nd October, 1899, when the upset price is fixed at R5 per acre.

The total area of Forest lands on the Anamalais is estimated to cover 80 square miles. As regards terms of leases, these seemed to be framed and on equitable scale, the cultivation tax of R2 per acre being leviable from the 6th year, on one-twentieth of the holding only continuing in progressive increments. And in the interim the balance of the land is taxed at 8 as per acre. One provision remains to be reconsidered

by Government, and refers to the gathering of Forest products by the Hill men, or Kadirs, who, under instructions from the Conservator of Forests, collect cardamoms and wild pepper. Obviously, this system would prove impracticable when similar products came to be cultivated by planters. But as this tribe is believed to number only about 100, Government should be able to provide for them, though some difficulty may be confronted in the matter, as these men prefer an existence on forest produce, such as yams, fruits, &c. With the establishment of a sanitarium, and the immigration of Missionary settlers, it is probable that some of these difficulties may be dissipated.

Under the ægis of the present sympathetic Governor of Madras, a new policy for the development of the resources of the country is being inaugurated, as is already shown by accelerating the completion of the new road, and by the erection of the iron bridge over the main river, while it is said that the Government projects a line of railway from Podanur to Dindigul *via* Pollachy, which would bring the Anamalai region within touch of Madras, Calicut, Colombo and other parts of India. Irrespective of the Waterfall Estate, and the area opened with coffee in 1897, there are already about 1,500 acres planted this year. Approximately half of the 15,000 acres taken up by planters is held by Ceylon men.

THE MICA INDUSTRY IN INDIA.

The attention that has begun to be paid to mica in the island,—one among the many valuable minerals soon to be extensively worked in this island, we may hope, assisted by the proposed Chamber of Mines whose existence was inaugurated the other day—lends peculiar interest to what is going on in India where, too, mica claims more attention than it used to do. Mr. T. H. Holland, a young geologist with an excellent reputation, recently wrote a sketch of the mica industry of India, which has been published in the Annual Report on the work of the Geological Survey for last year. The Report, we learn from a Calcutta contemporary, was the outcome of a tour of inspection, in the course of which Mr. Holland, with two others, examined the mica-bearing areas of Bengal and Madras; and the conclusion arrived at was that the large and profitable industry might be rendered far more remunerative by more scientific exploitation of the fine pegmatite sheets which have been almost untouched hitherto. The system adopted in Bengal, where the field is 12 miles by 60, is described as most wasteful and primitive, the mines being narrow irregular holes, following

"The pegmatite sometimes to a depth well over two hundred feet. The whole of the materials—mica, rubbish, and water—are brought by coolies to the mouth of the hole, which is often very near the summit of a hill, being the point where, on account of better exposure, the pegmatite outcrop was originally discovered. On account of the accumulation of water, all mining operations are suspended during the monsoon season, and at the close of the rains the process of forking a mine occupies several days, and sometimes weeks. In the same way, an hour every morning is spent in bailing out the water accumulated over night." With a single exception, at Bendi, we are told, "there is not a single vertical shaft in the whole mica mining area of Bengal, not a single drive or cross-cut to show that the miners have appreciated the actual disposition of the pegmatite as normal intrusive sheets, and, notwithstanding the favourably shaped natural contours of the ground, not a single adit for the removal of water. Contrary, too, to the explicit regulations on the subject, no plans of the mines have been prepared to show the disposition of the workings."

In the Madras area, the system is only one step in advance of that which obtains in Bengal, being of the open quarry plan. Notwithstanding that "none of the mines have attempted to deal with the pegmatite vein by vertical hauling shafts and drives, after the fashion pursued in all modern methods of mining for minerals occurring in regular veins or sheets," the industry is flourishing. The yearly exports of mica are valued at a million rupees, and we told that there is no reason why, with careful treatment of the abundant material available, India should not continue to hold her place easily as the first mica-producing country in the world—the more so, as it is likely that mica can be found in other districts, and other minerals are generally associated with gneissose rocks in which mica is found. Among the minerals, some new to India, found in Bengal, were arsenic of iron, in lumps weighing in some instances as much as 20 lb.; phosphate and floride of iron, and manganese, in thick masses; and appatite in such abundance that, out of 100 lb. of material collected at a pit's mouth, 76 per cent of phosphate of lime was obtained. In the scarcity of phosphates in India, the find is naturally considered of importance, as the appetite has hitherto been thrown away and the expense of treating it as a by-product will be almost wholly confined to "cooly labour to pick over the waste heaps, royalty and transport." The Madras area is described as less rich than Bengal; and though larger crystals have been found, the ruby tint which has made Bengal famous in the market remains to be found. All this is of as great interest almost to us as to India; and now that the Government is awakening to the importance of the mining industry generally, and is in communication with India about a geologist, we trust that the Geological Survey we have advocated for years will soon be undertaken and disclose new sources of wealth and industry for us. The primitive and wasteful methods described above almost exactly represent the system generally pursued in the gem and plumbago industries; and the recent discovery of asbestos which we recently noted, should induce the Government to give all the help it can, through a Geological Survey, to capitalists to utilise every available mineral which the island affords.

FACILITIES FOR MAKING TEA.

Two circulars have turned up from Northern Districts which deserve some notice. The drawbacks to one division North of Kandy are said to be:—Previous chenaing of lands, and, partly, full exposure to S.-W. monsoons, and possibly no appliances for cool fermentation. The jât is said to be quite up to the average, but mixed in the oldest instances. There is very little virgin soil and much variation from iron-stone and red loamy clays, to clays, quartzes, gravels and gritty cabooks and micaceous talc, plumbago lands. Any estates worn out?—Yes, in two distinct cases, but one is now being worked

up. Would manuring improve the tea and be profitable, in your opinion?—All analogy goes to prove it,—why should tea be an exception? Has the pruning been too severe, or too frequent?—In some cases distinctly so, in others decidedly not: heroic pruning requires as great skill as heroic surgery (and very careful tipping after). Averages of 600, 640, 550 and 500 lb. an acre are ample evidence of the suitableness of the district for tea.

In the case of the other report from farther North, better tea cannot be made "because it is not in the leaf," although the jât is generally good, and the soil particularly so. Manuring could be decidedly beneficial and factories are not yet equal to a big rush in most instances. The neighbourhood has proved itself very suitable for tea: what it lacks in quality, it makes up for, in quantity.

[Buyers were getting better value some months back than ever before in the history of tea. It is rot to talk of wholesale falling-off in quality. There is more care exercised in manufacture universally, but there is less competition for medium teas in markets.]

DR. GEORGE WATT'S COMING TOUR.

COMMERCIAL SECTION OF THE INDIAN MUSEUM.

Dr. George Watt proceeds to Simla at the beginning of next week, and after spending about a fortnight there, starts on a lengthy tour throughout India, in the course of which, he will visit all the commercial centers from Peshawar to Tanjore. The object of the Reporter on Economic Products, the *Englishman* says, is to gather material for exhibiting in the commercial section of the Indian Museum, which it is hoped to throw open to the public by next cold weather. The plan of this exhibition is at once simple and comprehensive, although the work of classification and arrangement is involving an immense amount of labour. Dr. Watt's idea is to give the economic history of every product in a nutshell. Thus, if it is a plant, it is shown by specimen at every stage from the tree to the finished article, while statistics of every kind are given in connection with it, and a map of India placed alongside show at a glance the various parts of the country in which it may be obtained. And all this cyclopædia of information lies within the compass of a small glass case! It is difficult to estimate the usefulness of this department when once the commercial world appreciates the fact that it embraces every one of the manifold industries on which the economic life of the country depends. Nor is the artistic sacrificed to mere utility. For instance, an enterprising firm of ropemakers display their productions in the form of a large arch, surmounted by their name in letters of rope. Again, a kind of dado is formed right round the room—and a big room it is—by polished slabs representing the various timbers grown on the peninsula and among the Himalyas. Altogether, the economic department of the Indian Museum promises, when it is completed, to render notable service in helping forward the development of the resources of India, and reflects the highest credit upon the learning and ingenuity of Dr. Watt.—*Pioneer*, July 27.

RUBBER DISCOVERED IN CUBA.

It is the positive conviction of Major J. Orton Kerbey, who returned lately to the United States from a tour of Cuba, that he found there the true rubber tree of Central America (*Castilloa elastica*) growing native, and that the conditions for its cultivation are more favorable on the island than even in Mexico or Nicaragua. Major Kerbey pursued his investigations further into the interior of Cuba than any recent visitor, from America, at least, has done in recent times, being aided in his search for the rubber tree by orders from the government at Washington which gave him command of the facilities of the United States military establishment on the island. On the southern coast of Cuba, in particular, he personally saw the trees which he has identified as the *Castilloa elastica*, while he was assured by old residents of good standing that such trees were to be found in abundance. Moreover, he was assured that, in former years *goma* (rubber) figured in the exports of Cuban produce, going presumably to Spanish ports. Major Kerbey is writing some results of his discoveries for The India Rubber World, and the information he has to give may be looked for with interest.—*India Rubber World*.

TEA IN AUSTRALIA.

The tea statistics for the port of Melbourne for the week ended Saturday, 15th instant, compares with the previous week and the corresponding week last year as follows:—

	July 16, 1898. Lb.	July 8, 1899. Lb.	July 15, 1899. Lb.
Entered for bond ..	85,797	196,857	819,339
Duty paid, ex-ship ..	28,672	7,638	46,690
Duty paid ex-bond ..	150,432	139,799	133,206
Exportations, ex bond ..	31,174	68,600	97,662
Exportations under drawback	47,796	41,230	23,533

The Custom-house statement of receipts and deliveries at the bonds for the week ended 15th inst., together with the stocks in bond at the close of the week, is as follows:—

	Receipts into Bond. Lb.	Deliveries: For Home Consumption. Lb.	Deliveries: For Export. Lb.	Stocks on July 15. Lb.
China ..	760	32,259	40,486	323,939½
India ..	49,166	34,164	15,030	273,519
Ceylon ..	156,995	56,783	42,146	343,101
Total ..	206,921	123,206	97,662	940,559½

At the corresponding date last year bonded stocks consisted of 423,713½lb. China, 323,754lb. Indian, and 327,137lb. Ceylon; total, 1,074,604½lb.—*Melbourne Argus*, July 19.

Collectors.—Noticing the work of Mr. Whitehead, the Bird Collector in the Far East, the *Spectator* says:—

The time must be approaching when there will be no more unknown birds or beasts to discover. Then the explorer will perforce fall back on the less exciting search for new insects, or new plants and flowers. The botanists and florists have still a field before them, and a new orchid is a valuable discovery, and a new dye or fibre plant potential wealth. If the green indigo, reputed to exist in some country in the Far East, were found, its discoverer's fortune would be made; and a real rival to indiarubber, or a substitute for Manila hemp, would enrich a whole community.

BY RAIL IN BRITISH NORTH BORNEO.

(*From Our Own Correspondent.*)

Bukow, 16th July.

"No country can advance unless it provides and maintains a comfortable means of rapid transport," is, I believe, an accepted axiom in these days of progress. A few words on the means of communication, present and future, of this new country, will perhaps be of interest to your readers. I left Sandakan on the 3rd July in the coasting steamer "Labuan," north about, to Labuan, calling at the ports. These form a special point in the coast line of Borneo and British North Borneo can boast of better and more numerous harbours than can be found in this part of the ocean's boundaries. Calling in at Jambanjon, Kudat, Ambong, Santian, we arrived

AT LABUAN

on the third day. From Kudat onwards, the hill ranges on a fine day form a fine feature in the view. Kudat is a thriving town, in a good agricultural district, which in 1883 brought in a Revenue of $14,000 to the Treasury and this year the estimate is $123,000 to which increase, tobacco, coffee, and Chinese immigration have helped. The soil is good and the records of the old East India Company, who had stations he e about, show that the Kudat district contained 30,000 fighting men. In these days, the word "fighting" would not apply to the peaceful people who now sparsely occupy the ground, but owing to epidemics in the past, to piracy and to war, the population, though now increasing rapidly, was very small in 1881, when this country came into the hands of the British North Borneo Company. The next port,

AMBONG

is in a pretty land-locked bay. It has only lately been opened and is doing a good cattle trade supplying Sandakan and Looloo where there now are 750 American soldiers. The Government charges an export duty of one dollar per head. The cattle cost about fifteen dollars laid down in Sandakan and sell for twenty to the butcher.

From Ambong a bridle path twenty miles long runs up the Tampassuk River and

THE GREAT MOUNTAIN KINABALU

can be ascended from here; but the best route is from Santian, the new port in Sayah Bay. Mr. Little, the Acting Governor of Labuan, who has ascended Kinabalu, tells me the trip can be done for $300. The officer in-charge at Santian, Mr. Haynes, is very kind and would lend his assistance in collecting transport coolies. I believe the ascent has only been made five times. The upper part of the mountain is smooth rock with low vegetation in the sheltered ravines and crevices. The last village is something over 4,000 feet up and there is a large cave at a 12,000 or about two thousand feet below the top. The cold at night is great and the coolies suffer from want of suitable clothing. To a naturalist the mountain affords a grand field for research.

Labuan is the departure point for the mainland. At present there is only one launch available for the crossing to Weston, the sea terminus of the railway, but I hear rumours that the Sabah Steamship Co., which runs the three local coasting boats, propose to keep a fast launch at Labuan, capable of doing the trip in three hours or less. The present available launch takes five hours and is in a chronic state of breakdown. The line from Weston (so named after Mr. A. J. West, the Railway Engineer) to Bukow, eight miles, is almost complete. I came the whole distance in a truck drawn by the construction engine without a jolt in less than an hour which included two stoppages and taking in firewood and water. At Bukow river, the want of suitable timber has caused delay in building a bridge, but when this has been done the twenty three miles

FROM WESTON TO BEAUFORT JUNCTION

on the Padas River will easily be done in an hour or so. I am now staying the night with Mr. West, the Engineer-in-charge of the construction, and tomorrow we go to Beaufort. in a comfortable first-class carriage. Mr. West has shewn me the train consisting of a light-engine appropriately named "Progress," one first-class car, one third-class and four waggons (one closed) all built of local wood in Mr. West's workshop. This he runs twice a week from Bukow to Beaufort. The third-class car holds thirty and is generally full, (fare twenty-five cents); so are the waggons when going up. Coming down they get a return cargo of rotan, etc., and a little gutta.

The land from Weston to Bukow is

SPLENDID COCONUTS AND RUBBER LAND

and there are a lot of native gardens and paddy fields. The railway overseer at Weston, who lives a couple of miles from the terminus, told me the country was very healthy with good drinking water. It is cold at night. At Weston the people get fish every day. I saw two fishing-boats come in and we took some fish up to Bukow. The price at Weston is three cents a catty. Weston is now beginning to wake up. Up till now all the traffic has gone by the River Bukow to and from Bukow, but a railway bridge across the Bukow will make Weston the terminus. No town lots have been sold as yet at Weston as it is desirable to raise the ground first; but the engine will be at Weston immediately and ballast will soon be run down and thrown over the low land from a hill one mile along the line. A stone pier has also to be made. The hill is a mass of ready-made ballast and at present produces a wonderful crop of pineapples. The pigs take a large share and the balance sell for two cents each (three cents to a European!) This is a wonderful fruit country. Durians sell at five cents and can be had in great quantity next month—*and I hope to be here.* I remember meeting an ex-Ceylon Engineer in Singapore who told me:—"When I scent a durian my mouth waters and I gaze around with fingers itching *to clutch* that durian!" The fall of the year is our chief fruit season.

Tomorrow I go to Beaufort and up the River Padas with Mr. W. Towers who has laid out a railway from Beaufort north along the Coast to Santian, 63 miles, on a metre gauge like this one. Mr. Towers is now inspecting the ground between Beaufort up river thirty (?) miles which he says resembles the Haputale line in point of difficulties. Mr. Towers was seven years in Ceylon and must be well-known to you. I will send you a line on my experiences on my return to the Coast.

NEW CEYLON.

A Sample Packet of Malacca Tea has been sent to the editor of the *Straits Times* who has tried it, and who writes:—"It seems very good tea of a distinct and wholesome flavour, and pure; and one is not surprised to learn that large quantities of it are now being sold in the Straits. The Malacca tea is also being shipped to Egypt and to London, so much so that a new drying machine will shortly be added to the factory."

THE "CAUCHO" RUBBER OF PERU.

A despatch received at the Foreign Office from H. M. Consul at Para states that the tree which produces the quality of india-rubber exported from Peru through Para under the name of *caucho*, has recently been determined by M. Huber, a botanist, who is on the scientific staff of the Museum of Para. M. Huber lately visited the Ucayli region in Peru, and discovered that the tree was a *castilloa*, and he will shortly be able to decide by comparison whether it is the same as the *castilloa elastica* of Central America, or a variety of the same genus. It has been surmised previously that the tree might be a *castilloa*, but it is said that M. Huber is the first authority who has settled the point. With this knowledge it results that the distribution of the *castilloa* is wider than was previously thought to be the case. *Caucho* is also produced in the neighbourhood of the Bolivian tributaries of the River Amazon, and from parts near the said tributaries that pass through Brazilian territory. A sample of *caucho* exists in the Para Museum that came from the banks of the River Tocantins. It is said that *caucho* is also produced near Macapo and Mazagao, on the north bank of the river Amazon, near its estuary. A recent statistical return on the exports of the State of Para shows that this produce was exported in small quantities (altogether about 10 tons) from Aveiros (River Tapajos), Santarem, Alemquer and Obidos, on the River Amazon.

The total shipments of *caucho* from Amazonian ports amount to about 2,000 tons annually. M. Huber describes the process of tapping of follows:—The trunk is almost severed in two at a distance of about 3 ft. from the ground, and the tree is allowed to fall in such a manner that is supported in the inclined position by its branches, and still holds on to the part that remains standing. The Sap is collected and poured into a hole made in the ground, and is coagulated by means of the juice of certain local *lianas*. The natives state that this is the best method of tapping, and if the trees were treated in the same manner as the *heveas* they would soon be destroyed by insects which would attack them where the back would be injured by incision. This may be only an excuse for unnecessary destruction, which might be avoided. However, it must be considered that as these trees grow far apart from each other in their native state it must be inconvenient, if not impossible, to attend to more than one tree at a time. Trees that have been tapped in the manner described do not survive the operation. In the course of time their places are no doubt taken by young trees that grow from seeds. The Amazonian *castilloas* are found on elevated land which is beyond the reach of floods, whereas the *heveas* thrive best in the lowland that are periodically inundated by the River Amazon. Sir W. T. Thistleton Dyer, Director of Kew Gardens, in a communication to the Foreign Office, states that *caucho*, of which caoutchouc is probably an expanded form, has been hitherto indentified with "India-Rubber" par excellence, the produce of one or more species of *hevea* indigenous to the basin of the Amazons and exported from Para; it would now however, appear that the *caucho* tree of Peru is a *castilloa*. One or more species of this genus produces the india-rubber of Central America. In South America the *castilloa* has been known to extend as far as Ecuador, where it is called *jebe* otherwise *jeve* or *heve*. According to Aublet, this latter name was given in Northern Ecuador to a species of *hevea* and in founding that genus he derived its name accordingly. In the Amazon basin the name for the species of *hevea* is "Seringa," and in Central America for those of *castilloa* "Ule" or "Tunu" (see Kew Bulletin, 1898, pp. 141, 142). Perhaps in Western South America the names *caucho* and *jebe* are applied indiscriminately to rubber-producing trees. According to a report by Mr. D. B. Adamson, H.M. Consul at Iquitos, dated 24th December, 1898, and published in the "Transactions" of the Liverpool Geographical Society for the same year, Peru has two kinds of rubber-producing trees—*caucho*, which appears to belong to *castilloa*, and *jebe* or *hevea*. Both Mr. Adamson and Mr. Churchill also state that the rubber is extracted from the *caucho* tree by felling. The *jebe* is always tapped. The former process results in a district being "worked out." In consequence, according to Mr. Adamson, "many of the 'caucheros' (or rubber collectors) are working in Brazilian rivers, where the supply is yet more plentiful." It is not, however, necessary to fell the *castilloa* trees to collect the rubber.—*India-Rubber and Gutta-Percha Trades Journal*, July 10.

ANGLO CEYLON AND GENERAL ESTATES COMPANY, LIMITED.

The ordinary general meeting of the Anglo-Ceylon and general Estates Company, Limited, was held on Tuesday, July 18, at the offices of the company, 20, Eastcheap, London, C.C., Mr. Alex. W Crichton presiding.

The Secretary (Mr. Henry Grey) having read the notice convening the meeting,

The Chairman said: I am sorry to have to take the chair at this meeting on account of the absence of your chairman, Mr. Quintin Hogg, and I particularly regret that this should be the case on this occasion, because I understand that some of you, at all events, have come here in the expectation, and with the desire, of hearing from him personally some account of his tour in the East, and of the opinions and estimates which he formed there with regard to the affairs of the company. He is, however, unfortunately not able to be present, and I am sure that you will be sorry when you hear that family bereavement is the reason of his non-attendance, and why his presence is absolutely necessary elsewhere. As regards ourselves, this alteration came upon us quite suddenly, and I have no time for the preparation of any statement to lay before the meeting, and, consequently, if in the course of what I am about to say I omit anything, or fail to make anything clear, I hope that you will, by questions, elicit from me that which you want to know. With regard to Ceylon, we state in our report, and I think that you must have had an opportunity of satisfying yourselves repeatedly of the truth of that statement from the number of reports of Ceylon tea companies which have been issued in the course of the last two or three months, that the year under consideration has been a remarkably unfavourable one. Prolonged drought, cold winds, and low temperatures prevented the usual flushing of the tea bushes, and from an estimate which we had of the 1,720,000 lb of tea we only got at the end of the season 1,540,000 lb. This constituted, therefore, a loss of nearly 200,000 lb of our crop. Nor was this the only mishap; for the same causes affected the cocoa crop, which in our case is an important one, and instead of 2,100 cwt. which we received the previous year, we were only able to harvest 274 cwt. This, of course, is an extraordinary diminution, and shows a loss on the working of the cocoa estates. These again, were not the only unfortunate circumstances. In the first part of the year the rice for the coolies had still to be bought at a very high rate, and freights during a great part of the time were also high. On the other hand, there was one point of consolation, and

that you will see reflected in our report, namely, that whereas the general average price of Ceylon tea during the year in London fell from 7·85d, which was the average rate during 1897, to 7·70d, the price which was received for our tea, on the other hand, rose from something over 8d in the previous year to something over 8½d in the year under discussion. This was, of course, something in our favour; but it was not sufficient to counterbalance the disadvantages which I have previously spoken of. On the whole, therefore, there was a very much reduced profit from Ceylon; but I am glad to say that these causes of loss have now, I believe, almost entirely passed away. So far as the reduction of our crop is concerned, they are due, of course, to climatic causes which were merely temporary, and we hear now that the tea is flushing very well, and with regard to the cocoa, the spring crop, which has already been harvested, is a most satisfactory one. The benefit of this, however, did not accrue to the year under consideration, but will be secured by the current year. Mr. Hogg n the ourse of his tour, visited most of our Ceylon estates, and he has often told me that he was exceedingly satisfied with the work of Mr. Campbell, who appeared to him to be a most excellent manager, and one in whom we could have the fullest confidence, and whose services he considers we are fortunate to possess.

THE POUND DRAFT DISPUTE.

With regard to the sales of tea, you will have read, no doubt, in the papers—and it is hardly possible to avoid knowing—that a dispute has arisen between the growers and importers of Indian and Ceylon tea on the one hand, and the buyers on the other, and the curious part of this dispute appears to be that, whereas the growers assert that they have to give to the buyers, in addition to the 1 lb. draft, at least ½ lb. or more on account of the turn of the scales, the buyers consistently deny they receive much benefit from this. If that is so, where does it go to? I think to those who are conversant with the subject it is pretty clear from its history that they must receive something considerable. Originally, in the old days—that is, in the days of China tea—there was a 1 lb. draft allowed by the importers to the buyers, and, in addition to that, there was a 1 lb. overdraft—that is, altogether, 2 lb. allowed on every chest of tea, and no doubt the importers got that gratis from the Chinese. Well, when the second pound—the overdraft—was discontinued as compensation to the buyers this turn of the scale was allowed to them, and therefore it is clear that it was allowed to them as some substantial benefit which they received. The growers have, of course, had opportunities frequently of going into this matter, and have repeatedly verified their assertions. I well remember, not with reference to this dispute, but on a former occasion, trying to ascertain exactly how the tea was sent off from our factories in Ceylon. I remember very well a garden invoice which was sent here, and in which it appeared that the superintendent had, with regard to one break, placed it in chests, the average weight of which was 16 lb. and 2 oz., and they, of course, were taken, according to the customs weighment, as weighing 17 lb. Now of course, there are only two things imported, the chest and the tea which it contains, and if you have by some fictitious method of weighment increased the weight of the chest, inasmuch as the total weight of the chest and the tea together cannot alter, you take from the estimated weight of the tea. Well, now, how did these 41 chests work out? They worked out in this way—that the tea as sent from the estate weighed on an average in each chest 108¼ lb., and although every chest contained 108¼ lb., yet, by the method of Customs weighment, we got paid for only 107 lb. That is a loss of 1¼ lb. in every chest in addition to the 1 lb. draft, that is, a loss of 2¼ lb. Well, now I admit this is somewhat exceptional, but there must be plenty of cases in which that happens every year, and I believe that growers are not far wrong in saying that at least ½ lb., if not a good deal more than that, is given gratis to the buyers in this way. I will not detain you further on this subject, because it has been so amply discussed; but I cannot help thinking that some equitable means may be found of settling this dispute, which must naturally, if prolonged, mean a loss on both sides, because when these trade disputes take place they are generally followed by a reduction in consumption.

MAURITIUS

I will now pass on to the subject of Mauritius, where the price for sugar during the beginning of the campaign was, as we state in our report, disastrously low, and owing to the disorganisation of the market in Bombay—our principal market—from various causes, have sunk lower and lower, and the falling in the price really reminds me of the story of the man who tried how little he could feed his horse on, till when he reduced him to a straw a day the poor animal died. We have known within the last few years R10 as the price per cental for sugar; then it fell to R9 and then to R8, and now, in this year under discussion, it was only slightly over R7 per cental. Most fortunately for us, the crop was an abundant one and, as you will see from the figures, we harvested from our own estate and those in which we are interested no less than 13,000 tons of sugar, as against some 8,000 tons in the previous year. With regard to the sugar which came from our own estates, you will see that although it was very much more abundant, the expenses really increased very little—only by £3,000; that is, from £66,000 to £69,000. Mr. Hogg was also in Mauritius during the crop time and he made various arrangements. In the first place, I believe that he was the first to introduce there a first-run sugar of low grade, which is now called in Mauritius Grey Vesons, and which has the advantage of being prepared much more cheaply than the white sugar we make for Bombay. This somewhat reduced the expense, and as usual in a good year, all the different items of expense were less in proportion. The general result was that we made a profit which was three times that of the previous year, and amounted to some £10,000. But these causes of profit and advantage to our Mauritius estates are not to be compared to that amelioration which we have to some extent secured, and to which we look with the greatest confidence in the future from the legislation of the Indian Government. I think that every grower of cane in India and Mauritius owes a deep debt of gratitude to the Indian Government and to the ministers here who have supported their action in imposing countervailing duties on the bounty-fed sugar which is imported into India. (Applause). You know, and on the last occasion on which I presided over this meeting I explained to you, the extreme injustice of the conditions under which that sugar is imported, and that this bounty-fed sugar has created fluctuations in the market, which have been extremely prejudicial

us. That state of things has, I hope, now finally passed away. At all events, we look forward in the near future to a much greater stability with regard to our Mauritius interests. Now, with regard to the accounts, you will see that the acceptances and accounts payable are less by some £9,000 than they were in the previous year. With regard to Mauritius the item £99,753 for Mauritius Sugar Estates, including land under realisation, has been reduced by £2,000, because is the previous year it stood at £101,000 odd. This we have received on account of the capital due, and, with regard to the interest which is due, that has been fairly met. I think the matter is therefore in a satisfactory state. There is a new item advances to coolies, which was formerly included in the sundry accounts receivable. That item has been stated separately in order to show what those advances were. The Ceylon expenditure is £40,000, as against £39,000 odd in the previous year. You will say it is a curious thing that whereas your crop was less in Ceylon than in the previous year, the expenses have been somewhat greater; but that is not so, because in rupees the expenses were R5,80,000, against R6,01,000 in the previous period. It is the higher rate of exchange which makes the amount appear larger. I think that is all I need say to you, and, in conclusion, you will see from the accounts of our estates in Ceylon that there are now 5,200 acres of tea in bearing and 800 acres of tea not in bearing. When all that comes into bearing we shall have over 6,000 acres of tea, and although some of our estates increase but slowly in productiveness, yet our manager tells us that our crops of tea must eventually largely increase. With regard to Mauritius, I believe the Indian legislation which I have alluded to, in the opinion of all people connected with Mauritius, puts a very different aspect on the sugar industry there, and I consider, therefore, that I may confidently say to you that the outlook for the company this year is an encouraging one. (Applause.) I would say only one word more with regard to dividend: we recommend that a dividend be paid at the rate of four per cent. I now beg to move: "That the directors' report and statement of accounts to March 31, 1899, now submitted, be, and they are hereby, adopted."

Mr. Claude E S Bishop seconded the motion.

In the course of a discussion which ensued, in which Surgeon-Colonel Porter, Mr. Parsons, Mr. Gillingham, and Mr. Nicholson took part, the latter gentleman stated that he had a great deal of experience of Ceylon and Mauritius, and he considered after the year those countries had passed through the directors had managed the company exceedingly well to have been enabled to pay a dividend of 4 per cent. He also considered the shareholders owed a debt of gratitude to Sir James Westland for the steps he had taken in promoting the Indian legislation with regard to the sugar alluded to by the chairman.

On the proposition of Chairman, seconded by Mr. Macaskie, Mr. Quintin Hogg was re-elected a director.

The motion was then put and carried unanimously.

Messrs. Welton, Jones and Co. having been re-appointed auditors, a vote of thanks was given to the chairman and directors, and the proceedings terminated.—*H. & C. Mail*, July 21.

COFFEE IN HAWAII.

The export of coffee from the Hawaiian Inlands amounts to about 3,000 bags early, nearly all of which goes to United States ports. The finest coffee is produced in the Kona district, Hawaii, where the trees are cultivated 2,000 to 2,500 feet above the sea level. The industry is still in the experimental age, having promise of a great future. A personal study on the spot has led Caspar Whitney, a contributor to *Harper's Weekly*, to the opinion that coffee-growing is the industry which is going to settle up the islands especially Hawaii. Coffee lands are to be found on all the islands, but Hawaii is the only one of the group that has land for public settlement.

The principal coffee districts in the island of Hawaii are Kona (48,000 acres), Puna (67,000 acres), and Hilo (195,000 acres); but a comparatively small percentage of this acreage is planted with coffee or suitable to its cultivation. In all three of these districts, and especially in Hilo, the Government is surveying and opening land for settlement as rapidly as possible. And as fast as the land is put on the market it is being taken up; for the Government sells it for from $5 to $10 per acre, while the boom at the town of Hilo—Hawaii—enables speculators to get $50, $60, and even $100 per acre for the same land, while about $30 to $40 per acre must be reckoned on additionally for clearing off the dense jungle and forest.

Careful figuring reckons the cost of caring for a coffee plantation at from $150 to $200 per acre for five years. There is a comparatively small quantity of land for outright sale—nearly all the desirable land on all the islands is owned or held under long leases, some of them so long as thirty years, which is the limit of life of the coffee tree under cultivation. On Maui, Kauai, and some little on Oahu, coffee has been planted, and prospects reported "flattering," but only on Hawaii have there as yet been results tangible enough for some estimate of profits. Fortunately, on none of the islands has any species of blight made its appearance. Taking a fair average of success at this stage of the industry, a conservative estimate on the commencement of the fifth year places the profit at 15 to 20 per cent on the original investment. The Waianai plant (Oahu) paid for itself in six years, and last year produced sixteen tons of coffee besides.

Furthermore, coffee planters purpose setting out bananas on their coffee fields, thus making the soil do double service without injury to either crop, and yield double profit to the grower. Half a ton of coffee and 300 branches of bananas per acre, as confidently expected from good average soil, are not a bad return by any means. The coffee boom is on the island of Hawaii, and so fast as the Government opens new roads into the coffee belts and plots public land for settlement, just so fast is it being taken up.—*American Grocer*, July 12.

THE MORAWAK KORALE TEA-PEST.—The tea-pest on Silvakanda Estate, Morawak Korale, has, we are glad to learn from Messrs. Boustead Bros., been at length cleared, but 25 acres have suffered and, through the severity of the treatment meted out to them with the pruning-knife, been thrown back for several months. It is hoped that it has been entirely got rid of, but there is no certainty as to the whereabouts of the *larvae* of the pest. No doubt a strict watch will be kept not only in the Morawak Korale, but in several other planting districts, where rumours of pests and gray blight (the latter most especially) are in the troubled air. We trust that the present mining craze will not lead to the neglect of tea plantations for pursuits less safe, and to the consequent spread of the enemies of tea through insufficient vigilance at the outset

Ceylon Rainfall.

S. G. O. METEOROLOGICAL OBSERVATIONS FOR MARCH, 1899.

We append the total fall of rain from which it will be seen that the highest fall was at Gammuduwa Estate, Rattota 12·38 inches, and the lowest at Kotta Estate, Pallai 0·03 inches.

Colombo (40) 0·88
Ratnapura (34) 5·80
Puttalam (27) 3·66
Anuradhapura (295) 0.35
Mannar (12) 0.80
Jaffna .. "
Trincomalee (12) 2·09
Batticaloa (26) 6·75
Hambantota (50) 0·84
Galle (48) 3·25
Kandy (1,654) 3·28
Nuwara Eliya (6,188) 3·75
Hakgala, Nuwara Eliya (5,581) 5·05
Badulla (2,225) 5·84
Vavuniya (317) Observations cancelled
Kurunegala (381) 2·39
Maligakanda, Colombo Mr. Johnson (70) 1·01
Agricultural School Colombo, Mr. Rodrigo 2·01
Wilhelmina Puttalam, Mr. Ratnayeke (131) 3·59
Horakele Estate, Chilaw, Mr. Beven (50) 4·56
Chilaw Kachcheri
Chilaw, Mr. Koch (10) 3·85
Franklands Estate —
Veyangoda, Mr. Beven 4·05
Orange Hill, Ragama Mr. Bury (·0) 1·61
Henaratgoda Gardens, Henaratgoda, Mr. de Silva (33) 3·14
Kotua Godella, Rambuk'a Mr. Windus (580) 8·86
Eadella or Liberia Estate Polgahawela Mr. Kynaston (4 5) 4· 7
Geekianakanda, Neboda Mr. Corrie (200) —
Polgahakanda, Neboda Mr. Wight (500) 3·73
Labugama, Hanwella. Mr. Samarakone (369) 4·53
Rayigam, Horaua, Mr. Hanan, (0) 3·92
Kanangma, Avissawella Mr. Cooke (200) 9·16
Dunedin Estate, Avissawella, Mr. Bayley, (400) 9·63
Digalla Avisawella, Mr. Tottenham, (400) 7·69
Pambagama, Avisawella. Mr. Bridgman (600) 9·15
Avisawella Estate Avisawella Mr. Byrde 250 4·18
Yatideriya, Kegalla, Mr. Fairweather — 6·55
Mahawalatenna, Balangoda Mahawalatenna R.M. — 7·41
Agarsland Estate Balangoda Mr. Boyd (2,215) 6·89
Maduwanwala, Rakwana, Maduwanwela R.M. (750) 4·44
Anninkanda. Morawaka, Mr. Woodhouse (1,400) 8·33
Panilkanda, Morawaka, Mr. James (2,000) 8·80
St. John Del Rey, Bogawantalawa Mr. Glanville (4,300) 5·71
Friedland, Bogawantalawa Mr. Rammell (5,20) 4·48
Campion, Bogawantalawa. Mr. Saunders (4,810) 4·90
Blair Athol, Dikoya, Mr. Lane (3,641) 5·69
Annfield, Dikoya, Mr. Knight (4,300) 4.89
Maskeliya Hospital, Maskeliya Mr. Oorloff (4,200) 5·03

Hope Estate, Hewaheta, Mr. Bagot (5,000) 5·91
Coll's'ream Estate, Watawala Mr. Jones (3,800) 4·81
Holmwood Est., Agrapatana, Mr. Bosanquet (5,249) 6·97
Sandringham, Agrapatana Mr. Orchard (5,200) 7·52
Gingran-oya, Kotmale, Mr. Cox (3,800) 5·65
Labookelle, Ramboda, Mr. Stone (5,000) 7·28
Dunsinane, Pundalu-oya, Mr. Metcalfe 4,800 4·90
Sogama, Pusse'lawa, Mr. Eustace (3,500) 8·31
Kurundu-oya, Maturata, Mr. Owen (5,150) 8·28
Kabaragalla, Maturata, Mr. Maclean (4,200) 5·60
Maragalla Estate, Moopana, Mr. Betts, (2,200) 5·83
Moopana, Hospital, Moopana (Mr. Thomasz) (500) 2·27
Madulsima Hospital Lunugala Dr. Vethecan (2,400) 4·86
Meeriabedda, Haputale, Mr. Dupuis (3,600) 9·97
Udahena Estate, Haputale, Mr. Coombe (4,500) 6·85
Post Office, Bandarawela, Mr. Rodrigo (4,033) 3·35
Callander, Ohiya Mr. Green (5,125) 8·94
Mariawatte, Gampole Mr. Salmond (1,600) 2·15
Orwell Estate, Gampola Mr. Taylor (1,800) 3·83
New Forest, Deltota. Mr. Wardrop (3,500) 7·12
Rajawella Estate, Tellenlya Mr. Murray (1,500) 3·19
Lower Spring Valley, Badulla Mr. Rettie (3,650) 6·34
Gourakele Estate, Badulla Mr. Hope (1,200) 5·11
Mousagala Estate, Badulla Mr. Deaker (4,500) 8·44
Ledgerwatte, Badulla Mr. Rettie (4,000) 8·94
Dea Ella Estate, M'wa'atenna Mr. Vandersloot (800) 7·10
Sembawatte Estate, N'pitiya Mr. Roe (1,600) 8·10
Gammaduwa, Estate, Rattota Mr. Westland (2,4 0) *12·38*
Koboncila Estate, Rangala, Mr. Pole (3,300) 8·00
St. Martins, Rangala, Mr. Wyllie (3,600) 6·39
Crystal Hill, Matale, Mr. Van S'rex (1,400) 7·66
Vicarton Estate, Matale Mr. Carrie (3,250) 9·65
Matale Mr. Tisseverasinghe (1,208) 5·22
Wariapolla, Matale, Mr. Dickenson (1,200) 4·01
Damtu la, Mr. Sinnetamby (400) 5·78
Kotta Estate, Pallai, Mr. Todd (13) *0.03*
Mantota Hospital, Mannar, Mr. Rosario (17) 2 26
Buttala Hospital, Buttala, Mr. Bulner — 9·35
Police Station, Hatton Police Constable Miskin (4,141) 5·76
Medway Estate Nilaveli, Mr. Abraham, ... 1·50
Delwita, Kurunegala, Mr. Neame (49)) 6·08
Woodside, Uragalla Mr. MacMahon (3,000) 6·58
Gillardstown, Wattegama Mr. Hardy (2,500) 5·43

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS FOR JULY 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Padupola in the Central Province, 21·98 inches, and the lowest at Point Pedro in the Northern Province 0·01 inch.

WESTERN PROVINCE.

Negombo, Mr. Bucknall (6) ... Nil
Kalutara Mr Gregson (56) 1·19
Labugama, Mr. Bond (369) . 4·91
Henaratgoda, Mr. Silva (33) ... 1·02

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,500) .. 4 40
New Valley, (Dikoya) Mr. Ward (3,708) .. 16·54
Helboda, (Pussellawa) Not received (3,300) ... —
Yarrow Estate, Mr. Peto (3,400)... 5·11
Peradeniya Mr. MacMillan (1,540) ... 6 07
Duckwari, Mr. Edwin (3,300) ... 10·78
Caledonia, Mr Goork .. (4,273) ... 12·52
Pussellawa, Mr. .. Powell (3,000) .. 7·46
Hakgala, Mr. .. Nock (5,581) .. 6·80
S. Wanarajah Estate, Mr. Tatham (3,700) ... 19 87
St. Andrew's (Maskeliya,) Not received (4,200)... —
Padupola, Mr. Ward ... (1,635) 21 98
Mylapitiya, Mr. Fletcher (1,717) ... 0·70

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) . 0·98
Jaffna Mr MacDonnell (8) Nil
Mankulam, (N. Road) Mr. Sinmukam (167) .. 0·53
Elephant Pass, Mr. .. Silva (7) .. Nil
Vangalachettykulam, Mr. Oorloff (179) .. 0·20
Point Pedro, Mr. Pararachasinghe (24) .. 0·01
Jaffna College, Mr. Cooke (9) ... Nil
Kayts, Mr. Kretser (8) .. Nil
Kankesanturai, Mr. ... Adams (10) . Nil
Pallai, Mr. Silva (24) .. Nil
Murikandy, (North-Central Road) Mr. Silva — 0·70
Nedunkeni, Mr. Sanmukam (122) ... 2·53
Chavakachcheri, Mr. Silva (16) ... Nil
Udupiddi, Mr. Hastings (65) ... Nil
Marichchukaddi, (14) Mr. Thamotharampillay Nil
Murungan, Mr. Brechingberg (52) Nil
Vavuniya Mr. Sanmukam (318) Nil

SOUTHERN PROVINCE.

Ella Vella (262) Mr. Smith 6·39
Kekanadura, (150) do 5·70
Denagama, (286) do 5·58
Udukiriwila Mr. Lourensz (235) ... 2·55
Kirama, Mr. Ismail (260) 0·10
Hali-ela (200) Mr. Smith 5·40
Tissamaharama, Not received (75) ... —
Matara (15) Mr. Smith 5·31
Dandeniya, (157) do 5·04
Urubokka, (890) do 4·62
Elagala, Not received (121) —
Tangalla, (94) Mr. Bartlet ... 0·53
Mamadola, Mr. Cade (56) ... 1·18

EASTERN PROVINCE.

Irrakkamam, (42) Not received —
Devilana, Mr. Vanderstraaten (136) 3·13
Sagamata, Not received (40) ... —
Ambare, do (65) —
Kanthalai, Mr. Carte (150) 0·31
Allai, Mr. Carte (95) Nil
Rukam, Mr. Vanderstraaten (120) .. Nil
Periyakulam, Mr. Carte (20) ... 0.59
Chadaiyantalawa, Mr. Edge (57) ... Nil
Kalmunai, do (12) Nil
Rotewewa, do (30) Nil
Lahugala, do (70) 0·20
Naulla, do (30) Nil
Andankulam, Mr. Carte (41) ... 0·22
Manalpaddy, Mr. Vanderstraaten (21) 1·50
Maha-Oya-Tank Mr. Vanderstraaten (190) 0·51

N.-W. PROVINCE.

Magalawewa, Mr. Gunaratna (176) ... 0·35
Maha Uswewa tank, Mr. Crabb (160) ... 0·19
Tenepitiva, Mr. Churchill (8) ... 0·30
Batalagoda, Mr. Fonseka — 2·67

N.-C. PROVINCE.

Kalawewa, (268) Mr. Carson 0·51
Maradankadawala, Mr. Carson (443) ... 1·77
Mihintale, Mr MacBride (354) ... 1·14
Horowapotana, Mr. MacBride (217) ... 2 05
Madawachchiya, Mr. MacBride (285) ... Nil
Topare, (200) Not received —
Minneriya — Mr. Eves 0·10

UVA PROVINCE.

Bandarawela, Mr. Tocke (4,380) ... 0·18
Haldummulla, Mr. Viramuttu (3,160) ... Nil
Kumbukan, (446) Mr. Emerson ... 3·12
Koslanda, (2,258) Mr. Emerson ... 0 75
Tanamalwila, Not received (550) ... —

SABARAGAMUWA.

Ambanpitiya, Mr. Caldicott (729) 4·28
Pelmadulla, Mr. Clarke (408) 13·84
Kolonna Korale (Hulanda-oya) (203) Not received —
Avisawella, Mr. Jeffery (105) 6 07

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers
Agra Ouvah Estates Co., Ltd.	500	—	925
Ceylon Tea and Coconut Estates	500	—	500 n'l
Castlereagh Tea Co., Ltd.	100	—	95
Ceylon Hills Estates Co., Ltd.	100	—	30
Ceylon Provincial Estates Co.	500	485	—
Claremont Estates Co., Ltd.	100	15	..
Clunes Tea Co., Ltd.	100	—	105·50
Clyde Estates Co., Ltd.	100	—	90
Delgolla Estates Co., Ltd.	400	—	150
Doomoo Tea Co., of Ceylon, Ltd.	100	—	65*
Drayton Estate Co., Ltd.	100	—	135
Ella Tea Co., of Ceylon, Ltd.	100	60	65
Estates Co., of Uva, Ltd.	500	—	350
Gangawatta	500	—	—
Glasgow Estate Co., Ltd.	500	—	975
Great Western Tea Co., of Ceylon, Ltd.	500	645	—
Hapugahalande Tea Estate Co Ltd	200	—	250
High Forests Estates Co Ltd	500	—	550* xd
Do part paid	350	...	350*
Horekelly Estates Co., Ltd.	100	—	85
Kalutara Co., Ltd.	500	—	390* xd
Kandyan Hills Co Ltd.	100	45	—
Kanapediwatte Ltd.	100	—	85*
Kelani Tea Garden Co., Ltd.	100	...	65
Kirklees Estates Co., Ltd.	100	—	142·50
Knavesmire Estates Co., Ltd.	100	..	75
Maha Uva Estates Co., Ltd	500	—	575
Mocha Tea Co., of Ceylon, Ltd.	500	—	675
Nahavilla Estate Co., Ltd.	500	—	500
Nyassaland Coffee Co. Ltd.	100	..	90
Ottery Estate Co., Ltd.	100	110	—
Palmerston Tea Co., Ltd.	500	..	415
Penrhos Estates Co., Ltd.	100	—	105
Pine Hill Estate Co., Ltd.	60	—	50
Pitakanda Tea Company	500	1,000	—
Putupaula Tea Co., Ltd.	100	..	100
Ratwatte Cocoa Co., Ltd.	500	350	500 n'l
Rayigam Tea Co., Ltd.	100	—	57·50*
Roeberry Tea Co., Ltd.	100	—	50*
Ruanwella Tea Co., Ltd.	100	...	75
St. Heliers Tea Co., Ltd.	5 0	505	—
Talgaswela Tea Co., Ltd.	100	—	35
Do 7 per cent. Prefs.	100	80	..
Tonacombe Estate Co., Ltd.	500	—	450
Udabage Estate Co., Ltd.	100	..	65
Udugama Tea & Timber Co., Ltd.	50	..	10 n l
Union Estate Co., Ltd.	500	—	300
Upper Maskeliya Estate Co., Ltd.	500	..	500
Uvakellie Tea Co., of Ceylon, Ltd.	100	65	..
Vogan Tea Co., Ltd.	100	—	85
Wanarajah Tea Co., Ltd.	500	—	1145
Yataderiya Tea Co., Ltd.	100	..	400

CEYLON COMMERCIAL COMPANIES

Name of Company.	Amount paid per share.	Buyers.	Sellers
Adam's Peak Hotel Co., Ltd.	100	..	60
Bristol Hotel Co., Ltd.	100	85	—
Do 7 per cent Debts.	100	102·50	—
Ceylon Gen. Steam Navgt. Co., Ltd.	100	205	—
Colombo Apothecaries Co., Ltd	100	135*	...
Colombo Assembly Rooms Co., Ltd.	20	..	12·50
Do prefs.	20	..	17
Colombo Fort Land and Building Co., Ltd.	100	..	80
Colombo Hotels Company	100	—	300
Galle Face Hotel Co., Ltd.	100	..	150*
Kandy Hotels Co., Ltd.	100	—	90
Kandy Stations Hotels Co.	100	..	40
Mount Lavinia Hotels Co., Ltd.	500	—	400
New Colombo Ice Co., Ltd.	100	—	170
Nuwara Eliya Hotels Co., Ltd.	100	—	40
Public Hall Co., Ltd.	20	15	—
Petroleum Storage Co.	100	—	—
Do 10 % prefs.	100	35	40

* Transactions.

LONDON COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers.
Alliance Tea Co., of Ceylon, Ltd.	10	8½—9	—
Associated Estates Co., of Ceylon Ltd.	10	..	6¾—7
Do. 6 per cent prefs.	10	..	9—10
Ceylon Proprietary Co.	1	..	12·6—17·6
Ceylon Tea Plantation Co., Ltd.	10	..	26½—27
Dimbula Valley Co., Ltd.	5	—	5¾—6
Do prefs.	5	—	5½—6
Eastern Produce and Estates Co., Ltd.	5	..	6—6½
Ederapolla Tea Co., Ltd.	10	.	8—9
Imperial Tea Estates Ltd	10	..	6—7
Kelani Valley Tea Asson., Ltd.	5	..	5—6
Kintyre Estates Co , Ltd.	10	.	7*
Lanka Plantation Co., Ltd.	10	4½	5—6
Nahalma Estates Co., Ltd.	1	.	½—1
New Dimbula Co., Ltd.	1	..	2½—3
Nuwara Eliya Tea Est. Co., Ltd	10	..	10½
Ouvah Coffee Co.,Ltd.	10	7	8
Ragalla Tea Estates Co., Ltd.	10	...	10½
Scottish Ceylon Tea Co., Ltd.	10	..	14—16
Spring Valley Tea Co., Ltd	10	..	5—6 n'l
Standard Tea Co., Ltd	10	..	12—13
Yatiyantota Ceylon Tea Co., Ltd	10	...	8—9
Yatiyantota pref. 6 o/o	10	..	10—10½

BY ORDER OF THE COMMITTEE.

Colombo, 1st September, 1899.

RAINFALL RETURN FOR COLOMBO

(Supplied by the Surveyor-General.)

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897	1898	Av. of 29yrs.	1899
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch	Inch	Inch	Inch.	Inch.
January ..	0·81	1·45	7·39	5·42	0·62	5·00	2·92	3·81	2·32	3·09	6·98
February ..	4·36	2·81	5·32	2·36	0·52	0·81	0·35	1·68	1·98	1·90	2·73
March ..	5·34	9·43	1·52	5·15	7·44	1·84	5·64	3·66	4·21	4·92	0·88
April ..	14·27	5.93	13·92	20·39	12·51	9·34	5·93	10·97	22·81	11·47	6·66
May ..	6·48	17·65	3·00	10·32	3·00	10·09	9·31	8·30	5·80	11·89	17·73
June ..	1·87	9.79	6·62	11·01	11·32	13·99	8·37	10·14	10·94	8·34	9·23
July ..	3·32	4·59	1·10	2·20	1·72	0·52	2·85	5·24	6·15	4·49	1·11
August ..	0·73	1·65	1·86	1·01	0·86	0·92	6·35	9·09	0·97	3·77	0·62*
September ..	1·50	4·42	1·14	1 99	0·78	4·09	10·99	4·58	6·90	5·13	
October ..	13·33	35·28	12·24	6·59	20·81	30·36	16·78	4·71	20·60	14·57	
November..	12·32	18·37	5·86	18·10	14·63	5·83	19.81	11·66	17·38	12·80	
December..	8·47	7·66	0·86	·13	3·25	9·44	11·76	8·89	3 (5	6·45	
Total..	72·80	119·03	60·83	89·67	77·46	92·23	101·06	82·7	103·11	88·82	45·93

* From 1st to 30th Aug. 0·62 inch, that is up to 9 30 a.m. 31st Aug.—ED. C.O.

THE CHINESE TEA TRADE.—Consular reports do not offer encouragement to those who are looking for the rehabilitation of the tea trade of China. From Canton Mr. Consul R. W. Mansfield reports that the decaying tea trade again diminished by over 500,000 lb. A dry spring and an insurrection in June in close proximity to the tea districts may to some extent have affected the trade, but the real reason for the decline is the steady falling off in the demand for Canton scented capers on the London market. What demand there is more and more for low-priced teas for blending purposes, and a few more years will probably see even this small demand disappear. The quality of the teas was fully up to the average standard, and they were exceptionally well scented,

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo 29th Aug, 1899

EXCHANGE ON LONDON :—Closing Rates: *Bank Selling Rates*:—On demand 1/4; 4 months' sight 1/4 1-32; 6 months' sight 1/4 1-16.

Bank Buying Rates:—Credits 3 months' sight 1/4 7-32 to 1/4¼; 6 months' sight 1/4 11-32 to ⅜; Docts 3months' sight 1/4 9-32 to 5-16; 6 months' sight 1/4 13 32 to 7-16.

Indian Bank Minimum Rates 4 o/o

Local Rates: 2 o/o Higher.

COFFEE:—

Plantation Estate Parchment on the spot per bus—R12.50

Plantation Estate Coffee, f.o.b on the spot per cwt R72·50.

Liberian Parchment on the spot per bns—None.

Native Coffee f.o.b per cwt. R38.00 Scarce and nominal.

TEA:—Average Prices ruling during the week—Broken Pekoe per lb. 42c. Pekoe per lb. 36c. Pekoe Souchong per lb. 30c. Broken Mixed and Dust per lb. 24c.—Averages of Week's sale.

CINCHONA BARK:—Per unit of Sulphate of Quinine per lb 8c. 1 % 4 o/o

CARDAMOMS:—Per lb R1.82

COCONUT OIL:—Mill oil per cwt. None.

Dealers' oil per cwt. R13.75; Coconut oil in ordinary packages f.o.b. per ton R310.00

COPRA:—Per candy of 560 lb. R42.50

COCONUT CAKE:—(Poonac) f o.b. per ton, R85.00

Cocoa unpicked & undried, per cwt. R37.00 Supplies scarce—out of season.

Picked & Dried f. o. b. per cwt. R48.00

COIR YARN.—Nos. 1 to 8 { Kogalla R17.25 / Colombo R16.00 }

CINNAMON:—Nos. 1 & 2 only f.o.b. 64c. No transactions since London sales showing slight advance in price.

Do Ordinary Assortment. per lb 55c.

EBONY.—Per ton None.

PLUMBAGO:—Large Lumps per ton, R1,200

Ordinary Lumps per ton, R1,150

Chips per ton, R750; Dust per ton, R600; Dust Flying R150—Market Weaker.

RICE.—Soolai per bag, { R7.87 to 8.37
,, per bushel, R3 00 to 3.20 }

Pegu & Calcutta Calunda per bushel. R3.15 to 3.25

Coast Calunda per bushel, R3.25 to R3.50

Mutusamba per bushel R3.44 to 3.75

Kadapa and Kuruwe, per bushel } None.
Rangoon, raw 3 bushel bag. }

Soolai Kara per bushel R2.95 to 3 05

Coast Kara per bushel None.

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, Aug. 29th, 1899.

COFFEE:—

Estate Parchment:—per bushel	Nil.
Chetty do do	Nil.
Native Coffee per cwt.	R35·00 to 40·00
do F. O. B per cwt.	
Liberian coffee:—per bushel	R3·50
do cleaned coffee:—per cwt	R22·25
Cocoa unpicked:—per cwt	R37·00 to 45·00
do cleaned do	R42·00 to 48·00
Cardamoms Mysore do	R1·65 to 2·00
do Malabar per lb	R1·00 to 1·25
RICE:—	
Soolai per bag of 164 lb. nett	R7·87 to 8·37
Slate or 1st quality:—per bushel	R3·15 to 3·20
Soolai 2 & 3rd. do do do	R3·00 to 3·15
Coast Calunda	R3·25 to 3·50
Coast Kara	R3·00 to 3·10
Kazala	R2·95 to 3·00
Muttusamba Ordinary	R3·44 to 3·75
Cinnamon. per lb No 1 to 4	R00 55½
do do 1 to 2	R00·64
do Chips per candy	R92 50
Coconuts Ordinary per thousand	R35·50 to 38·00
do Selected do	R36·00 to 39·00
Coconut Oil per cwt	R13·50 to 13·75
do do F. O. B. per ton	R270·00 to 275·00
POONAC:—	
Gingelly per ton	92·50 to 95·00
Coconut Chekku do	R77·50 to 80·00
do Mill (retail) do	R75·00 to 80·00
POONAC:—	
Cotton Seed do	R65·00
Copra per candy	
Kalpitiya do	R42·50
Marawila do	R41·00 to 41·25
Cart Copra do	R40·00
Satinwood per cubic feet	R2·00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R30·00
Palmyra do do	R8·50 to 17·50
Jaffna Black Clean per cwt	R14·00
do mixed do	R11·00 to 13·00
Indian do	R8·50 to 13·50
do Cleaned do	R11·00 to 17·50
Sapanwood per ton	R50·00 to 52·50
Kerosine oil American per case	R6·00 to 6·25
do bulk Russian per tin	R2·50 to 2·75
do Russian per case	R5·55 to 5·75
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R38·00 to 40·00
Kapok cleaned f o b do cwt	R24·00 to 25·00
do uncleaned do	R7·50 to 8·00
Plumbago per ton, according to grade — Large lumps	R700·00 to 1,200·00
do do	R550·00 to 1,150·00
do Chips	R300·00 to 750·00
do Dust	R150·00 to 600·00

CEYLON EXPORTS AND DISTRIBUTION. 1899.

COUNTRIES.	Tea, 1899 lbs.	Tea, 1898 lbs.	Coffee - cwt. Plantation	Coffee - cwt. N'tive	Coffee - cwt. Total.	Cinchona Branch & Trunk lb. 1899. lbs.	Cinchona Branch & Trunk lb. 1898. lbs.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.	Coconut Oil. 1899 cwts.	Coconut Oil. 1898 cwts.
To U K. ..	66280808	66094112	10634	..	10634	380195	456492	31426	243055	437596	496274	74431	66761
,, Austria ..	7338	12333	1	..	1	..	..	...	...	..	105966	2064	6490
,, Belgium ...	9983	8540	90	..	90	..	4421	157	58	47260	95760	1006	903
,, France ..	69707	59439	165	...	165	33	21808	34	...	65954	1750	..	4209
,, Germany ..	259907	214880	19	..	19	..	..	..	20490	282139	353488	1412	6978
,, Holland ..	12860	22631	..	..	..	...	..	..	...	..	..	...	..
,, Italy ..	8716	2970	..	..	..	..	..	...	20	58300	111520	404	397
,, Russia ..	2417202	1634385	24	..	24	...	..	...	923		...	..	..
,, Spain ..	11800	24650	..	...	..	..	...	..	...	138400	29400	..	..
,, Sweden ..	35986	25664	..	..	..	..	..	...	4036	500	..	206	..
,, Turkey ..	11007	22542	1	:	1	..	...	..	336	...	..	..	..
,, India ..	354067	799834	71	..	71	..	..	1	37492	..		40069	80916
,, Australia ..	10172223	10081116	2384	..	2384	..	...	95	..	4900	16240	373	422
,, America ..	1967887	1660744	442	..	442	94005	186819	514	6240	100600	28000	69932	38235
,, Africa ..	200618	278186	...	..	..	..	724	..	952	400	1240	...	..
,, China ..	821309	780286	28	...	28	...	2026	...	2388	45000	...	2880	2327
,, Singapore ..	42471	43626	78	..	78	..	--	..	480	..	..	22333	70777
,, Mauritius ..	46179	7300	..	..	..	..	..	..	...	...	..	..	..
,, Malta ..	178652	116229	..	...	..	...	..	..	..	..	..	..	...
Total export from 1st Jan. to 29th Aug. 1899	82905720	81889267	13937	..	13937	474233	672290	32227	316470	1181049	1239638	219110	278415

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From Lewis & Peat's Fortnightly Prices Current, London, August 12th, 1899.)

☞ No Price Current having reached us by latest Mail, we omit the usual quotations and fill with other matter,

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FOREIGN MARKETS FOR TEA.

At the meeting of the United Planters' Association of Southern India on the 16th inst.,

Mr. ACWORTH said:—You are doubtless all aware that, some few years ago, the Indian Tea Association and the Ceylon Planters' Association started a fund to push the consumption of British grown tea on the American Continent. This Fund was called the American Market Fund and its success has justified expectation. It began work in the face of the greatest opposition and the position seemed at first almost a hopeless fight, and yet from a consumption of nothing per annum when they started, the returns last year showed that 12 millions lb. of British grown tea were consumed in the United States of America and Canada; and I have no doubt that the consumption is annually increasing. I am afraid, gentlemen, it is only fair to say that the joint action of the two Associations would have had far greater success had the Indian subscription to the Fund been on the same lines as in Ceylon. In India the subscriptions were voluntary; in Ceylon, by the wish of the planters themselves, it was compulsory. Now there is much to be said for voluntary contributions when all do their duty, but the policy of the Indian governing body did not meet with a very liberal response from the Indian planters, some 40 per cent. holding aloof. We are larger producers than Ceylon, yet the Fund fell short of that raised in Ceylon, by almost half. I am proud to say, however, that my own Association has from the inauguration of the Fund subscribed annually its full quota throughout. I believe I am right in saying we are the only body throughout the length and breadth of India that has done so, and that several of our members are so disgusted with the inaction, apathy and sheer selfishness shown by others that they are inclined to hold aloof. To me it appears that the apathy of India in this matter is more than unfortunate, it is almost disastrous. Messrs. Gow, Willson and Stanton wrote that the London market had been relieved of 58 million lb. of tea. I tremble to think to what point the market would have dropped if this had not been accomplished by the joint action of the two Associations. Again a prominent member of the Indian Tea Association, speaking at Calcutta in May last, stated that the London market had been relieved of an additional 10 million lb. We would never have seen the slump that did take place. and could have been averted, if India had done its duty. There is no doubt to my mind that we have only just reached a critical state. Production is increasing and competition is increasing. Japan, our shrewdest and most popular rival, is making gigantic efforts to oust us from our present position and improve her own. She has spent already £80,000 in pushing her produce and is prepared to go further. Who can foretell the enormous injury the opening of China and her vast tea districts will do? Thus I believe, gentlemen, the fight for the tea markets of the world has only just begun, and it depends on our own action whether the fight shall be for us one of life or death. The Anglo-Saxon is never beaten when he sets his teeth and determines to fight; but the time has come when he must make that determination. They raise by a levy of a cess of 20 cents per 100 lb. of tea in Ceylon rather over R3 lakhs a year, and by spending this money in judiciously advertising and pushing their produce they are able to relieve the London market and raise the average prices of British grown tea from 8¼d to 8½d per lb. That is to say the producer gets an extra farthing on the lb, of his crop. This sum on the total output of India for the year amounts to 2½ million, omitting Ceylon from the calculation altogether. Will any one tell me the game is not worth the candle? The thing is self evident and requires no argument. The only pity to my mind is that the Indian Tea Association did not some years ago move on the same lines that Ceylon has done (cheers). I therefor beg to move "That the Secretary be instructed to write to the Indian Tea Association and press upon that body the great importance of obtaining funds for the American and Continental Funds and to request it to approach the Supreme Government with the object of securing an act on the same lines as Ceylon Act IV of 1894."

The resolution was seconded by Mr. H M Knight.

Mr. HODGSON said the subject of Mr. Acworth's speech was new to him and he was not prepared to vote for it without first consulting his Association. The principal was fair, no doubt, but the Resolution called upon all planters in South India to consent to a self-imposed taxation, which was a proposition he was not prepared to assent to without consideration.

The Resolution was carried, coffee planters holding aloof and not voting.—*M. Mail*, August 17.

"ALL ABOUT RUBBER."

The third edition of this useful compilation has been issued by Messrs. A. M. & J. Ferguson, of Ceylon. It is revised and enlarged and brought thoroughly up to date, having the latest statistics and information with regard to cultivation, and scientific experiments in Trinidad and Ceylon. The table of contents shows how thoroughly every source of information has been ransacked, and in the 350 pages of the book there is a vast amount of information useful and instructive to the planter of what is believed to be the coming industry.—*S. F. Press*, Aug. 12.

ASBESTOS IN CEYLON.—Supplementing previous information respecting Asbestos in Ceylon, the discovery of which the *Ceylon Observer* was the first to announce, we qoute the following lines (signed J. J. G.) from our evening contemporary :—

On enquiry from one of the largest owners of plumbago mines in the Province, who has an experience of over thirty years' mining in different localities, I learnt that he came across "asbestos" in several of his pits; but he did not take any notice of it beyond looking at it out of curiosity, as he was not aware of its value. Some two or three years ago he came across a pretty large quantity of the "oily stuff"—that is what he calls it—in one of his pits. It was so oily that, if it touched the body of a man while working in water, he says not a drop of water remained on the man's body. Asked as to the nature of the soil in which the "stuff" is usually found, he replied that all the instances he came across in pits on the slopes of hills adjoining fields. It is found at every depth at which plumbago is found, but only in a peculiar kind of soil which is dark-coloured and clayey; and which, when exposed to the sun, turns to a red colour. "Asbestos," so far as he has seen he says, is found in small crevices, about the size of the pockets of a billiard table, between the "illama" rock and plumbago. It is of a whitish colour, weighing one to two pounds, and has the appearance of well-prepared putty. The pits in which he found asbestos were situated in the following villages:—Karayaldeniya, Hali ela and Atanikita—about thirteen miles from Galle, near about Ahangama.

THE

AGRICULTURAL MAGAZINE,

COLOMBO.

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for September :—

Vol. XI.] SEPTEMBER, 1899. [No. 3.

BEE-KEEPING.

WE are glad to be able to announce that the experiment in bee-keeping at the School of Agriculture has now had a fair start. A couple of frame hives specially constructed by Mr. Charles Andree of Kurunegalla (whose name is always associated with apiculture in Ceylon) were obtained some time ago, but these remained empty for a while owing to the difficulty experienced in securing a swarm near Colombo. During the late Show, however, Mr. Andree brought over a glass hive for exhibition purposes (and for which he was awarded a special Silver Medal), and kindly left the swarm to start the experiment at the school. The variety of bee chosen is the most satisfactory of the honey bees of Ceylon, known in Sinhalese as the "*me-messa*" (*Apis indica*). The hive as constructed by Mr. Andree, after many years of close attention to the subject, is specially adapted to the requirements of these bees, so that the modern and enlightened process of bee-keeping has been undertaken as it shonld be, not by the wholesale adoption of European appliances, but by a judicious modification of them to suit local conditions. A small bee-house has been constructed on the premises of the School of Agriculture, in which the main swarm has been located. In the original hive may be seen four parallel combs, and as there is a secoud casing of glass within the wood structure, the progress of the work of the bees can be watched from day to day.

It is high time that the barbarous method of collecting honey in vogue among the natives, accompanied as it is by the great loss of bee-life, should give place to the more humane modern method of bee-keeping we are trying to popularise. Honey is admitted on all hands to be one of the most wholesome and palatable foods, particularly for the young, and while it is so largely produced and consumed in other countries, it is a reproach that in this Island where there are such facilities for carrying on apiculture, it should not be possible to purchase pure honey—the stuff offered as such being in most cases an unwholesome compound of filthily-extracted bees' honey and "jaggery" (or palm sugar boiled with water).

We can think of no more suitable occupation for the women and children and older members of a villagers' family than that of bee-keeping on modern lines. Practically the only expense is the cost of the hive which should not exceed three or four rupees, and then bee-keeping makes but a small demand on the time and attention of the keeper. So that for the inactive villager this is the ideal occupation! As an interesting pursuit there is nothing to beat it, while as a means of occupying the mind of the idle, whose thoughts from stagnation become foul and breed crime, the introduction of bee-keeping among the village population is a measure that deserves all the support that the authorities can give it. And who can say but that the industry of the insect may put the lazy man to shame and urge him on to emulation! So may it be.

OCCASIONAL NOTES.

The following is the result of a sale of cattle held at the Government Dairy on the 18th August :—

No.				Rs.
1	cow calf	purchased by	Dr. Rockwood ...	40
2	"	"	Sir Harry Dias ...	55
3	"	"	Mr. R. E. D. Bandaranaike ...	43
4	"	"	Mr. A.A.C. Moraes .	59
5	"	"	Mudaliyar S. R. de Fonseka ...	46
6	"	"	Mr. A. A.C. Moraes.	70
7	"	"	Mudaliyar S. R. de Fonseka ...	55
8	"	"	Mudaliyar Dassenaike ...	51
9	"	"	Dr. Rockwood ...	36
10	"	"	Mr. R. E. D. Bandaranaike ...	55
11	"	"	" ...	63
12	bull calf		Bought in	
13	"	"	Mr. A.A.C. Moraes	110
14	"	"	Dr. Rockwood ...	32
15	"	"	Mudaliyar S. R. de Fonseka ...	80
16	a cow	"	Mr. A.A.C. Moraes	70
17	"	"	Sir Harry Dias ...	48
				Rs 913

The prices obtained are highly satisfactory, the average working out R57 a head, while R110 for a bull calf is quite a record price.

We are now able to supply our readers with an index to the Tenth volume of the Agricultural Magazine.

A meeting of the Commission appointed by H.E. the Governor to consider the advisability of having an Agricultural Department and to submit a report thereon, was held at the Agricultural College yesterday morning, when there were present the Hon. Mr. Justice Lawrie (Chairman), the Hon. Mr. L. F. Lee, the Hon. Mr. A. de A. Seneviratne, the Hon. Mr. J. N. Campbell, Messrs. F. G. A. Lane and Don Solomon Dias Bandaranaike, Maha Mudaliyar. A letter from Mr. J. H. Starey, Nuwara Eliya, was read. Mr. Lee's amendment on the report was placed before the meeting, and after some discussion. The Chairman proposed that Mr. Lee's report be adopted with the amendment, and that it be printed and circulated among the members for any additions they think proper to make. The proposal was agreed to, and the proceedings terminated.

The Colombo Agri-Horticultural Society offered a gold and a silver medal for country-bred horses exhibited at the Horse, Cattle, and Dog Show held in August. Both awards went to the Maha Mudaliyar who is foremost among horse-breeders in the Island.

The local Paris Exhibition Committe has recommended to Government that Mr. W. E. Davidson, who is Vice-Chairman and Secretary General of the Committee, should proceed to Paris as official representative of Ceylon. Mr. Davidson was one of the officials connected with the representation of Ceylon in London at the Indian and Colonial Exhibition of 1886, and we do not think a wiser selection could have been made than has been done by the Paris Exhibition Committee, and the interests of Ceylon should be perfectly safe in the hands of the Commisioner elect:

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF JULY, 1899.

1	Saturday ..	Nil	17	Monday ...	Nil
2	Sunday ..	Nil	18	Tuesday ..	·25
3	Monday ..	Nil	19	Wednesday	Nil
4	Tuesday ..	·08	20	Thursday ..	Nil
5	Wednesday..	·33	21	Friday ..	Nil
6	Thursday ..	Nil	22	Saturday ..	Nil
7	Friday ..	Nil	23	Sunday ..	Nil
8	Saturday ..	Nil	24	Monday ..	Nil
9	Sunday ..	Nil	25	Tuesday ..	Nil
10	Monday ..	Nil	26	Wednesday	Nil
11	Tuesday ..	Nil	27	Thursday ..	Nil
12	Wednesday...	Nil	28	Friday ..	Nil
13	Thursday ...	Nil	29	Saturday ...	Nil
14	Friday ...	Nil	30	Sunday ...	Nil
15	Saturday ...	Nil	31	Monday ...	Nil
16	Sunday ..	Nil	1	Tuesday ..	Nil
				Total...	·66

Greatest amount of rainfall in any 24 hours on the 5th inst., ·33 inches.

Mean rainfall for the month ·02 in.

Recorded by Mr. J. A. G. RODRIGO.

VETERINARY ITEMS.

It is high time that some organization was brought about in the Veterinary Department of Ceylon which at present consists of the Colonial Veterinary Surgeon and an assistant. It is of course impossible for these two officers to make any impression on the stock diseases and especially the contagious diseases of the Colony. Not even when rinderpest rages in a dozen different centres has it been thought practicable to increase the veterinary staff in such an emergency. And while Koch's method of inoculation is being adopted under Government auspices wherever rinderpest occurs, it no decided official recognition of this new discovery appears to have been given to it in Ceylon.

The following is the Government Resolution on the Report by the Imperial Bacteriologist on the results of the inoculation against the disease in the Bareilly district :—

In the Resolution of the Department of Revenue and Agriculture, No. 8-94-8, dated the 5th May, 1898, on the subject of the demonstrations made by Dr. Koch at Mukhtesai of his methods of immunizing cattle against rinderpest, the Government of India asked for the hearty co-operation of Local Governments and Administrations in the carrying out of experiments in different parts of the country, more especially in th districts in the plains. The opportunity ha recently occurred of making such experiments i

Bareilly; and as the results, though the experiments were on a small scale, were satisfactory, the Lieutenant-Governor considers it advisable that the procedure adopted should be made generally known. On receipt of information regarding outbreaks of rinderpest in the Bareilly district, Captain Rogers, I.M.S., the Imperial Bacteriologist, in March last, addressed the Collector of the district, stating that he would shortly have a supply of serum for use in inoculation, and asking for assistance in carrying out the process. The Commissioner of Rohilkhand submitted the correspondence to Government for definite orders as to the nature and extent of the assistance to be given, pointing out that any mistake at the beginning might have serious effects. The Commissioner was informed by the Government that the Bacteriologist should receive all possible assistance in the prosecution of his work in Bareilly, the results of which might be of the greatest benefit to the country; but that care should be taken that no pressure was brought to bear on the villagers, and that no experiments were made without their full consent. To secure these ends the following procedure was prescribed. On hearing of an outbreak in a village conveniently situated for the Bacteriologist's action, a sensible and trustworthy Deputy Collector or Tahsildar was to be deputed to go at once to the spot, assemble the landlords and chief raiyats, explain to them the object of inoculation, and strive to get their consent to its being tried. On their consenting, but not otherwise, the Bacteriologist was to be allowed to inoculate the cattle.

The Bengal Veterinary School has been raised to the status of a College which is under the management of a committee appointed by Government and consisting of Government officers and native gentlemen. The college consists of a large building in which are three lecture-rooms, a museum, library and reading-room, pharmacy, lecturers' room, and a photographic room. A Veterinary Hospital is attached to the College, consisting of four horse wards, *post mortem* and dissecting-room, shoeing-forge, operation, shed, and store-room. Special isolation wards for the contagious and infectious cases are provided outside the College compound, so as to prevent any chance of communication between the infectious and non-infectious cases. There is also a hostel attached to the College, which has been expressly provided for the benefit of the students of this College. It consists of eight large and three small rooms, with quarters for the Manager, and has sufficient accommodation for fifty boarders. Full clinical and other facilities will be afforded to meet the educational requirements of veterinary students in the Bengal Presidency. Students may also be admitted from any other part of India. The special objects of the College are to train thoroughly practical and competent men for veterinary service under Government, Native States, Municipalities, District Boards, and private employers. Government have undertaken to bear the cost of the establishment, which consists of a Principal, and assistant principal, three lecturers, an Hospital Surgeon, and a considerable working staff. Rules for the admission of students to, and regulation of their studies in, the Bengal Veterinary College, and for the admission of animals into the hospital of the Bengal Veterinary College, are issued provisionally, and are liable to be modified hereafter, if found necessary. It is a pity that Ceylon is so backward as regards veterinary education, which is more or less confined to a short theoretical course whilh is of little benefit to the students attending it.

This procedure was adopted with successful results, and without any friction of any kind, but, as the outbreak was on the decline, the Bacteriologist was unable to make experiments on a large scale. In one village in which nearly a third of the cattle had died, twenty-four animals were treated; a fortnight later none of them had been attacked, while out of thirty-nine healthy animals which had not been inoculated, seven had contractted the disease, and of these three died. In another village five were successfully inoculated; but the disease was at the time on the decline, and their subsequent immunity from it may possibly be due to this cause. The experience gained in Bareilly is important, as indicating that with judicious explanation the villagers can be induced to consent to the experiments; and the Lieutenant-Governor desires that District Officers will in a similar way arrange to give assistance to the Bacteriologist when similar outbreaks occur. In this way inoculation against rinderpest may become in time so popular that the ordinary district veterinary staff may be able to practice it, to the great benefit of the people and the country.

At the Cape, the services of the Veterinary Surgeons are placed at the disposal of farmers and others. The following notification is worthy of being read and digested by our local authorities. As things go in Ceylon, the Colonial Veterinary Surgeon has first to get authority before he can visit the scene of some serious epizootic outbreak, while attendance on individual cases of serious non-contagious disease do not seem to come within the scope of that officer's duties :—

"Farmers and owners of stock throughout the Colony frequently telegraph to the Department of Agriculture requesting that one of the Government Veterinary Surgeons should be sent at once to them to attend to some valuable animal which has been taken seriously ill. It is rarely possible to comply with these requests; in the first place, because it is seldom that the Veterinary Officers can be communicated with immediately by telegraph, as they are generally engaged in the country at some distance from a telegraph station; and in the second place, because the only Veterinary Officer who may be at liberty to leave the work upon which he is engaged at the time, may be two or more hundred miles away, and can hardly be expected to arrive in time to be of any real service in an urgent case. Hence much valuable time is wasted, the owner of the animal is dissatisfied, and the Veterinary Staff discredited. It would be much more satisfactory, therefore, in all such cases in which veterinary advice and assistance are required, if the owner would telegraph the nature of the complaint that the animal is suffering from, giving as full and accurate description of the symptoms as possible. This

would enable the Veterinary Surgeon to telegraph advice at once, and state whether he were able to give personal attendance to the case or not, and thereby save valuable time, which is always of importance in acute and urgent cases."

ORIGIN AND FORMATION OF ORGANIC MATTER IN PLANTS.

(Continued.)

It does not suffice to know that the leaves, saturated with water, absorb the carbon dioxide of the air, and under the influence of the sun's rays evolve oxygen. It is necessary to define this process and to explain how organic matter is derived from the product of this decomposition. Maquenne and the author, in the article already referred to, report the result of studies on the quantities of carbon dioxide absorbed by leaves, taking into account also the quantities which would be absorbed by a volume of water equal to that contained in the leaves under experiment. The results, as already stated, indicated that the absorption is not simple solution of carbonic anhydride in the water of the leaves, but a chemical combination of the dioxide with water to form the acid CH_2O_3. This carbon dioxide decomposes in the leaves, giving off a volume of oxygen (O_2) equal to that of the carbonic anhydride absorbed as observed by Boussingault, and leaving a residue of formic aldehyde (CH_2O.) The fact that formic aldehyde has never been found in plants might be taken as casting doubt upon the correctness of the above hypothesis, but the hypothesis is strengthened by the fact that the molecules of this aldehyde combine easily with each other, and although we do not find formic aldehyde itself, we may safely assume that some at least of the bodies present are the result of combinations of molecules of formic aldehyde.

As a matter of fact, bodies which might be thus formed are extremely abundant in the vegetable kingdom, as will be seen hereafter. It is known also that the aldehydes combine readily with oxygen and hydrogen, and it is of great interest to ascertain whether there are not present in plants some products thus derived from formic aldehyde. As a matter of fact such substances have been found. By oxidation formic aldehyde yields formic acid, which gives to nettles their irritating properties. The addition of hydrogen to formic aldehyde in proper proportions yields methyl alcohol, which Maqueune found in all the plants which he studied. While the presence in plants of these two compounds so closely allied to formic aldehyde supports the hypothesis of the formation of this aldehyde in the chlorophyll cells at the moment of the decomposition of the carbon dioxide by the sun's rays, there are other proofs of a more convincing nature. The reducing sugars are widely distributed in plants. Loew, and later Fischer, starting with formic aldehyde, have prepared these sugars artificially.

They succeeded in linking together six formic aldehyde molecules, and thus formed a reducing sugar resembling those found in plants. This beautiful synthesis convinced the physiologists that the primary organic compound from which all the others are derived is formic aldehyde produced by the decomposition of the hydrated carbon dioxide. Many other compounds common in plants are formed by the combinations of molecules of formic aldehyde, such as glycerin, which exists in all oils and which contains three molecules of formic aldehyde combined with hydrogen; the gums, which readily yield a sugar containing five molecules of formic aldehyde; and persite, found in the fruit of the alligator pear which contains seven molecules of the aldehyde. Starch is easily transformed into glucose by simply heating the starch with weak acid solution. This in fact is the method employed in the commercial preparation of glucose. Starch is also transformed into glucose during germination by the action of a ferment present in the seed. This change is so easy and so frequent that there is no doubt that the transformation could be reversed; that is, the glucose could be changed into starch. Up to the present time, however, this has not been done by purely chemical means, but when leaves are placed in a solution of glucose, starch soon appears in them. The starch is formed from the glucose through the combination of several molecules of the latter, water being eliminated. Starch is very abundant in leaves which have been exposed to sunlight. Its presence is more easily detected than that of glucose. The latter is but a transition stage, while the starch is reserve material which remains in the tissues much longer than glucose. The starch which is so abundant at the end of the day disappears during the night. The leaf is thus seen to be both a laboratory and a store-house which is continually emptying and filling itself. The starch disappears from the leaves in the form of glucose. Adult plants utilise this transfer form of starch in the formation of cellulose, just as young plantlets utilise the glucose formed from starch in the cotyledons of the seed during germination. The different steps have now been traced in the formation of the organic matter of plants from the simple carbon dioxide absorbed to the complex carbohydrates of the plant tissues. It only remains to briefly discuss the derivation of some particular forms of these carbohydrates. Among the most important of these is cellulose, which forms the envelope of the cells and which is easily changed into reducing sugars under the action of acids. It appears during the germination of seeds simultaneously with the disappearance of starch. There is little doubt that it is derived from glucose, and consequently from formic aldehyde. It seems clear, therefore, that all the carbohydrates, the gums, sugars, starch, inulin, and cellulose originate in the activity of the chlorophyll cells. The same is probably true of the tannin and resin groups. There are, however, certain plants which contain a group of sugars known as the inosites, which are true carbohydrates, but whose molecular construction is different from that of the other glucoses, since their derivatives belong to the aromatic series and not to the fatty acid series, to which the other groups belong. There is one other important point which needs some explanation. If we study the phenomena of

assimilation in a leaf which has been exposed to sunlight, we shall find that the volume of oxygen evolved equals that of the carbonnic acid decomposed. The plant utilises the carbon, but the proportion of oxygen which it contains remains unchanged. This is not true, however, when we determine the changes in composition which the air in which a plant is living undergoes.

Schloesing found that under such conditions the volume of oxygen evolved was larger than the volume of carbon dioxide absorbed. This indicates that the evolution of oxygen is not due simply to decomposition of carbon dioxide. Doubtless the greater part of this excess of oxygen is due to reduction of nitrates which the plants take up from the soil, but, as is shown below, a study of plant respiration reveals another source of oxygen.

FIBRES.

(*Continued*).

[BY DR. CHAS. RICHARDS DODGE].

Turning to the Western World and to the aboriginal civilization of the Inkas, we find the ancient Peruvians, with their simple handlooms, were enabled to produce fabrics that were marvels of design and exquisite in color and finish. Both cotton and wool were used in the different articles of dress of these people with other fibres. The Aztecs, or ancient Mexicans, were familiar with cotton, as well as several other vegetable fibres. With cotton and feathers we are told they produced a soft and beautiful fabric, which was used for mantles and blankets, and examples of their plain cotton fabrics are said to have been as fine as some of the imported linen of the present age. Regarding the early use of cotton on this Continent, there are abundant records to show that it has been cultivated more or less generally for four or five centuries. How long it has been known to the early ancestors of some of the native Indian tribes of our own country will never be known, although from the fact that its use is required in religious ceremonials, as in the Hopi Indian tribe, for example, we may be sure that such use is no modern innovation. Among the ancient fibres of India, we have early allusions, in the Institutes of Menu, to several prominent fibres, particularly where the material of the sacrificial thread is prescribed. Cotton, sana, and woollen thread are mentioned. Sana has been supposed to refer to Sunn hemp, one of the commercial fibres of the present time (*Crotalaria juncea*). Dr. Watt says the possible Sana fibres of the Sanscrit authors were Sunn, above mentioned, Sanpat, or *Hibiscus cannabinus* and common hemp (*Cannabis sativa*). On the whole, the evidence is in favor of Sunn. Hemp grows wild throughout India, just as it is found in a wild state in many parts of our own country, but is regarded as the source of the drug known as bhang, or hasheesh, rather than as a fibre plant. We know that the use of hemp among the ancients was very limited. It has no mention in the Scriptures, and it is rarely referred to by the heathen writers of antiquity. It was used by the Scythians at least five hundred years before the Christian era, and some writers attribute to its cultivation an antiquity more remote by a thousand years; and it was known to the Chinese at a period quite as remote. The Romans were familiar with the use of hemp for sails and cordage, though not until after the dawn of the Christian era. The China grass fibre, more popularly known as ramie, has been grown in the Orient from time immemorial, and modern writers have attempted to prove that it was contemporaneous with flax several thousand years ago in Egypt, if indeed it was not used for mummy cloth. Dr. Watt also advances a suggestion regarding ramie which would give it a great antiquity in India. He states that frequent reference is made in the Ramagana to a garment called the kshauma, and goes on to say that while kshauma is generally regarded as a name for linen, the word strongly resembles the Chinese name of the grass-cloth plant, or ramie, which is Chuma, Schou-ma or as now most commonly written, Tehou-ma. The use of ramie fibre is undoubtedly old, but how ancient, history does not inform us. The date palm, as we know, afforded a valuable material for cordage in Egypt in very early times, as the modern excavations have revealed to us, and the fibre is valued quite as highly by the present inhabitants of the country; and the ancient Chaldeans, or Babylonians, are said to have used this palm for everything—food, clothing, wine, and the timber for their habitations. There is plenty of evidence that palm fibre was employed throughout this entire region of the ancient world. Pliny tells us that even the papyrus (*Cyprus papyrus*) was used for cordage in Egypt, as well as for matting, curtains, and sails, and Warden says that small boats were sometimes made from the plant. Ancient vessels of bulrushes are mentioned by Isaiah, and Lucan alludes to the manner of binding and sawing them with papyrus. The use of papyrus for paper is even more interesting.

In the realm of rank aquatic vegetation we may note a reed known as Arundodonax, which has been regarded as the "reed" of the Scriptures: "A bruised reed shall he not break, and the smoking flax shall he not quench." (The Hebrews employed flax for their lamp wicks.) Dr. Moore tells us that the heroes of Homer made their arrows of the Arundo (Iliad XI.), and that the tent of Achilles was thatched with its leaves. A coarse grass (*Spartium junceum*) has been used in Italy as a fibre plant from ancient times, its Italian name being Ginestra de Spagna. It is mentiond by Pliny. It was also largely used by the Greeks and Romans for many purposes. Another ancient Eyptian fibre grass is known as Teff (*Poa abyssinica*), said to have been the "straw" that was used by the ancient Egyptians in brick-making. The ancients were also familiar with the use of flexible twigs for tying material, the name viburna being used for such substances. Twigs of vibirnum cassinoides are used for such purposes in the present age. In the Western Hemisphere the fibre of two species at least of agave were employed by the ancient Mexicans or Aztecs, together with palm fibre and very coarse cotton, as clothing for the poorer classes. Cloth from the agave was called nequen, and today the Yucatan name of the commercial sisal hemp, or ag-ave rigida, is henequen. This may have been one of the ancient Mexican species, but as the history of

their civilization was grotesquely recorded by the use of idiographic paintings, and not by means of written language upon books or scrolls, such fine distinctions as botanical species are not possible Agave fibre was also used to a limited extent by the ancient Peruvians, though wool and cotton were held in first esteem. In the burial mounds of the south-western United States the remains of fibres are frequently found, Agave and Yucca fibre being common. Remains of bast fibres are also found, but they have not been identified. The subject is interesting, but it is not possible on these pages to give more than an outline, chiefly for the purpose of showing that the most valued of the commercial fibres of today were among the useful fibre species of the ancient world.

RINDERPEST.

D. Hutcheon, Colonial Veterinary Surgeon, Cape Colony.

(*Continued.*)

Pure fresh bile should not be used in an infected herd, if any of the other inoculating materials can be obtained, as it tends to intensify the character of the disease in those already infected, and its immunising effect is too slowly developed to protect the healthy cattle against infection, if they are left in contact with those already sick. If no other means are available, however, the temperatures of the whole of the cattle in the infected herd should be carefully taken by the clinical thermometer, and only those which register a normal temperature should be inoculated with pure bile, the others should be separated from the inoculated lot at once, and carefully tended. If glycerine be obtained, the spare bile should be mixed with it in the proper proportions—one part of glycerine to two parts of bile. This mixture, after standing forty-eight hours, may be injected into the affected animals in large doses not only with safety, but with marked benefit.

A similar line of treatment should be adopted where Rinderpest appears amongst a herd of cattle which has been previously inoculated with bile. Much will depend, however, upon the length of time whch has elapsed since the previous bile inoculation. In the large majority of instances that would now be nearly eighteen months, except in those herds in which it has for some special reason been repeated. Hence the amount of immunity remaining would in most instance be small, while in the remainder it would have practically passed off. It is impossible, at the present time, to form any estimate of the strength of the immunity which remains in any individual herd, as it varies so much. In some bile-inoculated herds all immunity appears to have passed off in a few months, while in others the immunity has been strong enough to resist natural infection after twelve months. As an example of the latter, Rinderpest appeard at Tafelberg Hall amongest the young calves which had not been inoculated, and four had died and several more were sick before the nature of the disease was discovered, or the affected animals removed from the rest of the herd. But although this occurred over thirteen months after the cattle were inoculated, the outbreak was confind to the calves; not a single previously inoculated animal contracted the infection. If such a herd had been re-inoculated with any kind of bile, pure or glycerinaned, or even with serum, the inoculation would have got the credit of arresting the progress of the disease at once, whereas it was eutirely due to the lasting immunity conferred by the previous bile inoculation. To quote an instance of an opposite character, the disease appeared in a herd of cattle on a farm near Molteno, about five months after being inoculated with Koch's bile. The owner inoculated all that were visibly sick with serum, but not in doses large enough to do any good, and the remainder he inoculated with pure bile, after Koch, with the result that the serum did not save any of the visibly affected cattle, and the majority of those inoculated with bile, many of which would be already affected, also succumbed. In such a case if the whole herd had been inoculated with serum, giving large doses to all indicating the presence of fever, by a rise of temperature, and the usual doses to the others, the probability is that those which were bad at the time of inoculation would have died, but the others would have been protected. Similar results would have followed if the herd had been inoculated with glycerinated bile, for, as already remarked, glycerinated bile contains strongly curative as well as immunising properties. Veterinary Surgeon Armstrong discovered that fact as far back as September 1897. While in the district of Graaff-Reinet, Rinderpest appeared in a herd of cattle unexpectedly, and he could not procure serum in time to be of any use, so he injected 20 c. c. of glycerinated bile direct into the jugular vein of the sick and apparently healthy alike, with marked beneficial effects; only one animal died out of the twenty-four treated. Since that date, the curative action of glycerinated bile has been repeatedly witnessed by farmers, as well as by different members of the Veterinary Staff. Its action in this respect is silimar to that of immunising serum, the strength of the antidotal action varying in different samples of bile.

the reason why glycerinated bile can be injected into healthy animals with perfect safety, and into sick animals with marked beneficial results, whereas fresh pure bile frequently communicates the disease to healthy cattle on inoculation, and if it is injected into animals already infected, "shortens the period of incubation," and intensifies the attack—is explained as follows:—The addition of glycerine to the bile has the effect of destroying, or rendering inactive, the infective organisms of Rinderpest which are present in the bile, leaving the passive immunising substances uneffected. On the other hand, to quote Drs. J. W. and Otto C. H. Krause, *vide South African Medical Journal*, vol. vi., part 2, p. 29:—"Pure fresh bile contains the Rinderpest organism, but its activity is restrained by the presence of the immunising substances in the bile and by the bile salts." Further on these authors quote a conversation which one of them had with Dr. Koch respecting the way in which the bile of a Rinderpest animal acted. Prof. Koch's opinion is as follows:—"The bile is very gradually absorbed into the system of the animal, the minute doses of poison the system resisted forming a chemical protecting substance, which conferred a weak immunity, and which immunity

again increased as the further absorption of the remaining bile went on, until on or before the tenth day of gall inoculation the animal could withstand the enormous dose of 10 c.c. of virulent blood injected without contracting the disease. On the contrary, it was found that the injection of 10 c.c. of virulent blood fortified this immunity to a much higher degree. Bile is an aseptic fluid, which has the property when injected into the intercellular tissue of passing very slowly into the circulation. In some instances the absorption of bile takes place quicker than others, hence the gall acts with varying intensity. Thus in accordance with Prof. Koch's view, slow absorption of rinderpest bile confers immunity on an animal; quick absorption would cause rinderpest. This will depend on the amount of immunising substances in the gall; where these immunising substances are contained in the bile in the lesser quantities and not sufficient to modify or mitigate the action of the rinderpest organism, disease will supervene. Here, however, we meet with individual differences."

"Experience has taught us that, after bile inoculation of clean herds, several animals contract rinderpest from about the 8th day after the infection. The incubation period of rinderpest when acquired in the natural manner from infection through the mouth and nose, will vary depending upon the amount of poison entering the system. When an animal is infected by means of an injection of virulent blood this period is shorter; where a large dose (10 c.c.) is used the incubation period is mostly from 60 to 96 hours; when a smaller dose (0.2 c.c.) is injected, 6 to 7 days; and when a still smaller dose is employed, the period is longer. In an animal inoculated with serum after the French method, the incubation period is prolonged, and the disease appears between the 8th and 10th day, in some cases even at a later period. Where glycerinated bile (Edington's) is injected, which contains only the passive immunising substances, and after ten days 0·2 c.c. virulent blood, the incubation period is prolonged, and the animals in the majority of cases contract the disease on the 9th or 10th day after the blood injection, depending on the amount of immunising substances; where these substances in the glycerinated bile are too powerful, no outbreak of the disease will occur.

If, now, the animals had been infected on the day of inoculation with bile, in the natural manner the disease would appear on the 5th day. The outbreak taking place so regularly on the 8th day (after bile inoculation) "conclusively proves that no infection was conveyed to the animals at the time of inoculation, and must have been subsequently cnmmunicated to the animals by means of the rinderpest organism contained in the bile."

After adducing very strong evidence in favour of the fact that rinderpest bile does communicate the disease to healthy cattle, Drs. Krause propose, in order to minimise the loss arising from that, to give two inoculations instead of one. They say:—"To procure a long immunity, and at the same time to minimise the mortality after bile inoculation, we recommended two successive bile inoculations in the following manner, and obtained excellent results. The first inoculation was to be made with bile older than three days, and not older than seven. Twelve to fourteen days after this inoculation the second inoculation followed, on condition that the animals showed no signs of disease. We found further by experiment that it was safest to use for the first inoculation 8 c.c. and for the second inoculation 15 to 20 c.c. of bile. Should, however, some of the animals sicken this second inoculation was postponed to the 20th day."

Whilst I thoroughly agree with Drs. Krause in their opinion with respect to the capability of certain fresh biles, under favouring conditions, to communicate rinderpest to healthy cattle, and accept the explanation which they offer as probably being the correct one as to how this infection is effected by the bile, I differ from them as to the method in which they propose to overcome this drawback, and procure a long immunity with safety.

With respect to their recommendation to keep biles from three to seven days until their infective properties have passed off, this is impracticable for either a Veterinary Surgeon or a farmer situated in the country districts. Bile cannot be kept sweet and fit for use for that period without ice, and it is both difficult and expensive to obtained ice in districts some distance from a railway. But I cannot understand why, under the circumstances, Drs. Krause should not use glycerinated bile for the first inoculation when they admit that it possesses the same properties as pure bile which has been kept for four days and over. It is absolutely safe to use, and equally effective.

With regard to their recommendation to use only 8 c.c. instead of 10 c.c. of Koch's bile for a first inoculation,—if this applies to bile which has been kept for four days and over, I do not see any necessity or advantage in reducing the dose, because a full dose of bile of that age would be safe to use. And if it refers to comparatively fresh biles which have been kept from 24 to 48 hours, I regret to have to state that in our experience we did not find the small dose any safer than the large one. We tried the method of twice inoculating with bile as far back as the beginning of May 1897, but the results were not satisfactory. The disease appeared in the herds following inoculation with the smaller dose as frequently as when the full dose was used, it being the quality rather than the quantity of the bile to which we attributed this result: and when the disease did appear in a herd after being inoculated with the smaller dose, it showed a greater tendency to spread through the herd, as the immunity was not so strong as when the full dose of bile was injected at first; and if a second inoculation with pure bile was resorted to before the disease had ceased in the herd, it intensified the disease and increased the mortality, while to wait until the disease had ceased in the herd, was to wait until the second inoculation was of no immediate practical value except to extend the immunity. We had therefore to abandon that method and resort to the old dose of 10 c.c. for the first does, a second dose could then be injected at any convenient date if the owner wished to further fortify his cattle.

Moreover, it is very evident that the Drs. had no great confidence in the success of this small first injection of bile themselves, for they make provision for, and give directions how to act should the disease follow the first inoculation with 8 c.c.

But with glycerinated bile, the case is entirely different, it can with perfect safety be injected into healthy susceptible cattle in doses sufficiently large to give complete immunity against the danger of a second large dose of fresh pure bile communicating the disease. Considering, therefore, that Rinderpest has practically died out in the Colony, no farmer with a clean herd would willingly run the risk of introducing the disease amongest his cattle, if he could get them protected without the necessity of doing so. I have no hesitation, therefore, in reply to the question,—What method of inoculation should be adopted in the case of clean herds which are in danger? to recommend that they be at once inoculated with a large dose of glycerinated bile (from 20 to 30 c.c.) corresponding to the size of the animals, and follow this inoculation in from eight to twelve days with an injection of a large dose (10 to 20 c.c.) of strong pure bile. If this is properly carried out, such inoculated animals would have a lengthened immunity conferred upon them sufficient for all practical purposes.

With respect to Drs. Kranse's recommendation to follow these two bile inoculations with an injection of virulent blood,—there is no part of South Africa in which an injection of virulent blood after bile inoculation has been so largely practised as in Cape Colony, and our experience is that *one* dose of virulent blood injected on the tenth day after bile inoculation does not strengthen or extend the immunity conferred by the bile, if such bile possessed strong immunising properties and the blood inoculation that followed produced no fever reaction. If, on the other hand, the bile was weak in immunising properties, the mortality that followed the virulent blood inoculation was very high, in many cases 75 per cent. and even more.

In controverting our expressed opinion on this point Drs. Krause make a very important qualifying remark. They say "It is an established fact that once an animal is rendered immune, and *gradually infectious* materials are conveyed to its blood, the greater the increase of the immunity will be." Quite so; we never disputed that inoculation with virulent blood in *gradually increasing* doses, injected at short intervals after bile, will increase the immunity conferred by the bile. We emphasized this fact, *vide* my annual report for 1897, p. 25. The point that we disputed and still maintain is that if *one dose* of virulent blood is injected into an animal ten days after that animal was inoculated with Koch's bile, when the latter confers an immunity which resists the action of the dose of virulent blood so copletely that no reaction follows, then the immunity of that animal is not perceptibly strengthened by such an inoculation with virulent blood. I do not think that any one who reads the account of our experiment at Taaiboschfontein in the Herbert district in 1897 can entertain any doubt on that point, *vide* my annual report for 1897, p. 14.

But apart from its utility or otherwise, there are very few farmers in the Cape Colony who would now favour the blood inoculation after bile in healthy herds owing (a) to the danger of introducing active rinderpest amongst them, and (b) the danger of introducing other diseases such as red-water by the blood inoculation.

These are also the chief reasons why the serum and blood method of inoculation should not be applied to healthy herds,in the majority of the cattle districts of the Colony, at least not unless the disease should again assume an epizootic form, which we sincerely hope it my not. But independent of the undesirability of introducing the disease into clean herds now that it has become sporadic in its character, it will be impossible to obtain any strong serum after our present limited supply is exhausted, as there will be no suitable animals available for its immediate production. As Dr. Turner remarks, "such highly fortified animals as would produced strong immunising serum could not be prepared in less than three months. Hence bile must of necessity be used for th inoculation of herds in fresh outbreaks of an isolated and sporadic character." I would therefore strongly recommend that in every outbreak of the disease that occurs, every drop of suitable bile obtained from the animals which die should be mixed with glycerine in proper proportions, two parts of bile to one of glycerine, so that it may be preserved and made available for the inoculation of infected herds, and also for the first inoculation of clean herds which may be considered in danger. Pure bile for the second inoculation of clean herds can always be obtained when the disease appears in any locality, which would be the only reason for inoculating clean herds in the immediate vicinity. The method of inoculation which I would recommend in future sporadic outbreaks of the disease is briefly as follows:—

Infected Herds.—These should be inoculated at once with either serum or glycerinated bile; every animal which indicates infection by a rise of temperature should receive a large dose of not less than 100 cc. of serum, or 30 cc. of glycerinated bile, the latter should by preference be injected into the jugular vein, so as to secure its immediate action. Then from eight to twelve days after, all the animals in the herds which give no indication of being infected with the disease or fever should receive an injection of pure bile; not less than 10 cc., and for large animals 20 cc. This will confer a lasting immunity sufficient for all practical purposes.

Clean Herds.—When it is decided to inoculate a clean herd which is in danger of becoming infected through its proximity to diseased cattle, I would recommend that the animals composing the herd should be inoculated first with 20 cc. of glycerinated bile, and to follow this inoculation in from eight to twelve days with an injection of from 10 to 20 cc. of pure bile. This will confer a strong and lasting immunity on the animals in the herd, and will be free from risk arising from the inoculation or of introducing the disease.

DIRECTIONS FOR PREPARING THE BILE.

The bile should be taken from an affected animal immediately after death, or from one which is killed in the last stage of collapse.

Biles of all shades of colour—except those which are red from the presence of blood—may be

used, so long as they are clear and free from a putrid smell. Thin, light, yellow biles should also be rejected.

All the galls extracted at one time should be mixed together, after standing separately for twelve to eighteen hours, so as to render them uniform in streugth and immunising properties. Pure bile should be used on the second day after being drawn, unless it is kept in an ice chest, when it may be kept sweet much longer. But if pure bile is used as a second inoculation only as above directed, it is not desirable to keep it longer than twenty-four hours.

Glycerinated bile is made by adding one part of glycerine to two parts of bile, stirring the mixture well, then mix all the biles taken at one time, and allow them to stand for eight days. But if there is urgency, the glycerinated bile may be used forty-eight hours after it is mixed.

Cleanliness and all antiseptic precautions formerly published, aud with which the public are familiar, must be carried out in extractinle the bile and inoculating the catte.

TAGASASTE.

Very full information respecting the useful fodder plant known iu the Canary Islands as Tagasaste has been given in the Kew Reports, 1879, p. 18; 1880, p. 16; 1881, p. 13; 1882, p. 22, and in the Kew Bulletin 1891, p. 239. This plant was brought into notice by the late Dr. Victor Perez of Orotava, Teneriffe, and it was entirely through the personal exertions of this estimable geutleman that so much information has been obtained respecting it, and that seed of so useful a plant has been placed at the disposal of persons in various parts of the world for experimental purposes. Dr. Perez sent many supplies direct to Kew with results that have already been recorded. During a visit to Teneriffe in the early part of this year I had many opportuuities of seeing the Tagasaste growing and of realising how valuable it proved in dry localities unsuited to the growth of any other kind of herbage plant. This note is to be regarded as supplementing iu a few particulars the general information already given in the Kew Bulletin. The ordinary *Cytisus proliferus*, Linn. f., or "Silky Cytisus" is a plant widely distributed in Teneriffe. It is kuown locally as "Escabou." It was observed growing plentifully at elevations of 3,000 to 6,000 feet. According to specimens in the Kew Herbarium it is found also in Grand Canary, but probably to a much less extent thau in Teneriffe. It is not infrequently seen as a cultivated plant in English greenhouses where its silky leaves and abundant white flowers render it a very attractive object. In Teneriffe it forms a large bush or tree with a stout woody stem sometimes attaining a height of 8 to 10 feet. The branches are of a slender drooping habit plentifully covered with ternate leaves on short petioles. The leaflets are oval-lanceolate pointed at both ends and clothed on the underside by copious silky adpressed hairs. These hairs are generally white, but in some cases they are fuloons or even of a rich brown colour. The flowers (also silky in bud), are snow white when fully expanded and attached in loosely packed umbels on the sides of the branches. The pedicels are of a rosy colour. After flowering the bud in the centre of each umbel usually grows out into a branch, an appearance of proliferation which has suggested the specific name. The pods are slightly narrowed at the base and produced abundantly. They are sismous, oblong pointed and densely pilose in the young state. This is the typical plant known as "Escabon," ordinarily met with in the mountanious parts in Teneriffe. There are several forms differing slightly in the size of the leaves and the colours of the flowers.

None of them, however, possess any special merit as fodder plants. The Escabon itself is seldom browsed upon by animals unless pressed by hunger, and it probably contains cytisine—an active poisonous principle known to exist in the common laburnum and other members of this genus. The tagasaste on the other haud evidently contains little cytisine, for it is readily eaten by animals and especially those that have become accustomed to it when young. The tagasaste is known in the wild state only from the island of Palma where it grew originally on the hills above the celebrated chapel of our Lady de las Nieves at an elevation of about 1,000 feet above the level of the sea. It acquired considerable reputation locally, and it was gradually distributed by cultivation all over Palma. The first person who carefully studied the tagasaste and wrote about it was Dr. Victor Perez. He introduced it into cultivatiou at Teueriffe and published a pamphlet on its merits as a fodder plant nearly 30 years ago. The plant was quoted in Dr. Victor Perez's writings simply as an unnamed variety of *Cytisus proliferus.* Although in botanical characters it differs only in a slight degree from the type, it has nevertheless deserved to be regarded as a distinct variety and to bear a distinguishing name. The name that might very appropriately have been associated with it was that of Dr. Victor Perez. As the matter now stands, however, the tagasaste has been described by Dr. H. Christ in *Spicilegium Canariense* published in Engler's "Botanishe Jahrbuches," IX. 120, as *Cytisus proliferus var. palmensis.* This name therefore distiuguishes the Palma Tagasaste from the ordinary Teneriffe plant Escabon. *Cytisus proliferus*, Linn., *f. var. palmensis* differs from the type by its more robust growth and a laxer habit. It often attains a height of 12 to 15 feet in good soils, and all parts of the stem and branches are enveloped in leaves. In fact its very leafy character is oue of the marked features of the plant. The leaflets are ovate oblong, somewhat obtuse and dark green in colour. The young growths, as may be seeu in growing specimens at Kew, are almost entirely destitute of the silky hairs so abundant on the species. Dr. Christ's Palma specimens were obtained on the margin of woods above Barranco Carmen and at Dolores in March 1884. It only remains to add a few words respecting the economic value and the uses of tagasaste for fodder purposes. Like all Canary plants it sends its very long tap roots deep into the ground, and it is thus enabled to bear prolonged periods of drought without injury. In many instances tagasaste was the only plant that throve in loose volcanic scoria and ash. Bushes of it more than

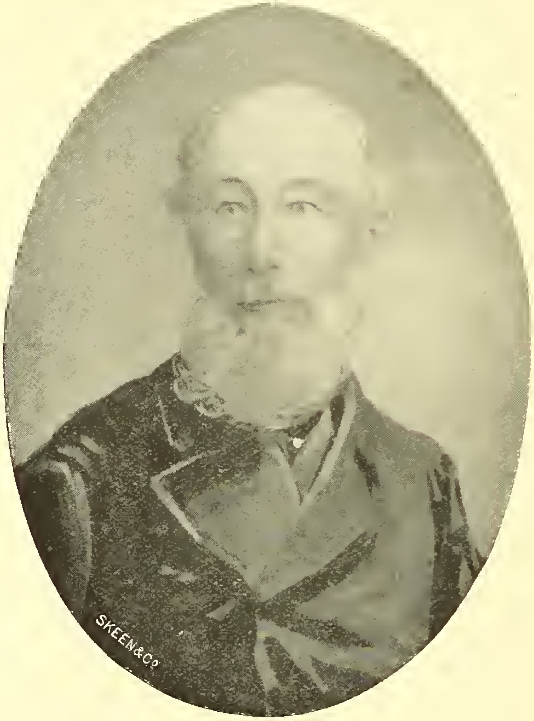
20 years old, existing under the most arid conditions were still yielding regularly large crops of fodder. A plant or two is cultivated near every cottage in the neighbourhood of Orotava, and it is planted along the principal roads to afford food for the animals kept by the road labourers.

The tagasaste evidently prefers a loose friable soil, for then its roots can penetrate far into the earth. It grows moderately well also in somewhat clayey soils, but it is impatient of stagnant moisture. The climate where the tagasaste thrives best is mild and equable. The plant is well known not to bear frost, but on the other hand, it will probably bear considerable heat, and it might on this account be suited for most tropical and sub-tropical countries with a friable soil. As already stated the tagasaste is readily eaten by domestic animals. Cattle, sheep, goats, and pigs evidently thrive upon it. It is said not to be so suitable for horses in the green state. This practically the only drawback to its general use when freshly cut. It makes, however, an excellent hay, and as a dry fodder or after being treated in silos its value is greatly increased. A sample of dried fermented tagasaste was forwarded to Kew by Dr. Perez through Her Majesty's Consul at Teneriffe in 1886. It is said that in this state tagasaste is particularly palatable to both horses and ruminants. Another interesting point about tagasaste is that its flowers are frequented by swarms of bees, and it has already proved at the Cape and in Australia of great value to bee-keepers. The late Dr. Schombugk states that the tagasaste trees in the Botanic Garden at Adelaide "were covered with bees during the flowering season." In countries with bare hilly tracts denuded of forest tagasaste should prove of the utmost value. It requires no irrigation, and once it is planted it lasts for 20 years or more. When overgrown and cut down it yields excellent firewood. In very dry countries with light friable soils there is probably no plant that would so well repay cultivation as the tagasaste.

GENERAL ITEMS.

The Mangosteen is a native of Malacca (Straits Settlements) it is said that in the early days of the French occupation of Cochin. China several naval officers who had been invited to the table of the Emperor Napoleon III. were unceasing in their praise of the delicious mangosteen, at that time unknown in Europe. The curiosity of Her Majesty the Empress Eugenie was aroused, and, wishing to taste for herself this famous produce of Cochin China, she requested an Admiral to accomplish the impossible and to procure for her at least a dozen mangosteens. Great efforts were made, the ice-room of a man-of-war taking troops home was appropriated to the purpose, and out of several thousands of the selected fruit a hundred arrived in good condition.

The Rev. W. H. Hollister, of Kolar, in the Mysore province, has says the *Indian Agriculturist*, sent us a small pamphlet in which he discusses the "plough problem," and hopes that his endeavours "will lead men of influence to adequate consideration of one of India's great needs." In the author's opinion a good plough costing Rs. 15 to Rs. 20 will pay for itself in two years and then be good for ten years' service, and a good plough drawn twenty-five miles will accomplish as much as a country plough drawn 100 miles. Mr. Hollister then discusses the relative advantages of the improved and country ploughs and lays down the following propositions: Improved ploughs are an important factor in promoting general prosperity and preventing famine in India, for they will largely increase the productive areas, besides increasing the production of present cultivated areas by bringing unused portions under actual cultivation, by destroying noxious weeds and grasses that cause many acres to lie waste or produce scant crops, and by improving the soil in many places. Other advantages claimed by the author for the improved plough are that the use of it will lead to improvement in the quality of the cattle and will help directly in solving some famine problems. Mr. Hollister, proceeding to discuss what should be the attitude of Government in this matter, makes some very sensible remarks. He says that Government action in this matter would be in perfect accord with its generous, humane, and paternal efforts for the people on other lines, and it is as legitimate a line for Government effort as are irrigation works. As to the efforts that Government may wisely make in this matter, the following are some of the suggestions of the author of the pamphlet. (*a*) Let careful and exhaustive tests be made of all ploughs that appear likely to be of real value to ryots. The more meritorious should be brought to the notice of the people and be placed within reach of the more intelligent ryot, since these will use them to their best advantage; (*b*) men of practical experience in agriculture and the use of ploughs should be appointed Superintendents of circles of greater or less extent; (*c*) during the infancy of the industry Government should manufacture ploughs in such a manner as to reduce their cost to a minimum; (*d*) Government should establish numerous depots.



R. E. LEWIS.

Photo and Half-Tone Block by W. L. H. Skeen & Co., Colombo and Kandy.

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"PIONEERS OF THE PLANTNG ENTERPRISE IN CEYLON."

(Third Series.)

R. E. LEWIS:

MERCHANT, PLANTER AND EDITOR, 1841-1870.

MR. R. E. LEWIS deserves a place in our roll of pioneers if for no other reason than that, so far as we can recollect, he was the writer of the first little history of systematic "Coffee Planting," ever published in Ceylon. But Mr. Lewis has special claims arising out of his arrival at an early date in the Colony and to his interest in its development, not only as merchant, but also as planter and editor. He is now a veteran of 82 years in retirement in England, but, like so many other old pioneers, is still active, both mentally and physically, as may be judged by the following little note which reached us by a mail in July last from our old friend:—

"You will be glad to know that in my 82nd year I am in good health though not without infirmities; still active and energetic, for which I cannot be too thankful, still enabling me to make walking excursions into the country by the help of railways, for which the position of my residence offers great facilities, not only for all the Southern lines, but also several of the Northern. These excursions afford healthful changes of air and exercise. My oldest Ceylon friend, Mr. Robert Nicol (A. & R. Crowe & Co.), passenger with me in the 'Achilles' to Colombo in 1841, still survives at Bervie, N.B."

We may now proceed to a sketch of Mr. Lewis' career which will be chiefly autobiographic:—

The subject of the following memoir brought with him a nine years' experience of London business, especially in connection with the Colonial Produce Markets of Mincing Lane, and the wholesale trade in that produce in all parts of England and Scotland. The equalisation of the duties on all British-grown coffee persuaded him that Coffee Planting in Ceylon would very soon become a new enterprise for the employment of British capital, and prompted the desire to go out to the Colony to become a planter. By his father's advice, on the score of his youth, his voyage out was postponed until 1841, when it took place in Mr. Tindall's ship, the "Achilles," which arrived at Colombo in October, 1841. At the time of Mr. Lewis' arrival, there were only two vessels in the Colombo roadstead, and both belonged to Mr. Tindall, whose ships carried nine-tenths of the cargo and nearly all the passengers to and from Europe during the early "forties." Mr. Lewis was at once received into the office of his father's friend, Mr. H. I. Albrecht, whom he had known for many years in his connection with the Produce Markets in Mincing Lane. The Colombo business passing through many vicissitudes was known then as Parlett & Co., and ultimately Parlett, O'Halloran & Co., which firm, after the death of Mr. Albrecht,

in later years suspended. The opportunity occurring, Mr. Lewis embraced the offer of the charge of a Coffee Plantation, Hatterebage, in Saffragam, in 1843. This had long been his wish before leaving England. Having noticed the fiscal changes which had equalised the duties on Coffee from the West Indies and the Colonies, he had been confident from the first, that planting in Ceylon by Europeans would soon follow. Here, notwithstanding the intense solitude of the place, a happy three years were passed, 150 acres planted and partially brought into bearing at a reasonable expense. The proprietor, his friend and fellow-passenger by the "Achilles" died, and troubles arising with his representatives, Mr. Lewis' connection with the estate ceased. He was soon called down to Colombo to undertake to bring into shape the accounts of an Agent for Proprietors in Europe, who had bought and carried on many estates at a vast expenditure of capital. This he did not fully accomplish for reasons which need not be stated, and he declined to proceed further with them. At that time 1846-7, a Conveyance Company was projected in order to bring down the coffee crops from Kandyan districts with better dispatch than could then be accomplished by bullock carts, which usually took from five to seven days between Kandy and Colombo. For this it was proposed to establish stations on the road for providing fresh bullocks to draw the loads and to make the journey continuous and not intermittent by the work and rest of the same cattle. A fair salary being offered for a Secretary, Mr. Lewis applied for and obtained it. Outside attendance at meetings of Directors and receiving subscriptions for shares, his first work was to determine the sites of the stations and to negotiate with native owners and Government officials for the land required. Having accomplished this and secured a terminus in Colombo, other business of a more pressing nature having come upon him, he resigned his position with the Company. Mr. Lewis then held the Power of Attorney of a merchant who was leaving for Europe, and contributed some assistance to the "Examiner" newspaper then but lately commenced. This last led to lending his savings to the then proprietor, of which being unable to obtain the repayment for good or for evil, and very unwillingly he had to take over the paper on the return of his merchant friend to Ceylon. This was in the year 1848, and his connection with that paper, of which he was sole Editor, continued until June, 1853, when the "Examiner" was disposed of to three gentlemen now all gone to the majority. The year 1848 was notable for a partial rising of the natives in the Central Province and the means used for suppressing it, which gave rise to a lamentable controversy between the "Examiner" and the *Observer*, which had hardly subsided when Sir George Anderson succeeded Lord Torrington as Governor. The proceedings in Parliament at home were no less stormy; an exhaustive Parliamentary enquiry took place, and many Ceylon officials were removed to other Colonies. The two last acts of the drama being the Court Martial demanded by Major, now Colonel Watson, by which he was acquitted, and another enquiry by two members of the Indian Civil Service with the same charge in connection with his action whilst on duty in the disturbed districts. Before parting with the "Examiner" it may be mentioned that though it did not enjoy a large circulation, it was an authority on mercantile questions, always siding with the new departure, Free Trade then coming forward at home. Many improvements, arising from the Editor's early business experience at home in regard to preparation and packing coffee for shipment, were advocated in its columns, many suggestions for improvements in coffee cultivation were put forward which have borne fruit in later years.

At the Great Exhibition of 1851, Mr. Lewis contributed Models of Buildings and Machinery on Coffee Plantations for which he received a Medal, and the smaller contributions mostly passed through his hands, sent in to the "Examiner" Office.

Leaving Ceylon in November, 1853, he arrived home in the following March in fine health, just as the Fleet was leaving for the Baltic; the Crimean War having broken out during the voyage round Cape. After parting with the "Examiner," on his passage to England round the Cape in the "Symmetry" in 1853, Mr. Lewis, besides other things amused himself with writing a short "History of Coffee Planting" and the *modus operandi* which after his return to Ceylon was published in chapters in the "Examiner," and afterwards gathered into a pamphlet for distribution to his friends. This little work was used and favourably acknowledged by Sir Emerson Tennent in his great work on Ceylon. Later it was plagiarised by several writers on the same subject, whose names and works need not be mentioned. It is only fair to say, that an ampler historical account of the commencement and progress of Coffee Planting in the various districts, was published by Mr. A. M. Ferguson in his Ceylon Commonplace Book in 1859. Having married, he returned to Ceylon arriving in September, 1855, ostensibly to undertake the management of a plantation in Dimbula; but the arrangement falling through, at the invitation of his old friend, Mr. Butler, he became assistant to, and holding the Power of Attorney of, Messrs. Darley, Butler & Co., which power he was called upon to

exercise to the full during the absence of both partners in Europe. In the same year in conjunction with the late Mr. S. T. Richmond he was appointed Assignee in the Bankruptcy of Messrs. James Swan & Co. In 1861, Mr. Darley, then resident partner in Colombo, going home, not intending to return, and Mr. Stephen Darley coming from Cochin to Colombo, as partner in conjunction with Mr. Mitchell, who had recently joined the firm, Mr. Lewis moved with his family to India to the vacant Cochin post, which he held, after good success in which he participated, until 1866, when the firm gave up business at Cochin. After visiting the Travancore Coffee Plantations, Madras, Colombo, and Bombay, on his way, he rejoined his family at home in the same year. Not seeing his way to enter business in England, Mr. Lewis, at the instance of the partners in London, returned to Ceylon as assistant to Mr. Mitchell, at that time Mr. Stephen Darley had retired from the firm. The death of the elder Mr. Darley in 1869, obliging Mr. Mitchell's absence from Ceylon, during which Mr. Lewis took charge of the business, also brought about changes which made an opening for Mr. Lewis' retirement, then necessitated by the state of his health which had broken down, Mr. and Mrs. Lewis leaving Ceylon and their many friends in November of 1870, after twenty-nine years connection with the island.

Before closing, we may take over a contribution made by Mr. Lewis some four years ago to the *Ceylon Observer*, giving some recollections of his early days in Ceylon :—

The writer's recollections commence in

THE YEAR 1841,

when Sir Colin Campbell was Governor of Ceylon. It was then ceasing to be merely a military dependency of the British Crown, but was becoming a Colony, while Mercantile and Planting enterprise were beginning to develop. It is not intended to give a history of these enterprises, but something may be said as to the causes for this change. In a word, it was the abolition of differential duties on coffee, which had been imposed on the produce of Foreign Countries and even on that of our own possessions in favor of the West Indies.

In these days, when few middle-class families have not some friend or relation connected with the Island, it may sound strange, that Ceylon in the "Forties" was very often confounded with Sierra Leone, and intending voyages were sympathised with as going out to one of the most unhealthy countries in the world.

As nearly as 1837—perhaps earlier—some few plantations had been commenced ; the Governor Sir Edward Barnes had himself opened land near Peradeniya, rendered possible by the opening of the road to Kandy under his energetic rule.

PLANTING

was very experimental in those days, and much capital was wasted by planting in unsuitable situations. The great rush for land however began in 1841, and land was then readily sold by the Government at 5s an acre, as a reference to the *Government Gazette* for that year will show. Unhappily much land was bought and planting commenced by Civil Servants and Military men and much disaster followed leading to regulations which have lately been revised prohibiting such investments. Experience in cultivation and finance had to be acquired, wanting which many proprietors were ruined, and by the year 1847 few estates remained in the hands of the original owners. Experience at last came,—not a little assisted by the local press, through which every improvement became common property, producing valuable discusssion. Wave after wave of alternate prosperity and depression have characterised the enterprise up to the time when Coffee had to give place to Tea.

In those early days the

SOCIETY

outside the Civil and Military offices was very limited. A few merchants had officers in the Fort where their assistants mostly lived to protect the hard cash in the strong room ; no Bank having been established until 1841, when the "Bank of Ceylon" was opened. There was no decent hotel in those times : the Colombo Resthouse would now be a disgrace to an outstation ; but there was much hospitality to strangers, and Captains of ships were always entertained by the merchants, to whom their vessels were consigned. Admission to the use of the Library with the privilege of attending the dances every fortnight, was by ballot. There were then two Regiments of Royal Troops besides the Ceylon Rifles, Artillery and Gun Lascars. Not long before there had been

FOUR REGIMENTS,

stationed in the island. With the influx of new people, houses and furniture were wanted, and except old Dutch furniture in the houses of Burghers,—often very handsome and made of valuable woods,—there was little to be had, except a few articles manufactured outside and brought in for sale on pingoes chiefly. It was not an uncommon thing for somebody to say to another about to leave the Island :—"I am sorry you are going away,

HAVE YOU ANY FURNITURE TO SELL ?"

Not only furniture, but gentlemen's and ladies' clothing articles were difficult to obtain beyond plain things which could be made by local tailors and needlewomen. The writer not knowing what head covering might be worn, brought out with him a silk hat costing 6s 8d which was admired by all beholders : many were the enquiries "Where did you get your hat ?" At that time the Colonial Secretary was wearing a beaver, the color of a fox's brush. Soon after, things changed by a curious circumstance. A new Chief Justice came out, and in his train a Scotch gentleman, who practised as a notary afterwards, and later on as a magistrate at an outstation. His wife, with an eye to the main chance, brought with her an invoice of ladies' goods which were sold off at once. This lady saw at a glance the nakedness of the land, and having a brother in the drapery trade communicated her views to him, which resulted in the establishment of

A GENERAL STORE

of high character and which celebrated its jubilee only lately. Retail business by Europeans has since progressed largely in all its branches. One of the most pressing wants at that time was

ROADS IN THE INTERIOR.

The Kandy, the Kurunegala, the Galle, the Gampola, the Negombo, the Puttalam and the Matale roads alone existed. Estates which did not adjoin these roads were reached at best by bridlepaths, but most often by a mere track through jungle over rock and river which caused those clever and sure-footed Pegu ponies to be in great request,—rice and stores reaching the estates by coolies and tavalam bullocks. The facilities for locomotion now enjoyed independently of railways, are chiefly due to the late Major Skinner and his able assistant Capt. Evatt and his subordinates. There were then mail coaches (so-called) on the Kandy and Galle roads which started daily at morning gun-fire. Our merchants were few ; the business of coffee curing and shipping had no then come into existence ; nor had the trade i

piece goods and European articles been developed by the circulation of money on the plantations. A merchant leaving for Europe would be always accompanied to the Wharf by his brother merchants. Intercourse with Europeans was then almost entirely by

SAILING SHIPS;

merchandise and produce coming and going in the same way. Mr. Wm. Tindall of London and Scarborough was the owner of nearly all the vessels which traded with Ceylon; their Commanders being well-known men well received everywhere. Any one who wished to use the Overland Route organised by Waghorn, would go up to Bombay by our little mail-steamer "Seaforth," going on by Indian Navy steamer to Suez, and thence in a very rough way across the desert to Cairo and to Alexandria and onwards. Our Overland Mails came in and went out once a month. During the monsoon they were brought down by Dak from Bombay. In the North-East monsoon they came by the Colonial steamer "Seaforth" from Bombay. The arrival of the

ENGLISH MAIL

was a very exciting thing; for it happened mostly that the outward mail had to be despatched in a matter of hours after. Perhaps there is no European now living in Ceylon who remembers the arrival of the mail announcing the birth of H.R.H. the Prince of Wales and the Breach promotion in 1841. On that occasion after the steamer was signalled, Civilians, Military and Mercantile men were at the Wharf awaiting the Captain of the steamer to land. When he came, he announced to the recipients themselves their new honours. That gentleman after a prosperous career as a merchant in Colombo is now at a good old age, living near London. The passage of the mail was then about a month—possibly more—for when Capt. Ingledew, the Pioneer of the P. & O. Company, brought letters to Galle in the steamer "India" in 30 days, it was considered a great feat. Since that time the large and powerful steamers of the P. & O. and British India Company, besides many other modern lines, with the opening of the Suez Canal, have reduced the time occupied in transit and expenses of travelling to about half of what they were up to as late as 1871. Postal facilities of all kinds now exist which were undreamed of in the 40's, 50's and 60's. The early planters had among other difficulties, that of

FETCHING THEIR MONEY

in hard cash up to the estates which generally required a personal visit every month to Kandy. The provision of this money was by Government notes cashed at the Kandy Kachcheri. Considering the temptation to highway robbery and the facilities for it in lonely corners, it speaks well for the natives, that the number of these crimes might have been counted on the fingers of one hand. A greater trial to the planter was

THE LABOUR QUESTION

especially for clearing jungles for which Sinhalese villagers are specially adapted; those were not the days of contractors for felling and burning, and the immigration of Tamils for all the after operations had not been systematised.

AMUSEMENTS

were few, Governor's Balls, Race Balls and dinner parties in Colombo were about all. In the Planting districts perhaps the monthly visit to Kandy where the pioneer enjoyed himself very much like Jack ashore, was a beneficial change which the circumstances of his life required. It might then have been said,

"The sound of the church-going bell
These valleys and rocks never heard."

There were Chaplaincies in Colombo, Kandy, Galle and Trincomalee; Missionaries both Church, Presbyterians and Nonconformists at several stations with Churches and Chapels in Colombo and Kandy, but the privileges of public worship whic dwellers in the jungle now enjoy, though these might be improved and extended, did not exist. The most important improvement, and the cause of the great contrast between the present and earlier times has been the introduction of

RAILWAYS.

The facile communication between the Plains and the Hills is a boon to the health of Europeans, whilst it is an enormous advantage to the Planting Interest, on the prosperity of which, as seen by its ups and downs in sixty years, the well-being of the island depends.—R. E. L.

PHILIPPINE HEMP INDUSTRY.

Among the chief industries in the Philippine Islands is the gathering and export of Hemp. Manila hemp is known the world over for its fine quality and its value for making all kinds of rope, from the biggest hawser down to the finest piece of twine, and it would be very much in order to devote a little of our space to this important feature of Manila's commerce.

The scientific name of this hemp is "Musa Textilis," and the tree belongs to the banana family; thus the banana is classified as "Musa Edibilis," the latter names of each respectively showing one to produce the textile or fabric, and the other the edible fruit.

"Manila hemp" is the name invariably used by the merchants of England and America to distinguish it from the Russian an Indian hemp, which is much inferior. In the Philippines, however, it is not regarded as a product of Manila and district, but chiefly of the southern islands, and it is called "abaca," with accent on the last syllable.

The hemp trees of the Philippines, have been tried to be introduced in Borneo and India but without much success. The trees grow best on the Pacific slopes of the Southern islands. South Luzon furnishes the best quality and greatest quantity, but there is little difference between Samar and Leyte of the archipelago as producing districts. The roots of the plant cannot exist in damp soil; volcanic soil where the ground is dry and plenty of moisture overhead is essential to getting the best results.

Here, in these localities we find large plantations among the hills with the hemp trees in different stages of growth. They require little cultivation; once a week the native cleaner or gatherer goes through the plantation and does the little weeding that is necessary while in performance of his duty of cutting and stripping the trees.

The trees are planted from shoots and grow to a height of ten feet and from five to seven inches in diameter. In appearance they appear to an unpracticed eye like the banana tree, and if these trees were allowed to grow five or six years they would develop a fruit something like a plantain; it is said by some that this fruit is poisonous.

When the tree is three years, then it is the proper time to cut it down and strip it of its fibre. This stripping is a most difficult and important point in the production of hemp and requires great experience. The native cleaner, as he is called, goes up into the hills armed with his bolo and a bag of rice. He enters the plantation and glances to right and left as he walks along. Experience has taught him to tell at a glance if a tree has reached the age for cutting. One slash with the bolo and the tree is cut down close to the roots. The first thing he does is to plant a cutting or shoot in close proximity to where the tree grew. This is invariably the rule, that when a tree is cut down another is immediately planted in its place, so there are at all times trees in different stages of development. As soon as this is done he strips the shrub of its leaves and commences on the long stalk eight or ten feet in length: He strips off the extreme outer skin and then commences the real work. In the centre of the stalk is a stout pith, and around this grow alternate layers of fibre and a sappy, vegetable matter. These layers of fibre must be carefully stripped off the stock at once for fear of the sa

rotting the fibre. The cleaner in a couple of minntes has cut a small bamboo tree and made a rough bench. With a bamboo strip fastened to his knife and that in turn fastened to his foot, he stoops over to the ground in front and then makes a full backward sweep as far as his arms can reach stripping a layer of fibre which he throws off to one side. This is repeated until the fibre is all taken off, and after spreading the strippings on the gronnd to dry in the sun he continues on to repeat the work in another spot wherever he may find a tree in the proper stage of maturity. The work of stripping is heart-breaking and causes many a lame back; even the native who is accustomed to the work finds it no sinecure. A full tree will yield about one pound of fibre and a native can clean fifty pounds in a week. The length of fibre is from six to eight feet.

The natives are exceedingly independent and work as long as it suits their convenience. When a cleaner has got what he considers enough fibre cut, cleaned and dried, he ties it up and takes it down to market, where he sells it to the middleman and receives in return the market, value of the fibre. The plantation owner receives one-half this remuneration and the native keeps the other, and this is the only time the plantation owner figures in the whole proposition, i.e., when he gets his half. He simply watches to see that he gets his share.

In the hemp ports representatives from the business houses here in Manila buy from those middlemen. They are either Spanish, Chinise or native dealers, who collect the hemp and barter with the native cleaners, using rice as the standard of exchange.

GRADES.

Ordinarily, the hemp arrives here classified according to grade by the middlemen, but sometimes it is sent here to be classified and the experienced eye of the merchant spots at once all deffective or injured fibre.

The quality depends a great deal upon the original cleaner and the state of the weather at the time the tree was cut.

To turn out the best grade the cleaner must be very careful in his stripping and have the fibre dried at once, whereas, if allowed to stand awhile, the fibre losses its fine color and some of its strength. Hemp is graded accrding to fineness or coarseness, color, length of fibre and its tensile strength. The latter depends greatly upon the age of the tree. The color and coarseness show the quality of the Hemp and this depends, as mentioned above, wholly upon the cleaner. Sometimes he is careless, and more especially when high prices prevail in Manila he does not trouble himself about the quality of his work, but aims only to turn out as much as possible while that market condition prevails.

VALUE.

The value of hemp varies. It has been known to be as high as £60 per ton and then again as low as £14 sterling. Of late the price has fluctated continually, owing to the war and the political situation in the Philippines. The average rate per ton, however, is about £25 or £30 sterling.

There are between 800,000 and 1,000,000 bales of hemp produced and shipped from these islands annually. The United States, acting as a centre for South America, Cuba and canada,; and England; as a centre for Europe and Western Asia take the bulk of the trade in about even quantities.

The bales are packed by both hand and steam presses and weigh about 28 pounds each. They are thus conveniently handled. About half a dozen of the shipping houses here do the bulk of the export trade and, perhaps, forty steamers are utilized in the carrying of rice to the ports and a return cargo of hemp to Manila.

The handling of the business requires years of experience and a long residence in the country, to be successful in coping with the business methods of the wily Asitic, both Chinese and Filipino.

We all remember how in visiting the owner of an orchard he takes us through his fruit preserves and can tell every grade and species of apple tree. They appear to the unpractised eye to be all apple trees. It is the same with the hemp plantation. There are great varieties of hemp and the native showing a visitor through the groves points out the different grades of trees, giving its native name and weather the quality is better or inferior to the ordinary.

There are all residents here in Manila, foreign as well as native, who from long experience in handing hemp, can tell at a glance just which ports certain bales of hemp have come from. It is indeed a great business and cannot be learned in a day.

From the outer layer of a properly matured tree comes the finest of fibre, and if this is carefully cleaned and dried, it is sometimes used by the natives to weave into cloth. They mix it with silk and make a sort of Indian muslin, in fact it makes the finest of hemp cloth. Some of the natives in the hemp growing district make coarse cloth to wear while others make fishing nets, the fibre being exceptionally good for this purpose as it is so strong.—*Manila Times* July 28th.

CONNECTION BETWEEN THE ROOTS AND LEAVES OF PALMS.

I am sending you some samples of Sago Palm (Bot *Caryota urens:* Telugu, "Bakinimanu," Uriya, "Solopo") collected from the Nallamalai Hills in the Kurnool District, where the species grows in great profusion in damp localities, covering the soil with a regular carpet of seedling. From these specimens several points may be noticed. First: when one leaf is developed there is one root; when two leaves are developed there are two roots, and generally when three leaves are developed there are three roots, but sometimes more. There seems, therefore, to be a very intimate connection between the number of roots and number of leaves developed; it may be that, where the number of roots exceeds the number of leaves developed, more new leaves are developing. I send also (but regret it has been much damaged) a specimen of grass which has, or has had, 28 leaves developed and has 28 main roots; whether this is merely a coincidence I cannot say.

I send also a portion of a *Caryota* stem, from which I have cut the leaves just above where they separate from the stem. Each leaf completely surrounds the stem at the base of the petiole; in the samples of leaf sheaths herewith sent, I was obliged to cut the net-work of fibres, which was continuous all round the stem for from 2 to 4 feet in length, so as to take the leaf off the stem. One leaf is developed at each node, and between the nodes the petiolo of the leaf forms part and parcel of the stem. In the Kistna District I found that 3 leaves were developed at each node in the Palmyra (*Borassus flabelliformis*) and in the date (*Phœnix sylvestris*) even a greater number seem to be produced (I hope to investigate the date more carefully next month).

The stem of the *Caryota*, thus deprived of leaves, resembles a drawn-out telescope, the object glass of which is at the roots, and the eye-piece points upwards.

Referring again to the seedlings, it will be seen that the first root almost resembles the tap root of an exogen, but that the monocotyledonous formation is so distinct. The collum in the dicotyledon is an indefinite point between the cotyledons; in this, what corresponds to the collum (which term, though not Botanically correct in this case, I shall adopt) is a most distinct point. There is not the slightest doubt that at this point, the fibro-vascular expansion from the seed, the root, the first leaf and its sheath diverge. When the second root forms, it develops higher up than this collum point, and immediately below the sheath of the first leaf. The first leaf develops between its sheath, almost surrounded by it, and the fibro-vascular expansion from the seed, and is, therefore, in the middle of the plant. When

the second leaf appears, the seed and its expansion have dropped off, and it comes from the base of the petiole of the first leaf, which forms a sheath for the second leaf, and between the first leaf and the sheath of the first leaf. It thrusts the first leaf out of the central part and takes the centre of the plant itself. The third leaf acts in the same way to the second leaf, and the fourth to the third leaf, and so on, just as the second did to the first. The third root forms just below the first leaf, the fourth root below the second, and so on, the roots getting gradually higher and higher up above the collum point the later they develop. There seems to be a centrifugal tendency about these roots. This can be further observed from the fact that young palms have none of their roots above ground surface level; but, the older they become, the more such roots above ground appear; and in bamboos sometimes they are seen springing from the lowest two or three nodes above ground level, when the rhizome is fully crowded out. The same is seen in *Caryota* and *Borassus*, but ordinarily the nodes are not so distinct, and they seen to come out between the nodes.

Endogenous growth of wood is generally said to consist of a cellular tissue in the centre with a compact net-work of fibro-vascular bundles outside it, forming a rind. It was generally supposed that these fibro-vascular bundles came from the outside of the rhizome, passed in towards the centre of the stem, and passed outwards again towards the rind and into the leaves. A celebrated botanist (French, I think,) whose name I cannot just now recall, took exception to this, as it was found that tracing some of the fibro-vascular bundles back from the leaf they passed towards the centre of the stem, then came back to the rind considerably higher up than the rhizome. I think an investigation of these specimens will explain the matter. The fibro-vascular expansion from the seed forms the fibro-vascular bundles of the first root; those of the first root form those of the first leaf and sheath, those of the sheath form those of the second root and those of the first leaf from those of the third root; and so the bundles are formed in succession from root to leaf and from leaf to root. In the mean time cellular tissue is being formed in the centre of the plant, kept there and prevented from expanding much outwards by the fibro-vascular tissue. As each leaf develops it takes the centre of the plant, forms a small portion of stem (between the nodes), and is then pushed on one side by the next leaf. As each root develops it takes a position more and more away from the centre, and higher and higher up the stem; but it must be remembered that above ground it cannot come out of the stem, *i.e*, it must lie dormant until the sheaths of the leaves have fallen away from the stem. As the tree develops the fibro-vascular bundles have to pass from the side of the root (*i. e.* not the centre) to the centre of the stem when the leaf develops at the top and centre of the stem, and is pushed back to the side of the stem by the development of the fresh leaves; and the more the stem increases inside, the greater will be the curve of the fibro-vascular bundles, until it is flattened by other bundles coming inside it.

It does not necessarily followed that, because the fibro-vascular bundle has to pass to its root, that it necessarily passes to the bottom of the tree; for the roots appear on the tree higher and higher up the stem, as the tree becomes older; and there must be many dormant roots which have been prevented from coming to the surface by the persistent sheaths of old leaves.

It seems rather curious that weight is attached to the difference in growth between endogenous palms and acrogenous Tree Ferns; for the difference seems merely in degree. Both consist of cellular interior tissue, with fibro-vascular exterior tissue; in the case of palms the fibro-vascular tissue from a leaf appears to descend to form a root before forming another leaf, whilst in the case of tree ferns it appears to ascend direct to form the next leaf. The rind of endogenous is consequently far stronger and more continuous. The term acrogenous, too, seems to be misleading, for in the endogenous palms, each leaf comes to the central summit before being pushed aside by a new leaf; the same happens with the Tree Ferns.

A. W. Lushington.

PROFITABLE TOBACCO GROWING.

By R. S. Nevill, Tobacco Expert.

To the question, "Is the growing of heavy export tobaccos profitable, or can Queensland growers compete with other countries in other markets?" the answer is—Yes, if the farmers are willing to adopt modern methods, and conduct their farming operations upon lines followed by other agricultural communities. Not only that, but they can practically monopolise the market for this class of tobacco in these colonies, as it is conceded that, so far, this colony gives promise of being able to produce the best tobacco grown in Australia. Given the soil and a sufficent rainfall, the cost of production in this colony should be less than it is in the United States, for the following reasons:—The Queensland farmer does not require to feed his working stock through a long hard winter, his taxes are little more than half those imposed on the farmer in the United States, and he gets a larger yield than the latter, while the price of a labour is about the same.

Ordinarly, the amount of tobacco produced here is not commensurate with the labour performed, and for the reason that the labour is often not properly directed.

It is doubtful if any one crop, to the exclusion of all others can be made profitable one year with another, employing only one-third or one-half of a man's time, and the balance idle or doing wage work when he can get it. By diversifying the crops of the farm, and making tobacco one of the crops, the farmer does not then depend upon the one crop for the whole of his income and sustenance, and he is sure to get a good price for one or more of his products, besides producing his own food, which he can do cheaper than he can buy it out of his tobacco money.

METHODS.

It goes without saying that the one-crop system requires a higher average of prices to be profitable than that of several crops. By diversifying their crops, the farmers of the United States have found tobacco-growing fairly profitable at 3½d. per lb.

The cost of production in Queensland can be materially lessened by substituting the plough tor the hoe, as I have heretofore suggested—a process which will increase the quantity and improve the quality. Improved curing-sheds and improved methods of curing will also give additional weight to the tobacco, besides improving its quality. The labour of transplanting can be much lessened by a thorough preparation of the ground beforehand, by deep ploughing and deeper cross-ploughing, and thorough harrowing, and getting the soil into the best of tilth. By this means a proper arrangement of soil particles is obtained, and the land is in the best physical condition, influencing beneficially both the temperatnre and the moisture; the free access of air is secured, supplying the necessary amount of oxygen, and the soil is in such a condition of fineness as to allow a perfect root development.

These are all essential to healthy plant life; and when these conditions exist, the farmer will have fewer plants dying from transplanting, and the labour will be materially lessened. It should be evident to everyone that the soil in such condition as to supply, fully, all that plant life demands of it, will give the best results in every particular, and this condition cannot be obtained without the free use of the plough.

USE OF THE PLOUGH.

A cloddy soil will certainly defeat all efforts to get a good and uniform stand in the field, and care should be taken to plough the ground when it is in proper condition. A tobacco-field should be ploughed after each hard rain—after the ground has sufficiently dried, until the plant is too large. When the plants are kept in a perfectly healthy and vigorous condition, they are less susceptible to disease. Pruning, or taking off the bottom leaves in order to allow ventilation under the plant, is also a condition to healthy fields. The amount of water in the soil to produce the best results for heavy pipe tobaccos is estimated to be from 15 to 20 per cent. "Below 15 per cent. the line of drought is reached, and the methods of cultivation should have for their prime object the maintenance of the water supply above the line of drought, so that the growth of the plant shall receive no check."—*Whitney.*

PRODUCT.

It is important that growers should take notice of these things, for when they seek an outlet for the surplus product they must offer an article quite as good as others, and one which is produced as cheaply. This cannot be done unless the best methods are adopted—the best are the most economical.

The appreciation of the necessity of proper methods, and their adoption, will save fully 25 per cent. of labour, besides giving better and increased results.

The various pests of the tobacco plant can be controlled by the use of Paris green, as a spray, but this must not be used after the tobacco has been topped. It is very effective in the case of the Miner.

The lands best suited to growing heavy export or pipe tobaccos are friable and well drained. Limestone soils, with a small percentage of the clay and a large percentage of silt, are the best. Wet or forcing soils will not grow good tobacco, as the product will be rank and woody.

Climate has much to do with the quality, and this can only be determined by experiment. For cigar tobacco sandy soils are preferred, some of the best cigar lands of Florida having 50 per cent. of sand. This is confirmed by Mr. Whitney in his report on the tobacco soils of the United States.—*Queensland Agricultural Journal.*

THE VELVET BEAN.

A few words about the velvet been as a source of forage as well as a renovator of the soil be very opportune, and I would suggest to those who are unaware of the value of this bean to try a small patcy of it and just watch the result. Those who have already grown the bean will bear me out when I say that we have nothing in its own line to equal it. It is a great forage producer, and the grain, both in the green and dry state, in equal to anything grown for food for any stock, and it is not too much to say that everything that walks on four feet is fond of it.

The velvet bean grows and makes a fair crop where cowpeas would scarcely germinate the seed. It is an excellent improver of the soil in that it is the best nitrogen gatherer among all the known legumes. Its foliage is so dense that it shades the land completely during our hot days of summer, and by shedding the leaves nearest the ground it forms a mulch that conserves the ordinary moisture in the soil. In short, we have in the velvet bean what the Southern farmer have so long been looking for, that is, something that will produce a good profitable crop and at the same time help to put backbone into the poor sandy soils of the South.

I have said that it will make a fair crop on land too poor for cow peas, but it will repay its grower for a little commercial fertilizer applied to the soil previous to planting time. Some farmers are sanguine enough to think that there will come a time when commercial fertilizers might be entirely dispensed with. There is no indication that will ever come ; in fact, the tendency is rather the other way, as every year sees a marked increased in the fertilizers used, and every broad-minded, observing farmer knows that for every dollar thus invested he gets back ten and sometimes twenty, according to the intelligence and wisdom exercised in the selection of the proper kind of fertilizer and the method and time of application.

Like every other crop, the velvet bean has a preference, if we may use the term, for a certain kind of food which is best suited to its requirements and which enables it to return the most profitable crops. It wants a fertilizer analyzing high in phosphoric acid and potash. Being a natural nitrogen gatherer, it does not require any nitrogen fed to in the shape of fertilizers. If we cannot get a fertilizer containing no nitrogen, the best way to get over the difficulty is to buy our phosphate and muriate of potash, and prepare our own fertilizer, bringing the analysis as near as possible to ten per cent potash and seven to eight per cent phosphoric acid. Four to six hundred pounds of this per acre, broadcasted and mixed in the soil a short time before planting will pay for itself at least twenty-fold. On poor, worn-out soils it is best to drill in the fertilizer and plant the bean in the drill after it has had a good rain on it.

In preparing the land for this crop the best method in my experience has been to run off furrows about five feet apart and drop a been every ten to fifteen inches; this will give a good stand, and as the crop is a long season one it should be planted as early in the season as possible. Some time in late June or July make a very thin sowing of Giant beggar weed in the water furrow, this will spring up quickly and be ready just in time for the bean to climb all over it (for the latter undoubtedly does best when it has something on which to climb.) If the bean has been planted early in April, which is really the proper time, a thin sowing of fodder corn in the water furrow in June will answer the purpose as well as beggar weed. This combination will give an exceptionally heavy forage crop, ready to cut in early September, and it will make a good second crop after that which can be allowed to remain in the ground and be ploughed under in the winter to improve the soil and restore its fertility.

If simply grown as a soil renovator it can be planted four feet apart and every two feet in the furrow and allowed to remain where it grows. If wanted for pasture for stock or hog feed, beggar weed, millet, or anything of that kind planted along with it, will prove a decided benefit, as in itself it is somewhat laxative at first in its effect on stock, and other forage mixed with it helps to counteract this effect somewhat.

In cutting to cure for forage is where the real trouble is encountered, as its growth is so enormous, and if it is growing on anything the tangle of vegetation is such that it is a hard matter to get at it well. If cut in the forenoon, after the dew has dried off, and hauled to the barn without delay and spread over poles (I use my tobacco barn for the purpose), it cures excellently and makes the finest cattle forage I ever saw, and I feel confident that it only needs a proper trial by every Southern farmer to secure its general adoption all through the Southern States.

I do not think the velvet bean can be grown north of Kentucky successfully. A friend in Kentucky grew some of it last summer and he reports an extraordinary growth of vine but no gain, the season being too short for it to form seed. He grew it in a field adjoining the turnpike road where a telegraph line ran along. The vines went through the fence and climbed to the very top of the telegraph poles, showing that Kentucky soil is well adapted for the vine—at any rate.—C. K. McQuarrie.—*Planters' Monthly.*

CULTIVATION OF THE COCONUT IN THE PHILIPPINES.

What Every Man Interested in Those Islands Wants to Know.

Coconut plantations pay very well and there is a oertain demand for the fruit in China, beside constant local sales in native markets. The uses of the tree are various. Some tap the tree by making an incision in the fruitbearing stalk, nnder which a bamboo vessel called a bombon is hnng to receive the sap. This liquid, known as tuba, is a favorite heverage among the natives. As many as four stalks of the same trunk can be so drained simultaneously without injury to the tree. In the bottom of the bamboo vessel is placed as much as a dessert spoonful of pulverized tong bark, to give a stronger taste and hright color to the tuha. The incision, renewed each time the vessels is replaced, is made with a very sharp knife. The sap drawing of a stalk continues incessantly for ahout two months, after which it ceases to yield and dries up.

The vessels containing the liquid are removed and empty ones put in their place every twelve hours about sunrise and sunset. If the tuba is allowed to ferment it is not so platable and hecomes an intoxicating drink. From the fermented juice the distillers manufacture a spirituous liquor known locally coco wine.

The trees set apart for tuba extraction do not produce nuts, as the fruit forming elements are taken away. The man who gets the tuba has to climb the trunk of the tree, on which *notches are cut to place his toes in*. Occaionally a man falls from the top of trunk 70 or 80 feet high and breaks his neck. The occupation of tuha drawing is one of the most dangerous.

When the tree is allowed to produce fruit instead of yielding tuba the nuts are collected about every four months. They are brought down hy either a sickle-shaped knife lashed on to the end of a long pole or by climbing the tree with knife in hand.

When they are collected for oil extraction they are carted on a kind of sleigh, unless there he a river or creek providing a water way, in which latter case they are tied together, stalk to stalk, and floated in a compact mass like a raft npon which the man in charge stands.

The water or milk found inside a coconut is very refreshing to the traveller, and has this advantage over fresh water, that it serves to quench the thirst of a person who is perspiring without doing any harm.

At seven years' growth the coconut palm tree seldom fails to yield an unvarying crop of a score of large nuts monthly. In the provinces of Tayabas, La Laguna Batangas and district of La Infanta the coconut palm is extensively cnltivated solely for the purpose of extracting the oil. The coconut oil factories are very rough, primitive establishments, usually consisting of eight or ten posts supporting a nipa palmleaf roof and closed in at all sides with split bamboos. The nuts are heaped for a while to dry and concentrate the oil in the fruit. Then they are chopped mere or less in half.

A man sits on a board with his feet on a treadle from which a rope is passed over and works to and fro a cylindrical block in the end of which is fixed an iron scraper. He picks up the half-nuts one at a time, and applying to the scraper in motion the white fruit falls out into a vessel underneath. These scarpings are then pressed between big blocks of wood to express the oil and thc mass is afterwards put into cast-iron cauldrons of Chinese make with water which is allowed to simmer and draw remaining fatty particles off the surface. When cold it is sent off to market in small straight-sided kegs on ponies which carry two kegs—one slung on each side.

Small quantities of coconut oil are shipped from the Philippines. In Europe coconut oil is white and solid and is used in the manufacture of Soap and candles. In the tropics it is seldom seen otherwise than in a liquid state, as it fuses a little above 70 deg Fahr.

In 1891 a coconnt oil factory was started in Manila with modern appliances. In the Philippines themselves it is an important article of consumption. Every dwelling, rich or poor, consnmes a certain amonnt of this oil nightly for lighting purposes. It is largely employed as a luhricant for machinery, for which purpose however, it is very inferior. Occasionally also, it is nsed for a medicinal application.

COPRAH.

It is only in the last few years that coprah has acquired importance as an article of export. In 1890 the total amonnt exported was 4,653 tons. In 1897 it had reached 50,714 tons, about 85 per cent of it being handled by English firms.

A variety of useful domestic ntensils are manufacturеd by the poorer class of the natives ont of the hard shell of the coconut. Also when carbonized the shell gives a black dye, used for dyeing straw hats.

COIR.

Very little nse is mads of the coir or onter fibrous skin which in other conntries serves for the manufacture of coconut matting, coarse hrnshes, hawers, etc. It is said to rot in fresh water, where as salt water strengthens it. As it floats on water it onght to be of great value to ships. In the Philippines it often serves for cleaning floors and ships' decks when the nut is cnt into two equal parts across the grain of the coir covering, and with it a very high polish can be put on to hard woods.

NIPA PALM.

The nipa palm is found in many salt swarmps and flooded marchy lands. It has the appearance of a gigantic fern. The leaves, which are very long and ahont three to five inches wide, are of immence valne in the conntry for thatched roof. Nipa is not to be fonnd everywhere; one may go many miles withont seeing it in the districts devoid of marches and swarmpy low lands.—*Manila Times*, August 21st.

The World's Coffee Trade.—"Coffee Statistics, 1899-1900," by Messrs. C J Leech & Co., of Mincing-lane, contains a mass of statistics relating to the trade of the world in coffee. Much of this information is of value only to those engaged in the trade; but some of the figures are of more general interest. The chief coffee markets are London, Havre, Hamburg, the Dutch ports, Triest, Antwerp, Bordeaux, and Marseilles. The total production during the current year (*i.e.* up to June 30 next) is estimated at 15,285,000 bags of 60 kilogrammes or 132¼ lb. each. Of this over 10½ million bags belonging to Brazil, Santos coming first amongst Brazilian ports with 6,000,000 bags, and Rio next with over 3¾ millions. Mexico and the Central American States come next 1¼ milllon bags, then Venezuela and Colombia with 1¼ million; Java supplies 650,000 bags, the West Indies (chiefly Hayti, Cuba and Puertorico) 550,000; British India and Manila, which are classed together, send 300,000 bags, Africa and Arabia 250,000, and the small balance comes from Sumatra, Ceylon and the Eastern Archipelago. During recent years the production has fluctuated considerably; in 1894-95 it was over 11½ million bags; the next year it fell to 10¼ millions; in 1896-97 it rose to over 13½ millions, and in the following year to over 16 millions, while last year it again fell to over 13¼ million bags. The prices show still greater fluctuations. The figures given by Messrs. Leech show how completely the world depends for its coffee on Brazil and how dependent the market prices are on the production there.—London *Times*, August 14.

REMEDIAL MEASURES AND INSECTICIDES.

BY E. E. GREEN, GOVERNMENT ENTOMOLOGIST.

In the following pages I have endeavoured to bring together scattered information on the various methods that have been employed in dealing with insect pests of the family *Coccidæ*. Though such treatment may in many cases be found suitable to insect pests of other families, I do not propose to give here a general treatise on insecticides, but to confine myself to measures applicable to the subject of the present work.

Little or no originality can be claimed for the following remarks. They are very largely compiled from the published work of trained entomologists (chiefly American) in different parts of the world. America has long been in the forefront in the practical application of economic entomology.

Remedial measures may be discussed under two main headings: Prevention and Cure. The former, being by far the more important, will be dealt with first:—

PREVENTIVE MEASURES.

Of first importance amongst preventive measures, I would place Quarantine Regulations. It is a fact, repeatedly demonstrated, that imported pests, are the most serious. An insect may attract little or no attention in its original home, where it is kept in check by its own natural enemies, a system recognised as 'the Balance of Nature.' But take it away from its home; place it in a congenial climate with an ample supply of suitable food, and it will multiply without the checks that have prevented its increase in its original habitat. The very fact of extensive damage by any insect may of itself almost be accepted as proof of its foreign origin. Looking through the list of the different scale-insects occuring in Ceylon, I find that all the more troublesome species have been previously described from some other country, and are, therefore, presumably imported insects. The home of the 'Lantana bug' *(Orthezia insignis)* is now supposed to be some-where in S. America; and there is evidence in favour of the supposition that we owe our 'green coffee bug' *(Lecanium viride)* to Western Africa. *Aspidiotus cydoniæ*, *Chionaspis biclavis*, and *Mytilaspis citricola* were originally described from America. *Aspidiotus camelliæ*, *A. cyanophylli*, *Chionaspis aspidistræ*, and *Dactylopius citri*, are all well known on the continent of Europe. *Aspiodotus aurantii* and *Pulvinaria psidii* have their home in Australia. Our former coffee pest, the 'brown bug' *(Lecanium coffeæ)* might perhaps be quoted as an exception to this rule, as it was first recorded from Ceylon. But this insect is now considered to be merely a local variety of *Lecanium hemisphæricum*, an insect found all over the world, and whose origin is uncertain. On the other hand, not a single undoubtedly native species has attracted any notice as an insect pest in Ceylon.

We have only to recognise these facts to appreciate the importance of a properly conducted system of quarantine for all imported plants and fruit. Our insular position in Ceylon, with but one main port of entry, gives us a peculiar advantage in carrying out such a system. A single quarantine station, with a single fumigatorium, will be sufficient in our case to deal with the whole importations of the island. It is true that, in spite of quarantine regulations, particular pests have found their way into protected countries. In such cases failure must be attributed to incompleteness of execution. And, though some few pests may have evaded all precautions, how many others must have been refused entry? The records of existing quarantine establishments give long lists of dangerous insects detected on arrival, and destroyed before they have had the chance of obtaining a footing in the new country. I believe it is the custom at most quarantine stations to examine imported plants and fruit, and if they appear to be free from blights, to pass them without treatment. But I maintain that not even the most experienced entomologist could guarantee a plant as absolutely free from insect life. Minute larvæ and eggs may lurk beneath bud-scales, in the axils of leaves, or in unnoticed crevices of the bark. To be really effective, quarantine must be complete. Every live plant and fresh fruit should he subjected to treatment, *whether it appear to be free from disease or not.*

The only sure way of reaching every hidden insect is by fumigation. If properly conducted, there is little danger of permanent injury to the plant. Even though some few delicate plants may be injured, or actually killed by the process, this is a very small consideration in comparison with the damage that may be effected by a single imported pest. What, for instance, must have heen the pecuniary loss to the colony from the ravages of the 'green bug'—a loss that, in all probability, might have been prevented. And compare this loss with the value of all the delicate plants that have ever heen imported into Ceylon! But, for such tender plants, it is possible to employ other treatment than is recommended for hardy shrubs and trees.

For wholesale fumigation of plants and fruit their is nothing to equal hydrocyanic acid gas, generated by mixing cyanide of potassium, water, and sulphuric acid in certain proportions. This treaament is cheap and effectual. The gas is of the most deadly nature, and will penetrate every crack and crevice, and do its work thoroughly. The application is quite simple. All that is required is a close-fitting chamber, provided with a flue for the escape of the gas after the operation. The more air-tight the chamber, the more complete will be the work. It should he fitted with racks to receive removable trays, upon which fruit may be spread. The objects to be fumigated are placed into position; the chemicals are mixed in leaden or earthenware pan and placed on the floor, the door shut, and the room kept closed for from half to three-quarters of an hour. The flue is then opened, and, after a sufficient time (about half an hour) has been allowed for ventilation, the door is unlocked, and the plants, &c., removed. It is not advisable to take the subjected plants directly into the open air if the sun is shining. They should be kept for a few hours under shade, which will greatly lesson any danger of damage.

Mr. C. P Lounsbury, official Entomologist at Cape Town, has kindly supplied me with full particulars of the work of the Fumigatorium at that place. From his letters and reports I have extracted the following directions and suggestions:—

For each 300 cubic feet of space enclosed (and in proportion for greater and smaller spaces) 1 ounce of 98 per cent. potassium cyanide, 1 ounce of sulphuric acid, and 2 ounces of water will be required to generate gas of sufficient strength to kill the insects. Double this strength, or the same amount of meterials to 150 cubic feet enclosed, may be used upon woody plants without danger of seriously injuring them. The greater strength should be employed whenever practicable, as it will ensure the death of the eggs as well as the active insects.

Imported plants are usually in a more or less dormant condition, which lessens danger of injury. Mr. Lounsbury writes, in his Report of June 1897. 'Injury to the tips of new growth generally results. This injury is in no wise serious, and is quickly outgrown. The operators consider it a favourable indication, as when such injury results it is quite certain that the gas has been present in sufficient strength to destroy all of the insects.'

With respect to fruit, I again quote from Mr. Lounsbury's letter: 'I had lemons and oranges analysed after treatment, and found that after a few hours not more than a trace of the gas remained in the rind. There is much more natural cyanogen in a single seed (so the analyst told me) than what remains in the fruit from fumigation. We have no complaints of any effect on the keeping qualities of the fruit.'

To generate the gas 'the required quantities cyanide and water are first placed in the generating vessel, the cyanide being broken into small pieces about the size of lump sugar. The operator then adds the acid, pouring it slowly into the vessel to avoid splashing, and immediately withdraws.'

The above treatment is suitable for fruit and hardy plants. Tender garden plants are usually imported in Wardian cases, and may be treated separately. We have—in the 'Wardian case'—an air-tight chamber ready to hand, in which the plants can be fumigated before their removal. After a large series of experiments with various fumigating media, I find that hydrocyanic acid gas remains by far the most efficient insecticide and the least injurious to the plants. But with delicate succulent plants I find it has to be applied rather differently. A more concentrated dose of the gas applied for a shorter period is most satisfactory in its results. In a Wardian case, containing about sixteen cubic feet, I find a dose of ½ ounce cyanide, ½ ounce acid, and 1 ounce water, with an exposure of half an hour, will kill every individual of a colony of Orthezia (the most resistent of all Coccids) without in the least affecting the plants. The treatment should be carried out only after sunset. According to Mr. Lounsbury's tables, these proportions of chemicals should be sufficient for a space of 140 cubic feet with a longer exposure.

The other meterials tested were (1) a preparation of concentrated nicotine, sold by the XL-all Company; (2) McDougall's fumigation paper; (3) Jeyes' fluid; (4) naphthaline; and (5) common tobacco leaves. Nos. 1, 3, and 4 were evaporated by means of a small spirit lamp inside the case; Nos. 2 and were lighted and allowed to smoulder. All these materials, applied in different lengths of time, resulted similarly in more or less complete injury to the plants, and very incomplete destruction of the insects.

If there be no Government quarantine establishment in the general planting interests, importers should safeguard themselves individually by properly disinfecting all foreign plants before distributing them or putting them out in their gardens.

Further directions or the application of the 'gas treatment' will be found in the sections treating of CURATIVE MEASURES. (*See* pp. xxvii—xxxi.)

Perhaps of equal importance as a preventive measure is the maintenance of plants in a vigorous free-growing condition. This is a fact that has been recognised by gardeners for many generations. Anything that interferes with the free flow of sap immediately lays a plant open to attack from its insect enemies. A weakly, hide-bound plant falls an easy prey to every pest. Scale insects in particular, with a few exceptions (and such exceptions chiefly imported series), seem to avoid a free-growing plant, possibly finding the healthy rush of sap too strong for them. Unremitting attention to cultivation will go far towards the prevention of insect pests. Amongst causes predisposing to disease may be mentioned: (1) Careless selection of plants and the retention of weakly seedlings; (2) Insufficient or injudicious drainage; (3) Unsuitable condition of soil, want of tillage, and—perhaps—of fertilisers.

Under the category of remedial measures may be mentioned the use of resistant stock. In the history of nearly every extentsive plant disease it has been observed that individual plants—or established varieties of the plant—may show a marked freedom from the disease prevalent upon the less favoured type. By breeding from such individuals, or accidental varieties, a more or less completely resistant stock may be established. This fortunate fact has been frequently used with great success in dealing with fungal diseases. Thus a special variety of the potato plant—proof against the well-known potato disease—has been extensively cultivated. Some varieties of wheat are found to suffer but little from 'wheat rust' (*Puccinia*). We have also examples of certain established strains of cultivated plants that repel particular insect pests. In Europe the vine growers have found an American stock that to a large extent resists the attack of the dreaded *Phylloxera*; and by grafting on to this hardy stock they have been able to immunise their more delicate and valuable varieties. In Ceylon we have the strongest evidence that certain varieties of the tea plant (especially the Assam indigenous stock) are most markedly free from injury by the so-called 'mosquito blight' (*Helopeltis*). In any serious epidemic that may threaten the profitable cultivation of an economic plant, we should at once be on the look-out for any accidental varieties or strains that may prove resistant to that particular disease. In cases where the hardier stock is not otherwise so profitable as the more delicate variety, by grafting upon it a more valuable scion the latter may sometimes be rendered equally immune.

CURATIVE MEASURES.

Where preventive measures have failed, as—even with the greatest care—must often happen, recourse must be had to curative measures.

In no single connection can the old proverb, 'A stitch in time saves nine,' be more aptly applied than in dealing with insect pests. In this case the 'stitch in time' is more likely to save ninety, or nine hundred, or nine thousand!

If a pest is to be eradicated, *immediate* treatment is the most important part of the process.

And the first step towards treatment should, when possible, be the insolation of the infected area. All ordinary work amongst the affected trees should be deferred until after treatment. The young larvæ of scale-insects are very minute and active, and one of the most fertile sources of their distribution is by means of clothing. The rough 'cumblies' used by the estate coolies are particularly well adapted for their transport.

Another important point is that the treatment should be applied *on the spot*. If the infected branches are cut down and carried off to some other part to be burned, they may be shedding the germs of the disease all along the way.

It is difficult to lay down hard-and-fast rules for action, so much depends upon circumstances, *e.g.* the nature of the particular pest, its extent, the nature and value of the plant attacked, &c., &c. But for, the sake of example, we will suppose a case in which three or four tea bushes are found to be infested by some scale-insect that is considered to be a dangerous pest. First dig a fair-sized hole in the midst of the affected clump, and place in it some dry grass and sticks as foundations for a fire. Fill two or three buckets with one of the insecticide washes described below. Prune back the branches one by one; immerse each branch completely in the insecticide and throw it into the hole, until nothing but the bare framework of the tree is left. Sweep all fallen leaves and rubbish from beneath the trees into the hole. Next, paint over the bare stems with the same insecticide, using a large paint brush and taking great care to saturate the entire surface down to the ground. Then set fire to the heap of prunings, and cover up the remains with earth. To kill off possible stragglers, the unpruned trees immediately surrounding the affected patch should be thoroughly sprayed with the mixture. If carried out in time, these measures will probably stamp out the pest; but a careful watch should be kept for any fresh outbreak.

The above treatment is suitable only for such plants as may be cut down without permanent injury. We may now consider the case of some larger tree to which this method would be inapplicable—say an orange or cacao tree. In this case the gas treatment is the most suitable. The application should be repeated after an interval of about a fortnight, to ensure the death of larvæ subsequently hatched from eggs that may have survived the first operation. Full directions for gas treatment are given below. (*See* pp. xxvii—xxxi.)

In other cases a combination of these two method might be adopted. If two or three coffee tree should require treatment, all superfluous branches

might be pruned, dipped, and burned, and the standing trees fumigated with gas. Modifications of the treatment will be required to suit particular cases.

When a serious pest has once firmly and widely established itself, little hope can be entertained of exterminating it, though much may still be done to keep it in check.

Where trees are large and more or less detached, as in orange groves, and the crop a valuable one, the gas treatment is again the most satisfactory one. But where the cultivation is denser, and the crop not so concentrated, spraying is found to be more practicable.

The choice of the insecticide must be regulated by the nature of the crop. Arsenious compounds cannot be safely applied to food crops—such as fruit and vegetables—during the cropping season. And they can on no account be recommended for such a product as tea, unless employed exclusively after pruning. For, however minute may be the actual amount of active poison deposited on a single leaf, when we consider that it takes some 400 lb. of leaf to make sufficient tea to fill a chest, and that about 3,000 of the green leaves go to the pound, or 12,000 leaves to a pound of the finished product, it is evident that the amount of poison in a single chest of tea might be considerable. And further, during the processes of packing and transport, it is by no means improbable that this mineral poison—which would dry off in fine powder—might gravitate and become condensed towards the bottom of the chest, with dangerous results to the consumer. The danger may be considered far-fetched; but I think it should be recognised.

For the above reasons no patent preparations should be employed to any large extent, unless the ingredients are well known. Such mixtures, being designed for general use, may contain several different poisons acting in different ways, either externally by contract, or internally through the alimentary system. The proprietors of patent intsecticides not unnaturally object to disclose their formulæ, and put off any questions by asserting that the amount of active poison in the mixture is so very small as to be practically harmless. This may very well be true in most circumstances; but, as shown above, in other cases the poison might become concentrated into a small portion of the product.

For other reason compounds that depend upon arsenic or other mineral poisons for their killing properties are of little use against *Coccidæ*. Insects that subsist upon the sap of the plants should be treated with insecticides that kill by contact, such as soap, petroleum, pyrethrum, &c. Arsenic, which adheres to the surface of the plants, is useful only against pests such as caterpillars, grubs, and slugs, that take in solid food. Mr. Maskell puts the matter concisely. He says: 'Whatever damage is done (by scale insects) is effected by the sucking of the juices of the plant through the rostrum (beak) of the insect. It follows from this that applications of any fluid to the tree externally, with the object of poisoning the insects *in their feeding*, would be useless, as their food is drawn from beneath the surface.'*

There are many substances fatal to insect life, but perfectly harmless to the higher animals, that may be safely used. A list of the principal insecticides, with directions for their preparation and application, is appended. (*See* pp. xxxi *et seq.*)

The most suitable season for spraying is when the young larvæ are hatching. They are then in the most unprotected condition. In temperate climates this season varies with different species, and should be made the subject of careful observation. In tropical countries many species, and those naturally the most pernicious, appear to produce a constant succession of broods throughout the year.

To produce any permanent result, spraying must be very thorough. The success of the treatment depends upon the actual contract of the liquid with individual insects. Even when the work is done by a trained man, it is practically impossible to secure the destruction of every individual. The difficulty is greatly increased when the work has to be inrusted to natives. In conducting the operation, the position of the insects upon the branches and foliage must be carefully noted, and the nozzle of the machine manipulated accordingly, so as to throw the spray upwarts against the backs of the leaves, or downwards on to the upper surface, or horizontally against the stems and branches.

A few words may be said as to the apparatus for spraying. This is not the place to advertise any particular make of machine; but some general principles may be given to help the would-be purchaser in his choice.

Points to be considered in the selection of a machine should be:—

I. *Adaptability to Transport.*—For ordinary use, where small trees only have to be treated, there is no form so convenient as the knapsack pump. This consists of a metal vessel that rests upon the back, and is supported by straps passing over the shoulders of the operator. The handle of the pump (in the best patterns) comes forward under the left arm, and is worked by the left hand, leaving the right hand free to direct the nozzle which is attached by flexible rubber tube. The vessel usually contains the pump cylinder, and space for about four gallons of liquid. Where a larger apparatus is required, a barrel pump may be used. In this form the pumping apparatus is fixed in a barrel to which handles are attached, so that the whole apparatus can be carried from place to place by two men. Where the land is flat the barrel, or a metal tank, may be mounted on wheels for transport; but it should be designed to that the vessel may be dismounted and carried by hand to such places as are inaccessible to the wheeled vehicle. Where the lay of land is suitable, and large trees have to be treated, a more powerful apparatus may be mounted on a cart, and drawn by horse or bullock power. In such cases two or more lines of hose and nozzles can be worked from the same tank.

II. *Strength.*—The materials employed in the construction of the machine should be such as are not readily corroded by the mixtures used. Mr. Lounsbury, in his report for the year 1896,* gives the following very practical hints on this subject:—

'Iron is so quickly corroded by many of the common insecticides and fungicides that pumps in which the working parts are of this metal are not desirable. These parts of the pumps should always be made of hard brass. For the sake of economy, the bodies of most pumps are made of iron, but even here the use of brass lends greater durability, and is an advantage which in the end will probably pay for the additional initial cost. Rod-like parts and thin handles of cast iron are objectionable because so easily fractured. Any parts of rubber are damaged by contact with paraffin. Ignorance of this fact has led to the ruin of a large number of Vermorel knapsack pumps, in which a circular rubber disc is used for the propulsion of the liquid. The paraffin causes the rubber to swell, and thus becomes useless for its purpose.

'Copper is the best metal for tanks in knapsack pumps, and attention should be paid to the thickness of this metal. Thin copper will rapidly ear through. Tanks of sheet iron or tin are soon ruined by contract with liquids containing copper compounds, such as Bordeaux mixture and Paris green, and these preparations are also injuriously affected. But even copper tanks are not suitable for use with all spraying mixtures, since this metal is acted upon by the sulphur in such compounds as "eau grison" and lime-sulphur-salt mixture. In these cases, the sulphur leaves the lime, with which it had united during the process of cooking, and unites with the copper to form copper sulphide. This compound forms in a thick black layer over the copper, which, if it would remain intact, would preserve the metal

* *New Zealand Scale Insects*, p. 26.

* *Report of the Government Entomologist for the Year 1896.* Cape of Good Hope, pp. 139-140.

from further action; but, unfortunately, some of it usually breaks away, exposing fresh surface to the injurious action, and also proving an annoyance by passing through the hose and clogging the nozzle. For these reasons it is best not to use these sulphur mixtures in knapsack pumps.'

III. *Simplicity.*—All the parts of the pump should be readily accessible and removeable, so that, should anything go wrong, they may be taken to pieces and cleaned, or damaged parts renewed. The want of these facilities is a serious falt in many machines, the slightest injury necessitating the sending of the whole apparatus to the repairers.

IV. *The Production of a Uniform and Effective Spray.*—The continuity and force of the flow is dependent upon an air chamber in the pump, this feature constituting a 'force-pump.' On this account all hand syringes are almost useless. The nature of the spray is regulated by the form of nozzle employed. The chief object is to break up the liquid into such a fine spray that it will penetrate the thickest foliage in the form of a dense mist and come in contract with every part. For this purpose one of the 'cyclone nozzles' is most admirably adapted, but where it is necessary to throw the liquid to a considerable distance, as, in spraying large trees, a nozzle throwing a coarser spray must be used. It is advisable to have several interchangeable nozzles to suit the different kinds of work. There should always be a detachable cap to the nozzle, so that any obstruction may be quickly and easily removed. Many nozzles are provided with a fine point, held back by a spring, but which, when pushed forward, clears the aperture.

A few further remarks may be quoted from Mr. Lounsbury's report, in which he gives some recommendations for the care of spray pumps. 'Before a spray pump of any kind is put away after use, it should be throughly washed and clear water pumped through it; hot water answers much better than cold if stickly or soapy washes have been used. The working parts should be occasionally oiled, and if the paint on the iron parts becomes worn away it should be renewed. Attention to these details will preserve the pump for a long period, while, if they are neglected, the pump may never save its initial cost.'

(*To be continued.*)

CACAO POD DISEASE.

In December, 1898, my attention was specially called to the fact of the presence of a disease of Cacao pods on several large estates. Examination proved them to be attacked by a prasitic fungus, the full characters of which have not yet been worked out. From literature recently received from professor Harrison, it is seen that he reported the existence of a disease in Grenada in April, 1895, and also described the conditions in such a way as to leave little doubt that it was idential with that now recognised as affecting the Trinidad trees. Professor Harrison also alludes to the presence of the same disease in Surinam, and refers to my report on specimens sent by him, in the following words:—

"*J. Hinchley Hart, Esq., F. L. S., the Government Botanist of Trinidad, to whom I submitted some of the diseased pods from Surinam has informed me that a similar disease occasionally occurs on cacoa in Trinidad, but is not there looked upon as being in any way serious, and is generally ascribed to an excess of moisture.*"

Professor Harrison's conclusions have been recently confirmed by the receipt of infected pods from Grenda, which show identical characters with the infected pods from Trinidad estates. From these pods I was able to reproduce the disease in healthy pods, as in the first instance, and also to make pure culture for the study of the various forms of the fungus, and it has now been grown through its entire cycle of existence in several separate experiments.

Remarks upon the forms assumed during the growth of the fungus are however withheld, until they have been confirmed by the expert to whom they have been submitted, and it will be sufficient to note that the life history of the fungus promises to be of an interesting character. This, disease, therefore, has long been recognised in Trinidad in Surinam and in Grenada, but its infectious character was first proved by reproducing the disease by inoculation again and again at the Royal Botanic Gardens by the writer, in December, 1898. Professor Harrison observed in 1895, that where an affected pod touched a healthy one the disease was communicated, but it does not appear that special inoculations were made. Mr. Whitfield Smith, now of the imperial Department of Agriculture for the West Indies also noted the disease in Grenada while travelling with Professor Harrison. Mr. Massee of Kew makes the following *interim* Report, pending the receipt of full material for further investigation:—

Interim Report on Cacao Pod Disease.

1. The fungus appears to belong to the Peronosporeæ, but cannot as yet be determined with certainty, as the spores in sprit will not of course germinate.

2. The pods sent are completely covered with a dense felt of variously coloured hyphæ and have comletely lost all trace of the fungus causing the disease which can only be seen in the spirit material sent.

3. If the Superintendent could send a couple of Hensen's flasks with germinating spores, perhaps something might be done to determine the nature of the fungus.

4. Preventive Measures.—Spring with potassium sulphide solution (½ ounce to one gallon of water) would destroy zoospores and germinating conidia; Bordeaux mixture might answer, but a very dilute mixture should be used at first, as it appears to frequently injure foliage in a worm climate.

5. All infected pods should be removed and burned. The disease can hardly exist on the pods only and search should be made to find its source. The conidia are frequently distributed by insects and if the trees are infested with winged insects an insecticide should be used.

On receipt of this Report I immediately applied to several planters for further material, and was met by the statements that on account of the dry weather, no diseased pods were to be found.

As, however, pods were obtainable in Grenada, there is evidence that the disease is not restricted to any certain time of the year, but is more prevalent under conditions which prevail during the wet season.

The work of investigation is being continued, and when complete a Report will be published giving full details. The remedial measures to be adopted are those laid down in my Report to the Government, viz.:—

1st. To gather and destroy all diseased pods.

2nd. The early removal and destruction of the empty pods, after the beans are removed for curing.

3rd. The dressing of all badly infected trees with sulphate of copper solution.

A strict attention to these primary recommendations will probably result in confinding the disease to small areas, but more summary measures must be taken if it is seen to make way. As however, it is fairly evident from the Reports of experienced planters, from the Report of Professor Harrison, and from my own observation, that the disease is no new thing; there is every reason to think that with due care on the part of planters, the disease will not increase. On the contrary, there is every reason to hope that when the full-life history of the organism is known, it may be possible practically to eradicate it. This hope is further justified by a Report from one of the most careful of our planters, who has adapted the tentative course laid down for treatment, as he states that the number of pods affected is rapidly diminishing on the estate he manages.—*Trinidad Bulletin.*

TEA AND COFFEE DISEASES.

(With Plate.)

BROWN BLIGHT OF TEA.

The "blights" which affect tea in Assam were investigated and described in the *Kew Bulletin* for last year (pp. 105-112). Another and different one has made its appearance in Ceylon, and has been transmitted to Kew for investigation by Mr. J. C. Willis, M.A., F.L.S., Director of the Royal Botanic Gardens.

DIRECTOR, ROYAL BOTANIC GARDENS, PERADENIYA, CEYLON, TO ROYAL GARDENS, KEW.

Royal Botanic Gardens,
Peradeniya, Ceylon,
April 10, 1899.

Sir, By parcel post this week I send you a tin containing some specimens of a fungus blight which is causing considerable injury to tea in many of the planting districts of Ceylon. It resembles the "grey blight" of Assam (which is also common here) in its action on the leaf, and I have recommended similar measures for its eradication to those used for that pest. The specimens enclosed show the conidial fructification of the fungus, and I am sending them in the hope that you may be able to give me the name of the fungus to enable me to round off my investigations into its ravages and life history. In the event of your publishing any account of this disease, I have to request that the name of the estate mentioned on the specimens be withheld from publication.

Notes upon the disease are given below.

I am &c.,
(Signed) JOHN C. WILLIS.

The Director, Royal Gardens, Kew.

Specimens from Maskeliya district, 4,000 feet above the sea level, sent to Kew. Fructifying specimens pinned. Collected 7th April, 1899.

Disease like grey blight in appearance and effect, but characterised, by chocolate-brown colour of fully diseased spots on the leaves attacked. Common in the Central Province.

Shows first on upper side of leaf, and soon afterwards on lower also. Appears as yellowish-brown patches, which rapidly spread and to a chocolate or almost black colour, and as they extent their central parts dry up, die, and often fall out if the leaf is roughly shaken. When the leaf is held up to the light, a yellowish band, 1·3 mm. wide, is seen round the infected area, due to the spreading of the mycelium into the still unattacked area of the leaf, which losess its green colour.

Fructifications not often seen; on the accompanying specimens they show in typical form, as pinkish spots, more or less concentrically grouped. The spores are oval-oblong, unicellular, hyaline. The blight spreads very rapidly, and does much damage. Measures of treatment recommended are the same as for grey blight.

J. C. W.

10th April, 1899.

The specimens were examined by Mr. Massee, the Principal Assistant for Cryptogams in the Herbarium of the Royal Gardens. He furnished the following report:—

The fungus proves to be undescribed, and may be known as *Colletotrichum Camelliæ.*

All the many known species of *Colletotrichum* are parasites, and many are destructive to important economic plants.

Spraying with Bordeaux mixture, or with ammoniacal solution of carbonate of copper has proved effective in checking the spread of other species of *Colletotrichum*, and would probably prove beneficial in the present instance. In spraying plants like the tea, having glabrous leaves, success mainly depends on the fineness of the spray, which should hang like a fog. A coarse spray causes the solution to form drops which roll off the polished surface of the leaves.

In addition to spraying, all diseased leaves should be collected and burned, as *Colletotrichum* is a form-genus (=the conidial condition of an ascigerous), and if the leaves are allowed to fall and remain on the ground under the trees, the higher form of fruit would form on the decaying leaves and inoculate the new leaves the following season.

G. M.

3rd May, 1899.

The following description has now been prepared by Mr. Massee:—

The fungus present on the leaves proves to be a species of *Colletotrichum*, a genus perhaps too closely allied to *Glœosporium*, differing only in the presence of a variable number of coloured spines being intermixed with the conidiophores. Numerous species belonging to these genera are known as destructive parasites, attacking more especially leaves and fruit.

The leaves of the tea plant are probably infected in the first instance by floating spores settling on their upper surface when damp. The discoloured portion of the leaf corresponds to the range of mycelium in the tissues. Eventually the central portion of the blotch changes to a dull grey colour, and becomes studded with numerous very minute black spots, which are often arranged in irregular circles. These points correspond to the clusters of spores which rupture the epidermis of the leaf and become free on the surface, whence they are washed by rain or carried by wind to other leaves. After the spores are mature, those portions of the leaf on which they are produced become dry and brittle, and are blown about by wind, and as many spores still adhere to such floating fragments, it is not difficult to understand why the disease spreads so quickly when once established in a plantation.

As the species proves to be undescribed, the following diagnosis is given:—

Colletotrichum Camelliæ, *Massee* (sp. nov.) *Maculæ* amphigenæ effuso-indeterminatæ, primo flavo-brunneæ, dein nigrescentes, denique griseo-arescentes, postremo frustulatim deciduæ ac folium perforatum relinquentes. *Acervuli* centro maculæ laxe insidentes, epiphylli. *Conidia* cylindraceo-elongata, continua, utrinque obtusata, hyalina, episporio levi donata, 15-17 × 4-5 *u*. *Cystidia* lineari-cuspidata, septata, olivacea, 100-135 × 7-8 *u*.

CEYLON. CENTRAL PROVINCE. On living leaves of *Camellia Thea.*

Preventive Measures.—Bordeaux mixture has been proved to arrest the spread of disease caused by other species of *Colletotrichum*, as *C. lindemuthianum* on scarlet-runners and French beans, *C. Altheæ*, on hollyhocks, &c., and would probably prove effective in the present instance. Care should be taken to experiment at first with a very dilute solution until its action on the leaves is ascertained.

Diseased leaves should be picked before the spores are mature; that is, as soon as the first indications of the presence of the fungus are observed. If this practice was universally followed through the infected area, the disease could be readily exterminated.

CENTRAL AMERICAN COFFEE-DISEASE.

This disease has attracted attention for rather more than the last twenty years. But it is, perhaps, only of late that it has attained serious dimensions. Apparently, the first notice is contained in the *Kew Report* for 1876 (p. 21), where it is noticed as "Mancha de hierro" or "Iron stain." Berkeley attributed it to a minute fungus, *Depazea maculosa*, which was the only organism he could find on the diseased leaves. Dr. Ernst, however, in his *Estudios sobre las deformaciones, Enfermededas y enemigos del arbol de Cafe en Venezuela*. Caracas, 1878, was unable to accept this as the cause of the malady:—

"Berkeley opina que la *Depazea* es causa de la 'Mancha de hierro,' sin duda porque las hojas que le fueron remitidas, vinieron con esta denominacion. No queremos contradecir el aserto de tan respetable autoridad, pero tendremos más adelante ocasion de comprobar que la enfermedad llamada así es generalmente de otro orígin" (p. 17).

He further expressed the opinion that "iron stain" was to be attributed to more than one cause, and that

while in some cases it might be due to a fungus, it was generally the work of the "Coffee-leaf Miuer," *Cemiostoma coffeellum.* An account of this will be found in the *Kew Bulletin* for 1894 (pp. 130-133).

"Compréndense acaso bajo este nombre tambien otras manchas de aspecto semejante, pero dehidas á la vegetacion de un hongo, como se ha dicho más arriba; pero generalmente es la 'Mancha de hierro' el resultado dc la presencia de la larva de una pequena mariposa nocturna, que eu la zoologia lleva el nombre de *Cemiostoma coffeellum,* Stainton" (p. 17).

This opinion is important as showing that at the date (1878) when it was written the injury done by the fungus was inconsiderable.

What appears to be the same disease was the subject of a note in *Nature* by Dr. Ernst (July 29, 1880, p. 292). He says:—"There appear on the leaves small spots of a lightish green colour, which in two or three days turn hrownish." Hence the name of "Iron stain."

Dr. Cooke detected upon these patches a fungus of an entirely different kind. which he described in *Grevillea* [vol. xi., p. 11] as *Stilbum flavidum.* He further discnssed the whole subject in the *Journal of the Linnean Society* (*Botany*, vol. xviii., pp. 461-467).

Spegazzini has recently suggested the name of *Pistillaria flavida* for the fungus on the assumption that it belongs to the Basidiomycetes. This view is not, however, supported by a microscopic examination of authentic specimens.

Of late years the ravages of the fungus have assnmed more serious dimensions. It has proved very destructive in coffee plantations in Costa Rica, Venezuela, New Greuada, and Guatemala; it is also said to have occnrred in some of the West Indian Islands.

The Government of British Cen'ral Africa, apparently under the impression that it is the leaf disease of Ceylon (*Hemileia vastatrix*), which it is not, has "temporarily proclaimed" Guatemala and the Central American States generally "to he prohibited conntries" for the importation of seeds and plants.

A lengthy correspondence has taken place with the Foreign Office on the subject, of which the following is the most material portion:—

Mr. Consul-General Jenner to Foreign Office.

My Lord, Guatemala, Febrnary 7, 1899.

With reference to your Lordship's despatch, No. 14, commercial, of the 4th of November, I have the honour to enclose herewith copy of a despatch from Mr. Consul Harrison, enclosing a short report by Mr. H. Pittier on the diseases which have at different times appeared in the coffee plantations in Costa Rica.

The samples of the dried leaves are being sent to your Lordship by parcels post.

I have, &c.,
(Signed) G. Jenner.

The Marquess of Salisbury, K.G.

[Enclosnre.]

Report of Mr. Henri Pittier on the diseases which have at different times appeared in the coffee plantations of Costa Rica,

Dnring the existence of the Institnto Fisico Geografico several coffee diseases were submitted for study to tbe botanical department.

Firstly, the so-called "Maya," characterised by circular zones of dead tissues on the leaves, black rotten spots on the fruit, and by the subsequent falling off of both. The fungus which causes the destruction of the tissues has been identified independently by two specialists: Messrs. Rolfs, of the Florida State Agricultural College, and Spegazzini, of the "Facultad de Agronomia" of La Plata, with the *Stilbum flavidum,* Cooke (Pistillaria flavida *Spegazz.*).

Secondly, the "Hollin" or "Fumagina," which appears as a kind of a soot covering the leaves of the coffee tree, and which is also a fungns (*Capnodium trichostomum* Spegazz).; but in this case the fungus is only a secondary symptom, as it grows on a honey-like exudation of an insect (*Coccus*, scale insect, mealy bug) which settles on the tree.

Thirdly, several cases of distinct appearance, one due to the invasion of legions of caterpillars of a moth, the name of which I do not now remember, and others which were ascrihed to overcroppiug, to rot caused by imperfect drainage, or to the presence of foul wood in the soil.

These last were all more or less localised and disappeared after a time, hut the two first are rather common in the neighbourhood of San Jose, where they reappear every year with a gradually more epidemic tendency,

However, so far they cannot be said to have assnmed a very alarming character, and the majority of the planters have not paid attention to them.

Owing to the excessive dranght I have not been able to find any trace of the fuugus on the diseased leaves; but these are snre to appear with the first rains in April and May, and if uot too late for you, I shall gladly endeavour to obtain some good samples for you.

(Signed) H. Pittier.

Mr. Consul Harrison to Royal Gardens, Kew.

British Consulate,
San Jose, Costa Rica,
Sir, February 28, 1899.

In accordance with a circular I received from Her Majesty's Minister in Central America, I sent His Excellency for despatch to the Royal Botanic Gardens, Kew, some pamphlets and notes on the diseases which have appeared iu the coffee trees in this Republic.

I also forwarded soms samples of leaves affected by the disease which the Government obtained for me,

I now under separate cover forward you direct some samples of diseased leaves, collected for me by Mousienr Pittier, and two photographs of trees effected, These trees have recovered, but in some instances look sickly.

I send these direct as Monsieur Pittier tells me the less they travel the better, as the fungns is liable to be rubbed off.

I have, &c.,
(Signed) Percy C. Harrison.

W. T. Thiselton-Dyer, C.M.G., F.R.S.,

Director, Royal Gardens, Kew.

The leaves are most frequently attacked, and within a short time become dry and fall to the ground, so that the tree is soon completely dennded of foliage. The growing berries also dry up and fall before matnrity. New leaves are formed after some months of rest, usnally to be again attacked in a similar manner, and after the consecntive loss of foliage for two or three years, the tree dies.

Diseased leaves are at once known by the presence of one—or nsually several—more or less circnlar pale green, then hrown, and finally whitish patches, which extend quite through the substance, appeariug equally marked on both sides of the leaf. Gronped on these bleached spots, on the upper surface of the leaf, are several clear yellow drnm-stick-like bodies standing erect. Each of these bodies, which are only about one-twelfth of an inch high, is a perfect fnugus, bearing myriads of reproductive bodies or conidia on its globose head. One or more similar circnlar hleached spots bearing fungi also often occur on the berries.

On young twigs the bleached spots are elongated, varying from half to one inch in length. If the diseased patch completely girdles the twig, the portion above the wonnd dies.

Preventive measures.—Those recommended for the arrest of hrown tea blight would probably be effective iu the present instance also. Cleanliness is of primary importance. It is impossible for the disease to appear nnless spores of the fungns are present in the neighbourhood, and the most effective means for reducing this possibility to a minimum is to collect and hurn all diseased leaves and frnit that have fallen to the ground. Photographs received from Costa Rica showing coffee trees completely defoliated by the disease also show the fallen leaves lying in heaps uuder the trees.

Diseased twigs should be removed, otherwise, shonld sclerotia be formed, and the mycelium become perennial in the tissues, a yearly crop of conidia would be produced.—*Kew Bulletin.*

RUBBER IN THE BASIN OF THE AMAZON.

CRUISE OF THE U.S. GUNBOAT "WILMINGTON."

The United States gunboat "Wilmington" has arrived at Manaos, a thousand miles up the mighty Amazon, says the *N.Y. Tribune*. Here the wide, deep Rio Negro mingles its placid black water with the swift yellow current of the sealike Amazon thus joining the Amazon with the Orinoco.

The credit is given to Captain A. S. Crowninshiel, of Washington, for the present extensive cruise of the "Wilmington" in South American waters, a crusie which was interrupted by the Spanish war. Her primary object is to show the American flag in ports where it is seldom, if ever, seen; cultivate friendly relations with the officials and encourage American merchants and commerce wherever possible. So far the "Wilmington" has visited over twenty ports, among them being such important commercial and political centres as Trinidad, Barcelona, Carupano and La Guayra (the seaport of Caracas), on the Spanish Main; Las Tablas, Barranca and Cludad Bolivar, on the Orinoco: Georgetown and Paramaribo, in British and Dutch Guiana, and Para and Manaos, Brazil.

The "Wilmington" will ascend the Madeira River for six hundred miles to the first cataract, near the Bolivian boundary. Thus her voyage will open up to the knowledge of the world the great Amazon basin, the extent of which is enormous and the resources of which are unlimited. But the high price of rubber to-day ($1 a pound for the crude article, in the United States and Europe has stopped for the present, and undoubtedly for many years to come, any other form of industry. The Indians and halfbreed Portuguse demand and get their own price for working in the rubber forests, and only they seem able to stand the deadly levers and miasma. To-day the rubber industry is both the blessing and the curse of Brazil, though for the moment it appears to be the former, as every one seems to be making money. This can be easily understood when it is known that the Amazon basin, with its sparse population, exports nearly $50,000,000 worth of rubber annually. The key to this rich product and regino is Para, a thriving, rich city of about 10,000 inhabitants, seventy miles above the mouth of the Amazon. As is well known, the delta of the Amazou for serveral hundred miles is composed of large low islands, covered with water at "big river," (July and August), and abounding with rubber trees, the product of which is known commercially as "islands rubber," and it extends three hundred miles up the Amazon to Gurupa. Thence for several hundred miles the forest, though densely tropical, is sparse in rubber trees. They become thick again, however about Abidos, three hundred miles further up, and around and above Manaos is the fine Upper Amazon rubber, coming from the Rivers Tuara and Tavary, Rio Negro, Rio Branca, Solimoens, Puras, Madeira and hundreds of other streams tributary to Manaos.

While Para, by its wealth and situation is the key to the rich Amazon country, entirely controlling the valuable delta district output and largely that of the up-country, it has a new rival for the Peruvian, Bolivian and Upper Amazon rubber output in Manaos, a young giant of about thirty thousand inhabitants of recent and mush-room growth but having a beautiful opera house, palace of justice, electric railroads, electric lights, modern waterworks, sewers and asphalte streets, and is altogether such a remarkable city of great commercial future as to deserve a special letter.

Exact knowledge of the rubber districts, the gathering of the crop and the curing and transporting of the same is confined at present to three classes. The first are the "aviadores," or buyers, merchants who advance large stocks of goods, gewgaws and rum to headmen iu the forest. The aviadores are mostly Portuguese, and having a "good thing," will not tell much. The second are the men or branch storekeepers in the jungle, usually half Portuguse, half-Indian, who are suspicious and secretive and great liars. They absolutely control the third class, the Indians, who work in the dense tropical forest, and gather and cure (smoke) the rubber. Left to themselves, the Indians are generally hospitable and communicative; but their dialects are little understood and their knowledge is local.

Recently a ship of only 2,500 tons left Para for New York, with a cargo of rubber, which was insured for $3,000,000. Nowadays only a bullion ship or one loaded with fur seal skins from the Pribylov Islands would carry such a valuable cargo. Naturally this valuable and constant output demands many large cargoes in return payment. Heavily loaded steamers leave New York and Europe for the Amazon three times a month, and this number may soon be increased. The United States is getting a large part of this rich trade and can increase it by judicious efforts.—*The American.*

A TEXT-BOOK OF PLANT DISEASES.

Whilst much may be effected to prevent the occurrence of disease in plants, and to put a stop to its diffusion, and whilst something may be done to mitigate its consequences, little or nothing can be done in the way of cure. Day after day we receive samples of diseased plants with an enquiry as to the nature of the disease, and almost invariably an enquiry as to a remedy. Sometimes no information is vouchsafed as to local conditions, and as to the method of cultivation adopted, and often, indeed, nothing but continued inspection during growth would enable us to arrive at a satisfactory diagnosis. In most cases absolute cleanliness and free ventilation, together with the methods of cultivation appropriate to each plant, will suffice to keep plants in health. Indeed, in very many instances it is obvious from the specimens sent to us, that slovenly or careless cultivation has been practised, perhaps unavoidably, from adverse circumstances not known to us. However this may be, disease and parasites, whether vegetable or animal, often find the condition suitable for their growth and propagation in plants whose cultivation is neglected. This is, however, by no means invariable. Many of the samples sent us come from establishments where rigid care is exercised, as in market establishments where superb cultivation is the rule. Nevertheless, a fungus may make its appearance, and quickly destroy the hopes of the cultivator. Over-crowding, and the growth of the same crop in the same houses year after year necessarily favour the spread of the disease when it does break out. How often do we find the Tomato crop spoiled from this cause?

We see the same carelessness in woods; the unfortunate trees get injured in a variety of different ways, but all resulting in au open wound. Nothing is done to cover this over, and so the wound, it may be a mere crack, offers a resting place for the spores of the fungi, which, as in the case of canker of the Apple, eventually compass the destruction of the tree. Now the main reason for this loss—much of it avoidable—the main reason, is sheer ignorance—indifference and apathy do the rest.

It cannot be expected that the cultivator who has his business to attend to can attain that knowledge of detail that it is the duty of the expert to accumulate, but he should get a sufficient grasp of general principles, and sufficient information as to the manners and customs of fungi and insects, to be able to avail himself of the teachings of the expert, and turn them to practical account. It is with this object in view that we desire now to call attention to Mr. Massee's recently published *Text-book of Plant-diseases caused by Cryptogamic Parasites* (Duckworth & Co.) After some generalities, the author proceeds to describe seriatim the chief parasites which affect our cultivated plants. The order followed is that of the botanist, the author going from order to order in systematic series.

We have waited long indeed for anything like a complete handbook of this kind. We have had special books like those of Marshall Ward and Worthinton Smith, excellent in their way, but strictly limited; we

have had various translations from the German, and we have had endless articles in our own columns and those of our comtemporaries, but Mr. Massee is the first to give us in anything like a complete form, a combination of these scattered records into a systematic whole. This will be invaluable as a book of reference. Our gratitude to the author is proportionate. —*Gardeners' Chronicle.*

THE OIL TRADE OF SOUTHERN INDIA.

The Oil Trade of Southern India, which in 1897-98 was represented by an export of 46,804,81 gallous, valued at 58,699,30 rupees, and accounted for an area of 1,646,628 acres of cultivation, is one of those branches of industry which possesses the remarkable characteristic of never, under any circumstances, suffering from under-production. The supply at all times is equal to the demand. Domestic consumption is largely in excess of export, but can never be exactly ascertained, as much of the oil used is obtained from trees and shrubs growing in a wild state, and manufactured by the poorer classes. Among plants regularly cultivated for oil are the coconut, the gingely, two species of the racinus from which lamp and castor oil are made, and linseed-coconut oil is exported from the Western Coast and from Ganjam, Rajamundry and Tanjore on the Eastern Coast. It is extracted from the *dry* kernels of the nut by expression in the ordinary native oil mills. When made with care, the oil is colourless and solid at a low temperature, but very liable to become rancid by keeping. For edible purposes it is made from the *fresh* kernels, which are rasped, and the milk, being squeezed out, is boiled with a little water. The Cochin coconut oil is reputed the best, and is exported in large quantities to the United Kingdom and to France, where it commands good prices, and is used for the manufacture of candles and soap. Coconut oil soap is lighter than water and is the basis of the floating soaps of the perfumers. Inferior soaps made from coconut oil are liable to melt away if exposed to damp, and if allowed to dry will shrink. For these reasons, and to prevent loss, only small quantities of the article are made at a time. The method of manufacture in the coast is exceedingly simple. Two cisterns are built one above another; the upper filled two-thirds full with the compounds above specified and tightly pressed down;, water being poured on the lye filters through and is received in the lower reservoir. About two-thirds or so of this lye is stirred with oil and allowed to stand for three days with occasional subsequent stirrings. The solution is then removed and boiled in a copper cauldron until the soap separates. Pure water is poured on the mass and stirred to clarify it, and the soap is then moulded and cut into bars, when it is ready for sale. Coconut oil is to the inhabitants of the Western Coast what *ghi* is to the Hindu elsewhere. Property in the coconut tree is considered a sound and profitable investment, as each tree is calculated to yield 2½ gallons oil per annum, and the refuse after the oil is extracted finds a ready sale as cattle-food or as manure—to say nothing of the coir and thatching that form bye products of the palm. Before the introduction of kerosine oil, coconut oil was a very popular illuminant. It still enjoys a great deal of favour in this respect, as it gives a bright light, and there is no risk whatever in its use.

Among the poorer classes Gingely Oil is much used for domestic cookery, sometimes by itself, but more frequently as an adulterant of *ghi*. Care is necessary in the preparation of the oil, which becomes discoloured by the matter from the epidermis of the seed, which should first be repeatedly washed in cold water or partially boiled in water to remove the reddish-brown colour before passing it through the mill. In the northern districts of the Presidency, the babool gum is added to the seed before expression, but it is doubtful whether this is done exclusively to improve the oil, for it also confers an increased value on the oil cake as a cattle-food, The manufacture of the oil is primitive, and the mills used in the present day are the same as were employed for the purpose thousands of years ago. By throwing in the seed without any preliminary cleaning the oil becomes discoloured and depreciated, but it can be make very clear, when high prices are obtained. This clear oil is the yield of a white seed, which however is not so profitable as the black seed or *Sesamum orientale* of commerce. The price of the oil varies according to the district, but a uniform rate is obtained in Europe, where it is imported for the manufacture of soap.

Two oils are extracted from the *Racinus communis*: one known as castor oil, and the other the real lamp oil of the country. *Racinus communis minoribus* is a small-seeded variety, that after being sifted and cleaned is slightly crushed between two rollers; then freed from husks and coloured grains and enclosed in squares of clean gunny or canvas. These squares are put into a mould to give them uniformity, when they are known as bricks. The bricks are then arranged alternately in a screw or hydraulic press with sheets of iron, and pressed till the oil exudes through the pores of the gunny, and is received into clean tins. After boiling the oil is filtered through blankets, and forms the castor oil of commerce. Much less care is exercised in pressing the larger-seeded variety of the Racinus and the seed is partially roasted before passing through the mill—both imparting the dark and even dirty red colour which this oil has when sold in the bazaars. As much as 50 per cent in weight of oil can be obtained from the seeds, and the price of the oil is always maintained. The ground or Manila nut is largely grown in Madras more particularly in North and South Arcot and in Nellore and Tanjore. The cleaned seeds yield by cold pressure 43 per cent by weight of a clear, straw-coloured, edible oil possessing all the qualities and characteristics looked for in imported salad oil—which often is nothing more than Indian ground nut oil clarified and reimported from Europe. This oil is seldom used by the natives, but they eat the nut after being slightly roasted over a charcoal fire. From the trade statistics it appears that 19,631 acres of ground in Madras grows linseed, and that the crop is raised principally in the northern districts. It is not, however, easy to arrive at the actual acreage of linseed because it is sown in furrows on the borders of fields, and so escapes calculation. The introduction of linseed into the Punjab, and especially into Sind, is credited to a military settler on the Nilgiris, General Wormald, before his retirement. He appears to have tried it at Jamadar-ka-Sandee, and the experiment is said to have been thoroughly satisfactory from the commencement, the yield being tenfold. The above are the staple oils of the Presidency, but the list might be easily multiplied by local products of which no account is taken, such as poppy oil, the oil of the *neem* tree, cotton seed oil, the oils of various woods, and fish oils. Few of us in fact remember what a great part oil plays in the economy of the country.—*Pioneer.*

New Source of Gutta-percha.—M. Jouffroy d'Albans, the French Consul at Singapore, writes to the *Courrier de Saigon*, regarding an invention made by a Frenchman in the Straits to extract guttapercha, principally from the leaves of *Isonandra Hookeria.* The leaves, dried, are sent to Belgium and France for the extraction of the gutta. This trade in dry guttapercha leaves has considerably increased at Singapore and Penang. The gutta thus produced is said to be of such high quality that the Eastern Extension Cable Company has contracted with the inventor for a supply of it.

COCONUT CULTIVATION.

MANURING.

I had the privilege lately of discussing the above subject with a veteran, and as his opinions are entitled to much weight as being those of one of the foremost coconut planters, I trust he will pardon me for making them public and for discussing them. Apart from the fact that his long experience, his well-known intelligence and his close observation entitle his views to respectful consideration, his having been a pupil of the late Mr. Davidson of Jaffna in early youth and imbibed the wealth of scientific wisdom which places that gentleman far above his fellows then or since, is an additional recommendation in his favour.

My friend holds very decided views that coconut rees should be manured every alternate year. That if manured at longer intervals, it represents to a large extent money thrown away, as a large proportion of the manure goes towards helping the trees to regain lost ground and a small proportion to putting on crop. In his experience he has found ashes a valuable, nay indispensable, fertiliser for coconuts, and trees which responded in a sort of way to the application of castor cake and bones, showed wonderful results as soon as ashes were added to the mixture. By a systematic and intelligent system of manuring he has known an estate increase its yields, not in one leap of course, but gradually to three times its old average yield. The system was for half the trees to be manured one year and half the next. The manure used was castor-cake, bones and ashes. In addition to that, the husks were carted to the fields and the husks of about 50 coconuts were dropped between every four trees and together with all the branches, were burnt and the ashes spread over the ground. This was done from end to end of the estate with the results indicated above.

I may be pardoned the tenacity and the presumption of discussing the views of so high an authority. But no one more than he will appreciate the good resulting from such discussion, and the unwisdom of blindly following a system simply because it is practised by an acknowledged authority. Circumstances alter the experience of different persons and the observation of one man may not be in accord with another.

I am at one with my friend that it is desirable and more than desirable, necessary, that half an estate should be manured one year and half the next. But I would say as a general and not invariable rule. Experience and observation show that a sandy and therefore hungry soil takes up manure very much faster than a heavy soil with body, or to be more precise, coconut trees growing on a sandy soil derive benefit from an application of manure very much quicker than trees growing on a heavy soil and in proportion to the quickness of the benefit is the quickness with which the results disappear. I therefore think that the rule of my friend is a necessity on a light, sandy soil, and is not so much of a necessity as a desirability on a heavy soil. On such a soil, digging it up and mixing it can be resorted to in the interval between two manurings.

However desirable or even necessary frequent manurings are, it is not everyone that can manage to manure half of his estate annually. Many circumstances, not necessary to be detailed, will stand in his way. Under such circumstances the object of the Planter should be to try to minimize the acknowledged running down of the trees. I think this could best be done by the use of such fertilizers as yield comparatively slow results. In my opinion, bone meal is one such. Bone in its raw state is insoluble or not readily soluble. In contact with the soil and the moisture in it, it decomposes slowly, the length of time depending on the minuteness of the particle and the composition and quality of the soil, among other causes. It is generally believed that bones are of value chiefly, if not entirely, according to the phosphates in their composition. This is to a certain extent true, but bones in their decay yield ammonia which assists the action of the phosphate of lime. I have always held consistently to the opinion that quick-acting manures are of value chiefly in the cultivation of annuals, where the result are required in a given time. For the cultivation of perennials, and especially of coconuts, slow-acting manuress are the most desirable. The trees are not stimulated to heavy-bearing and then quickly fall off, the bearing is steady, even and continuous. It is for this reason, I do not favour the use of steamed bones or of super-phosphate for coconuts. When raw bones are used, the effect is spread over a number of years and after a few applications, the quantity of available phosphates and ammonia in the soil will, if necessity become large, and the benefit to the trees will be in proportion.

Now as to the value of ashes as a manure, there are now two opinions. Their composition is dependent on the substance of which they are the result. Mr. Cochran has made known the great value of the ashes of husks, and people can easily realise by the light of his analysis, to what extent their soils are being impoverished by the removal of husks or their non-return to the soil in the way practised by my friend. Would rot economy be attained by carting to the field the ashes of husks instead of husks in bulk? I am not of those who believe in the fertilising properties of manure; but I believe in the value of fires at nights in coconut fields. They help to attract and destroy injurious insects, such as red-beetles and the moths of caterpillars.

I have heard

THE PRAISES OF ASHES

sung very loudly but unfortunately my experience with them hardly accords with that of others. I know an estate where the branches had been burnt between the trees for a number of years. The ground was black with ashes. Anxious to see the extent to which the roots of the coconut tree availed themselves of this rich store of manure, I had the ground dug. My disappointment was great when I came across a few straggling rootlets and not the mass of rootlets within the experience of others. I have had ashes lying in heaps between coconut trees and yet they were not attacked by the rootlets in anything like the way in which a heap of cattle manure or any other heap of decaying vegetable matter with a lot of moisture in it is attacked. I have often wondered how roots take up the fertilising matter in ashes when so few are seen to attack them. Again I have applied wood ashes and the ashes of coconut branches in large quantities of from two to three basketfuls to coconut trees both by themselves and in conjunction with castor-cake and bones with no striking results.

My experience has been that there is no application for coconut trees to equal

THE DROPPINGS OF CATTLE

under the trees. I have tied one animal for ten days to trees that had been neglected and not manured for a number of years and growing on poor white sand and the results were such as to make me most enthusiastic on the benefit of droppings. The branches of these trees were of a yellow, sickly hue and the bearing was being reduced to zero. Within six months the trees were carrying dark, green heads and commenced to throw out large blossoms. The effect, as regards crop, lasted for two years, as the trees were weakly, but the colour of the foliage did not relapse to its original colour. My method was to tie the cattle to the trees without removing any soil and then to dig in the droppings after rain had washed in the ammonia. I think digging in before rain has washed in the ammonia, will help to dissipate it. I am inclined to think that this most encouraging result is due almost entirely to the urine. The solid excrements of ten nights from ordinary village cattle that are grazed on poor pasturage, hardly equals two basketfuls. It will be useful to find out what the composition of the urine of cattle is to enable us to make up a mixture to resemble

it as closely as possible. In the stall-fed cow leaving out of consideration the water which is nine-tenths in weight, we have Organic matter .. 60

Containing nitrogen equal to ammonia ..	9
Inorganic matter	20
Containing phosphoric acid . ..	7

That does not look formidable. Perhaps, Mr. Baur, with that enterprise which is his characteristic, may find out what the total solid and liquid excrements of one animal is for one night, analyse that and multiply it by ten and give us a mixture representing the application per tree. It is impossible to entirely manure an estate, or even a large part of it, by tethering cattle to the trees, so the next best thing to be done is to secure a mixture resembling it as closely as possible, for the efficacy of the droppings of cattle in the immediate neighbourhood of trees is assured.

I have had the opportunity of watching the difference in effect between the droppings of cattle and an application of cattle manure, castor cake, bones and ashes. The former was to a field that had been neglected and unmanured for a number of years. The latter to a field that was in cultivation and had been manured a couple of years before. Both fields were composed of poor, white sand. The former field responded at once with beautiful dark green heads and a brave show of blossom and very good yields for two years. Though the crop fell off after that, the appearance of the trees did not. The better part of the application to the latter field was appropriated to bring up the condition of the trees and but a little went towards the putting on of crop. We read a great deal last year about "denitrification." That may be responsible for the disappointing results, which, however, are not general.—*Cor.*

PRODUCE AND PLANTING.

Bacteria and Tea.—Mr Allen Cooper, of Southampton, quoting the article in the "Contemporary Review," in which it was asserted that the particular flavour of different growths of tobacco is "attributable to the agency of microbes alone," these microbes being generated during the process of fermentation, thinks that an interesting question for tea planters arises in connection with it. Not only is poor tobacco transformed, but it has also lately been discovered that it is possible to have living cultures of Bacteria which can give a delicious flavour to butter and a fine taste to cheese. "It occurred to me," says Mr. Cooper, "that the distinguishing flavour of teas from different countries might be attributable to a similar cause. It may not be the plant so much as the Bacteria generated during fermentation that gives each district its distinctive character. All tea planters are agreed on the importance of the fermenting process for the proper development of flavour, and the necessity of arresting this fermentation, or 'fixing' it (as it is called) at the critical moment, over-fermenting producing a peculiar rancid odour and flavour. Mr. David Crole, in his lecture on the Chemistry of Tea (given on February 10th, 1897, at a meeting of the Society of Arts), was very emphatic on this point; and some tea planters I was fortunate enough to meet on the s.s. "Nubia," four years ago also emphasised the importance of this part of tea manufacture. They all agreed that the fermentation period was the critical one for the proper development of flavour. This raises an interesting question. Is it possible to alter the flavour of teas from poor districts by the introduction of living cultures of Bacteria developed from micro-organisms taken from fermenting tea in the more favoured districts?" Perhaps Mr. Watt or Mr. Bamber may have something to say on the subject.

A Declining Market for Tea.—Under the above heading "The Grocer" discusses the tea market as follows: "It is now three months since the market for tea was in a buoyant condition, with prices of the common descriptions astonishingly high for these modern days of cheapness, and when, moreover, the position of the distributing trade in April last was exceedingly strained and awkward. The subsequent trend of the market has proved that at the period referred to quotations had touched their highest points, when at public auction the Indian growth fetched the following rates: Common to good leafy Pekoe at 8d to 1s 3d; Broken Pekoe at 8d to 1s 4½d; Orange Pekoe at 8½d to 1s 5½d, with finer grades up to 1s 10d and 2s 3½d; also Broken O.P. from 10d to 1s 6¾d; Pekoe Souchong and Souchong both at 7¾d to 11d; fannings at 6d to 1s 4½d; Broken tea at 7d to 11½d; and dust at 6d to 8½d per lb. Also at the same time Ceylon tea was readily taken off as under: Common Pekoe Souchongs at 7¾d to 8½d; Pekoes at 8d to 8¾d; ordinary broken teas at 6d to 8½d; with fine broken and Orange Pekoes at from 1s to 1s 4d. From these extreme rates there has latterly been a gradual, though uninterrupted, decline of 1½d to 2d per lb., so that common grades of Indian Pekoe and Souchong now are not worth more than 6½d to 7d, and those of Ceylon realise only 6d to 7d, with the medium sorts in proportion."

A Return to Lower Rates.—"This reduction in the value of both Indian and Ceylon tea marks a great step towards a return to lower rates, such as will enable the dealers and retailers once more to push the sale of the article with their accustomed vigour and success; and, provided that the rupture between importers and the wholesale dealers is soon healed up, there is a prospect of business being renewed with increased activity during the remainder of the year. At first, when 'top' prices were the rule, operations were more or less cramped, partly by the manipulations of speculative members of the trade, and also by reason of the fix in which many blenders found themselves in having no reserve or precautionary stocks to fall back upon at the moment they were most needed. The comparative dearness of teas that had to be pressed in to do duty for the popular 'shilling canister' likewise helped to instil a fresh spirit of cautiousness in all bona-fide purchases for home use, and for several weeks in succession considerable difficulty was experienced in satisfying all retail requirements with the same promptness and satisfaction, as when in the latter part of 1898 clean leafy teas were easily procurable at 5d to 6d per lb. Stiff prices, nevertheless, wrought good service in hastening forward the arrivals of new season's teas from India, which came to hand in larger quantities and earlier than they did last year. Besides this the merchants were willing sellers on terms which continued to show a distinct improvement on the lowest rates that were current before the extraordinary rise commenced, and enough tea was secured by the blenders and others to keep matters going on pretty smoothly at a season of the year when, as if by universal consent, the wants of consumers generally are neither so large nor so urgent as in the cooler months, when supplies are superlatively abundant."

A Strong and Unsurpassed Demand.—Notwithstanding the fact that the clearances of tea in the United Kingdom have been somewhat inflated by the heavy duty payments made in March and April last, in anticipation of an increase in the Customs' impost, there is reason to believe that the rate of consumption is fully equal to, if not decidedly beyond, that in 1898, or indeed, in any previous year, and this may be regarded as a guarantee for the continuance of a strong and unimpaired demand on home trade account. Granted this much, it naturally follows that, with a plentiful supply of new season's teas coming on from all parts, the necessities of the market here will be well provided for, and orders to any extent will be capable of fulfilment at more reasonable prices than were demanded in the spring of this year. Other questions of vital importance have also to be considered just now, and it will be greatly to the advantage of both importers and dealers if they can succeeded in arriving at a friendly understanding where any cause for disagreement is supposed to exist, and so keep the whole machinery of the London tea in perfect working order.—*H. & C. Mail*, July 21.

TEA PESTS AND SCIENTIFIC REMEDIES.

The Kunaon correspondent of the *Planter* writes :—

I suppose all have read Dr. Watt's remarkably candid views on this matter of a scientist for tea, and if one or two of his observations do not strike home then surely nothing will. "I know of no industry of a similar magnitude where empiricism is allowed to have such limitless sway." Such is the opinion of a dispassiouate and perhaps the highest scientific authority in Indian at the present moment. It amounts surely to the severest condemnation of current tea methods that has as yet seen the light of day, and besides which Sir Alexander Mackenzie's observations were nowhere. I note Cachar votes for an entomologist, but Dr. Watt states that Ceylon has, in addition to their chemist, appointed an entomologist of the very highest European repute, and with the incomparable advantage of himself being a planter. Why then, I would venture to ask, should India spend a lot more money on another entomologist? Ceylon planters are surely fellow men, and nothing discovered there in the way of entomology is going to be hid under a bushel, because, as I understand, Mr. Green is Government entomologist. In my very humble opinion, entomology without direct reference to renovation, and great improvement in cultural methods will turn out to be of the least real advantage to tea. I speak in this matter as one with twenty-six and a half-year's consecutive horticultural practice in its every brauch of fruit, plant, and vegetable life. Now if there is one fact borne out by all experience aud a multitude of observers, it is this :—No sooner does any kind of plant become enfeebled, than in come the insect pests. As sure as the sun rises in the east and sets in the west do iusects show at all times a marked preference for the weak or enfeebled, no matter from what cause arising, and I am perfectly sure—setting aside the scientific aspects of the matter and looking at exactly where it affects the planter, this matter of insect pests and plants is for all practical purposes in the nature of cause and effect. There are quite a number of most effective insecticides. I do not believe for example any green fly exists that will for a moment staud against a strong decoction of quassia ; thrip also succumb to its intensely bitter qualities. Again, the Bordeaux mixture, consisting simply of sulphate of copper aud lime, is remarkably effective against a number of insect pests and I know that even water heated to 180° F. will effectively destroy green fly. Here is a remedy which in the abstract costs nothing at all, but the moment one comes to practical details and its application to thousands of acres of tea plants growing out in the open what of the expense, and what of the expense still more in the case of remedies costing money and their application to thousands of acres of tea. It will surprise me exceedingly if the salvation of tea is found in entomology. Of course, it would be of the greatest interest and probably no small value to know the exact life-history of each pest and how best to take the pest at the greatest disadvantage. All the same we shall, of course, see what we do see, but entomology is not going to stamp out mosquito, thrip, red spider, and green fly while the inducing cause remains, or at all events, there is such a magnificent field for their existence. If I may venture an opinion, I would say tea today stands in need of two conspicuous reforms above all others first—tea manufacture reduced to a scientific basis in its every process. Secondly, absolute reform in culture, which includes pruning. If this be so, then it indicates a chemist in the factory, and what Dr. Watt terms an agriculturist in the field, but which, I think, would be much more correctly termed a horticulturist or at all events, an agri horticulturist. It is not by any means clear what an agriculturist, as such, can know about the tea plant or is likely to discover. . . . At the present moment this is how I have for a long time conceived the matter stauds :—The planter has by his methods of culture and ghastly pruning, produced a sickly bush, constitutionally. A vast acreage of tea is not what it ought to be, and might be, or rather should have been ; the food aud drink of this sickly out of sorts bush is wrong, but the planter now demands a doctor and medicine to beat off the pests that beset its enfeebled frame. Now if experience is worth anything at all, this is not the way to go to work to effect a permanent cure. There must be a radical change in the methods that make the pests so plentiful. Without this it will be a ceaseless warfare, and Assam may be filled with entomologists, and as time goes on they will get more and more to do, because, however much you may destroy on the spot, you can't at any price destroy surroundings of unlimited dimensions without reform in the plant aud culture. It is my firm conviction the phrase "let 'em all come" will be a very painful reality for tea, and this will be constantly growing worse until the root of the matter is energetically dealt with.

COCOA PLANTING IN SAMOA.

A report ou cocoa plantiug in Samoa has been received at the Foreign Office from H. M. Consul at Apia. In an introduction to the report, the Consul states that it would seem, assuming the price of cocoa not to fall radically and no cocoa disease to arise, both of which events seem unlikely to occur, that a potential commercial future has at length arisen for the Samoa group, after years of depression owing to the fall in the price of copra and the apparent unsuitability of the climate for other cultivations, such as rice, sugar, tea or cotton.

Small capitalists (£500 to £2,000) going to Samoa and purchasiug or leasing land for the purpose of cocoa planting, would stand a good chance of making a fair income after the first three or four years—provided that they either possess a practical knowledge of tropical planting or will take advice from those in Samoa who have experience in the matter.

Cocoa was first experimentally grown in Samoa by "Die Deutsche Handels und Plantagen Gesellschaft der Sudsee Inseln zu Hamburg" on one of their plantations near Apia. In 1892 a favorable report on the quality of the bean was received from Germany. In 1893-4 a large number of seeds were distributed among the Samoans, and a few small plantations were started by some of the more enterprising of the British and other foreign residents, which are now coming into bearing. The number of small plantations are rapidly increasing and the amount of land at present bearing cocoa trees is estimated to be 75 acres.

The most encouraging reports continue to be received from Hamburg, San Francisco and Sydney regarding the quality of the Samoan cocoa, the price varying between £60 and £80 per ton. An English planter in this island has an agreement with the German firm to cut and take all his cocoa, he paying freight to market and receiving two-thirds of proceeds, and the firm one-third, but it is stated that this arrangement has not as yet been extended to others. However, there need be no difficulty as to drying and preparing the cocoa for market, as another planter who prepared his own in a rough manner received 16 ceuts (about 8d) per lb. in San Francisco, whereas the cocoa prepared by the German firm realised 18 cents (about 9d) per lb. in Hamburg. The expense of fitting up, drying and preparing rooms would not be great if divided amongst several planters. Small plantations are

to be preferred, at all events at present, to large ones as in the former personal supervision can be given, and the initial and working expenses are of course a mere fraction of what a large plantation would entail.

A small plantation of 6 acres holds about 1,200 trees, and these in the third year produce about 140,030 pods, and it is apparent that, even with the liberal allowance of 15 pods to the pound of marketable bean, each tree would produce from 6 to 8 pounds of prepared cocoa bean per annum. The trees begin paying in the third and fourth years after planting, and are in full yield after the fifth. Apparently there is practically no age limit to the bearing of a cocoa tree. The two heaviest cuttings are in April and September, and between times there are cuttings about every three weeks. The full grown pods, the immature one, and the blossom may all be seen on the same tree.

The best and cheapest way of preparing bush land for cocoa growing is to thin out the undergrowth but to leave the trees standing so as to afford shade to the young plant. The cost of clearing and planting ought not to exceed £4 per acre. The young plants are raised in small coconut baskets filled with earth in well shaded nurseries and planted out; or the seeds are planted in holes well covered with topsoil, 15 by 15 apart, and when the cocoa trees have attained two years' growth, banana trees are planted between the rows of cocoa, the shade trees are ring-barked, and when dead are felled and allowed to rot in situ. It is surprising to see how very little damage—in fact practically none—is done to the plantation by the fall of these trees.

The cocoa tree seems to be able to bear an extraordinary amount of rough usage in Samoa. When the trees are about three years old the banana trees are cut down and rooted up. The tree with a single trunk is not considered desirable in Samoa, and by allowing two or three main stems to grow and training the laterals to branch out well a comparatively low bush is obtained, which does not attain the height to which the cocoa tree is allowed to grow elsewhere, and consequently is not so much damaged by hurricanes, and produces a larger crop of pods than the other variety.

The kinds of cocoa planted in Samoa were Caracas and Forastero, but as usually happens by hybridization, a distinct kind has been produced, partaking of the best qualities of each variety. The Samoan cocoa is prepared in the Ceylon manner and is especially well adapted for confectionery purposes.

It is advisable not to prune the trees, as this entails stunting them in Samoa. In fact the golden rule for would-be planters in Samoa is not to follow any rule blindly, however well established, but to adapt the general rules of cocoa planting to the special factors out here, and not to try and make Samoan nature follow scientific rules, but vice versa. The cost of land near Apia is about from £1 10s to £3 per acre if purchased from whites, and about 4s to 8s per acre if leased from the natives on a 20 or 40 years' lease. The soil is rocky and volcanic, and well adapted for cocoa.

Although labor in large masses is practically unobtainable in these islands and the native Samoan is by no means an energetic and hard-working laborer, yet sufficient floating labor for small plantations is to be had. The price is about 24s to 35s a month per laborer, his food costing about 16s per head a month. One man ought to be able to look after six acres of well grown cocoa in the dry season, but two are required during the wet season from December to May.

In Samoa the cocoa is a robust, hardy tree, growing luxuriantly, and yielding abundant crops with but trifling cultivation.—*Cultivator.*

HYBRIDISATION.

In connection with an International Conference of Hybridisation held under the auspices of the Royal Horticultural Society during the past two days a dinner was held last evening in the Whitehall Rooms, Hotel Metropole. Sir T. Lawrence, President of the Society, was in the chair, and the company included the Netherlands Minister, the Belgian Minister, Earl Annesley, the Master of the Rolls, Sir E. Fry, Mr. Herbert J. Webber, and the Rev. W. Wilkes (the Secretary). The tables were beautifully decorated with roses, carnations, orchids, and other flowers, the gifts of members of the Society, who also presented the fruit for dessert. The toast of "Horticulture" was proposed by the Rev. Professor Henslow, and acknowledged by Mr. H. J. Webber (United States), Professor H. de Vries (Holland), and M. H. de Vilmorin (France). Mr. Webber remarked that the possibilities of hybridisation had hitherto been little realised, and the few examples which had been brought to notice were simply heralds of the advances that were likely to be made in the future. He thought it a matter for regret that there was no way in which the originator of a new fruit or a new flower might derive due benefit from his labours. Every endeavour ought to be made to popularise horticulture, so that any discoveries that were made by hybridists might meet with their just recompense. Mr. W. Bateson, in giving the toast of "Hybridists," insisted on the importance of bringing about a permanent investigation in this country of the problems of hybridisation, such as was now being conducted in the United States. (Applause.) Mr. W. T. Swingler (Washington) replied. The Master of the Rolls proposed "The Royal Horticultural Society," and Sir Trevor Lawrence, in responding, observed that it was owing to the fact that Robert Fortune was sent out by the Royal Horticultural Society to China that the cultivation of tea was undertaken in India, and ultimately spread to Ceylon, and that now the bulk of the tea consumed in Western countries come not from China, but from the country into which Fortune introduced it. The Society now numbered nearly five thousand Fellows, and, though not wealthy, was in fair water. It needed, however, two things, which he hoped would soon be forthcoming, namely, a hall in London and a new garden larger than that at Chiswick, and not so near London. (Applause.) Other toasts followed.—*Morning Post*, July 13.

MR. JACKSON'S NEW TEA MACHINERY.

Hitherto it has been impossible, even under most careful factory management, to prevent dust, powder and foreign matter, such as hair-like splints of bamboo and fibre from green leaf jute hessian withering tats, being mixed with the tea in packing. From careful experiments, made with various grades of tea of their appearance, the amount of foreign matter contained in them varied from ½ per cent to 2½ per cent. To obviate this a new

PATENT TEA DUST EXTRACTOR,

for use in tea factories, warehouses, and packing rooms has been designed by Mr. Jackson.

By a series of simple adjustments, the machine can be made to remove only powder, or light fibrous matter; or all the dust may be removed, and the residue thoroughly mixed; or the dust may be extracted, and the residue divided into two grades, medium and large. The design of the machine is such that a fluted feeding roller in hopper regulates the supply of tea, so as to spread it into a thin stream, four feet wide. It passes down a series of steps, arranged in a

zig-zag form, all the while being subjected to a current of air, which may be regulated to any necessary pressure, by means of shutters, to suit the material to be operated upon. The capacity of the machine is from 500 lb to 1,000 lb per hour, according to the thickness of feed, and the quality of tea to be dealt with. The materials used in the construction of the machine are of the best possible description, the framing being of the best selected pitch pine, lined with sheet steel, and the machine body is mounted on four strong cast-iron standards. The fan is powerful, and accurately balanced, and the bearings are fitted with special oil-catching devices. The discharge doors are both moved by one bar and handle, and arranged so that they may be shut, or kept partially open, while the machine is at work.

Mr. Jackson has also constructed a new balanced

SELF-CLEANING TEA SIFTING MACHINE

with a view of giving every facility to the factory manager to produce the best grades of tea required by the market. Its advantages may be summed up as follows: First. Balanced Action. There are two superposed carriages containing the sieves, supported, and held in their track by wooden springs, securely bound to angle foundation plates at their lower end, and pivoted at the top. Motion is imparted to the sieve carriages by a crank shaft with double throws, the crank pins being arranged opposite each other, thus producing a perfect balanced action, reducing the action of wearing parts to a minimum, and making heavy and costly foundations unnecessary. Second. Adjustable Incline of Sieves.—The two carriages are hinged at the end next the driving shaft, and the other end can be set level, or at any necessary incline, to suit the nature of the tea to be operated upon. Ready means for attaining this object are provided by a clamp-device, which is free to revolve and accommodate itself to any angle at which it may be desired to set the sieve carriage. Third. Self-Cleaning.—It is generally known that to keep the wire meshes of sifting machines free from entangled leaves has been one of the most difficult problems for any designer of this class of machinery to solve, and we believe that Mr. Jackson has overcome this by introducing a cleaning device underneath the sieves. The self-cleaner consists of numerous wooden splints attached to sliding rods, and pitched to suit the exact travel necessary to thoroughly free the wire meshes from curly tea leaf. The sliding rods are secured by clips, which can be instantly released by the attendant, and all that is necessary to clean the sieves is to set them at liberty, and hold them by hand for a few seconds, and the movement of the machine will do the rest. When the cleaning arrangement is not in use, its splints act as bearers to support the wire mesh without in any way reducing the efficiency of the sieves. Fourth. Interchangeable Sieves.—Two wire mesh frames and sieves are supplied with each machine, the numbers of mesh to suit option of purchasers, these are interchangeable, and can be instantly taken out to give place to frames with different sized meshes to suit various classes or methods of sifting. The crank shaft is bent from the bar, and mounted in a massive pedestal, with oil catching devices arranged in bearings, the shaft runs a hollow casting which is practically dustproof; but immediate access can be had to shaft for the purpose of lubrication or clearning when necessary, by simply lifting a lid. Being accurately balanced the power required is nominal. The driving pulley is ten inches diameter, by three inches wide, and the speed is 265 revolutions per minute.

The following report on the working of Jackson's Patent Tea Packing Machine, by a planter of long experience, has recently been received from Ceylon: "I am much pleased with Jackson's No. I Packer. It is an excellent machine, works noiselessly, speedily and packs well. I should not like to revert to the coolie trading system of packing again, after using Jackson's Packer."

The following is a copy of a letter received from one of the proprietors of the above estate: "I am very glad to inform you that our first invoice packed with your machine had not to be rebulked in London; formerly most of our grades in an invoice had to be re-bulked. This of itself represents a good saving in the twelve months."—*H. and C. Mail*, July 21.

CEYLON CHAMBER OF MINES.

The meeting which was held on Aug. 8 afternoon was very largely attended and the proceedings lasted about an hour and a half. Mr. F. M. Mackwood, Chairman of the Chamber of Commerce, occupied the chair.

The following are the official minutes of the resolutions passed:—

1. To form a Chamber of Mines.
2. That all gentlemen interested in mining be eligible as members.
3. That membership be divided into two classes, viz., full members and associated members.
4. That entrance fees and subscription be as follows: full members - entrance R50, and annual subscription R50; associates—entrance R10, and annual subscription R10. Associates to enjoy all the privileges of full members, except that of voting on any resolutions brought before the Chamber.
5. That all the members registering their names (*i e.*, sending them to the Secretary *pro tem*) by 31st August shall be original members, after which date all candidates for membership to be ballotted for by Committee.
6. That a Provisional Committee to hold office for six months be appointed consisting of the following gentlemen: Capt. Tregay, Messrs. Jacob De Mel, E C Skrine, Rajapaksa Mudaliyar, A S Berwick, J W C De Soysa, S P Jeffery, R Fielding, J Clovis de Silva and N D P Silva. Four to form a quorum, and that Mr. Geo. Armitage be appointed Secretary *pro tem* and a member *ex officio*.
7. That the Committee shall draw up rules and regulations for the working of the Chamber of Mines and report progress to a general meeting of members to be convened about the end of September.
8. That minutes of the proceedings be sent to the Hon'ble the Colonial Secretary, Colombo, and through him to the Secretary of State for the Colonies, the Crown Agents for Ceylon, and to H.E. Sir West Ridgeway.

Rubber from Peru.—Much indiarubber is brought from Peru to Para, in Brazil, for exportation. It is traced by M Hubert of the Para Museum, to a species of Castilloa, possibly identical with the Castilloa of Central America.—*Globe*, August 4.

CEYLON FOREST DEPARTMENT.

THE CONSERVATOR'S REPORT FOR 1898.

AFTER a careful reading of Mr. Broun's report for the past year we are struck with the moderate tone of his really telling criticisms upon the Government interference with the Department that took place during his absence from the Island last year. Opportunity was then taken to obtain a report upon the state of the Department, Mr. F. C. Fisher, C.C.S., Acting Conservator, being chosen to draw it up. The conclusions of this report were, it will be remembered, at variance with the Conservator's opinions, and Mr. Broun found it necessary to reply. As a consequence of his report—the necessity of which has not been proved —Mr. Fisher was requested to submit proposals for the re-organisation of the Department. And what was the substance of these proposals? It was very much that of similar proposals made in the opening chapter of Mr. Broun's report for 1896. On the latter's return to the Colony, he was graciously included by Government in the Committee appointed to report on Mr. Fisher's proposals. But—and here must have lain a source of the utmost annoyance to the Conservator who has been so continuously badgered—partial effect had already been given to these proposals before Mr. Broun returned. Yet we find the mere fact alone chronicled—nothing more. Perhaps silence is stronger than words, and the Government will be warned in time not to try the patience of their trained officers beyond the limits of natural endurance.

The following changes, which were described less specifically in the Commissioner's report (extracts from which appeared in our issue of February 23rd), are those that have come into effect with the present year—changes which Mr. Broun has accepted and therefore, no doubt, intends to make the best of:—

(i.) Separation of the *General* from the *Provincial* Forest Administration, the former including the management of areas to be reserved as permanent forest estates under the direct control of the Conservator, while the latter dealt with forests and waste lands available for the extension of cultivation. In the Western and Sabaragamuwa Provinces and in the Galle and Matara Districts of the Southern Province, however, this separation was not recommended for the present for any forests whether reserved or not, but it may take place when the rights of the Crown in and over waste lands have been determined after survey. The inclusion of certain valuable forest blocks which have for the present been left under the charge of Government Agents has been left for discussion later.

(ii.) Division of the forests under General Administration into the following six charges or "circles" each under an Assistant Conservator, viz :—

(*a*) *Northern Circle*, including the valuable forests in the Northern Province and serving the export centres of Jaffna, Mannar, and Mullaittivu.

(*b*) *North-Eastern Circle*, comprising the forests of the Trincomalee District, West Tamankaduwa, and the eastern portion of the North-Central Province, and serving the export centre of Trincomalee.

(*c*) *Eastern Circle*, consisting of the valuable forests of the Batticaloa District (excluding the Panawa pattu), Tamankaduwa east, and the Nilgalla pattu, Province of Uva, and serving the export centres of Kalkuda bay, Batticaloa, and Arugam bay.

(*d*) *South-Eastern Circle*, composed of forests of the Panawa pattu, Eastern Province, the Hambantota District, and the southern portion of Uva, and serving the ports of Okanda and Hambantota.

(*e*) *North-Western Circle*: valuable forests of the North-Western Province and a few in the western portion of the North-Central Province, serving the port of Puttalam and the market centres of Kurunegala and Chilaw.

(*f*) *Hill Reserves*: hill forests of the Nuwara Eliya District and Haputale and in Matale north, Central Province, serving the planting districts and the town of Kandy.

(iii.) Working of the forests under the Conservator of Forests on a more systematic and concentrated plan, and of those not required for reservation by a system of licenses.

(iv.) Reduction of the number of officers and of expenditure on staff, while providing an improvement of the prospects of the superior and clerical staffs.

The effect of these changes will be, in Mr. Broun's opinion, to injure the finances of the Department for a while, because of the large area now made available for obtaining timber for sale, and the low rates at which this timber will now be sold. On the other hand, the Department will benefit by the P.W.D. being henceforth allowed to supply itself in the open market, the Forest Conservancy being thus enabled to relinquish the practice of keeping deteriorating stock on hand to wait the good pleasure of the P.W.D. With regard to the area of the circles above specified, these are the figures supplied, with the Conservator's comments thereon :—

	Square Miles.
Northern Circle	1,587·50
North-Eastern Circle	1,858·00
Eastern Circle	2,200·00
South-Eastern Circle	2,297·00
North-Western Circle	1,556·75
Hill Reserves	513·00
Total ...	10,012·25

It is however not to be understood that all this area is forest, much less *good* forest. Considerable areas will have to be excised and placed again under the control of Government Agents, and they will possibly amount to from one-half to two-thirds of the total area. On the other hand, there are certain valuable forests which have not been included within the circles which it will be desirable to place under the control of the Conservator.

A good deal of demarcation has gone on during the past year, the Central, Uva and Sabaragamuwa Provinces alone being untouched.

The enumeration of the bits of surveying done reads somewhat jaggedly, and after vainly endeavouring to grasp a solid estimate and a fairly lucid idea of the work accomplished, we come on the following paragraph as upon an oasis, and we most heartily re-echo the cry for method, *method*, METHOD, which is there very soberly expressed :—

It is necessary that all the areas placed under the Conservator be now worked on a systematic plan. The enumeration surveys and measurements of sample plots which have been hitherto made are unfortunately not sufficient for fixing a possibility, either by volume or by area, for our principal species. It is however imperative that the past disconnected way of carrying on operations here, there, and everywhere, should be changed, and I have assumed for the present that most of our important species take about forty years to grow from the second girth class (4 ft. 6

in. girth) to first class (6 ft. girth). For the present therefore, and until we can get more reliable data from sample plots, about one-fortieth of the area will be worked each year, taking only such first class trees as can be spared for exploitation. Before long I hope that a reconsideration of this system can be made. It is intended that cleanings and seed fellings should precede the principal fellings by a few years. The fuel reserves will be worked on a rotation of twenty years.

On the subject of sample plots further interesting information is supplied. The measurement of these is, we are glad to learn, becoming more universal in the different Provinces; but unfortunately several that were started have been left neglected. On them the different species of trees have not been sufficiently represented and deductions as to rate of growth have been rendered unreliable. Valuable material is expected in a few years; but, meanwhile, as Mr. Broun says, "ten years have passed during which most important data might have been got together."

The reorganisation of the superior staff has now come to pass, and effected a reduction in the number of officers—a course which is to a certain extent satisfactory to Mr. Broun, since, as he points out, it is a one which he has advocated as far back as 1891. Even with the 34 rangers, which form the executive staff—at salaries ranging from R1,500 to R360—under the new scheme, the staff, including 17 rangers, under the Conservator, it is shown, is still somewhat small, considering that some 10,000 square miles have to be administered; and this fact will scarcely be affected if more than half the total area is given back to the Provincial Administration. The Conservator very wisely remarks, however, that it is better at the outset not to overman the Department, but to add to it as fresh requirements are proved.

The review of the plantations for Artificial Reproduction shows every promise and a rebuke is duly administered for the previous disparaging remarks on them, made by Mr. Fisher, apparently without personal inspection of the plantations. This portion of the Conservator's report we shall reproduce in full. The indiscriminate issue of free grants in the little populated districts of the North-Central Province and Trincomalee is also deservedly condemned as tending to foster unthrift and a want of self-reliance. Nor is it, we may add, likely that the native estimation of the value of land in the neighbourhood of the Northern Railway likely to be increased by these doles from the Government landlord.

With regard to the financial results the surplus has fallen short of what was anticipated partly because of the value of plumbago lands leased, (the rents R20,105 not being put down as forest revenue) and partly because the value of timber on lands in the N.-W. Province (R20,000) was not credited to the Department in actual cash. The net surplus (R14,738) would, with these addditions, have attained R54,843 or more than double that of last year. In 1896 it was R9,605, but in 1897 we are at a loss for the correct figure; for in Mr. Fisher's Report for 1897, it is put down at R23,573 and in the comparative table in Mr. Broun's statement for 1897 and 1898 it is given as R27,372. This is entirely due, we notice, to the surplus for the Eastern Province being given in the former table as R15,368 and in the latter as R19,167; similarly the total Eastern Province and receipts differ in both cases. In conclusion we have the following paragraph accounting for the delay, upon which we were about to comment, in issuing the report:—

There is again delay in the submission of this report on account of the lateness in receiving the provincial reports. This is due to the precipitate hurry with which officers were transferred to new headquarters just before my return from home, the consequence being that the record, are in one place with the Government Agents and the Assistant Conservator and his clerical staff in another. The result is delay in obtaining necessary data and in submission of reports.

In view of this we do not see how any blame can attach to the Conservator himself, and further we have to thank him for a peculiarly interesting and succinct account of the Department under his charge—one which stands in the first rank of public importance to the people and colonists of Ceylon.

SCIENCE FOR AGRICULTURE.

We have often noted the backwardness of British Colonial Governments, in recognising the importance of providing scientific help for the furtherance of agriculture, as compared with Continental Governments. In the case of German and Dutch Colonies, a staff of scientists is always attached to public institutions, so that their services might be available to planters and others; and specially is this the case in Java. We need not go far back to recall the official refusal at first to enlist the services of Mr. E. E. Green for the benefit of the Island, and his subsequent appointment as Honorary Entomologist; and then the confession, or rather pretence of inability to find a cryptogamist to inquire into the cacao disease, which led to the engagement by private proprietors of Mr. Carruthers, whom the Government afterwards consented to subsidise. The lesson taught the nation in industrial and commercial matters, in which Great Britain is paying the penalty of a narrow conservatism which has enabled American and German goods to oust Br tish goods even in British Colonies, ought to be laid to heart, and applied to matters agricultural, if there is to be progression, rather than stagnation and retrogression. We refer to the subject just now, in view, of the movement to secure Mr. Carruthers' return to the Island as a Government servant, and of certain correspondence which has come under our notice between the Government of Bengal and Dr. Watt, the Reporter on Economic Products with the Government of India. Dr. Watt, in a letter bearing date the 17th May, from Calcutta, in replying to inquiries in connection with grants of R5,000 a year sanctioned by the Lieut.-Governor of Bengal, and R2,500 a year for three years by the Chief Commissioner of Assam, towards the cost of employing an expert to study and report upon the cultivation and manufacture of Tea in Assam and Cachar, writes to Sir Patrick Playfair in very explicit terms which have some ap-

plication here. He draws a distinction between the cultivation and the manufacture of Tea; and while admitting that the problems on which he had been previously consulted, touching blights and pests, are connected with cultivation, he points out that it would be vain to expect the officer proposed to be employed to deal with those problems, to be able to advise as an expert on all questions relating to Teas. Even in respect of pests and fungal blights, Entomology and Mycology are two widely different studies; and it is almost impossible that a Biologist could be an expert in both branches, though he may conduct useful investigations in both. But Dr. Watt regards it as contrary to all experience that a Biologist could be an expert chemist at the same time, and he proceeds to refer to our own proceedings in the following terms:—

Some few years ago the Association brought to India a chemist (Mr. Bamber), and he furnished a report which no doubt most of the members of the Association have read. Its practical value is, therefore, a point I need not deal with. At the present moment the Ceylon planters have engaged Mr. Bamber as chemist, but they have secured also the services of Mr. E. E. Green, an entomologist of the very highest European repute. Mr. Green is himself a tea planter of many years' experience, but has consented to become Government Entomologist mainly with the view to devote his entire energies to the investigation of the pests of the tea plant. With a chemist and entomologist at work, Ceylon may reasonably hope to make some progress, but I do not look with much favour to a scheme that would secure one officer, in the hope that he would be an expert on every scientific problem of tea planting. I should, therefore, recommend the Association to carefully consider whether they want a chemist or biologist as the first and most important consideration.

The action of the Government there having been inspired by the local Association, Dr. Watt approves of its action, subject to the foregoing qualifications; and while appreciating the desire of those engaged in the Tea Industry to discover remedies for pests and blights, to cultivate the bush to the best advantage, and to perfect the methods of manufacture, he declares that he knows "no industry of a similar magnitude where empiricism is allowed to have such limitless sway." These are strong words: but do they go beyond the truth? It is easy to blame the Government here for inaction; but it was not so long ago that our "preachings," on the need of calling science to the aid of cultivation and manufacture—to decide on the choice of manures and to study the chemical changes which the leaf underwent from the plucking to packing—were regarded as mere vapouring. And Dr. Watt justifies his language by reference to a former Report, in which he gave instances of the diametrically opposite views held by "well-informed and successful planters on almost every aspect of the industry." It is only "the immense capabilities and vast powers of endurance of the plant" which have been the safeguard of planters, as their conflicting opinions might both be wide of the mark and the profits obtained be far short of what they should be. Holding, as he does, that the limit to the blindfold trusting in Providence and to the endurance of the plant, is not very remote, he declares that there is scope, "not for one scientific expert for a few years, but for half a dozen for a life time." These are words the truth of which our Government should recognise not only in connection with the immediate demands of the Planting Community, but also in connection with the project of a Department of Agriculture, or a Board, which is under inquiry by a Commission. Dr. Watt's advice is that, if funds will not permit of the whole question being dealt with, the Association should decide whether it wants (*a*) a Biologist to inquire into pests, (*b*) an Agriculturist to inquire into cultivation, or (*c*) a Chemist to suggest improvements in manufacture. These are precisely the departments in which knowledge and help are needed here; and it behoves the Government to consider the question, not merely by the light of the immediate present but as one intimately connected with the maintenance and extension of an industry on which the progress in prosperity of the Island so largely depends.

In this connection we may call attention to the very encouraging report of the Superintendent of the Agricultural School, the bulk of which we reproduce elsewhere.

China Tea not popular in Amerca.—An interesting report of Mr. Consular-General Brenan has just been published by the Foreign Office. He says that the Ping-suey teas were the purest and best that have been brought to market for thirty years, and yet they met with a poor reception in America. This is partly attributed to the absence of colouring matter, which caused the leaf to be unattractive to the eye. Seeing that the tea is only wanted for making an infusion, and not for putting on the table in the shape of leaf, it is strange that consumers do not prefer to have the pure uncoloured leaf as it is used by the Chinese themselves. Colouring enables the tea curers to hide defects which would otherwise be exposed. The crop was 80,000 half-chests against 112,000 half-chests last eason.

Tea Planting in the United States.—Here are further particulars from the *American Grocer*, regarding a subject which we treated editorially quite recently:—The Secretary of Agriculture is following in the foot-steps of former Commissioner Le Due, in furthering tea planting in the Southern States. Secretary Wilson regards a domestic tea industry as one of the hopeful problems of the day, if, indeed, it has not been demonstrated to be a success already. From the specimens sent to the Department of Agriculture, he is induced to believe that the plant can be produced at a profit in the United States, and to this end he is prepared to use his best efforts. Fourteen thousand tea plants have been secured and sent to the South in continuation of the experiments started by General Le Duc several years ago, when the labour question was the difficult problem to solve. Since then machinery has come into use for the preparation of the leaf for market, but there still remains the question of labour for picking. In Ceylon and India, pickers receive a few cents per day and it is doubtful if tea planting in this country can be made a profitable industry until labour is as cheap as in China and other tea growing countries.

"ALL ABOUT RUBBER."*

A planter writes:—"I have been utilising all my spare time lately in studying the book you have just brought out under this title. The wealth of information you have gathered together on the subject is amazing. I had no idea there was so much literature and knowledge of the product, its cultivation, &c., &c., extant! As a present day experienced Ceylon planter, I have been through the usual mill, beginning in coffee while it was still our staple, then doing a full time at cinchona with half-holidays at cacao and cardamoms, and the last few years at tea; so it is quite on the cards that I rush into rubber yet. Should the fates ordain it thus, I shall enter on the job with a light heart, as with your book as a guide one should be able to steer clear of the *puthuarle* mistakes that were made when most of the other products were first undertaken on a large scale in Ceylon. The book fully merits its title and the re-printing in full of the recent circulars from Peradeniya, brings it quite up-to-date. The only thing I note with regret is that you have not been able to include the figures promised by E. S. G. (on page 18), presumably because the tappings for rubber, he mentions, are still in progress? As those figures will be most interesting and useful might I suggest, that when they are available you have them printed on slips and post one to each local purchaser of the book, so that it can be pasted in rendering the volume more complete."

Other planting friends have written as follows:—"The latest edition of this valuable compilation comes at a most opportune time, when the attention of enterprising planters is directed to new fields, and when it is so important that their efforts should be well and properly directed, and that they should not be misled into ventures of doubtful issue by reason of scanty acquaintance with the requirements of the cultivation, the markets, and the various methods of meeting the new wants of modern trade; the book is full of information and right up to date; with all the recent experiments made in preparation, &c. in Ceylon, and statistics and news relating to the industry, from all parts of the world. The scientific side is not lost sight of either, and the Botanical list of rubber-yielding plants is included. Mr. John Ferguson seems to have a special gift of compiling these works of reference, but this volume on rubber is not only about the *best manual* he has given us, but it is issued exactly at the *right time* and with the latest and best information available, and should be read by all proprietors and planters interested in the lowcountry and by men who look for additional sources of income and investment.

"The latest report and tests from the Peradeniya Gardens are fully given and there is not an item of intelligence up to the present time that is omitted in this most useful volume."

"I think the book will be most valuable in the hands of all growers of rubber, not in Ceylon only, but wherever rubber is cultivated by English readers. Hoping you will have a large and ready sale for the book as some recompense for the trouble and expense you have been to in bringing all up-to-date information together in so handy a volume."

* All about India Rubber and Gutta Percha—Third Edition R5, cash R4, postage 20 cents.—*Observer Office*, Colombo.

INDIAN TEA ASSOCIATION (LONDON.)

The following is from the annual report to be presented at the meeting on Tuesday, July 25th;

The General Committee have the pleasure to submit to members the following statement on the conclusion of the 19th year of its operations. On the resignation of office by General Henry Hopkinson, C.S.I., at the last annual meeting—on account of advancing years and ill-health—Sir Henry Seymour King, K.C.I.E., M.P., was unanimously elected Chairman of the Association for the year under review.

FORWARD ESTIMATES OF THE INDIAN TEA CROP.

With a view to ensure greater accuracy in estimating the volume of the coming crop, it has been arranged that the Indian Tea Association, Calcutta, should procure special estimates from managers to be submitted by the end of June, and published immediately afterwards, and that no estimate be published before that time.

CROP OF 1898.

The original estimate and actual outturn of tea from the several districts in round figures (millions of lb.) were as follows:—Assam, estimated 64, actual crop 62; Cachar and Sylhet, estimated 49, actual crop 45; Darjeeling and Terai, estimated 11, actual crop 11; Dooars, estimated 26, actual crop 26; Chittagong and Chota Nagpore, Kangra, Kumaon and Dehra Dun, estimated 4, actual crop 5; Private and Native Gardens, estimated 4, actual crop 4; estimated total, 158; actual crop total, 153. Of this crop there were shipped direct from Calcutta to places outside the United Kingdom over 18 million pounds, leaving 135 for shipment to this country.

The chief places to which the direct exports from Calcutta went were as follows:—Australasia—1898: 6¼ million lb.; 1897: 7 million lb.; 1896: 5¾ million lb.; Indian Ports—1898: 4 million lb.; North America—1898: 3 million lb.; 1897: 2¼ million lb.; 1896: 2½ million lb.; Turkey—1898; 2½ million lb., China—1898: 1 million lb.; Germany—1898: ½ million lb.; elsewhere—1898: ¾ million lb.; 1897: 6¼ million lb.; 1896: 5¾ million lb. Total—1898: 18 million lb.; 1897: 15¾ million lb.; 1896: 14 million lb.—*H. and C. Mail*, July 21.

NATAL TEA.

At the Durban Agricultural Show on July 12th, prizes were offered for tea and with regard to the single exhibit the "Natal Mercury" says:—"The tea is disappointing, because only one exhibitor has come forward—Mr. J. A. McMillan, of Barnsdale, whose teas, however, are pronounced to be of first-class quality. Mr. McMillan secures two first prizes. It is said that the conditions are in some respects rather stringent, and that this accounts for the absence of competition. This rather enhances the value of the prizes won by Mr. McMillan, as he complied with the conditions, and has the satisfaction of knowing that his tea has been very favourably commented upon by those competent to judge."

ON THE PREVENTION OF TEA PESTS AND BLIGHTS.

BY OLIVER COLLETT.

(*Read before the Ambagamuwa Planters' Association, Aug. 21st, 1899.*)

The Director of the Royal Botanic Gardens in his recently issued Circular on the subject of Tea Blights says:—"The immunity from disease that tea has enjoyed in so marked a manner for many years is now disappearing; many insect and fungus enemies, some of local origin, some introduced from Assam and elsewhere, are now attacking tea in many parts of the Island, and it behoves all interested in the cultivation to be upon the watch to recognise the signs of disease as soon as possible after they appear, and to at once attack and as far as possible eradicate the disease. The diseases are here, and all experience of cultivators in all ages and lands shows that such diseases come to stay; they cannot be completely eradicated, but they can be kept in check if taken in time."

Here is good and sound advice to which we are all, I am sure, prepared to give our best attention. At the same time many of us may not be inclined to fall in with the opinion of Mr. Willis, that the health of the tea-plant in Ceylon is now for the first time being seriously threatened by the attacks of fungus and insect-pests. On the contrary, I think, it is the experience of most of us that these pests have always been with us; and when we come to consider the fact that millions of insects and of parasitic fungi are daily brought into existence, apparently for the sole purpose of feeding upon the alimentary juices of plants, the wonder rather seems to be that plants which are kept under constantly cropping conditions—as in the case of tea—should be able, season after season, to retain their natural vigour and keep their foes at bay.

The test, of course, comes when an unusually unfavourable season occurs, and the resources of the plant are naturally tried to the utmost. If it is left, as not infrequently happens, in a weakened and impoverished condition, it becomes, according to a well-known law in nature, a ready prey to the attacks of disease. Thus, insect and fungus pests find the opportunity that they have been waiting for; and they very soon make themselves known to us—both in our tea fields and in the columns of the public press.

Now, the present season (1899) has been, up-to-date, a distinctly *abnormal* one. We had a severe drought in the early part of the year, followed by an excessive rainfall in the months of May, June and July—just the sort of season in fact, which would be likely to do harm to our tea-bushes—and the consequence has been that they have been exposed to an outbreak of disease of unusual severity with a smaller chance of warding it off than has been the case in former years.

It is, therefore, our business to consider—and that very seriously—whether, in our general system of cultivation, we are doing all that is needed to help the bushes to preserve the necessary amount of strength and vigour that shall enable them, in an unfavourable season, to combat successfully with the attacks of disease.

It is, I believe, the opinion of Indian planters that we, in Ceylon, predispose our bushes to the attacks of enemies by our system of plucking from them all the year round, and of only allowing them a rest—if rest it be—during the time that they are pruned down. Now, it is possible that there may be more truth in this than we have hitherto supposed. You are aware that all plants under cultivation must have a resting season; and it is perhaps a question whether we ought not to be satisfied with a slightly diminished yield per acre, in order to allow our bushes to have a complete rest for a month or two, at the least, between each pruning. Certain it is that resting has an enormously beneficial effect upon tea under any circumstances; and I can quite conceive that the time will come when we shall find it ultimately profitable to allow a small proportion of our acreage—say one-eighth or one-tenth—to remain unplucked (but of course meanwhile weeded and cultivated) every season.

Again, there is much to be done in the way of systematically removing all lichenous growth and moss from the stems of our bushes after every pruning. I am aware that a great many planters regard this as an altogether unnecessary operation but, there can be no doubt whatever that the removal of this growth invigorates the bushes to a great extent; and that where it is left to grow upon the branches it affords a dangerous refuge and breeding place for all manner of fungus and insect pests.

There is one more point to which I should like to refer, and that is the question of the abandonment of fields of diseased and unprofitable tea in the midst of cultivated areas. A patch of tea, once abandoned, becomes a spore-nursery for every kind of disease, and a source of considerable danger to all estates in its immediate neighbourhood. It is possible that this question, which, in my opinion, involves more serious issues than any of those just discussed, may be one which the Planters' Association may not be sufficiently powerful to cope with. If so, our only resource will be to ask Government to introduce measures which shall render compulsory the destruction of all abandoned areas of tea by fire.

In these remarks, which have been hastily drawn up to be in time for this meeting, I have confined myself to a general consideration of what, in my experience, are likely to be the best methods of protecting our tea bushes against the attacks of disease. I have not attempted to discuss the nature and treatment of fungus and insect pests. The former are treated of by Mr. Willis, in the Circular already referred to; and the latter are fully described in the little work by my friend Mr. E E Green, entitled "Insect Pest of the Tea Plant," with which most planters are already familiar.

A LESSON IN TEA.

(From the *American Grocer.*)

This is not a made-up story, but a true narration of facts. Many readers may at once recognize the parties concerned—for my part I am under a promise not to mention names.

A certain firm purchased a large quantity of tea in the foreign markets two years ago. Almost immediately after the purchase the price of tea went down and the speculation turned out to be a failure. The firm was in a quandary, as it had over $100,000 expended in the purchase, which would not then realise more than three-fourths of that amount. The dilemma was explained to a wise man, and he said he would think over the matter and report next day. When he came back in the morning he asked the firm if they would turn over one-fourth of the stock to him and he would guarantee to get full price for it. They

did so, and a large quantity of tea, which was then stored, was consigned to the wise man.

About three weeks afterwards a new brand of tea was widely advertised. It was in pound and half-pound packages, and had a pretty and distinctive name. It was advertised at 50 cents a pound, and in less than two weeks the supply was exhausted. The name of the tea and its peculiar quality was widely talked about.

Another lot was put on the market and the advertising kept up, and then a third and last lot was advertised, but in the meantime the firm had "smelt a rat" and had been let into the secret. They went out into the market and bought a whole lot more of the tea they had been "stuck" on, and in another month they had duplicated the order. Their failure turned out to be howling success, and all through the machinations of the wise men, who had conveyed the idea of giving this tea—which was of the most ordinary quality and cost but 25 cents a pound in bulk—a distinctive name and putting it on the market as a package tea, well advertised to the consumer. It cost 3 cents a pound to pack it in neat shape and about 4 cents a pound to advertise it, leaving a profit of 18 cents a pound on 400,000 pounds of tea—$72,000 profit in about nine months!

The whole scheme, be it remembered, originated in a direct loss of 25 per cent. on the first purchase, and it was only the genius of the wise man who was called into council that turned the failure into a success by the simple process of giving the goods a distinctive name, putting them up in attractive form and advertising them liberally to the public. The same tea was being sold by grocers at the time for 30 cents a pound, in loose form, but the wise man rightly conjectured that in a better and more presentable shape it would sell at a better price, provided that it was properly advertised.

The same tea is being advertised and sold today, and that is why I cannot mention its name.

But there is a great advertising moral for consideration. To take any article that is a failure at its own price, make no change in the goods intrinsically, but merely in the outside appearance; advertise it judiciously and create a steady demand for it at twice the price in the short space of a few months, ought to be the best kind of an answer to the cranks who have the audacity to tell us, in these enlightened days, advertising does not pay."—*John C. Graham in Printers' Ink.*

The above is very suggestive of the power of advertising to create demand; that a convenient package is a great factor in securing public favor; that cutting prices is not essentially a factor in winning trade; that it is easy to humbug some of the people at some time; that grocers are forced to sacrifice a liberal profit on bulk goods for small profit on proprietary brands of inferior quality.

We also note that this tea episode is denominated "a scheme" and that its author deliberately states that the tea sold at fifty cents per pound in packets, was the same tea that was sold in bulk at the same time, for thirty cents per pound.

The moral is plain that consumers are willing to pay more for goods put up in attractive shape than for the same articles in bulk at much lower price. This fact is clearly demonstrated by the preference given to crackers, put up in neat packages, over the same sort sold at less price in bulk; to the sale of cereals in packages at double the cost to the consumer that the same can be bought for in bulk. It is evident that package goods are most in favor with consumers, and that they are quick to pay an extra price for the more convenient service.

Is not the above narrative of "facts" also illustrative of how the consumer pays for advertising and makes it possible and profitable for plucky fellows to avoid a failure and make a "howling success?" There is a sermon with many valuable lessons in Mr. Graham's story which grocers should take to heart.

WANARAJAH TEA CO., LD.

Report of the Directors.

ACREAGE.

Tea in bearing acres		956	
planted in 1895		72	
1896		12	
1898		20	
			1,060 in Tea.
Timber Trees ..	...	...	20
Forest	..	..	27
Gross not available	...	..	27
		Total	1,134 acres.

The Directors have the pleasure of presenting to the Shareholders the Report, Balance Sheet and Profit and Loss Account for the year ending 30th June, 1899.

The crop harvested amounted to 336,692 lb., against a Revised Estimate necessitated by abnormal weather of 324,000 lb., of which quantity 228,420 lb. have been sold in London to date at an average of 54·98 cents, and it is hoped that the balance of the crop will be equally well sold, but in the present condition of affairs in London with the dispute between the dealers and importers still in an acute stage, it is difficult to speak with any degree of certainty upon this point. The high quality and excellence of manufacture of Wanarajah teas have been fully maintained during the year, notwithstanding a severe drought in February-March and an enormously heavy flush of tea in April-May, which tested the capacity of the Factory to the uttermost.

Manure.—The area completed amounts to 182 acres and the cost R5,631·01, but of this amount R2,219·32 for artificial manures for 55 acres has not been charged.

The amount at the credit of the Profit and Loss Account is R74,737·34, including a balance carried forward at the commencement of the year of R21,678·40.

After payment of the Interim Dividend at 4 per cent there remains a sum of R58,861·34 available, which the Directors recommend be applied as follows:—

To a final Dividend of 9 per cent making a total of 13 per cent per annum		R34,020·00
To be carried forward	...	R24,841·34
		R58,861·34

The estimated Crop for the season 1899-1900 is 370,000 lb. of made Tea, at an expenditure of R126,171 including expenditure on young clearings not yet in bearing.

The Visiting Agent's Reports can be seen by Shareholders at the Company's Office.

We regret to say that during the year our late Chairman, Mr. Thos. Mackie, died, and Mr. Dunbar was elected in his place. Mr. Dunbar is now in England and Mr. Wernham has been chosen to succeed him. Mr. Creasy became an additional Director during the year.

Messrs. Cantlay and Wernham retire from the Board by rotation, but are eligible for re-election.

The Shareholders are invited to elect an Auditor for the ensuing year, and Mr. Guthrie again offers his services.

The Passion Fruit.—We direct special attention to a well-informed article on page 251, dealing with this growth. It is indeed curious that the passion creeper should be allowed to run wild, instead of being cultivated for the excellent flavour of its fruit. The taste of the latter is, however, an acquired one; and its votaries are not over numerous. Hence, we think, arises the inattention the passion fruit has received.

HAPUGAHALANDE TEA COMPANY.

ANNUAL REPORT.

Acreage :—

Tea in full bearing ..	235 acres	
New clearings ...	150 „	
Jungle &c. ..	369 „	1r 3p
Total estate ...	754a	1r 3p

Your Directors beg to submit their annual report and accounts for the twelve months ending 30th June, 1899, which they trust may be considered satisfactory.

The quantity of tea manufactured for the season (including estate and bought leaf, but exclusive of that manufactured for other estates) was 138'750lb.

Estimating the unsold tea at a safe valuation, and excluding a surplus of R290·91 on previous crop, the nett amount realised for this product totals R47,960·02, being an average of 34·57 cents per lb.

After setting aside R2,641·28 for depreciation on buildings and machinery, the sum available for distribution (including R123·61 brought forward from last account) is R23,134·41. From this sum the directors recommend payment of a dividend of 12 per cent, absorbing R20,400 and leaving R2,734·41 to be carried forward.

In terms of the Articles of Association Mr. Keith Rollo retires from the office of director, but being eligible, offers himself for re-election.

The appointment of an auditor for the current season will rest with the meeting.

PRODUCE AND PLANTING.

The Outlook for China Teas.—Consular reports from the Celestical Empire are not encouraging as regards tea. A report from Kiukiang remarks : Tea shows (for 1898) an improvement as against previous year's statistics, but the total falls short of what it used to be in former years, and British merchants are not sanguine as to the future. Ningchows until of late years were the favourite Russian teas. Recently, however, Keemuns seem to compete with them for Russian favour especially in the finest grades, and this, combined with low exchange, has consequently driven prices up. This is probably caused by the Russian taste following the British. and preferring stronger liquory teas, and is leading them to take more and more British-grown tea each year. It looks as if Russian requirements would prevent any further falling-off in production. Export to the United Kingdom, however is steadily shrinking, and threatens to become nominal. The taste of the British public in the matter of tea has undergone a marked change of late years, says the Consul who is undoubtedly right, and consumers have no appreciation of light flavoury teas such as China produces. The introduction of machinery might revive the trade with England and the colonies, but this seems as far off as ever, the Chinese being quite satisfied with the prices paid for their tea prepared according to their own methods.

China Green Tea.—After all that has been said against the colouring of green tea leaf, the Chinese growers and manufacturers do not find much encouragement in abandoning the use of colouring matter for the United States market. The British Consul-General at Shanghai, Mr. Brennan, tells us that during 1898 the green tea market was subject to unusual depression in consequence of a duty of 10 cents being imposed in the United States ; stocks already in the States were exempted from this duty, and as large stocks of old tea were held, duty-paid teas had no chance till the existing supplies were exhausted. The Pingsuey teas were the purest and best that have been brought to market for thirty years, and yet they met with a poor reception in America. This is partly attributed to the absence of colouring matter, which caused the leaf to be unattractive to the eye. "Seeing that the tea is only wanted for making an infusion, and not for putting on the table in the shape of leaf, it is strange that consumers do not prefer to have the pure uncoloured leaf as it is used by the Chinese themselves. Colouring enables the tea-curers to hide defects which would otherwise be exposed." The crop was 80,000 half-chests, against 112,000 half-chests last season. In country teas (Tienkais Moynnes, and Fychows) transactions were not profitable. Most of these teas lost in America, and barely paid first cost in England. The crop is reckoned at 177,000 half-chests, against 192,000 half-chests in the previous season. In Hysons the competition to secure the choicest teas for the Central Asian markets, via Batoum, forced prices up to an unprecedentedly high point, 60 to 65 taels being paid for teas which usually fetch from 35 to 45 taels. The Central Asian markets promise to become important consumers of all kinds of green teas. Much dissatisfaction was caused by the arbitrary rejection on the part of the United States Customs inspectors of teas which were "perfectly pure and unadulterated, but which failed to come up to the requirements of the Government standard." The season opened on May 18, but business in black tea was restricted till the second week in July, when a fair business was done in second-crop Keemuns ; and these have been the only varieties that have given satisfaction. In common teas business was very dragging throughout the year, although prices were 15 per cent over those of last year. In volume it was the smallest for the last twenty years, the settlements being 37,000 half-chests, against 68,000 half chests the previous season. —*H. and C. Mail*, July 28.

CLUNES ESTATE CO. OF CEYLON, LD.

ANNUAL REPORT.

Clunes Division.			Eracht Division.		
Supt.—T S Luce, Esq.			*Supt.*—C F S Shaw, Esq.		
		Acres.			Acres.
Tea in bearing	..	340	Tea in bearing	..	365
New clearings	...	50	Tea planted 1896-7		50
Forest ..	..	174	„ 1898		92
			Forest & Waste Land		246
Total	..	564	Total	..	753

Grand total 1,317 acres.

The Directors now submit to the Shareholders the Accounts and Balance Sheet of the Company for the year ending 30th June, 1899.

The crops secured amounted to 395,486 lb tea, as against 395.535 lb last year, being 4,514 short of the estimate. The nett average sale price was 34·29 cents per lb, the cost laid down in Colombo being 20·29 cents per lb, both of which figures the Directors consider may be deemed satisfactory.

After providing for Depreciation of Buildings and Machinery, the result of the year's working shews a nett profit of R38,142·30 equal to 11½ per cent on the paid up Capital of the Company. To this must be added a balance of R4,413·87 brought forward from last year making the total at credit of Profit and Loss Account R42,556·17.

Out of the above profit the Directors recommend that R12,500 be transferred to an Extension Fund Account to provide for the capital already spent in opening clearings, and extending Factory accommodation, which has hitherto been financed by loans.

They further recommend that out of the balance then available a dividend be paid for the year of 8 per cent on the paid up capital which will absorb R26,560, leaving R3,496·17 to be carried forward to next year's account.

The estimate for the 1899-1900 season is 430,000 lb tea against an expenditure on Working Account of R92,311.

The estimated expenditure on capital account amounts to R5,596, mainly for upkeep of young clearings, to provide a new sifter for Clunes and improvements to the cart road to facilitate transport from this estate.

During the year Mr. S. L. Harris resigned as he was leaving the island and Mr. W. J. Smith was appointed to fill the vacancy on the Board.

In terms of the Articles of Association Mr. V. A. Julius now retires from the Board but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the Meeting.

COOLGARDIE EXHIBITION AWARDS.

TEA, COFFEE, COCOA, ETC.

Blended teas, pure Ceylon, Ch. and A. Bohringer, extra special 1st; Lethenty Tea Estates Ass., Ltd., special 1st; W. Paterson and Co., Frementle, Diamond Jubilee brand 2nd. Blended Indian and Ceylon—Amgoorie, Fowler and Co., 1st and 2nd. Blendid China and Indian—Viking brand, G. Wood, Son and Co. Frementle, 1st. Low Grown—Nahalma Estate and Eila Estate, 1st each. Green Teas—Hyson, Brunswick Estate, Ceylon, special. Highgrown Teas—Brookeside Estate, Talawakelle Estate, Hornsey Estate, Dotala Estate, Ormidale Estate, Sutton Estate, Oliphant Estate, Diyagama Estate, Excelsior Estate, Concordia Estate, Holmwood Estate, 1st each; Carolina Estate, Minna Estate, Fairlawn Estate, Alnwick Estate, Brunswick Estate, Dambatenne Estate, 2nd each. Pure Ceylon Teas—Fancy teas, golden tip, Lipton's Dambatenne Estate, Ceylon special. Coffees.

Ground Coffees—Amgoorie, Fowler and Co., 1st and 2nd; G. Wood, Son, and Co., 3rd.

Essence of Coffce—Symington, 1st. Coffee, Raw, Arabian—Lipton's Dambatenne Estate, 1st.

Cocoa.—Raw Cocoa—J. H. Parber, The Grove, Ukuwela, Ceylon, 1st; Lipton, Karandgalla Estate, Ceylon, 2nd.

Cocoa Prepared.—Taylor Brothers, London 1st, Fry, London, 2nd; Taylor Brothers, London, 3rd;

Desiccated Coconut.—Orient Company, Limited; Colombo, Ceylon, 1st; J. W. C. De Soysa, Colombo, 2nd.

Cinnamon Quills.—Orient Company, Limited, Colombo, Ceylon, 1st; J. W. C. De Soysa, Colombo, 2nd.

Cardamoms (Mysore Variety.)—Galentenne Estate, Ceylon, 1st.

Cinchona Bark.—Ch. and A. Bohringer, Colombo.

Annatto Paste—Bixa brand, A. Van Starrex, Crystal Hill Estate.

Coir yarn, Clarke, Spence and Co., Colombo, 1st and special; Orient Company, 2nd. Coir bristle fibre, Orient Company, 1st. Palmyra fibre, Orient Company, 1st. Kitool fibre, Orient Company, 1st. Mattrass fibre, in ballots, Orient Company, 1st.

Display of photographic work, A. W. A. Plâté and Co., special 1st; Colombo Apothecaries' Co. 2nd.—*Perth Morning Herald.*

THE COFFEE CROP IN COORG.

A forecast of the coffee crop in Coorg for 1899 has been received from the local Administration, and the figures are appended, together with those of the estimate of 1898, for comparison:—

	1898. Tons.	1899. Tons.
Estimated yield (2 cwt. an acre for Europeans in 1898 and 1½ cwt. in 1899)	2,730	2,089
Estimated yield (½ cwt. an acre for natives in 1898 and ¼ cwt. in 1899)	1,470	683
Total	4,200	2,772

Estimated average yield per acre of ordinarily well cultivated coffee in full bearing	3 cwt.	2 cwt.
Export of coffee taken from the toll gate returns ...	2,462 tons	4,134 tons
Average annual export of coffee in the ten preceding years	3,189 tons	3,326 tons

Taking the average annual crop at about 5,200 tons, the forecast of 2,772 tons for the coming season represents 53·3 per cent, against 79·2 per cent in 1898.

THE PASSION FRUIT.

ITS VALUE FOR LOCAL USE AND FOR EXPORTATION.

The lowcountry of Ceylon generally fares better in the matter of fruits than upcountry estates do, the former claiming such delicious fruits as mangosteens, mangoes, durians, and pineapples, all of which are now more or less in season While fruits of temperate countries, such as apples, pears, peaches, &c,, have refused to thrive to any extent at elevations of 4,000 feet to 6,000 feet, the Passion-fruit not only thrives exceedingly well there, but has become practically naturalised, being apparently as much at home as in its native country, Brazil. No other exotic fruit—and the Upcountry native fruits need hardly be taken into account—thrives here with such luxuriance as this, and probably also no other fruit would better repay systematic cultivation on upcountry estates. Indeed, it is but little cultivation that is required, judging by the way the Passion-fruit, having escaped from gardens and estates, grows wild in ravines and by the sides of streams at fairly high elevations—creeping among tall-growing grasses or climbing over shrubby trees, with its dark-purple tempting egg-shaped fruits bringing moisture to the teeth of those passers-by who know its delicacy.

The plant, however, is hardly, if at all, productive at elevations under 3,000 feet, but it is surprising that its fruit is not seen in larger quantities in the lowcountry markets. It only requires to be appreciated, and few who taste it but will not pronounce it delicious. Besides being an excellent fruit for local consumption, being palatable and most refreshing in itself and makes a delicious Jam, it is also of commercial importance. In Australia it is cultivated, and fairly successful trial shipments of it have recently been made from there to London, with a view of establishing a new industry. Notwithstanding the wrinkled appearance of the fruit on arrival in London owing doubtless to the long voyage, some were sold for as high as one shilling per dozen. An impetus is thus given, it appears, to its cultivation in Australia, and further shipments thence are promised, it being hoped that the heavenly-fruit (as the Passion-fruit there is sometimes called) may become as important an article in the export fruit trade as the Australian oranges now are. Our Australian cousins are thus aware of the wisdom of not having all their eggs in one basket, though as a matter of fact they produce already in their various latitudes almost every product it is possible to mention, from gooseberries and strawberries to grapes and coconuts; also cacao, coffee, &c.

At the higher elevations in Ceylon the conditions of climate and soil are obviously most congenial to the Passion-fruit, so that here its cultivation

should be easier and its crops less precarious than would be the case in countries where less favourable conditions obtain. Ceylon is only about half the distance from London that Australia is, so that the fruit from here could be landed in London, by means of steamer cold storage, in a comparatively fresh condition. Labour here is also relatively cheap. There would thus appear to be favourable prospects of the Passion-fruit becoming an important article of export in the island. Upcountry planters have frequently remarked on the enviable and neglected advantages of the lowcountry for producing the choicest fruits, both for export and for local consumption, but now that they have the monopoly themselves of so fine a fruit as the Passion-fruit, it is to be hoped they will not long show the same vein of apathy as their lowcountry brethren.

Those who are not acquainted with this plant may be interested to know that it is a climber, belonging to the same genus as the Granadilla, which has a much larger but inferior fruit and thrives only in the lowcountry. The former has also very ornamental foliage, and makes a handsome and quick-growing screen over fences, palings, &c.

The fruit, when obtainable, is often recommended as a special delicacy to invalids and convalescents, and is said to be also used in medicine. A most palatable way of taking it as a dessert is, to empty out a few of the fruits into a tumbler, adding a pinch of carbonate of soda, also some sugar or sherry, according to taste (although some prefer eating the contents as they are from the shell); then stir it up briskly. It may also be made into a delicious jam, in this case the shell and all being used.

The name *Passion-fruit* is a derivation of "Passion-flower" (the flower of the same plant), which is so named on account of the supposed resemblance of its component parts to the Crucifixion, the various parts representing the "crown of thorns," the ten Apostles and Peter and Judas, the "scourge," &c. The fruit was formerly called Sweet-cup, which is a more appropriate and a better name.

UNITED PLANTERS' ASSOCIATION OF SOUTHERN INDIA.

Bangalore, August 14th.—A conference of the United Planters' Association of Southern India assembled here to-day in the Cubbon Rooms, the delegates present being:—Central Travancore, Mr G Acworth; Coorg, Messrs W H Sprott, A Lambert Murray, Aynsley; Kanan Deven, H Knight; Nelliampathies, Mr J Ahott; Nilgiris, Messrs Hodgson and Edmiston; North Mysore, Messrs Scott, Skirving, and Parsons; South Mysore, Messrs Grahame-Anderson, Horne, Crawford, Park, and Playfair; Shevaroys, Messrs Lechler, Messrs Gompertz: Wynaad, Mr Kockin.

Committee work occupied from 10 o'clock till 1. At 2 the Agenda was taken up, the Secretary's annual report and Statement of accounts being duly passed.

THE CHAIRMAN'S ADDRESS.

The Chairman (Mr. George Romilly) delivered his address. He said:—The Secretary has told you in his Report, clearly and concisely, about all the work that the Association has carried out during the past year, but naturally does not touch on those subjects in which, although they affect our interests, we have not been actively engaged. I will in consequence confine my opening remarks to these matters and in the forefront stands out the great question of exchange.

THE CURRENCY QUESTION.

A strong and impartial Committee has given its verdict in favour of an attempt at a gold currency and a 1s. 4d. rupee, and this notwithstanding that our plea for re-opened Mints was backed up not only by all other *bona fide* producers, but also by the leading exporting and importing merchants, and a vast amount of evidence was given in favour of this view. It seems to have been a fight between conflicting interests, the trade and people of the country on one side and the Government and their supporters on the other. The evidence of the experts was pretty equally divided. Unfortunately for us, Government has won, and we must accept the verdict. I don't want to dispute it, but I want to call attention to one or two points that seem to me worthy of study. The whole trend of the evidence, from Lord Northbrook on the Government side to the most ardent of our own supporters, seemed to be that the prosperity of the country depended on its exports, and that nothing must be done in the way of export duty to check exports. This seems to be a generally received axiom and the logical conclusion would be that some recommendations would be made, whereby exports might be stimulated. But instead, they are left to do the best they can for themselves under a crushing, but indirect tax. Another argument, which seems to me anomalous, is that export must be encouraged but only moderately, for if there is an excess of encouragement, overproduction ensues. Now I will give you an illustration of these two theories in one of our own trades. Our coffee has been competing with the produce of a country where production has been stimulated by abnormally low exchange and where, in consequence, over-production has ensued—I speak of course of Brazil. Now, who in this case are the real sufferers? Profits in this country among coffee planters have, in recent years with high exchange ruling, been small and now, except in especial cases, are none-existent—in fact many of us will have to face a loss in the coming year. Things will right themselves, no doubt, but in the interval the unfortunate Indian planter has but little saved wherewith to tide over the bad days. Against this take the case of the Brazilan. Even supposing that he can no longer harvest and ship at a profit, let alone his cultivation expenses, he has been steadily making four years past abnormal profits owing to a falling exchange, and if he has been a sensible man and foreseen the undoubted fall in prices that must follow on over production, he has saved his profit and now has capital to turn into other channels. If this logic is right, poor India, you will admit, is the greater suffer. I don't for one instant deny that unnatural profits, owing to a falling exchange or indeed owing to any other cause, will bring capital rushing into the enterprise and lead to eventual over-production, but in the meantime the producer is laying up for himself the wherewithal to face the catastrophe, and profits and capital in the country are accumulating. Another argument that has been brought up before the Committee is that a fixed exchange will attract capital, and I suppose from their recommendations that they have accepted this as correct. It may be so, but I cannot myself understand why the mere fact of being able to withdraw your capital at a fixed exchange should attract it for long investment when profits have been reduced to a minimum. I have always regretted that native public opinion was not more forcibly expressed over this currency question in India, as it was in Ceylon.

THE FIGHT IN THE TEA TRADE.

First as regards the fight in the Tea trade that has recently been going on. We were not consulted by the Indian Tea Association, as of course our interests in the Tea trade are too small to influence the position, so I do not know how negotiations were carried on before the deadlock, but judging from what one can read in the papers it does not seem to me to have been good generalship. Of course our sympathies must be with the Indian Tea Association in their demand, as doubtless the distributors and grocers can very much better afford to loss the 1 lb. draft than the unfortunate producers can; but yet, if that was all that was

in dispute, it seems to me a pity that the compromise now effected was not arrived at by a little more negotiation, instead of plunging into so bitter a contest with our best customers.

COFFEE PRICES.

The fall in coffee prices during the past year has been, I think, quite unprecedented, aud I fear that many a one among us, who at this time last year counted on a good profit, has bearly paid his expenses The extraordinary variation in prices, too, is somthing new to us and shows, I think how little can be done on the lines suggested by Mr. G. Anderson in his speech last year on the classification of coffees. The fact is that when a market is glutted with a produce, the buyers get fanciful, and fashion rules the price. In former years, and even until quite recently, the demand was for peaberry and colour coffees, but this year it seems to have been entirely for size, and coffees of the same mark have varied quite £40 a ton between the prices paid for their A and C sizes. However, any one who has read " Planter's" cogently reasoned letters to the *Madras Mail* will agree with him that the crisis has been reached and that we shall very shortly begin to recover.

CINCHONA.

The same improvement in prospects may also be predicted, I think, for the small band of cinchona planters. As you are doubtless aware, Mr. Hodgson, to whom our thanks are due, was intstrumental in getting the Madras Government to sent their director of cinchona gardens, Mr. Standen, to Java to report on the cinchona trade of the island. Mr. Standen has now come back full of valuable information which you will doubtless find in his Report. It seems to me that the ball is now at the foot of the Java planters. If, only they will combine now and restrict their output instead of rushing it forward, as they have been doing during the last 12 months, they can rule the price in the European markets. An eventual rise is a cetainly and the longer it is deferred by these abnormal harvest, the greater must be the re-action.

ELECTION OF OFFICE-BEARERS.

The meeting then proceeded to elect office-bearers for the ensuing year.

Mr. Sprott was unanimously elected Chairman.

Bangalore, 15th Aug.—The delegates met to-day at 11 A.M. when Dr. Lehmann, Agricultural, Chemist to the Mysore Government, and Mr. J. Cameron, the Mysore Government Botanist, were present by invitation. The sitting was accordingly devoted to discussing agricultural questions. Proceedings commenced by a number of subjects being added to the Agenda paper, after which the Chairman welcomed Dr. Lehmann :—

Fertilisers.

The Chairman asked Dr. Lehmann to address the meeting in connection with his experiences in reregard to coffee.

Dr. Lehmann said that he had no experience in regard to coffee except the little he had acquired during his tours. If the meeting, however, wished him to say anything, he would prefer to speak on the subject of fertilisers.

The meeting having notified its willingness to hear what Dr. Lehmann had to say on this most important subject, he said :——I have first of all to thank you most cordially and sincerely for your kind invitation asking me to be present at this meeting to-day. I am but a novice among you, as I have had but little experience in coffee, but I shall try to study the subject as much as I possibly can I do not want to lay any remarks before you that are not based on experience or experimen', and I do not want to give any assurance or opinion that is not based on knowledge. I hope therefore you will excuse me if I do not touch upon coffee questions, such as leaf disease black rot, &c. because although I have seen something of them, I have formed vague ideas as to how we are to set about discovering a remedy, and I have as yet been unable to try them, and before I have tried them, I should not like to say anything on the subject. I have not been long enough in the country to establish a library or a laboratory, and without these a chemist is almost as much at sea as a captain of an ocean vessel is without his compass and chart. You will understand how diffident I am in addressing you just now on the subject. The climate of Germany is totally different from that of this place and the crops too are very different, and I require time to study the subject carefully before pronouncing an opinion. A subject, however, that will interest you very much is that of soil analysis. It has almost been looked upon as a panacea for all ills that crops are heir to unfortunately I cannot quite agree with that. Soil analysis is very valuable, indeed it is absolutely necessary for making experiments, but it won't tell you everything. Soil analysis is not advanced enough for us to tell you what constituents of the soil are really directly available by the plant Chemists are striving to attain that end, but they have not attained it yet. There are a large number of experiments being tried, and each chemist may think that he has overcome the methods that can be employed but unfortunately all other chemists think the same. The great difficulty in studying the soil at all depends on the mechanical conditions taking place in it as well as its chemical constituents. Mechanical conditions have a great deal to do with it, but some of the matter is such that we can't easily ascertain its physical attributes—as for instance the distribution of the plant and the fineness of the soil. The fineness with which the plant food is distributed is an essential factor as I shall point out when I am talking of fertilisers. Then another matter which affects the growth of a plant is the nature of the plant itself. All plants have not the same ability to absorb plant food. Some plants may be peculiarly adapted to particular forms of plant food. The Leguminosæ always appear to be absorbing potash, although they contain a large amount of nitrogen ; still virtually what they require is more potash than nitrogen. In the same way with the Grammaciæ; they contain but little nitrogen, and yet they are peculiarly benefited by a nitrogen fertiliser. What is the particular fertiliser that is beneficial to coffee. What particular plant food coffee has a tendency to absorb from the soil is a question that will have to be solved and presents very considerable difficulty. Again, climate affects the productiveness of the soil to a large extent. The climate here is different to that of countries in which agricultural chemistry has made the most rapid advances and in which it has been reduced more to a science than it has elsewhere, so we cant apply what has been discovered there directly to our conditions here. So we are placed in peculiarly trying circumstances. We are beginning afresh to find out what can be used. What has been used is a guide, but it is not an infallible guide, and we must go carefully and cautiously. In regard to fertilisers there is some peculiar idea—some want of accuracy if I may say so—in regard to the relative values of soluble and insoluble fertilisers. As regards the value of superphosphates and fine ground bones, I may say that the chief value of superphosphates over ground bones is that superphosphates is soluble and percolates through the soil with the rain and soil water. The advantage of a soluble fertiliser is not that the plant can absorb it in a soluble form but that in that form it spreads and mixes more intimately with the soil and the plants roots can get at it better. I might illustrate this by, an example. If we take a piece of sugar candy and put it in water it dissolves very much more slowly. If however, we grind the sugar candy to a powder and put into water, it will dissolve very much more quickly. The same arguments hold good with regard to soluble manures, the rain and soil water dissolve them more rapidly and mix them more intimately with the soil. I wish to bring this point before you in a practical way in regard to the fertilising of your fields. I have seen in my tours in some instances, say, basic slag used. A little brow-pit is made near the coffee and

the fertilisers dumped in an covered up. Now for all practical purposes that is like what the natives of this country do with their gold, they bury it instead of putting it into a Bank. The plant may make use of that fertiliser but only in a long course of time. But if, on the other hand it is spread finely over the surface broadcast and then dug into the earth, the plant would be in a better position to get at it than if it was covered and hoarded up. Of course there is no rule without an exception. There may be steep lands on which you are using a comparatively easily soluble manure where it might be necessary to make a browpit and bury the fertiliser, but whenever it can be done, by all means always broadcast your fertiliser ; then when you dig it in the plants get at it more easily than when it is heaped together in a pit. A matter which also is of great interest to you is the use of saltpetre. Saltpetre is a fertiliser which is beneficial no doubt, and you are fortunately located in being able to get it comparatively cheaply; hut great care should be taken in its application. You should not apply it just before heavy rain or in the rainy season. Saltpetre, as you know, contains two of the three most important constituents of plant food, nitrogen and potash. Nitrogen in the form of nitrate washes into the soil readily, and if there is vigorous vegetation going on these nitrate will be absorbed by the plant and it is this nitrate which gives the flush of wood with the large deep green leaf. I am aware that my remarks are rather rambling, but before sitting down I would like to refer to the action of lime. Lime in the soil has a two-fold action. It serves the purpose first of a plant food. and secondly it aids in decomposition, not exactly in a chemical way but by combination with certain bacteria in the soil. Lime in the soil is almost absolutely necessary, as it helps very much in the process of uitrefaction—the nitrefaction of the comparatively inert nitrogen in organic matter in the humus into nitric acid which is absorbed by the plant If heavy rain comes, it has a tendency to wash the lime out of the soil ; but it always remains in the soil provided you have a sufficient amount of moisture and a sufficient amount of heat, of which there can be no doubt in this country. (Cheers).

The Chairman said:—It only remains for me to thank Dr. Lehmann very much for the most interesting little lecture he has given us. I am sure it has given us a great deal of information and is the precursor of a great many more. The Mysore Province is bound to benefit very much hy his residence in it.

Mr. Scot Skirving proposed and Mr. Hodgson seconded "That the U. P. A. S. I. send a cordial vote of thanks to the Mysore Government for appointing an Agricultural Chemist of such ability as Dr. Lehmann and thereby rendering a great service to the planting community of South India."

The Resolution was carried with acclamation.

Dr. Lehmann then made some further remarks on the proper method of condncting experiments with fertilisers and answered several questions put him by the Chairman and delegates.

LEAF DISEASE, ETC.

Mr. J. Cameron, the Mysore Government Botanist made the following remark :—This is the third, occasion on which I have been honoured in being invited as a visitor to this meeting. Needless to say, I am proud of the honour for which I thank you very much. I have embodied my view on coffee planting so recently in the form of a Report that there is a very little more to be said to-day. There are one or two things, however, which I omitted to put fully before you in the Report and for which I have been called to book more or less severely. One of these is that I took no notice whatever of the ripening and colouring of the berry, and also the colouring of the bean, which I understand is an important matter. I have repeatedly, during the last season's harvesting, seen that a great deal of green coffee has found its way into the market or which low prices were paid. Now, what was the reaaon for this green coffeo being so abundant? It might be one of various reasons. It might be due to being plantod on high levels and a very wet season late in the year; it might be overcrowding or overshading and one or two other causes. Now, gentlemen there are things I would like you to take up practically. See if you cannot ripen your coffee more fully by given it a lighter shade. Of course you can't alter the rainfall or the season but by giving a lighter shade in the colder parts of country where the coffee is not likely to ripen well, you will he helping yourselves. In the same way you can help by draining the ground properly. Probably it is due to a want of drainage that you have some bushes which do not fully ripen. This question has to do not only with the ripening of the bean itself but also with ripening of the wood. There is a time of the year when yon like to have your bushes more fully exposed than at any other time, and the wood at that time may he partially ripened or it may he fully ripened. It is important that it should be fully ripened if you wish to have not only a full crop but also ripened fruit which produces good prices in the market—fruit with a high colour and well formed. I will now mention another thing which I don't think I touched one sufficiently in the Report, namely, what practical steps should be taken in the matter of leaf disease. In travelling through Coorg last November, I fonnd the bushes were healthy looking and that they had an abundance of young healthy leaves and also an abundance of old leaves underneath piled one over the other and in some parts these were diseased and in others were showing signs of disease. Now I believe the old and partially decayed leaves which formed underneath in layers were carefully removed and burnt and the ground swept and the debris burnt, you would do much to suppress the disease. To enable you to do this thoroughly in a District like Coorg, you should have burning grounds, open spaces here and there in the marshes, where the leaves could be collected and burnt. If this could not be done, the next best thing to do is to collect the leaves in convenient sized pits and cover the whole thing over with caustic lime. If this was done it would prevent the spores of the disease being carried over the whole of your estate of your neighbour's. I don't think it would hurt the shrub to remove half the leaves, as it produces at the time new leaves very quickly. I don't think I have any more to say to-day, but before sitting down I would thank Mr. Graham Anderson for the kind way in which he has spoken about my report. I may tell you that I spent an enjoyable and instructive time in Coorg and should you wish me to visit any other District hereafter, I shall be glad to do so with the, permission of my Government (Cheers).

Mr. Sprott moved a hearty vote of thanks to Mr. Camerton for his interesting and instructive Report on his tour in Coorg and also for the instrnctive remarks he had just made.

The vote was carried with acclamation.

Mr. Cameron then gave a short account of some sncccessful cross fertilisation experiments he had succeeded in making: and dwelt upon the importance of hybridisation, quoting from the remarks of the President at a Horticultnral Conference which was recently in England.

Copra in Tonga Islands.—News from this islands dated July 4th says:—Copra is steadily coming in, and the statistics of this year—if the Government sees fit in its wisdom to compile any—will show a more satisfactory state of affairs than those of the last few years. The price is somwhat easier, the current quotation being about £10 at steamer's side ; in Vavau it rules somewhat higher. Heavy and continuous rain has interfered much with the northern island, but the crop is excellent. Very favourable reports, too, come from the Niuas. Some 400 tons go to Messrs. Lever Brothers by steamer from the Tongan group. Shippers are still complaining of the unsatisfactory returns from fruit consignments, but they go on shipping.

PLANTING IN PERAK.

(From the Perak Administration Report for 1898.)

Liberian Coffee.—Continued and continuing low prices make this cultivation at present unprofitable. The natives are practically abandoning their small gardens, but European and Chinese planters are exhibiting the pluck of the old Ceylon planters and are planting up with Para and other rubbers, cocounts and other products, and waiting for better times for coffee. Probably greater care and more experience in curing and packing Native States coffee will eventually secure a better price for in the home markets.

Para Rubber.—This product is being cultivated to a large extent. From the Government gardens 32,000 seeds and 59,718 seedings were sold, and the Forest Department has extensive nurseries. The rubber flourishes in Perak, and the samples from the Government gardens obtained good quotations in London. His Highness the Sultan has applied for a reserve of 15,000 acres for Gutta Rambong, and proposes to form a company amongst native gentlemen.

Sugar has received a considerable impetus climate, labour supply and silver-currency favouring it. Inclusive of reserves, 11,000 acres of land for sugar cultivation, in the Lower Perak District, were granted on special to the Penang Sugar Estates Company, which Company has also acquired a portion of the Gula Company's sugar estate in the Matang District and is buying up padi land, for sugar culture, from native owners. This Company is said to meditate inaugurating the central factory system, which had proved successful in the West Indies. Chinese planters have also acquired extensive areas for this cultivation in Matang, and are also buying up padi land from the natives.

Coconuts.—This product has continued to be in favour with planters, and the establishment of a large mill and factory in Singapore will encourage the industry. During the year 3,280 acres of land for coconuts were alienated to a British concessionaire in the Lower Perak District, and Chinese and natives are extending their plantations, especially in Matang. The coconut palm flourishes luxuriantly in Perak, and is currently reported to be more prolific than in Ceylon. There has for long been a controversy as to whether sugar-cane can be grown in the neighbourhood of coconut palms without a danger of breeding the beetles which are so inimical to the latter. The Curator has recently published an exhaustive treatise on the subject, which goes to shew the innocence of the cane.

Pepper.—High prices have encouraged natives and Chinese to re-open and extend their plantations. In Matang particularly there has been activity among the Achinese pepper planters.

Ramie.—A considerable concession of land was made to some foreign concessionaires in the Larut District, but operations have not yet commenced. It is hoped that ramie may soon rank in the list of products successfully cultivated in this State.

Rice.—The Padi harvest was, on the whole a fair one. Krian still takes the lead, but the high price of rice has caused considerable extension of padi cultivation in the Matang, Lower Perak and Kuala Kangsar Districts.

Irrigation.—The Krian Irrigation Scheme, under consideration for some years past, is now under way. Mr. R O N Anderson, formerly Personal Assistant to the State Engineer, and since appointed Irrigation Engineer, revised and completed previous reports and estimates, and a final report having been received from the Hon. A Murray, Colonial Engineer, Straits Settlements, whose services were kindly lent by His Excellency the Acting Governor, a provisional estimate of $656,000 has been sanctioned, and work has been commenced. The acreage commanded by the scheme is reckoned at 63,000 acres, and the estimate includes drainage and the supply of water for domestic purposes.

TEA IN THE PHILIPPINES.

Yet another rival for Ceylon is looming in the far future in the matter of tea cultivation. What place should this be, but those interesting islands, the Philippines, the resources of which have as yet been gauged only in a very small degree. The following cutting is one which appears prominently on the front page of the Manila *American*, of date August 9th:—

TEA CULTURE WILL BE TRIED.

A Chino named Yee Ah Hing, said to be a wealthy tea merchant of Formosa, intends to see if tea culture can not be profitably carried on in the Philippines. Conditions for the successful growth of tea plant are said to be fully as favorable here as in Ceylon. It is claimed that Yee Ah Hing is negotiating for a large tract of land on the island of Negros and will go into the business of raising tea there on a big scale.

But we learn, by the mail which brought the paper above-named, from a Manila gentleman formerly in Ceylon, that China teas will not make much headway if Ceylon seed is imported quickly. He says he has advised the Government not to allow the Chinamen to import China seed, owing to the inferiority of the tea grown in the Celestial Empire. He is himself importing good jât seed from Ceylon and will do his best to prevent the cultivation of inferior tea being inaugurated. If the Government at Manila are inclined to agree to this, Ceylon planters should have a good market for seed in that city, if indeed a few of the said planters do not go and start plantations at once, as soon as peace is assured over the bulk of the islands. Today Reuter's news is to the effect that General Otis has applied the Chinese exclusion law to the Philippines; and we presume that the Philippine Government will not be loth to act still further in the spirit of this regulation, and exclude the introduction of China tea for cultivation.

EILA TEA COMPANY OF CEYLON LIMITED.

REPORT.

The following is the directors' report:—

The Directors have to submit their Report and Accounts for the year ending 30th June, 1899.

The Crop on Eila Estate was 43,314 lb. and on Kanangama 4,160 lb. short of the estimates, but the unfavourable season may be considered to be the main cause of the deficiency. On Eila also the easy treatment of the bushes referred to in the last report has been continued.

The total amount of Tea manufactured was 357,852 lb. and the cost of production including the purchase of 101,299 lb. of green leaf was 23·06 cts per lb.

The average price of the Tea after estimating the value of that unsold was for the two Estates 33·11 cts. per lb. as against 28·58 cts. for last season. Every

effort will be made to improve the quality of the Tea and keep up the prices.

During the year £500 was repaid to the Standard Life Assurance Company on account of their loan of £7,000.

Your Directors regret that the R3,000 of Coast advances mentioned as doubtful in their last report have proved to be irrecoverable and this amount together with an irrecoverable debt of R488·38 on Kanangama Estate has been written off the Reserve Account.

The net profit for the past season, after writing off depreciation on Buildings and Machinery, is ..	R22,175·63
To which must be added the balance carried forward from last season ..	5,481·86
Making in all ..	R27,657·49
Out of this your Directors propose to pay a Dividend of 8% absorbing ..	R24,000·00
To grant a bonus to the Superintendent of Eila of ..	750·00
And carry forward ..	2 907·49
	R27,657·49

The Estimates for the current season provide for a crop of 391,000 lb. of Tea at a cost of R86,736·70.

The Estates of the Company on June 30th, 1899, consisted of—

Eila—564 acres Tea 5 years old.
62 " " 3 "
90 " " 2 "
240 " Forest.

956 acres.

Kanangama—215 acres Tea 5 yrs. old and upwards.
108 " Chena and patana.

323 acres.

During the year Mr. F. W. Bois was elected to the Board of Directors in the place of Mr. H. G. Bois who has left the Island.

Mr. Giles F. Walker retires in accordance with the Articles of Association, but being eligible offers himself for re-election.

The shareholders will have to appoint an Auditor for season 1899-1900.

NEW TEA COMPANY.

(*Investors' Guardian*, Aug. 12.)

Galkandewatte Tea Co., Ltd. (63,189).—Registered Aug. 2nd, with capital £21,000 in £1 shares to acquire lands and buildings in Ceylon or elsewhere, and in particular the Galkandewatte Estate, in the Dimbula District, to adopt an agreement with J. Tilly and J. D. Ellershaw, and to carry on the business of planters and growers of tea, coffee, cocoa and other crops. The subscribers are:—

	Shares.
J. Tilly, 48 Kimbolton Road, Bedford, tea planter	1
J. Ellershaw, 79 Queen Square, Lancaster, draper	1
A. T. Johnson, Rayne, Essex, gentleman	1
Mrs. L. Tilly, 48 Kimbolton Road, Bedford	1
Mrs. J. Jowett, 5 Gosvenor Road, South Norwood	1
Mrs. A. Johnson, Rayne, Essex ...	1
Miss M. E. Tilly, 48 Kimbolton Road, Bedford	1

The number of directors is not to be less than 2 nor more than 5; the first are J. Tilly and J. Ellershaw, senior: qualification £500; remuneration £50 per annum dividend. Registered office, Howard Chambers, Mill Street, Bedford.

THE LONDON CUSTOMS' SYSTEM OF WEIGHING CEYLON TEAS.

UNDER THE NEW REGULATION EXPECTED TO COME INTO FORCE ON OCT. 1st, 1899.

(*Instructions showing how to prevent a loss on Garden Weights.*)

At the settlement of the recent dispute between Growers and Buyers, the Joint Committee of the Growers and Buyers' Associations arrived at the following decision with regard to the *Weighing of Tares.*

"If the empty package weighs an even pound it is to be entered as such; if it weighs an even half-pound or over it is to be entered as the next pound above, and if it weighs less than half a pound it is to be entered as the pound below; boxes are to be weighed and tared as heretofore."

In order to fully benefit by the above change from the system of weighing now in vogue by the London Customs' Authorities, the following hints will prove of value to Proprietors and Superintendents of Estates.

1. The Customs will in future give the turn of the scale on the *Gross against* the Importer, but on the *Tare* either *for or against* the Importer when it weighs under or over the half pound.

2. The *Tare* (that is the weight of the empty package, complete with lid, lead, hoop-iron and nails) *should weigh four ounces over the pound*, whether the package be chest or half-chest.

3. The *Gross Weight* of a package *must in all cases weigh four ounces over the pound*, whether the package be chest or half-chest.

4. Subjoined is an example of the *correct* method of weighing a package containing 100 lb. of Tea.

Garden Weights, Ceylon.

Tare.	Tea Net.	Gross Weight.
27 lb. 4 oz:	100 lb.	127 lb. 4 oz.

Customs' Weights, London.

Gross Weight.	Tare.	Net.
127 lb.	27 lb.	100 lb.

From the above it will be seen that a margin of 4 oz. remains for any slight variations in weight of package during transit, and that *no loss* need result from the Customs' Weighing under this system, whereas, now a minimum loss of 5 oz. per package is unavoidable.

5. Should the present system of weighing in Ceylon be continued after the new regulations has been put in force by the London Customs the following would be the result.

Garden Weights, Ceylon.

	Tare.	Tea Net.
No. 1.	27 lb. 14 oz.	100 lb. 5 oz.
No. 2.	27 lb. 9 oz.	100 lb. 5 oz.

Customs' Weights, London.

Gross. Weight.	Gross Weight.	Tare.	Net.
128 lb. 3 oz.	128 lb.	28 lb.	100 lb.
127 lb. 14 oz.	127 lb.	28 lb.	99 lb.

No. 1. Shews a package, correctly packed under the old system, and shows a loss of 5 oz. but No. 2. incorrectly packed, would result in a loss to the grower of 1 lb. 5 oz.

6. It is most important that the weights of the Weighing Machine, used on the Estate, should be constantly checked and for this purpose a set of test weights should be kept—A beam scale is to be preferred to a platform one, as the former is the more accurate.

7. When a Superintendent, to equalise the tares of his package, adds pieces of lead or wood for that purpose, the material so added should be fixed inside the package, so as to prevent it falling out when the package is opened in London.

8. A Superintendent may "tare" and pack his teas with the greatest care, but if he afterwards permits his Carpenter to plane away from the top of the package before nailing down, all his careful work may be wasted.

The METROPOLITAN BONDED WAREHOUSES, Limited,
Crutched Friars,
London, August 1899.

N.B.—These Instructions revoke those issued by us in June 1898.

THE RECENT TEA DISPUTE.

Comments, by some importers of Ceylon Teas, on proposed settlement of Tea Dispute, as given in the Joint Committee's Circular, No. 17, dated 2nd August, announcing an "agreement with the Buyers' Association" as a settlement of the question of the abolition of the 1lb. draft on Tea, to come into force 2nd October.

No. 1—1 lb. Draft to be allowed as heretofore—the first stipulation!

No. 2—Gross weights to be taken and recorded as at present.

That is, ounces above a number of pounds to be ignored; *e.g.*, 77 lb. 14 oz. gross will still be recorded as 77 lb. only.

ALTERATION IN WEIGHT OF TARES AS FOLLOWS:—

Clause a—If the empty package weighs the even pound it is to be entered as such.

Clause b—If it weighs the even half-pound or over, it is to be entered as the next pound above.

Clause c—If it weighs below the half-pound, it is to be entered as the pound below.

This will be a gain to some growers to the extent of, perhaps, ¼ lb., as hitherto 1 oz. extra has counted as an additional pound in tare weights.

Clause d.—No "overtakers." No explanation of this Clause.

Clause e.—Boxes to be weighed and tared as heretofore to the pound weight.

Clause f.—Increase of number of Tarers for Factory Bulked Teas as agreed upon.

Any increase of number of tarers (at present it is 1 in 10, or 10%) means increased cost of turning out additional packages and increased risk of the tares taken varying more than the Customs' limit of 2 lb., necessitating the whole break being tared separately.

The Joint Committee might have said who called for the change, and in whose interests. It seems only in the interests of the warehouses.

Clause g.—If parcels are bulked in London separate Tare must be taken of each package.

At present "average Tares" taken are allowed to stand, even though the teas be afterwards bulked.

The change will put an end to the advantage gained by having average tares taken of London bulked Teas, and will increase the charges considerably.

Teas which are not Estate bulked or are insufficiently bulked on the Estate and require bulking here, will in future, under the new regulations, incur an extra charge of 5d for chests and 4d for half-chests, for cost of separate taring, thus increasing warehouse charges 10 per cent., and costing the Garden extra about ⅝ per cent. on value of Tea.

No reason or explanation is given for this new heavy charge, or any hint why the change is made. It seems made in mere wantonness or in crass ignorance of the trade. The Tea buyers will not gain; the Tea producer certainly loses; but it will put money into the pockets of the warehouse-keepers. It is, at all events, difficult to see why "the Joint Committee," supposed to be acting in the interests of Tea producers, should now insist on a separate tare being taken of each package (*e.g.*, in a case of a Tea shipment in Venesta or other packages running even and weighing exactly the same), except to increase warehouse charges. The Estate proprietor, to avoid the increased charge, will have to bulk on his Estate, whether he considers that desirable or undesirable, and in many cases will have to increase his factory accommodation at some cost. It will fall heaviest on those who can least afford it; and after the outlay has been incurred to enable factory bulking to be carried out. Tea buyers who have paid too much may dispute the factory bulking; and the cost of bulking and taring will still fall on the Tea producer.

THE QUESTIONS ARISE—who is this Joint Committee, and who appointed it to deal with the alteration in weight of Tares?—and as there is a Tea and Produce Committee of the Ceylon Association, why was not that called together to discuss a matter so affecting it, and, further, is this agreement binding in any way or degree on Importers of Ceylon Teas?

If the Ceylon portion of the Joint Committee are now in some way authorised to bind Importers of Ceylon Produce, without consultation or asking their assent, cannot the Ceylon Association be at once called together to withdraw the authority before the Committee perpetrate further mischief on the Ceylon Trade?

10th August.

ST. HELIER'S TEA COMPANY, LD.

REPORT OF THE DIRECTORS.

ACREAGE.

250 acres	in bearing		
29 do	planted	in	1896.
34 do	do		1898.
313 acres			
114 do	Jungle, &c.		
Total 427 acres.			

The Directors have now the pleasure to submit their Seventh Annual Report to the 30th June last, which they trust will be considered fairly satisfactory by the Shareholders' shewing as it does a nett profit of about 10 per cent on the year's working.

The crop which was estimated at 95,000 lb. of made tea to 30th June, has turned out only 89,973 lb. and has realised an average price of 38·69 cents per lb., against 36·21 last year.

The cost of the tea in Colombo, exclusive of the sum of R2,438·74 expended on Capital Account, works out at 25·56 cents per lb. as against 25·24 cents per lb. last season.

The balance at credit of Profit and Loss Account, after writing off the sum of Rs. 1,618·42 for depreciation of buildings and machinery, but including the sum of Rs. 1,203·11 brought forward from last year, amounts to Rs 5,205·42; and out of this sum the directors recommend that a dividend of 9 per cent be declared, absorbing Rs. 4,500·00, leaving the sum of Rs. 725·42 to be carried forward to next year.

Mr. Percy Bois retires from the board by rotation, but being eligible offers himself for re-election.

The Shareholders will have to elect an Auditor for season 1899-1900.

NYASSALAND COFFEE CO., LTD.

The report was as follows:—

ACREAGE:

10 acres Coffee planted Dec.			1895.
240	do	do	1896—Feb. 1897.
383	do	do	1897—Feb. 1898.

633 acres under cultivation.
2,843 acres reserve.

Total..3,476 acres.

SUPERINTENDENCE.—Mr. Moggridge tendered his resignation as Superintendent, under his agreement, which the Directors have now agreed to accept, being satisfied with the arrangements that gentleman has made for the working of the estate during Mr. Robin's absence on furlough.

The thanks of the Shareholders are due to Mr. Moggridge for the work he has done, although the Directors are of opinion that he did not attach sufficient importance to the advisability of opening with large enough plants.

Mr. George Napier Barclay whom Mr. Moggridge appointed to act until Mr. Robin's return is reported as being a coffee planter of many years' experience in the Wynaad; and judging from his letters and that of the Visiting Agent, Mr. Henry Brown, to the Company, the Directors are of opinion that the estate is in capable hands.

PROGRESS OF WORK.—During the financial year under review no more land has been opened, the energies of the Superintendents having been devoted to supplying.

This work has been completed, although it is a matter for regret that the plants which had to be put out were of small size.

However, Mr. Barclay in his last letter dated 7th June, 1899, states: "The young clearings are looking remarkably well and have made wonderful progress the past month. I think that all plants alive now may be calculated to survive the hot weather, if we have any, there being no indication so far of the present weather changing."

During the season a small crop of 341 bushels cherry was picked and sold in the cherry at 6s 6d per bushel to a local trader. Of this Mr. Barclay remarks:—

"The coffee I am pleased to say is of exceptionally good quality, and the trader referred to speaks very highly of it. There is no light berry to speak of, and the bean is a fine large compact one, as good as I have seen anywhere.

"The soil on this place being excellent there is no reason why this should not be the case with succeeding crops

"Personally I think you have picked out an ideal place for a coffee estate, though a slightly heavier rainfall would be an advantage."

"With regard to next year's return there will be pickings over an area of about 200 acres calculated as fully planted up, and you ought to get at least 30 tons from it."

FINANCIAL POSITION.—From the Balance Sheet it will be apparent that the capital of the Company is exhausted.

In the meantime and pending further particulars from Nyassaland as to the probable expenditure and crop for the two following years, the directors have arranged with Messrs. Carson & Co., that the latter should lend £500 sterling to carry on with, until it is seen what further additional capital is required and can be raised, or whether a loan for the requisite amount can be arranged in London.

FINANCIAL YEAR.—It is proposed to alter this to 31st December instead of as at present. By the end of 1900 the Directors hope to be in a position to state whether the success of the Company is assured or not.

Mr. G. Kent Deaker retires by rotation, but is eligible for re-election.

The appointment of an Auditor for the ensuing year rests with the Meeting.

NOTES FROM NORTH BORNEO.

(*By a Ceylon Correspondent.*)

When I last wrote you, I was on my way to the interior, using the 20 miles of railway now open to Beaufort. This line leaves Brunei Bay at Weston—named after Mr. A J West, the Engineer in charge—a town in name only at present—situated on the Bukow River. It consists of a small number of (15) native huts and a telephone office. It is not proposed to sell any shop lots until the ground has been raised a little. At the back of

THE FUTURE TOWNSHIP,

there is a large gravel hill, excellent ballast, and this is now being used to form a mole cut into the Bukow River, which at this point more resembles an inner bay. When the mole has sufficiently advanced, say 80 yards, a pier will be run out into deep water. From Weston to Bukow, the line runs for eight for miles through level ground, well-cultivated paddy fields and fruit trees abounding. This land is very well suited for coconuts. Bukow is the present headquarters of the railway officials, but its cluster of shops will probably have to be removed to Weston or up the line when the railway works are more advanced. Beaufort at the 20th mile, is situated on the great Padas River, which will require a bridge of some length, about 500 feet.

THE RAILWAY WORKS

are progressing up the Padas Valley, but, as the rails are only laid for a mile or so, I continue my journey by boat, taking one and-a-half day to reach the foot of the Penotal Gorge. At Rayoh I met Mr. W Tower, the Railway Engineer, who is drawing up a report for an extension of our railway, and together we walked up the Gorge, taking two days inspecting the more difficult places and camping half way. At the top of the Gorge, we stayed with the District Officer, Mr. Charles Keasberry, in his comfortable new bungalow which overlooks the plains, or patanas as they are called in Ceylon. These plains contain numerous small villages, irrigated paddy fields, the water for which is sometimes brought along the contour of the land for miles, and clumps of coconut and other fruit trees. The plains are narrow—under ten miles broad—but they extend fully thirty miles and over. Tradition says a great lake existed here until the Genii of the lake lost his daughter who fell over the brim. This caused the Genii of the lake to break the brim so that he might join his daughter, which he could only do by allowing the water to convey him. This

ACCOUNTS FOR THE GAP IN THE HILLS,

through which the Padas flows in one continual roar, 13 miles down to Rayoh. The fall is about 400 feet, there are no actual waterfalls, and navigation is impossible. There is a story that 30 Dyaks descended the Gorge—that only eight lived, and their boats and all their gutta were lost.

The bridle-path through Gorge is a great boon to the natives, who formerly had to walk over Rayoh Hill 3,400 feet in elevation. Rayoh is only 150 feet and the path was so bad that no cattle could use it. Mr. Tower walked up and down the bridle path with me and he said it was quite as good a bridle path as the hill paths of Ceylon. We could not ride it; first, because we had no ponies, and second (if another reason is wanted) a small landslip and a fallen tree barred the way, but these little difficulties could be obviated by the telegraph coolies. There are tele-

phones at all the places I mentioned and we found the telegraph line and

TELEPHONES VERY USEFUL

in communicating with Labuan; but communication with Sandakan, on the other side of the territory, has not yet been established, chiefly owing to want of battery power. This will probably soon be in order.

On our return to Beaufort, Mr. Tower proceeded to Labuan and England, taking with him the plans and sections of 90 miles of railway. I stayed at Beaufort and met

MR. H. W. BAILEY, OF YOUR ISLAND,

who had come to inspect land supposed to be suitable for gutta and rubber, and I understand that he has reported favourably on a large block of 20,000 acres on the railway line and 10,000 acres to the north of Sandakan.

THE EASTERN EXTENSION TELEGRAPH CO.

who have a principal station on Labuan Island are interested in the above lands, 20,000 acres of which were given them by the Chartered Company in return for their establishing themselves at Labuan and laying a cable to the mainland, and I hope to see the planting of rubber and gutta taken vigorously in hand. Of the suitability of British North Borneo for their cultivation, there is no doubt as gutta and rubber are exported from every port varying in value from $30 to $380 a picul, say 5½d to 5s 9d per lb. In one district, the natives cultivate a rubber creeper and tap it periodically, selling the rubber per $80 a picul.

I made enquiries from Mr. Keasberry

ABOUT LABOUR.

He is opening an experimental garden at Tenom, about 800 feet above the sea, and can get plenty of labour, men and women, and frequently has to refuse small gangs of natives from the far interior who wish to earn wages. Mr. Keasberry is of opinion that a large number of coolies, say three or four thousand, can be got from the Upper Padas. This is corroborated by the headmen with whom I spoke. The climate at Tenom is delightful, and although only 800 feet in elevation; it is as cold at night as at 2,000 feet in Ceylon and a warm night is unknown. The rainfall is probably 70 to 80 inches, but so well divided throughout the year that the paddy fields are planted

WHENEVER THE NATIVES WANT FOOD.

This applies to the dry paddy grown on the hills as well as to the irrigated paddy on the plains. I saw some Arabian coffee plants in Mr. Keasberry's nurseries, looking very well—he is planting Arabian and Liberian and is opening a clearing at 1,500 feet for tea and cinchona. When the railway reaches thus far, it will afford a delightful change. Tenom is particularly healthy, and the plains afford

SPLENDID SHOOTING,

—deer and wild cattle. I have counted 35 sambur deer in one morning. I prefer stalking, accompanied by our follower, but a popular method is the drive which is done by the villagers and their dogs while the guns are placed at the edge of the clump of forest. This necessitates very quick sighting, but there is great pleasure in

ANTICIPATING THE OUTWARD RUSH

of the driven game.

The railway in use at present is only 20 miles long; and, at the eighth mile, a bridge is unfinished, over the Bukow; but there is a construction engine on each side, and the (unloaded) cars can be pushed across the temporary bridge. Mr. West has

BUILT ALL HIS ROLLING-STOCK

with local timber of a remarkably good quality and is running one first-class car, a dining car, one third-class car, and as many trucks as required, twice a week from Weston to Beaufort. This interferes a good deal with the ballasting operations, but it is desirable and traffic is already leaving the river Padas for the railway. Transport is cheaper, and a very good class of shop is to be found both at Bukow and Beaufort. I noticed that the

FUEL USED IS WOOD;

previously it was coal, which is cheap, quarried in Labuan. There are large coal seams at Bukow which were purchased from the Sultan of Brunei before this province, Province Went was taken over by the Chartered Company. These now belong to the Rajah of Sarawak, and it will be a good thing both for the Rajah and the railway when they are worked.

Arrangements are being made for the transfer of the Customs Office and Police Station, now situated at Batu Batu, which commands the entrances of the Padas and Bukow rivers, to Weston, the railway terminus. This means the migration, also of about 150 natives whose chief occupation is fishing. The fishermen will then be in touch with a large population and obtain a better sale.

FOOD SUPPLIES.

The price of fresh fish is three cents a catty. Fowls are dear and beef is rarely obtainable. Wild pigeons and other birds are snared in great quantities, and are very cheap, and vegetables, thanks to the Chinese gardens on the railway line, are plentiful. Fruit is plentiful and cheap. It is very satisfactory to note that the

CHINESE ARE PLANTING COCONUTS

in their gardens, and they are doing well. Two applications from Chinese engaged on the railway works for 20 acres and 25 acres have just been approved. The price is $3 an acre, beautiful soil and a healthy climate. Marco Polo mentioned the Chinese in Borneo (how many years ago?) and today they are becoming as numerous as they were in his time. They are kept out of the Australias and the Americas, and possibly the occupation of the Philippines by the Americans will mean restricted intercourse with China—but we have only one remark, to Chinese or to any decently behaved people—

LET THEM ALL COME!

GREY AND OTHER BLIGHTS: THEIR STUDY AND THEIR REMEDY.

(*By a Ceylon Planter.*)

In writing the following notes on grey and other blights, I must ask your many readers to excuse shortcomings and I can only hope that this article may be of interest to some.

Grey and brown blight seem to be of the same family and both live on the matter found in the leaf-cells of the hop plant. The mycelium of these pests ramify through the intercellular tissues and reproduction is carried on by spore-bearing hyphae, which may be seen on the decayed leaf surface. It is a curious fact that fungi similar to grey blight (in its effect) may be found on almost all trees, etc.—coffee, gums, jungle and so on. If such are the same as is found on tea, it shows how widespread the pest is; otherwise it is reasonable to suppose that the present increase of blights is entirely due to

climatic reasons, and that such will decrease as rapidly as they came.

It is the general opinion among planters that—especially where the bushes are healthy and vigorous—no decrease in yield has occurred or is likely to occur; and it is easily noticeable that—though these blights increase on shuck patches—healthy tea seems to hold its own; and the disease though present seems unable to make headway.

Dr. Watt speaks of increase occurring vegetatively and the spread of disease by mycelia: this may be so, but spores carried about by the wind seem the chief means of reproduction. This is especially noticeable now when the prevailing direction of the wind is from the South-west. Slopes with that aspect are much more affected than others.

There seems to be a great diversity of opinion as to the seriousness of these pests. Some planters take a morbid pleasure in prophesying horrors, against which the coffee trouble pales into insignificance; others and, I am glad to say, the majority, take a much more favourable view of the matter, and it is significant that in the ranks of the latter may be numbered not only the majority of the ablest and leading planters, but men whose experience of coffee would tend to (were such a thing necessary) make them be among the worst alarmists. The general opinion seems to be that, while no real danger need be apprehended still precautions should be taken to prevent further increase. It is a strange fact, that, while Dr. Watt, Mr. Bamber and other scientific men should lay such stress on the necessity of prompt and drastic action, as well as talk so largely of the fearful rapidity with which such pests spread—we find Assam, for instance, has been the home of gray blight for many years and that although yields may have been reduced on shuck estates, healthy places there can even yet boast of bumper crops. As for Ceylon, an old and experienced planter remarked the other day that he recollected grey blight causing a great scare some 12 or 15 years ago, and how at the time he and others thought that tea was going the way of coffee. However, the blight decreased just as rapidly as in the first place it increased; and, though I am not sure on this point, I believe he remarked that the weather at the time was as abnormally wet as it has been during the last few months. The local "Times" of Thursday last speaks of mossing and asks whether estates on which such work is carefully carried out, show any freedom from pests. From observation I should say that they do not, and I have found blight almost as bad on one of the most carefully and systematically cultivated estates in the island as on less-cared-for neighbouring places. A planter further asks whether grey and brown blights respect jât and what jât seemed to be most affected. Personally I should say China jât seems to escape easiest, and that the better jâts suffer most: the latter seem affected most from pruning to about 18 months on, after which, the bushes being denser and the leaves harder, blight is not so noticeable.

Now for remedies: in order to do any real good some uniform system must be adopted, and an economical as well as efficient treatment has yet to be found. In this we seem to have to depend on our own resources. Science can tell us that this or that treatment will kill fungi, but is quite at a loss as far as remedies suiting the peculiarities of tea are concerned. Most estates, however, are trying something; but I doubt whether in some cases good is being done, and it is reasonable to suppose that blight is being sown broadcast by some of the supposed methods of cure which have been adopted. Among other methods the following may be worthy of trial:—

1. Collecting and burning the prunings when green.

2. Collecting and burying of all prunings with lime.

3. Picking off infected leaves from bushes and burning same.

4. As well as picking off, etc., sweeping the ground and burning the leaves so collected.

5. Pruning strips of from 20 to 40 lines leaving strips unpruned, heaping prunings in unpruned parts and firing same.

Possibly the most effective method would be a combination of Nos. 1 and 2 followed by No. 3. The great advantage of the first two methods is the value of such in cultivation. Where land is not too steep burying prunings makes a valuable bulk, and the soil being light, it is one of the only available ways of building such up and creating humus. Where land is too steep for this process, prunings could, while quite green, be collected in ravines and on roads and burnt: the resulting ash, collected and returned to the soil, is the cheapest potash manure we have—not to speak of the great value of the large amount of carbon in the ashes as a collector and retainer of ammonia. If tea so treated was afterwards gone over and blighted leaves picked off, it should not be either a difficult or expensive way of keeping blight in check.

Picking off blighted leaves has, from what I hear, not given entire satisfaction—this may in some cases be due to the pickers not being provided with proper receptacles. Personally I have provided them with thick canvas bags; notwithstanding this I find the blight increased after the first round of treatment, the second round taking twice as many coolies as the first. This might be due to climatic reasons, as I find the third round to be fairly free from infested leaves. Various methods are being tried in picking off leaves:—giving each plucker a bag and making them—while doing ordinary plucking—remove sickly leaves, is one; this may do when blighted leaves are few and far between, but personally I think a special gang doing nothing but this work is cheaper and the work done is much cleaner. It is quite possible that handling these leaves on dry hot days may scatter spores largely; but when this work is done in damp rainy weather, this should not occur. On the other hand wet weather is more favourable for the germination of the spores. No. 4 method is being employed on some estates, and no doubt is effective; but I doubt whether the good done is worth the heavy expenditure that this method of treatment entails. No. 5 method seems drastic, but I

believe has been tried in some cases. I should say that where blight is so bad as to require such treatment, the sooner such tea is pulled up and destroyed the better, as such bushes would never stand the shock of being killed back—which most of them would be—and at the best surviving bushes would be nothing but typical nurseries for parasites; and I may add that methods even more drastic than this have been tried in Assam, and in nearly every case the new bush grown has within a year been as bad with blight as ever. Blight, it seems to me, should be looked upon more as an effect than a cause. What has been the history of first coffee rather than tea? We have in most cases steadily drained the soil of its nourishing properties and, as long as dividends were forthcoming, have been content to ignore the laws of nature; with what result?—a decrease in both quantity and quality, as well as an increase in cost of production. Too late we turn our thoughts to manuring and general cultivation of the sickly and hide-bound bush we have left and by many years of ill-treatment trained into a nursery for all kinds of diseases which are afterwards distributed in the tea of more healthy and neighbouring fields. Having done all this we commence manuring and in many cases with disappointing results—why, it is not difficult to see: as with the bush so with the roots. And the latter in consequence—until new and healthy root stems are formed—are unable to utilize manures to the best advantage.

The chief thing necessary now is either the entire clearing out of tea on sickly ridges or the building-up of the same by a system of bulk manuring. In the latter case many methods might be adopted, burying of prunings, decomposed vegetable matter (cheddie could be collected into pits for this purpose) heavy dressings of castor cake and where available application of cattle manure and I believe much might be done by planting cuttings of say *Adhatoda vasica* (a highly nitrogenous plant, also making a good fungicide) amongst tea on poor soil a few months before pruning, to be afterwards buried with the prunings. In conclusion I might again repeat that the general opinion of practical men is that no real danger need be apprehended in connection with the present increase of blights; and I think we shall find these parasites will shortly play a more important part at annual company meetings than on the estates.

MINOR PRODUCTS REPORT.

Cinchona.—In addition to the quantities announced by us last week to be offered at the Amsterdam auctions on August 24th a further 2,251 bales and 93 cases (192,726 kilos) been brought forward. This now brings the total to 7,564 bales and 276 cases (688,364 kilos). The shipments from Ceylon for the week ending July 18th were 30,647 lb, and from January 1st to 18th they were:—

	1899	1898	1897	1896
Lb ...	277,336	277,755	304,311	193,398

Five brokers have declared auctions in London on August 15th the total at present amounting to 1,132 packages, of which at least 800 are East Indian bark.

Citronella Oil.—Quiet and unchanged at 11d to 11½d per lb on the spot in drums. The Ceylon exports for the week ending July 11th were 23,270 lb, of which 21,002 lb were for London.—*Chemist and Druggist*, Aug. 12.

LABOUR AND TRANSPORT IN THE PHILIPPINES.

Mr. Dean C. Worcester, Assistant Professor of Zoology at the University of Michigan, in his book "The Philippine Islands and their People," says:—

"The labour problem is a serious one. There is little trouble in getting a limited number of fairly good workmen, but when it comes to conducting any enterprise necessitating the employment of men in large numbers, difficulty is sure to be encountered.

"Wages are low, running from four to eight dollars per month, but one is often compelled to seek labourers at a distance, and to make them heavy advances against salary account. Should they desert before working out the debt, there is, under existing conditions, no legal redress.

"It is often necessary to sub-let parts of large estates to natives who work for a percentage of the crop raised, but they improvidently spend their wages as soon as earned, or sooner, and have nothing left to live upon. It is, therefore, necessary to loan them money on security of a crop not yet harvested, perhaps, not even planted; and should it fail, one is left out of pocket. Considerable losses from this and similar causes are inevitable.

"At the best the native is an intermittent worker. He is indisposed to exert himself unnecessarily, and is apt to relapse suddenly into idleness when he has accumulated a small sum in cash. It is to his dislike for steady, systematic labour, that the failure of so many mining enterprises has been due."

Concerning transport, Mr. Worcester says:—

"The lack not only of railroads, but of roads of *any* description, has impeded communication and transportation.

"There is but one railway in the islands. It extends from Manila to Dagupan, a distance of about 120 miles. Elsewhere transportation must be by water, by carts or sledges usually drawn by buffaloes, but sometimes by bullocks, or finally by coolies. The last method is often the only practicable one.

"This lack of any adequate means of overland transportation has contributed as much as any one cause toward retarding the commercial development of the colony. There is fairly regular communication between the more important islands by means of steamship lines, but freights are high."

PRODUCE AND PLANTING.

Indian Tea Companies' Results.—Mr. Seaton's annual tabular return shows the results of the working of forty-five Indian tea companies. The paid up capital of these companies is £7,047,885. The average dividend distributed on this capital was 5¾ per cent. which is a shade below that of the previous period. The reserves are also a little lower, being £534,000 against £559,000. These results follow naturally upon the fact that the profit per pound earned was only 1·45d representing £392,000, against 1·5d per lb. representing £413,000 in the 1897 season. The dividends distributed by these 45 companies varied considerably, and it may be interesting to shortly summarise them,

Thus, five companies distributed from 12½ to 15 per cent, seven from 10 to 11 per cent, thirteen from 5 to 8 per cent, and nine from 2 to 4½ per cent, while eleven companies paid nothing. The company which has distributed the best dividend is the Brahmaputra, whose shareholders have received 15 per cent. The Amalgamated Estates, Assam, Dooars, and Doom Dooma companies have distributed 12½ per cent., the Jorehaut 11 per cent., and the Balijan, Consolidated Tea and Lands, Jokai, Lebong, Moran, and Rajmai 10 per cent.

Tea Cultivation in South Carolina.—Periodically we hear of the success of tea cultivation in South Carolina, based upon experiments made on about 50 acres at Summerville. In his report made to the United States Secretary of Agriculture, Dr. Charles U. Shephard states that "last year 3,000 lb. of tea was sold at a profit of 25 per cent. The quality of the leaf is said to be good, and as the plants lived through last winter, the coldest ever experienced in the district, Dr. Shepard expresses the belief that the weather conditions are suitable for tea growing. It is estimated that when all the plants now growing arrive at maturity they will yield 10,000 lb. annually." This is satisfactory as far as it goes, but as these tea experiments have been conducted in South Carolina for a long time now, those who have the conduct of them are evidently proceeding cautiously, and South Carolina tea will not prove an important factor in the American tea supply just yet, notwithstanding the fact that a school has been established to educate the negro children in tea picking in order to solve the labour probem.

Fresh Fields.—Will afternoon tea become a popular institution in Abyssinia? A correspondent of the "Times" who is journeying in that land has done something towards the introduction of tea. He says in the course of one of his letters: "On one occasion the wife of one of these generals determined in her own mind that she could never allow the Ingliz to pass through without giving him a tender shake of her delicate hand, and, true to her decision, she appeared in great state before the door of my tent, and, followed by her lady-attendants, was ushered into my presence. The questions she asked disclosed an intellect of no mean order. But whilst she was listening attentively to the best replies I could give her and thoroughly enjoying the first cup of tea she had ever drunk in her life, it was suddenly announced by one of her followers that the general was coming. 'Oh! Oh!' she cried, and something else I did not understand, and, hurriedly swallowing the sweet dregs of the tea, she rushed out of the tent, mounted her mule, and swept away with her suite only just in time. When the general arrived I told him of the honour that had been paid me. He was exceedingly amused, and forthwith presented me with a magnificent riding mule, all ready saddled and bitted. I hope that he was equally considerate to his charming wife."

Detecting Adulteration.—Tea, coffee, and tobacco-growers will take some interest in the work done in the Government laboratory, in the matter of testing adulteration. Among the Parliamentary papers issued on Saturday is the report of Dr. T. E. Thorpe, F.R.S., the principal chemist of the Government laboratory, upon the work of that department for the year ended March last. Its business is mainly in connection with the Inland Revenue, of which it is practically a sub-department. Dr. Thorpe points out that the chemical and testing work in connection with samples of foreign produce is done partly at the laboratory at the Customs House and at stations at the docks and outports, and partly at the laboratory in Clement's Inn Passage, Strand. The work of the Customs House laboratory is mainly to determine the dutiable value of samples of imported wines, spirits and beers, and a great variety of other products are examined for alcohol, or for evidence that alcohol has been used in their preparation. Samples of leaf and manufactured tobacco from the factories under the supervision of the Customs are examined for the amount of moisture they contain, whilst samples of manufactured tobacco, mainly seizures, are examined for sweetening material. "Offal" tobacco is also inspected for genuineness prior to its examination for drawback value. Samples of tea, selected at the discretion of inspectors, are also sent for chemical and microscopical examination, and during the year fifty-seven samples, representing 1,616 packages, were found to contain exhausted leaves or to be mixed with other substances within the meaning of the Sale of Food and Drugs Act. These were refused admission for home consumption, or were forfeited and destroyed or otherwise disposed of as being unfit for human consumption. It may be of interest also to note that tea which cannot be admitted for use as a beverage is "denatured" by being mixed in bond with assafœtida and lime, and used for the manufacture of caffeine, coffee is examined for chicory and coffee substitutes, and several cases of adulteration were discovered, the payment of drawback on these being refused. Roasted cereals imported for used as coffee substitutes are examined for chicory, which, if found, renders them liable to duty.

Coffee Adulteration in South Africa.—Tea, for some mysterious reason, has not as yet increased its popularity in South Africa, where coffee at present holds sway. It might be thought that consequently the coffee would be pure and good, but this is far from the case. The "Cape Argus" remarks that everybody knows that his morning cup of coffee is not the product of the pure berry, and this view is corroborated by the report of the Cape Public Analyst, just published. —*H. and C. Mail*, Aug. 18th.

Tea Pests.—With reference to the Tea pest notes, given on page 271, we may say that the serial *Indian Museum Notes*, from which they are taken, are issued by the Trustees of the Indian Museum, Calcutta, under the authority of the Government of India, Revenue and Agricultural Department to take the place of *Notes on Economic Entomology*, of which two numbers have appeared. The parts of the serial are published from time to time as materials accumulate. Communications are invited by the editor, *Indian Museum Notes*, Calcutta. Correspondence connected with Economic Entomology should be accompanied by specimens of insects to which reference is made. Caterpillars, grubs, and other soft-bodied insects can be sent in strong spirit; chrysalids and cocoons alive, and packed lightly in leaves or grass; other insects, dried and pinned, or wrapped in soft paper. Live insects should be sent when there is a reasonable probability of their surviving the journey. Caterpillars, grubs and other immature insects can often be only approximately determined; they should therefore, where possible, be accompanied by specimens of the mature insects into which they transform. Insects forwarded for determination should, in all cases, be accompanied by a detailed report showing precisely in what their economic importance is believed to consist. *When* the Agricultural Department of Ceylon is established we trust we may not require the valuable assistance which is now offered by the Indian Museum authorities; meanwhile Ceylon is not too far off for considerable use to be made of it.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30.

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Castilloa Elastica (Panama or Central American Rubber).—Seeds and Plants supplied; price and particulars as per our Circular No. 32.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; seeds.

Santalum Album (Sandlewood).—The cultivation and felling of the tree is entirely under Government monopoly in India, Sandlewoods to the value of over £100,000 being annually exported to various countries from India. The cultivation of this useful tree is now receiving increased attention in other countries; seeds and plants.

Eucalyptus Marginata (Jarra).—Large quantities of this most valuable timber are being annually exported from Australia to London and various parts of the world for street paving and other purposes. Price of seeds on application. 7,846 pieces of Jarra timber has already arrived for Ceylon use.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Kolanut, Pepper, Cardamom, Vanilla. Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world.

"South Africa."—The great authority on South African affairs of 25th March, 1899, says:—An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price List of Seeds and Plants of Fruit Trees now being prepared and will be ready shortly.

Agents in London:—Messrs. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address:
William, Veyangoda, Ceylon.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
Henaratgoda, Ceylon.

HANKOW, THE TEA MART OF CHINA.

(*From "The River of Tea" by E. R. Scidmore in the "Century Magazine" for August*).

Hankow, the great tea-market of China, and sit companion cities of Hanyang and Wuchang, six hundred miles up-stream from Shanghai, together present one of the greatest assemblages of population in China. Abbé Huc, who passed this way in 1845 and wrote the most interesting and still useful travelers' book about China, estimated the combined population of the three great cities at eight million, and drew amazing pictures of the crowded river life of the Han and Yangtsze, a floating population depleted by thousands in the miles of burning junks when the Taiping rebels got their first taste of blood and plunder in the destruction of the three cities. For half the year the Yangtsze runs at the foot of a forty-foot stone embankment where broad flights of steps lead up to the park, or bund, of the British concession, a model foreign settlement extending from the walls of the native city for three quarters of a mile along the river-bank. For the rest of the year the Yangtsze rises higher and higher, until it often overflows the parapet and the great esplanade, the settlement streets and the race-course being navigable by small boats for weeks at a time. Since the opening of the port in 1861 this British concession, with its smooth, clean streets shade-trees, and flower-beds, has been an object-lesson in municipal order wholly thrown away on the Chinese wallowing in the filth of the native city. Only the magnificient, red-turbaned Sikh police have really impressed the natives, and with their splendid scorn and centempt of the yellow race, these men from the Punjab have maintained order, in fact the most serious decorum, in the settlement. The Chinese have conceded land along the river-bank adjoining the British concession for a Russian settlement, and beyond that tracts for French and German settlements, which when embanked and improved, will give the great foreign city of the future a continuous bund, over three miles in length.

THE CHANGE THAT HAS TAKEN PLACE.

Hankow, so long the chief source of supply of British tea-drinkers with fifteen or twenty tea-steamers in port at a time loading for London, has undergone a change in this decade. As Chinese teas deteriorated in quality and tea-farmers became more careless and dishonest, India and Ceylon teas began to win favour, and with the enormous increase of production in those two British dependencies Chinese tea has lost its place in the British market, furnishing only one-ninth of England's import in 1896. At that same time began the general awakening of Russia. At Hankow the Russian has come, and to stay, and the shadow of the Muscovite is over it all. The Russian is not only established at the gates of China, but also at its very heart, the invasion and absorption being as remarkable in this British settlement at Hankow as everywhere in Korea and Manchuria. Hankow is fast becoming a Russian city or outpost, a foothold soon to be a stronghold in the valley of the Yangtsze, which China has given her word shall never be alienated to any power but England. Some alarmists may even view the Siberian merchants at Hankow as emissaries, like those armed Russian monks who first established themselves in the Caucasus and Asia Minor in stronghold monasteries. Although the Russians have their own concession at Hankow, they do not eare to build upon it and live there, amenable then to Russian laws and consular jurisdiction, to Russian restrictions and espionage; and the consulate and a few warehouses were the only buildings on the Russian concession in 1896. The Russians prefer the laws and the order of the British concession, crowding in upon it at every opportunity, competing for any house that comes into the market, and building closely over former lawns and garden-spaces. They compete with and outbid the few British tea-merchants who remain in these days of active Russian trade aggression. Only one tea-steamer took a cargo to London in 1896; two more British firms closed out and left Hankow that year; and, still more significant, only one pony showed the colors of the one British racing-stable at the autumn races. In the retail shops prices are quoted and bills made out as often in rubles as in taels or dollars, and the Russians have gradually assumed an air of ownership, of seigniorial rights, as complete as if they held the lease or diplomatic deeds to the place for ninety-nine years.

THE ANNUAL MARKET.

This great tea-market of foreign Hankow is a city of six weeks only, the heads of the great hongs, or their managers, occupying their residences from the first of May to the middle of June each year. Leaf-teas are fired and shipped until September and even later, and brick-tea is made until January, but the choice tea is all looked to in those few weeks. For that first quality the Russians buy only the first "flush," or crop of young leaves unfolding at the tips of the new twigs of the evergreen camellia-bush each April. These pekoe and souchong "leaves of the second moon" are carefully picked by hand, while the next crop of tougher leaves is cut with a knife, and at the third and fourth gleanings the knife takes whole twigs, woody stems as well as leaves. The first crop of pale, downy leaflets is cured, or put through the wilting, rolling, fermenting and drying processes, at the tea-farm, the fermentation changing the colour of the leaf to a reddish brown, and converting part of the tannic acid to sugar, in which regard black teas differ from green teas, the leaves of which are dried as they come from the bush. With all the machines invented and used on tea-plantations in India and Ceylon, a drier has only once been used in China. All attempts toward greater care and cleanliness in preparation have been as vain as attempts toward introducing machinery at the tea-farms themselves. Not declining trade or prices—for the tea trade is not nearly what it was eight years ago—can stimulate the tea-growers to any change, and only when the whole country is open to foreign trade and residence will each village or valley have its own tea factory to cure and pack the tea for final shipment on the spot.

THE COMMENCEMENT IN MAY.

The dried tea leaves of the first crop are gathered up by middlemen and brought to Hankow, and on some day in the first week of May the Chinese brokers, in silk array, are borne in sedan-chairs from the native city and set down in the compounds of the great hongs to offer their first *musters*, or samples of tea. The high season begins at that moment, and for six weeks, in the first scorch and stew of its summer climate, Hankow runs at high pressure. The musters are tested by foreign ex-

perts, the skilled tea-tasters, whose acute and highly trained senses render their judgment and appraisal unerring. A few leaves are carefully weighed from the muster into a shallow cup, and boiling water poured over them. The tea-taster notes carefully how the leaves unfold in the water, how the liquor colours and deepens to a rich, clear coffee-brown, and inhales the fragrance of the essential oil as it is borne off in vapor before he takes his judicial sip. He carefully analyzes its qualities for the second it rests on his tongue, and then ejects the liquid, never by any chance swallowing it. A price is agreed upon, and the tea is brought in chests and thick paper sacks and dumped into great bins at the factory, where it is refired, or toasted slowly in iron pans over charcoal fires, to dry it thoroughly, then sealed in air-tight lead cases within wooden chests, which are papered, varnished, covered with matting, and hurried abroad the waiting ships. The average price at Hankow for the first quality black leaf-tea, which is all shipped to Odessa, is about 40 Mexican dollars for each ninety-pound chest. Twenty-five half-chests of this first crop's pekoe leaves are sent to the Emperor of Russia for palace use. Several times it has happened that the whole crop of some particular farm or hillside has been brought up by the Russians and shipped before Chinese connoisseurs, who would drink no other tea, knew it. At once they cabled to Odessa and had the tea bought on arrival and shipped back to China. Twice on the Yangtsze I used a rich and fragrant tea from the Keemug hills that had performed that journey to Odessa and return, because some mandarin knew what he wanted and was willing to pay for it.

THE TEA-TASTER.

The tea-taster is king at Hankow for the six weeks of his exclusive reign, and whatever he may do during the remainder of the year, he is a most rigid total abstainer during the high season, when every faculty of his keenest senses is on the alert. Although he never swallows a sample sip, the tea-taster's nerves and digestion are impaired at the end of ten or twelve years, even the stimulating effect of the strong, volatile aroma in the tea-hongs sometimes giving retired tea-tasters attacks of that tea-tremens which the Chinese and Japanese recognize as a disease; while temperance reformers, usually green-tea drinkers, seem ignorant of the fact that other stimulants than alcohol may be abused. The professional tea-taster at Hankow is said to drink only soda or mineral waters during the scorching weeks of his exacting season, and when word goes round the settlement that such a one of the great experts was seen to take sherry and bitters at the club, it is a signal that the great tea season is declining, that little choice tea is being brought in. Then the tension relaxes, and a certain section of Hankow gives itself over to a jubilation and indulgence that are the scandal and byword of the other ports. Although the tea firms are all Russians or Siberians now, the tea-tasters are Englishmen, and, for reasons not flattering to Russian character, it is said that the tea-tasters will always be English. No green or oolong teas, no perfumed or fancy teas, are included in these great summer shipments, those being specialties of the southern ports. Several times I was regaled on Pu'erh-cha, the greatly esteemed "strengthening tea" from Pu'erh Fu in Yunnan. It had a mildewed, tobacco, weedy flavor, a bitter draught which is warranted to strengthen the system, clear the brain, relieve the body of all humors and bile, and serves high-living mandarins as a course at Hamburg does European bon-vivants. This plant grows in the Shan States, and the leaves are brought to Pu'erh Fu to be steamed and pressed into large, flat cakes, which, being packed in paper only, soon mildew. The long, viscous leaves are probably from some variety of the wild Assam tea-plant, and the taste of the dried leaves themselves is a little like the *yerba buena* of the California foot-hills. The Chinese consider the Pu'erh-cha the better by age, and do not heed the mildew flavor. It promotes longevity along with its therapeutic qualities, and is sent regularly to the emperor at Peking. Despite the distinguished consideration implied, I should not care to have the costly herb offered me again, and, with all the craze for cures, I doubt if Pu'erh-cha would ever find favor abroad.

RUSSIAN CUSTOMERS.

The Russians buy the best and the worst, the dearest and the cheepest teas in Hankow's market, the chests of choice tea going to Odessa for European Russia, and the compressed brick-or tile-tea to Mongolia and Siberia. By September the best leaf-teas are fired, and some tea-steamers are back at Hankow for second cargoes, Odessa ships trying to make two round trips in each season. After that the tea-farmers send in the bags of coarse leaves, broken and refuse tea, the dust from their tables, bins and floors; the factories have binfuls of such leavings and sweepings too, and the manufacture of brick-tea begins, and continues until January before all such accumulations are disposed of. Tokmakoff, Molotkoff & Co.'s brick-tea factory, which is managed by a Scotchman, who invented and adapted several of the machines and processes employed, is the largest factory in Hankow, employing fourteen hundred workmen through the long season, and shipping nearly a million bricks a year, with an almost equal output from their factory at Kewkiang. All the way to their compound the settlement is fragrant with toasting tea-leaves, delightful whiffs coming from the rows of windows at that end of Hankow, where walls are higher and longer, and chimneys rise significantly. They showed us first the bins of fine dust, ground and sifted by wretched, sallow, greenish-hued coolies, whose nostrils were filled with cotton-wool to prevent their breathing in the insidious dust. Two pounds of tea-dust are weighed into a cloth, which is laid on a perforated plate over a caldron of boiling water and covered for a few minutes, when it is poured into a clumsy wooden mold, and a half-pound of finer dust added as a surface. The mold is covered, put under a screw-press, and clamped shut. The noise around this press is deafening as the heavy molds are clanged about on iron tables and the stone floor, and with the half-clothed workmen moving in clouds of steam from the caldron and shouting their hideous dialect about the dark warehouse, a short inspection of the process satisfies. The bricks remain in the molds for six hours to cool, and are then removed, weighed, and stacked in endless rows in an upper story to dry and shrink, before being wrapped in paper, furnished with red lables in Russian, and packed in baskets holding seventy bricks each. All defective or under-weight bricks are broken and ground to dust again, and it takes heavy blows with an iron, or sharp raps against the stone floor, to break one of these inch-thick black tiles, which are nine inches wide and

twelve inches long. A larger and a smaller size of green-tea bricks are also made at this factory, into which the coarse leaves and stems go entire, without grinding. One naturally wonders that machinery is not employed for all these simple processes, and that some Yankee does not start a factory where a stream of tea-dust would go in at one end and rows of bricks come out at the other ; but human lifeis so over-abundant in China that hand-labor is cheaper than any steam-driven machinery coolies' food worth less than engine coal.

BLACK BRICK TEA.

The black brick-tea for Mongolia and Siberia, and in fact almost the whole tea-supply of Russia, used, long ago, to go from Hankow by boat for three hundred miles up the Han River, was portaged across, and taken a distance up the Yellow River, and then loaded on camels and carried across Shansi to Kiakhta, on the Siberian frontier. The caravan trade from Kiakhta and Kalgan to the Volga was the subject of negotiations by the embassy Peter the Great sent to the Emperor Kanghsi, and ever since there have continued, winter and summer alike, the unending processions of camel trains back and forth across Siberia. Nijni-Novgorod was then the tea-market of Russia, and the water and land transportation across Siberia was so cheap that tea could be delivered in Nijni-Novgorod by caravan more cheaply than by tea-steamers to European ports. The opening of the Suez Canal gradually moved the tea trade to Odessa ; the tea brick is no longer a unit of exchange at Nijni, and the great fair on the Volga has lost its most picturesque feature with the vanishing of the camels and the great tea-caravans. When all the Russian tea came by caravan to Nijni, "caravan tea" had a deserved repute in Europe. About the time that the Russian tea trade shifted to Odessa, the name of "caravan tea" reached America, and dealers, not always informed themselves, played with the catching word. One is offered "Russian tea," and assured that "caravan tea" is better than other teas, because a sea voyage spoils the flavor of tea. One must not inquire how the tea crossed the Atlantic, evidently. If all leaf-teas were not sealed in air-tight lead cases, the sea air and ships'-hold odors could not taint them as unspeakably as the proximity of camel's wool, pack-saddle coverings, and the belongings of the filthy Mongol caravan-men on their three months' journey across Siberia.

A FEW FIGURES.

Hankow's trade statistics deal in large figures for the export of tea. In 1896 there went out from that port 470,063 piculs, or something over sixty million pounds, of leaf-tea, and 434,107 piculs of brick-tea ; yet the tea trade has fallen off, and the figures are not so large as when the English were the great consumers.

CEYLON EBONY.

Diospyros Ebenum—*Koenig.*

(From the *Indian Forester for August.*)

The name Ceylon Ebony for *D. Ebenum* is not absolutely correct, for this species is found in Southern India, nor is it only Ceylon *Diospyros* which has a black heart-wood there being others such as *D. ovalifolia*, *D. crumenata*, *D. Melanoxylon* and *D. oocarpa* which furnish a certain amount of ebony. It is even not certain whether the species will not have to be subdivided into two on account of the varied arrangement of the fruit, whether solitary or in clusters in the axils of the leaves. It is however convenient for me to use this name as it is used in the timber trade, and also because my acquaintance with it is limited to Ceylon.

Habit.—Without going into botanical details it may be said that this is a large evergreen tree, attaining a girth of up to 14 feet. It has a roughish bark of a dark colour which, in exposed situations, has a greyish tinge. The leaves are also dark and appear as if sprinkled over with fine charcoal dust. Several other species of *Diospyros* possess very similar characteristics and it requires a certain amount of experience to distinguish the species, especially saplings and young trees.

Distribution.—Ebony has almost the same range of distribution as satinwood as the annexed sketch map will show, but it is found more abundantly in the intermediate zone and in the south of the island it penetrates even into the moist zone. But it is most abundant in the dry zone and the richer forests are all in the Northern half of the island, especially in the Eastern portion of the North-Central Province. It is also well represented in the Northern and North-Western Provinces.

Soil.—The best ebony is found on rocky well-drained soil. It is at times found on soil containing a larger proportion of clay than satinwood can endure but, generally speaking, it is found like satinwood on sandy loam with a good subsoil drainage. It is frequently found near watercourses, which are dry during a part of the year, but in swampy soil never. It differs in this respect from *Diospyros Embryopteris* which is frequently found near rivers, pools or tanks.

Companion Species.—As I have stated before, satinwood is frequently a companion of ebony, as also *Mimusops hexandra*, *Nephelium longana*, *Gleniea zeylanica*, *Diospyros ovalifolia*, *D. crumenata*, *D. oocarpa*, *D. montana*, *Vitex altissima*, *Albizzia odoratissima*, *Berrya Ammonilla* on the moister soils, and many others. I have never seen ebony growing pure and the proportion of this species to the many others is always small. In the richer forests there may be 10 to 15 trees per acre or, taking the saplings into account, perhaps 50 trees, but this percentage is high. I have only heard of one instance, in the Mannar District, where there were 40 trees (exclusive of saplings) per acre. In an enumeration survey made recently over 50 acres in a fairly rich ebony forest in the North-Western Province, 26 trees over 6 feet in girth, 65 from 4 feet 6 inches to 6 feet and 120 trees between 3 feet and 4 feet 6 inches were counted. This gives a total of 4 trees over 3 feet in girth per acre. In average ebony forest, enumeration surveys both linear and by sample area made in the Northern, Eastern and North-Western Provinces, have shown that there are generally not more than 3 to 4 trees over 9 inches in girth per acre. This is, no doubt, partly due to the extensive and wasteful fellings which were carried on for many years over the Ceylon forests, and partly to the absence of improvement fellings required for furthering the growth of the young trees and saplings.

Sylvicultural Requirements.—Unlike satinwood, ebony does not require much light for its

seedlings. As a rule, it will suffice to cut the underwood and to girdle here and there a low-crowned tree. But after the seedlings have established themselves it is necessary to remove the cover which is directly overhead, not more. When the trees reach their maximum height, it is time to give more room to their crowns, but until then it is best not to let in too much light. It is difficult to see how the seed gets distributed over the soil of the forest, except in hilly ground, where it rolls down the slopes, or near streams or foot paths acting as such during wet weather, and yet trees are found, as often as not, at the top of a slope although the seed is neither light nor apparently palatable to birds or mammals although it becomes a prey to weevils, which would be rather a factor in the destruction than in the distribution of the seed. The seed usually ripens before the North-Eastern monsoon, but the good seed-years are not regular nor is the seeding equally good all over the forests at the same time. Observations taken in the forests since 1890 have not recorded a single universally good year, but the years 1891 and 1896 appear to have been the best while in 1892-93 and 1897 the seeding was fair. The good seed-years do not appear to come in any regular rotation but are dependent chiefly on rainfall at the right time. Occasionally, ebony seeds twice in the year. (*Ceylon Forester*).

Rate of Growth.—There are, unfortunately, not yet sufficiently reliable data to show the rate at which this tree grows. Several sample plots have been started but they contain so few trees, sometimes not even all girth-classes being represented, that it is not possible to take the measurements as absolutely reliable. As a rule, after passing 3 feet in girth, ebony is very slow growing, more so than satinwood. From the data which I have been able to collect the rate of growth in the forest appears to be about the following, but, as I say, the figures are very liable to correction. The present measurements see to show that a tree reaches a girth of 18 inches at the age of 25 years, 36 inches at 75 years, 54 inches at 135 years and 6 feet in girth at the age of 200 years. On deep soil these figures are probably below the mark and the trees grow faster.

The Timber.—The proportion of heart-wood to sap-wood varies a good deal. It is commonly considered that timber grown on deep soil contains a smaller proportion of heart-wood than trees growing on rocky slopes. My own experience coincide with this theory, not only as regards *D. Ebenum* but also as regards *D. Melanoxylon*. As regards the latter, I remember that small trees on the stony slopes of the Ganges division gave a far larger supply of blackwood than comparatively large trees growing on alluvial soil in the western part of the Sharanpur division. Recently, 15 trees of Ceylon ebony, varying in girth from 6 feet to 12 feet were measured carefully. The gross volume of these trees amounted to 1,208 cft. while the volume of Blackwood was 282 cft. or less than one quarter of the volume, the proportion of heart-wood in the individual logs varying from 0·14 to 0·35. This was in good soil and measurements have yet to be made to find out the proportion of blackwood on rocky soil. As a rule, I do not think that the thickness of the sap-wood cylinder is much less than 3 inches. The largest log of ebony, which I have seen, measured 7 feet in girth after the sap-wood had been removed. Together with the sap-wood it must have been very large ; for, of the 12 feet logs mentioned above, one gave a measurement of blackwood of 5 feet 3 inch while another measured only 4 feet in girth after peeling. The sap-wood is very light coloured and soft. It is peeled off by means of heavy felling axes. Circular incisions are made round the log at distances of about 2 feet apart and the portions between trimmed off. It is possible to get the wood naturally peeled by leaving the logs in the forest for some years, but timber merchants do not like these logs and consider them to be dead wood. They, therefore, fetch lower prices. The hart-wood is not necessarily black throughout. On the contrary, streaks of white or pale brown colour are not infrequent. Some forests of the island produce blacker wood than others. For example, ebony from the western side of the island is usually less streaky than that found on the east. Generally speaking, the market favours the black ebony, if it is of as good dimensions as the streaky logs, the China market especially requires the wood quite black. For cabinet work, however, especially for ornamental beading and framing, the streaky wood is in request as it is used as a substitute for calamander. As regards the comparative value of the different ebonies in India and Ceylon, it is somewhat difficult to make a comparison. *D. Ebenum* usually gives logs of larger dimensions and is on that account more valuable. In the local market, Indian ebony does not fetch as high a price as Ceylon ebony. Some years ago a local merchant imported a parcel of logs from India. The logs were of fair girth and very black, and yet they only fetched poor prices. The explanation given was, that Ceylon ebony takes a much better polish than that from India. I was not able to ascertain whether the logs referred to were *D. Melanoxylon*. If so, they were remarkably fine. Of the different ebonies which I am acquainted with, *D. Ebenum* seems to be the most close-grained. Its surface, when polished, feels more greasy to the touch than others and this, no doubt, accounts for the higher degree of polish which it can take. The weight, according to Gamble, varies from 61 to 81 lb. per cubic foot. I have weighted carefully six well air dried specimens from different parts of the island and found their weights to have varied from 90 lb. to 77·7 lb. per cft. the average being 73·9 lb. per cft.

Market.—The prices realized for ebony in Ceylon range up usually to R180 or R185 per ton (weighed) for good lots. I have once known the price to go up to R210 per ton, but it rarely exceeds R185, and I have never known the price of first-class ebony go below R150 to R160 per ton. The price not only depends on the state of the market in Europe and China but on freight available. If freight is scarce or high the price naturally goes down. I may add that it is by no means an easy matter to obtain freight for timber, especially when large consignments of tea are being sent home.

It may be of interest to Indian readers to know how the sales are conducted. All ebony, excepting branch-wood, top pieces and dead wood remaining from former fellings which are sold in the forest or at minor depôts, sent is to Colombo, where it is sorted at the Central Timber Depôt in lots, as homogeneous as possible,

THE SETTLEMENT OF THE DRAFT DISPUTE.

The following petition has been addressed to the Board of H. M. Customs by the Secretaries of the Indian Tea Association (London), the Ceylon Association in London, and the Tea Buyers' Association:—

Ceylon Association in London, 61 and 62, Gracechurch Street, August 4, 1899.

To the Hon. Board of Her Majesty's Board of Customs:—

Gentlemen,—We, the undersigned, representing the importers of Indian and Ceylon tea, and also the tea buyers of the City of London, ask your kind and favourable consideration of the following petition:—

You are doubtless aware of a dispute between importers and buyers of tea at present unhappily existing the Port of London.

The importers having given notice of the withdrawal of the usual pound draft, and the trade having refused to buy their tea without the allowance, representatives from both sides have met and have arrived at a settlement, which, if it be accepted by your honourable board will terminate the dispute.

The settlement agreed upon consists in a modification of the system of weighment of tares.

We do not petition for any alteration in Her Majesty's Customs present method of gross-weighing packages of tea on arrival, but we do petition for an alteration in the method of taring packages with the exception of boxes weighing 28 lb gross or under.

We petition your honourable board to take the tare with a half-pound weight in the scale, giving buyer the tare as heretofore, on the half-pound or any fraction between that and the pound above, and per contra, if the scale does not lift on the weight side, showing that there are only, say, from one to seven and three-quarter ounces over the pound, we petition your board to take the tare at the lower pound weight.

Thus:—

26 lb. and up to 26 lb. 7¾ oz. to be called tare 26 lb.
26 lb. 8 oz. and up to 27 lb. to be called tare 27 lb.

Under your honourable board's orders, parcels of tea are allowed to be tared on an average tare if the parcel does not vary more than 2 lb. in weight.

In order that these average tares may be arrived at with greater precision, we petition that your honourable board will order the number of packages to be taken for ascertaining the average tare in various parcels to be raised, and that the packages be selected fairly by your officer and not by the warehouse foreman.

Present arrangements:—

From 1 to 10 packages	1 tarer
From 11 to 40 packages	3 tarers
From 41 to 120 packages	5 tarers
From 121 packages up	7 tarers

We propose the following alterations:—

Up to 20 packages	3 tarers
From 21 to 60 packages	5 tarers
From 61 to 120 packages	7 tarers
From 121 packages up	9 tarers

To arrive at the average tare we suggest the following method of dealing with the fractions of a pound, viz.:—

lb		lb	
22		23	
23		23	
24	117 divided by	24	118 divided by
24	5 equals	24	5 equals
24	23 2-5.	24	23 3-5.
—	Tare 23.	—	Tare 24.
117		118	

We also petition that your honourable board will order each package in every parcel of tea bulked in London to be tared separately, and that you will instruct your officers to see that the entire bulk of tea, as landed including overweight, is replaced in the packages.

The reason we accept boxes of 28 lb. gross and under is that there is no trade draft on them, and it is likely that they would be made habitually to tare below the half-pound, and the buyer would in such case not get full weight.

If, on consideration, your hon. board can see their way to accede to our petition we shall be glad if you will issue an order to that effects, as dated from October 2, 1899.

Awaiting the reply of your hon. board, We remain, gentlemen, yours faithfully,

Indian Tea Association (London).
(Signed) Ernest Tye, Secretary.
Ceylon, Association in London,
(Signed) Wm. Martin Leake, Secretary.
Tea Buyers' Association, (Signed) A. Jackson, Hon. Secretary.

The following reply has been received by the Secretaries of the Associations:

Custom House, London, August 14.

Gentlemen,—The Commissioners of Customs direct me to acknowledge receipt of your letter of the 4th instant, and to express their hearty satisfaction at the prospect you hold out of a termination of the dispute between the importers and buyers of tea in London through the adoption of special arrangments for taring on the part of this department.

1. The proposal to tare to the half-pound (instead of the pound as heretofore), rounding up if the fraction be an exact half pound or over, and rounding down if the fraction be less than half a pound, will be gladly accepted by the Board of Customs, subject to the concurrence of the Treasury.

2. As regards the method of striking the average tare, the Board see no objection to your proposal that a larger proportion of packages be selected for taring, viz:

3 out of 20 or less.
5 out of from 21 to 60.
7 out of from 61 to 120.
9 out of 121 or more.

The method of calculating the average seems to be practically that now in force.

The selection of the packages will rest on the responsibility of Customs officers, as at present.

3. Your request that each package in every parcel of tea bulked in London should be tared separately, instead of leaving separate taring to be optional, as prescribed by general order 102/1894, does not seem to command the support of all the importers, as you will see from the enclosed copy of a letter, dated the 9th inst., from Messrs. Hadden and Co., and the Board suggest that you should give it further consideration before pressing it.

4. Your concluding proposal is that the officers of this department should insist on the entire bulk of tea as landed, including overweight, being replaced in the packages, instead of allowing the use of "overtakers," as at present. The Board regret to say that they would not be justified in imposing on their officers so heavy and novel a responsibility as would be involved in the suggested arrangement. Customs officers are answerable for the security of the revenue derivable from goods in a bonded warehouse, but not for the custody of the goods themselves, and could not keep guard over every package of tea, after taring, until it had been nailed down.

If importers and buyers are agreed upon a certain way of treating overweight, after bulking, they should adopt their own precautions for ensuring that this method is duly carried out.—I am, gentlemen, your obedient servant,

(Signed) John Courroux.

The Indian, Ceylon, and Tea Buyers' Associations in London, 61 and 62, Gracechurch Street, E.C.

The letter from Messrs. Hadden & Co., referred to in the foregoing reply, is as follows:—

25, Fenchurch Street, London, E.C. Aug. 9, 1899.

The Hon. the Commissioners of Her Majesty's Board of Customs.

Hon. Sirs,—General Order, 102/1894.

As importers of Ceylon tea, ourselves benefited, and acting for others benefited by the above Order, we humbly pray that there be no alteration with regard to it.

We are led to this petition hearing today that there has been a petition, dated 4th inst., sent to your Honourable Board, requesting that the order may be cancelled, which petition has been signed by the Secretary of the Ceylon Association in London jointly with the Secretary of the Indian Association, and we are convinced that the petition has been signed without proper thought.

The members of our firm belong to the Ceylon Association—have belonged to it from its commencement—and in it there is a special Tea and Produce Committee (of which they are also members), for the purpose of considering such questions as these. The matter has not been directly brought before this Association or its Committee. Had it been brought before them we are sure the request to have separate tares taken of London bulked teas would never have been made.

Under your general order of December 22nd 1894, a practice has sprung up in Ceylon of packing teas on the day they are made, and leaving any bulking that may be required to be done in the warehouse here. If such teas are separately tared, the warehouse charges will be increased some ten per cent. and the proprietors of the tea plantations will suffer accordingly. Probably they will have to abandon their present practice and, as many of them will consider, to the injury of their tea, and do all the bulking on the estates, and this will require enlargement of factories. It is a serious question to some planters.

If you cannot refuse that portion of the petition that refers to the separate taring of London bulked teas, we humbly beg that you will postpone your assent to it for some months. Apparently all those connected with the little-considered petition to you of August 4th are now out of town holiday-making. Your very obedient servants, (Signed) James A. Hadden & Co.
—*H. & C. Mail*, August 18th.

THE CHINA TEA-TRADE.

AT KIUKIANG.

The British Consul at Kiukiang reports that tea shows an improvement as against previous years' statistics, but that the total falls short of what it used to be in former years, and British merchants are not sanguine as to the future. The season, it is said, was a specially good one for native dealers, but foreigners also appear to have done a profitable business. Ningchows, until of late years, were the favourite Russian teas. Recently, however, Keemuns seem to compete with them for Russian favour, especially in the finest grades, and this, combined with low exchange, has consequently driven prices up. If it be the case that this is caused by the Russian taste following the British and preferring stronger liquory teas, and that this is leading them to take more and more British-grown tea each year, there is very good hope for Ceylon and Indian teas in Russia. Mr. Consul Brady quotes the remarks of a gentleman, well conversant with the tea trade, who appears to be very despondent as far as regards the prospects of exports to Great Britain. He says, "Teas from the Keemun and Ningchow districts have been of superior quality, and have sold at good prices. The total yield for the season was about the same as last year, and it looks as if Russian requirements would prevent any further falling-off in production. Export to the United Kingdom, however, is steadily shrinking and threatens to become nominal. The taste of the British public in the matter of tea has undergone a marked change of late years, and consumers have no appreciation of light flavoury teas such as China produces. The introduction of machinery might revive the trade with England, and the colonies; but this seems as far-off as ever, the Chinese being quite satisfied with the prices paid for their tea prepared according to their own methods." It is added that green teas pass through Kiukiang, but no business has taken place for twenty-five or thirty years.

AT CANTON.

The British Consul at Canton reports that the decaying tea trade has again dismissed by over 500,000 lb. A dry spring and an insurrection in June in close proximity to the tea districts may, to some extent, have effected the trade, but the real reason for the decline is the steady falling off in the demand for Canton scented capers on the London Market. What demand there is more and more for low-priced teas for blending purposes, and a few more years will probably see even this small demand disappear. The quality of the teas was fully up to the average standard, and they were exceptionally well-scented. Taken as a whole the year was a fairly profitable one, both to the foreign merchants and to the native dealers. Long leaf scented Orange Pekoe and Canton Congous seem to be going entirely out of consumption. The total export of tea for 1898 was 4,163,000 lb., of which nearly three-quarters was sent by junk to Hong-Kong and does not appear in the tables at the end of this report, which are compiled from the Imperial Maritime Customs Returns.

COCONUT GROWING IN THE PHILIPPINES.

It is stated that the coconut palm will grow anywhere along the sea coast of the Philipines and flourish even in the poorest soil. Under present conditions it is ascerted that there is lots of money in raising coconuts and it is prophesied that numerous new coconut groves will be planted. The Spanish method of managing a coconut plantation is described as being very simple. The trees are set out about eight feet apart and until they begin to bear which is at the end of the eighth year the ground may be utilised for other crops the same as young orchards are at home.

After the grove comes into bearing, the owner has a steady income for life. Spanish proprietors, it is said, usually lease their groves to native tenants, who pay for each tree an annual rental one dollar mex. At this rate an acre would bring in from $200 to $300 mex a year without any effort of collecting the rent. The owner of a bearing grove of 200 acres can afford to take life very easy, and as the prolific coconut tree, produces from fifty to 200 nuts a year the tenants also have a pretty good thing of it.

A trio of clerks in the "palace" are said by their fellows to be "nutty" on the subject just now. However, this may be they are "reading" on coconut palms and planning to become rich, poco tempo, by investing jointly in a plantation.—*The Manila American*, Aug. 24.

MATE: PARAGUAYAN TEA.

Yerba mate, or Paraguay tea, is a popular beverage in South America that has been used for centuries. In 1898 the exports of this leaf from Montevideo, Buenos Ayres, and Valparaiso were over 50,000,000 pounds.

For a long time Paraguay enjoyed the reputation of producing the largest quantity and the best quality of mate, but it is surpassed to-day by Brazil. The State of Parana alone exports annually 22,000,000 kilograms (48,501,200 pounds).

The cultivation of this shrub has assumed such proportions that in the interior of the country there are whole forests of mate. Mr. Barbier, who was sent by the French Government on a scientific mission to South America, estimates that more than 11,000,000 people use mate.

In a volume published in Paris in 1716 occurs the following description:

"During the day, they make much use of the herb of Paraguay, which some call St. Bartholomew's herb, who, they pretend, came into that Province, where he made it wholesome and beneficial, whereas, before it was venomous. Being only brought dry, and almost in powder, I cannot describe it. Instead of drinking the tincture, or infusion, apart, as we drink tea, they put the herb into a cup or bowl, made of a calabash or gourd, tipped with silver, which they call mate; they add sugar, and pour on it the hot water, which they drink immediately, without giving it time to infuse, because it turns as black as ink To avoid drinking the herb, which swims at the top, they make use of a silver pipe, at the end whereof is a bowl, full of little holes, so that the liquor sucked in at the other end is clear from the herb. They drink round from the same pipe, pouring hot water on the herb as it is drank off. Instead of a pipe, which they call *bombilla*; some part the herb with a silver separation, called *apartador*, full of little holes."

The Minister from Brazil to the United States Senhor Joaquin Francisco de Assis (Brazil) prepared an article for the Bureau of American Republics, describing yerba mate, which comes to the market in the form of broken leaves, coarse powder, or in stalks, and is prepared by infusion in boiling water, like tea. It is taken with or without sugar, according to individual taste. Mate is also prepared in a small vessel called *cuia*, from which the tea is sucked by means of a tube which terminates in a hollow perforated sphere called a *bomba*.

Doctor Peckholt, of Rio de Janeiro, makes the following comparative analysis of green tea, black tea, coffee and mate:

[In 1,000 parts.]

	Green tea.	Black tea.	Coffee.	Mate.
Essential oil	7.90	6.00	0.41	0.01
Chlorophyl	22.20	18.14	13.66	62.00
Resin	22.20	36.40	13.66	20.69
Tannin	178.00	128 80	16 39	12 28
Caffeine ortheine	4 50	4.30	2.66	2.50
Extract matter, etc.	469.00	390.00	270.67	238.83
Fibres and cellulose	175.80	283.20	174.83	180.00
Ashes	85.60	54.40	25.61	38.11

From this analysis, Doctor Caminhoa, professor of the faculty of medicine of Rio de Janeiro, draws the following conclusions;

First—Mate contains less essential oil, is less stimulating than coffee, black or green tea, and is, therefore, a beverage especially suited to nervous people, women, and children.

Second—Mate contains more resin than coffee, less than green tea, and very much less than black tea; it is, therefore, more diuretic than coffee, and as a stimulant rivals green tea.

The opinion of Doctor Caminhoa has been confirmed by other scientific men, among whom may be cited Doctor Lancaster, superintendent of the department of animal and food products of the South Kensington Museum; Doctor Schnepp, assistant inspector of the Bonnes waters, and Doctor Conty, the French savant, besides many others who have used and analysed the product.

Mate is prepared by infusion or decoction. Ordinarily one uses 25 grams of Mate to 1 liter of water, but this, of course, is regulated according to the individual taste. It is allowed to steep ten to fifteen minutes, and after being strained is served. It is sweetened to taste, and a little milk or rum is sometimes added. The use of utensils of iron should be avoided, as they give a dark color to the beverage.

On account of its peculiar taste, mate is frequently not liked at first. It acts as a powerful tonic, especially for invalids and those who are given to excessive physical or intellectual labors, and for all those who endeavour to solve the problem of excellent nourishment at a small expense. The journal *La France* declares that it was mate that enabled Doctor Tanner to endure forty days of fasting.

Mate is a quencher of thirst *par excellence* and a great restorative. It is a beverage specially adapted to men of studious habits to whom the use of coffee is harmful, as it gives the same results without unduly exciting the nervous system. It may be drunk cold, but it is generally served hot, and lovers of mate, absorb it by means of a *bombilla*, which is a diminutive *bomba*.

In Brazil the collection of mate is begun in December and continues until August. A company of gatherers set out, taking with them such provisions, tools, and cattle as are required for the expedition. On arriving at a suitable locality, they establish a camp or ranch, and immediately begin to gather mate, which is dried and packed on the grounds. The process is as follows: The leafy branches of the mate are cut down and placed in a pit about 6 feet square, where they undergo a roasting from a bright fire. This operation demands much care, since it is upon this process that the aroma of the mate depends, and the required amount of heat is only learned by long experience. After two or three days of drying, the leaves are reduced to coarse powder, and are packed in *serons* or bags made of raw hides, which are then exposed to the sun.*

The quality of the mate varies according to its origin and the method of preparation. That which is gathered from regions along the coast is the poorest, being less rich in gum and resin and having less aroma than that from the interior of Parana Paraguay. Leaves a year old have few of the properties required, while those of four or five years, being darker in color, thicker, and having a larger number of glands, give the best mate.—*American Grocer.*

Tea in India.—Unless manuring is taken in hand energetically, the shutting up of the larger portion of the Surma Valley plantations is merely a question of time—says *The Indian Planters' Gazette*. We have heard even old planters, employed on these places, congratulate themselves upon being able to get a thirty-mile nerrick done on such lands, not reflecting upon the unprofitableness of constantly turning up simple sand that results in a poor sixpenny average tea. It is not going too far to say that all north of the Puttareah range, and as high up as the meridian of the Goomrah in north-west Cachar, there is not one concern that can be classed as a first-rate garden. They may be kept going, but only by the adoption of the means we have pointed out. We are fully aware that there are in the area indicated isolated patches of good productive land, but these bear but a very small proportion to the rest of the property, as is proved by the averages obtained for the factories' outturn. Were it feasible to keep the produce of these plots separate from the rest of the outturn, things might improve, but unfortunately in bulking the whole gets mixed together, hence the stronger leaf is pulled down by the more insipid and weak. Manuring would go a great way to ensure uniformity; the want which in our Indian teas forms the chief complaint of dealers, and we must admit this complaint is justifiable.

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* This was the primitive method of preparing mate. To-day, however, perfected machinery does the same work better and more rapidly in large central mills, whither the product of an entire district is taken.

TEA PESTS.

BEING EXTRACTS FROM NOTES ON INSECT-PESTS FROM THE ENTOMOLOGICAL SECTION, INDIAN MUSEUM:

(By E Barlow, Assistant in charge of Entomology.)

1. EUPROCTIS LATIFASCIA, WALKER.

(sub-ord. Heterocera, Fam. Lymantriidæ.)

In March 1897, from Messrs. Andrew Yule & Co., were received some living specimens of a caterpillar which had been doing a great deal of damage to tea plants in the Darjeeling district. The caterpillars were said to be in millions and to be quite stripping the bushes of their old leaves.

The caterpillars forwarded were evidently full-grown specimens, as immediately on their arrival in the Museum, when transferred to a rearing cage, they began to transform themselves into chrysalids. The moths which emerged after about twelve days, were identified as belonging to the species *Euproctis latifascia* of Walker, who describes the female as follows:—

White. Antennæ with testaceous branches. Abdomen brown, white at the base, luteous at the tip. Length of the body 6 lines; of the wings 20 lines.

Hab.—Nepaul.

According to Sir G F Hampson, the species is identical with Walker's *Euproctis antica* and *E. postica*, and Moore's *E. abdominalis*, which have been described thus:—

Euproctis antica, Wlk. ♂ and . White head, palpi, fore part of the thorax and fore legs. luteous in the male, testaceous in the female.

Female.—Abdomen and fore wings with a very slight testaceous tinge. Length of th body 5-7½ lines; of the wings 12-18 lines.

Hab.—Nepaul, Hong Kong, India.

Euproctis postica, Wlk. ♂. White. Palpi porrect, smooth, hardly extending beyond the head; third joint conical, not more than one-fourth of the length of the second. Antennæ very broadly pectinated. Abdomen brown above; apical tuft, small, white. Legs pubescent; hind tibiæ with four long slender spurs. Wings rather short. Fore-wings rounded at the tipes; exterior border convex, very slightly oblique. Length of the body 6½ lines; of the wings 14 lines.

Hab.—Hindostan.

Euproctis abdominalis, Moore, ♂ and ♀. Cream-white; abdomen blackish; and tuft ochreous; legs white.

Expanse, ♂ 1 $\frac{1}{10}$, ♀ 1 $\frac{3}{10}$ inch.

Hab.—Dharmsala.

Allied to *E. postica*. Wings comparatively longer and narrower.

2. THOSEA CERVINA, MOORE.

(Sub-ord. Heterocera, Fam. Limacodidæ)

In July 1894* were received from Messrs. Finlay, Muir & Co. specimens of live cocoons, the caterpillars of which were reported to have done a good deal of damage to tea plants on the Rungamuttee garden in Jalpaiguri.

From the cocoons, two moths, a male and female, were successfully reared in the Museum; these, however, proved to be unrepresented in the Museum Collection, but they were so far identified as belonging to the genus *Thosea*. For more precise determination, the female moth was sent to Sir G. F. Hampson of the British Museum who very kindly identified it as *Thosca cervina*, Moore. His description of the moth is given below:—

Male.—Head, thorax, and abdomen red-brown. Fore-wing silky gray-brown, with a dark speck at end of cell, and a slightly incurved line from costa just before apex to near outer angle which is red-brown with a pale outer edge. Hind wing and underside dull blown. Antennæ with basal joint pale; a conspicuous white spot at end of fore tibia.

Female.—With the sub-marginal line of fore wing erect; the basal joint of antennæ dark: no white spot on tibia.

Larva green, with a yellow-bordered dorsal irregular band, linear and purplish anteriorly, dilated at middle and cleft behind, purple streaked, and with the angles at middle red; anterior and posterior subdorsal spinous tubercles; lateral and sublateral series of longer tubercles.

Hab.—Sikkim; Ceylon. *Exp.* ♂ 38, 44 millim.

The remedial measures suggested were that children might be employed to remove and destroy the caterpillars. If this were carefully done, and if also the cocoons were searched for, in and on the ground near the affected trees, and were destroyed, it would (if not of any immediate benefit) at any rate be likely to prevent or to alleviate a reoccurrence of the pest in a future year.

3. THOSEA DIVERGENS, MOORE.

This insect is another addition to the Indian Tea pests, of the genus *Thosea*.

In March 1897, specimens of a living cocoon were sent to the Museum by Mr. J. W. Fleet, with a note, that they were taken from the Bishnauth Tea Gardens, Darrang, Assam, where they had been doing damage to tea bushes.

From the cocoons, several moths emerged in the latter end of the month. They appeared to be new to the Museum collection and were forwarded to Sir G. F. Hampson who determined them as belonging to the species *Thosea divergens* Moore, = *Aphendala divaricata* Moore.

As the Museum Library does not possess Mr. Moore's description of *T. divergens*, it is not printed here, the description of *A. divaricata*, however, is quoted below.

Aphendala divaricata ♀. Upper-side pale purplish, brownish-ochreous. Forewing with a slender dark ochreous-brown band curving upward from posterior margin at one-third from the base to one-third before the apex, and from which a straight erect similar band extends from its costal end to the posterior angle. Body dark ochreous-brown. Expanse 1⅜ inch.

Hab.—Silcuri. Cachar.

4. BELIPPA LOHOR, MOORE.

(Sub-ord. Heterocera. Fam. Limacodidæ.)

In March 1897, Mr. W. J. Fleet forwarded to the Museum several living specimens of cocoon, with the statement that he had collected them from the Salonah Tea Estate, Assam. About the same time similar (live) cocoons were also sent to the Museum through Dr G. Watt, Reporter on Economic Products to the Government of India, as infesting tea plants in the Doom Dooma Tea Gardens, Dibrugarh, Assam.

The samples of cacoons were separately confined in a breeding cage, from which, after a lapse of a week, moths began to emerge. These on examination proved to belong to the genus *Belippa*; the species being new to the Museum collection.

On submitting specimens of the moth to Sir G. F. Hampson for identification, he pronounced it to be identical with *Belippa lohor*, Moore, the female being almost indistinguishable from that of *Belippa laleana*, Moore, and hitherto unknown to entomologists.

* The account of this pest should have appeared in the preceding number of *Indian Museum Notes*, but owing to the delay in ascertaining the identity of the species it was withheld.—Ed.

Mr. Moore describes the male, as deep ferruginous: fore-wing with patches on the disc, and a small patch at the apex, black hind wing with a triangular hyaline space from exterior margin; the anterior and abdominal margins fuliginous-brown; thorax with two black spots in front, and one on each side; base of abdomen black. Expanse $1\frac{1}{8}$ inch.

Hab.—Cachar, Java.

5. ASTYCUS LATERALIS, FABR.

(Order Coleopetera, Fam. Curculionidæ.)

Through Dr. G. Watt, Reporter on Economic Products to the Government of India, were received in the Museum in July 1897, specimens of a weevil said to be attacking tea plants in Assam. The original sender wrote concerning them that "they came during one night in thousands and simply stripped the bushes they were on." Fortunately they are easy to catch.

The specimens proved to be the same as *Asticus lateralis*, Fabr., which has previously been recorded as attacking various plants in different parts of India.

In 1889, Mr. Beck submitted specimens of this insect for examination, and reported that they attacked the leaves of the "Some" plant in the Raj Gardens, Darbhunga. In Vol. II, *Indian Museum Notes*, page 151, it is referred to as "a small greenish weevil reported in the beetle stage as defoliating mulberry (*Morus*) bushes in Rangoon. Also thought to be the species which has been reported by Mr. Thompson as tunnelling into the timber of Chir (*Pinus longifolia*) in the North-Western Provinces; in this case the injury is no doubt done by the larvæ of the insect."

6. DIAPROMORPHA MELANOPUS, LACORD.

(Order Coleoptera, Fam. Chrysomelidæ.)

In July 1897, specimens of a beetle which proved to be *Diapromorpha melanopus*, Lacord, were sent to the Museum by Messrs. Williamson, Magor & Co. who reported that it had been doing damage among the tea bushes on one of their Assam estates in the Jorehaut district.

This insect (known as the "Orange" beetle) is commonly found in tea gardens in Assam, where it no doubt does a good amount of injury by eating up the tender stems of tea-shoots.

Specimens accompanied by complaints of damage done by it are annually sent to the Museum, but no action, it appears, has hitherto been taken to ascertain the life-history of the pest.

7. CREMASTOGASTER ROGENHOFERI, MAYR.

(The Red and Black Ant of the Tea Bushes).

In his report on the "Pests and Blights of the Tea Plant of Assam, 1898," Dr. G. Watt. Reporter on Economic Products to the Government of India, makes mention, in page 257, of a red and black ant which he had observed infesting tea bushes in Assam.

His elaborate account of the habits, etc., of the insect is very interesting, but his identification of the species with *Cremastogaster contenta*, Mayr., is incorrect. Dr. Watt was good enough to present specimens to the Entomological Section of the Indian Museum, these are undoubtedly identical with authentically named specimens of *Cremastagaster rogenhoferi*, Mayr., in the Museum collection.

To make quite certain, a few examples of the insect were despatched to Dr. Forel, of Zurich, who confirmed the identification as "*Cremastogaster rogenhoferi*, Mayr., one of the commonest species of India."

8. EUPROCTIS CATERPILLAR.

On the 19th March 1897, from Dr. G. Watt, Reporter on Economic Products to the Government of India, were received specimens of a caterpillar reported as doing a deal of damage to the tea bushes in Darjeeling. The following is an extract which he forwarded regarding the pest:—

"A new sort of this blight has developed. A blackish-brown hairy species, they attack the old leaves and strip the trees. This pest does all its ravages at night and hides itself under clods and stones during the day. I have boys on catching same thousands daily. They appear on the dry ridges and are not found in any damp hollows. They have stripped some 50 or 60 acres on an adjoining garden and are now attacking the bark. On lower portions of Lebong and M. S. they have now appeared and are now doing considerable harm. I am sending you a bottle-full in spirit. I fancy they will disappear with rain, but of this there is no sign."

The specimens appeared to be the larvæ of a Lymentriid moth probably of the genus *Euproctis*, and not unlike the tea caterpillars sent in by Messrs. Andrew Yule & Co. from the Darjeeling district. (See p. 180).

9. PSYCHID CATERPILLAR.

In July 1897, specimens of a bag-worm said to be doing great injury to tea plants in the Golaghat district, Assam, were forwarded to the Museum through the Secretary, Agricultural and Horticultural Society of India.

The specimens proved to be the larvæ of a Psychid moth probably belonging to a species hitherto undescribed. We have only a few examples of the larva-case of this insect in our collection, but unfortunately we possess no moths, and Sir G. F. Hampson does not mention this species in his catalogue of moths of British India, Ceylon and Burma.

The most curious thing noticeable in this interesting group of moths is their larva-cases or protective coverings, which are usually composed of a silk lining with twigs, grass, and bits of leaves or vegetable matter attached on the outside, and are so constructed as to resemble little bundles of dried sticks, leaves, etc. In this insect, however, the larva-case is smooth and is covered with a coating of very finely divided vegetable matter and exactly resembles a thorn.

10. COLEOPTEROUS LARVÆ.

In July 1897, Mr. D. Hooper, Curator of Economic Museum, sent to the Indian Museum specimens of grubs reported as tea pests for identification. He wrote:—

"A correspondent in Nazira Division, Sibsagar, has sent me the accompanying bottle of white grub (*Lachnosterna impressa*) as a tea pest. Most of the smaller forms seem stages of the larvæ of that beetle, but I cannot think the very large ones can be the same species. I shall be much obliged for your opinion and, if possible, determination. I have found the very large one all over Assam imbedded in hard mud-houses of which I send a sample. It is particularly common in hard clay soils and does much damage to rice. These I at first mistook for queen whiteant houses until I dug them out for myself and found them invariably occupied by identically similar larvæ to the large ones herewith supplied. They are no doubt a species of *Lachnosterna*, but are they *L. impressa*

"I shall be very glad of any suggestions, more especially whether the very large larvæ have been known to injure the tea in the event of their being pronounced distinct from the smaller form."

The specimens proved to belong to two different species of insects, namely:—The large grubs are the larvæ of a Melolonthine beetle probably belonging to the genus *Lepidiota*, and the smaller ones are apparently the immature forms of *Lachnosterna impressa.*

11. COCCIDS.

Four bottles containing specimens of scale insects reported as infesting tea plants in the Darjeeling district, were received in the Museum through the Reporter on Economic Products to the Government of India. The following particulars regarding the insects are taken from his forwarding letter, dated 28th May, 1897:—

'No. 1, seems somewhat like *Aspidiotus flavescens* and is said to be the most dangerous of the series. It attacks the young twig of young tea, the scale-insects inserting themselves below the bark and thus raising and distorting it, in older twigs the life seems sucked out of the plant through this rupturing of the bark and the withdrawal of the sap. The young insects are alive and seen escaping."

"No. 2, is said to be a twig with long white blotchess."

"No. 3, a twig with large wax insects."

"No. 4, similar insect of smaller size and with orange-coloured central portion."

The specimens proved to belong to four different kinds of Coccids, namely:—No. 1 consisted of badly preserved specimens of larvæ apparently of *Aspidiotus theæ*, Mask; No. 2, consisted of examples of an unknown Coccid not represented in the Museum collection; No. 3 consisted, of a few larva-scales probably belonging to the species *Ceroplastes ceriferus*; and No. 4 contained specimens of a Coccid hitherto not reported as occurring in India.

Specimens Nos. 2 and 4 were forwarded to Mr. W. M. Maskell for identification, and his report on them is given below:—

"The two parcels of tea leaves with Coccids. One of these insects is evidently a *Pulvinaria*, but only the white cylindrical cottony sacs remain: the insects themselves (as usual in the genus) have fallen off: therefore I cannot identify the species.

"The other (No. 4), of which you sent three specimens and a small coloured drawing, is a *Ceroplastes*. The specimens are not sufficient for clearness. They seem to me to be, nearly certainly, either *C. vinsonii*, Sign. (Mauritius, or *C. floridensis*, Comst., which Green reports on tea in Ceylon. Very probably both these are the same species; but your insects are not in the full-grown stage or at least I think not. Every character corresponds to *C. vinsonii*, but also *nearly* all to *floridensis*. If you could let me have undoubtedly adult specimens and larvæ, I should be more positive. However, the thing seems to be one or other of the two species named."

12. CERONEMA SP. [COCCID].

In May 1897, the same officer forwarded to the Museum specimens of tea leaves attacked by scale-insects. No report accompanied the specimens and no locality was mentioned in the forwarding note.

The insects appeared to be new to the Museum collection and were forwarded to Mr. W M Maskell who very kindly identified them as belonging to the genus *Ceronema*. He wrote, "this is a peculiar and abnormal form which I have had a few months ago from Japan, on *Ilex crenata* and an unnamed plant. I am very much inclined to attach it to my genus *Ceronema* of 1894: the main difference from the single species *Cero. banksiæ* being that the curling white processes in your insect spring from the medium region and curl outwards, while in *C. banksiæ* they are marginal and curl inwards. But I have not yet made up my mind, at least on some minor points."

VI.—SOME BENEFICIAL INSECTS IN INDIA.

The following letter from the Superintendent of the Indian Museum, to the Honorary Secretary to the Trustees, covers a valuable report from Mr. E. Barlow, the Assistant in charge of Entomology, on this subject:—

With reference to your endorsement No. 187-RR, dated 27th September, 1897, forwarding a letter No. 1427-39-2, dated 18th September, 1897, from the Officiating Under-Secretary to the Government of India, together with copies of correspondence from the Government of Madras Nos. 634 and 635, dated 27th July, 1897, relating to the very promising subject of utilizing Lady-birds and other natural enemies of the insects pests of the country, I have the honour to submit the following report by Mr. E. Barlow, the Assistant in charge of Entomology:—

"In India there is already known a good number of indigenous insectivorous insects belonging to the three orders of Coleoptera (beetles), Diptera (two-winged flies), and Hymenoptera (Ichneumon flies, etc.), which have proved to be more or less beneficial to agriculture by keeping down insect pests.

"I.—SOME BEETLES KNOWN TO BE DESTRUCTIVE TO PESTS.

"(*a*) Among the Lady-birds I may mention—

"(i) *Chilocorus circumdatus* Schonh, which is said to prey upon the brown bug (*Lecanium coffeæ*) of coffee plants in Ceylon.

"(ii) *Scymnus rotundatus*, Motsch, which is parasitic upon the white bug (*Pseudecoccus adonidum*) of coffee bushes in Ceylon.

"(iii) *Platynaspis villosa*, Mulsant, attacks the scale-insect (*Icerya ægyptiacum*) in Calcutta.

"(iv) *Vedalia fumida*, var. *roseipennis*, Muls., said to prey upon the Coccid *Icerya ægyptiacum* in Calcutta.

The last named was submitted to Mr. L. O. Howard, United States Entomologist, for identification who wrote regarding it (see *Indian Museum Notes*, Vol. 4, No. 1, p. 28). 'It is interesting to find that this Coccinellid is not distantly related to the well-known *Vedalia cardinalis*, Mulsant, which Mr. Albert Kœbele of this department, brought from Australia some years ago, and which destroyed *Icerya purchasi* on our Western coast. It is Mulsant's *Rodolia roseipennis*, which according to Crotch's revision of the Coleopterous family Coccinellidæ, is a colour variety of *R. fumida*, Muls. Accepting the nomenclature given by Crotch, the name of the insect is therefore *Vedalia fumida*, var. *roseipeanis*, Muls.' It may be mentioned that the *Vedalia cardinalis*, here referred to is an Australian species of Lady-bird which on introduction into America is said to have at once cleared thousands of orange trees of destructive scale-insects of the species *Icerya purchasi*.

"(b) Among beetles other than Lady-birds are—

"(v) A tiger beetle of the species *Cicindela sex-punctata*, Fabr., which devours the rice-sapper (*Leptocorisa acuta*) in Chumparun.

"(vi) A Carabid beetle *Calosoma orientale*, Hope, which destroys the young locusts of the species *Acridium peregrinum*, Oliver.

"II.—SOME DIPTERA (TWO-WINGED FLIES) KNOWN TO BE DESTRUCTIVE TO INSECT-PESTS.

"(vii-viii) *Syrphus nietneri*, Schinr., and *S. splendens*, Dolesch, the larvæ of these two flies are said to prey on the coffee Aphis (*Aphis coffeæ*) in Ceylon.

"(ix) *Anthomyia peshawarensis*, Bigot, parasitic upon the eggs of the locusts (*Acridium peregrinum*) in India.

"(x) *Masicera subnigra*, Wulp., parasitic upon the larvæ of the moth *Olene mendosa*, Hubn., which attack tea plants in Darjeeling.

"(xi) *Musicera castanea*, Wulp., said to prey upon caterpillars of the moth *Leucania extranea*, Guen., which attack the young paddy plants in Bengal.

"(xii) *Masicera dasychiræ* Wulp., parasitic upon caterpillars of the moth *Dasychira thwaitesii* which does much damage to tea plant and sâl tree in Assam.

"(xiii-xiv) *Demoticus etrigipennis* Wulp., and *Calodexia lasiocampæ*, Wulp. The larvæ of these two flies are parasitic upon a hairy Lasiocampid caterpillar destructive to rice in the Central Provinces.

"(xv) *Miltogramma 12-punctata* Wulp., which preys upon the locust (*Acridium peregrinum*) in India.

III.—SOME HYMENOPTERA (FAMILY CHALCIDIDÆ) KNOWN TO BE DESTRUCTIVE TO INSECT-PESTS.

"(xvi) *Chalcis* (*Brachymeria*) *euplœa* Westw., preys upon the Dooars tea and sâl caterpillar *Dasychira thwaitesii*).

"(xvii) *Cotesia flavipes*, Cameron parasitic upon the Sorghum-borer (*Diatræa saccharalis*).

"(xviii) *Apheinus theæ*, Cameron, a minute fly-like insect that attacks the tea scale bug (*Chionaspis theæ*, Mask).

"(xix-xxvi) *Cirrhospilus coccivorus*, Motsch., *Encyrtus nietneri*, Motsch. *E. paradisicus*, Motsch. *Scutellista cyanea*, Motsch, *Marietta leopardina*, Nietner, *Cephaleta purpureiventris*, Motsch., *C. brunneiventris*, Motsch., and *C. fusciventris*, Motsch., are said to be parasitic upon the Brown bug (*Lecanium coffeæ*) of coffee plant in Ceylon.

"(xxviii) *Chartocerus musciformis*, Motsch., said to attack the white bug (*Pseudococcus adonidum*) of coffee plant in Ceylon.

"(xxviii) *Pteromalus oryzæ*, Cameron, a minute coppery green-coloured Ichneumon-fly believed to be parasitic upon the wheat and rice weevil (*Calandra oryzæ*) in India.

The above are some of the indigenous species of insect-parasites of insect-pests that have come to light without any special inquiry, and no doubt systematic research (which certainly ought at some day to be undertaken, would reveal many more. In the face of Mr. Barlow's report it can hardly be hoped that the introduction of a single foreign species of Lady-bird—even if that species be able to hold its own against the native species—will have any very marked effect.

PRODUCE AND PLANTING.

SOME EXCUSE FOR RETRENCHMENT.—Commenting on Mr. Geo. Seton's table of the workings of Indian tea companies the "Grocer" sees some "excuse for the Indian tea planters' recent anxiety to retrench." The forty-five registered Indian tea companies did worse financially during 1898 than they did in the previous year. Then the profit on their joint capital was, as our authority shows, only 5.56 per cent., whereas in 1897 it stood at 5.98 per cent. This diminution in their profits is elaborately demonstrated in the tables referred to, wherein it is seen that the paid-up capital was £7,017,865, against £7,215,498 in 1897; also that the "cultivated area" was 175,427 acres, instead of 173,074 acres in the former year; that the actual sale weight of the crop was limited to 65,706,075 lb, as opposed to 65,726,558 lb. in 1897; and that the "ratio expenses to receipts" were 84 per cent, as compared with 82 per cent in 1897, and 77 per cent only in 1896. "Here," says the "Grocer," "certainly, is matter for serious consideration, and we may proceed to point out a few facts embodied in Mr. George Seton's statement which cannot be easily gainsaid. We have already alluded to the capital involved, the lands planted, the aggregate quantity of tea produced, and the net average cost of its production. A further question of interest is the profits realised. These, we find, varied from 0·11 to 4·01 pence per lb, as many as seventeen companies (out of forty-five under review) making less than 1d per lb profit on the whole year's working, and only four or five managing to earn about 2d per lb over and above their ordinary outlay to keep their concerns in going order. It is true that two companies, more fortunate than the rest, succeeded in netting a gain of 3.21 and 3.87 pence per lb, and one as much as 4.01 pence (quoted above), but these were rare exceptions, and served only to accentuate the poorness of the returns that fell to the lot of other cultivators and shippers acting in the interests of British consumers. Next we notice the rates of dividend, the natural and final test of all industrial undertakings, and these, on the whole, turn out to be smaller than they were in previous seasons. Only a single company, the Brahmapootra, was successful enough to pay a dividend of 15 per cent; followed at a short distance by the Amalgamated Estates, the Assam, the Dooars and the Doom Dooma companies with their 12½ per cent 'divi'; and a little further behind came the Jorehaut with 11 per cent, and the Balijan, Consol. Tea and Lands, Jokai, Lebong, Moran and Rajmai tea companies with their distribution of 10 per cent on their paid-up capital. An 8 per cent dividend was declared by the British Assam, Lankapara and Meenglas proprietors; 6 per cent by the Chubwa Company; and 5 per cent by the Darjeeling, Derby, Eastern Assam, Jhanzie, Longai Valley, Majuli, Moabund, Sephinjuri Bheel and Tingri interests. Others doled out the more modest rates of 2 per cent to 4½ per cent, whilst the payments of eleven Indian tea companies were simply nil; and this notwithstanding that the total receipts from the 45 workings were £2,383,000, as contrasted with £2,304,000 sterling in 1897, when the profits were larger. As we observed a twelvemonth ago. All this was too well-known beforehand to occasion any surprise amongst those acquainted with the secret movement of the tea trade at home; and there can be no doubt that the combined ill-effects of the '1897' famine, the frontier disturbances, and damage done to crops and outbuildings by earthquakes in our Indian Provinces, told seriously upon the industrial pursuits and conditions of life of the native populations. Bearing these cross circumstances in mind, it is no wonder that, though an enormous tea crop was raised, its quality generally was that of a poorer class, which consequently failed to yield a higher price with which to defray the heavier expenses of cultivation, and contribute towards more handsome dividends."—*H. and C. Mail*, Aug. 25.

Correspondence.

To the Editor.

PLANTERS' ASSOCIATION OF CEYLON.

RUSSIAN DUTIES ON TEA.

Sir,—I enclose for publication copy of a communication received from Government on the subject of the duties levied on Tea by the Russian Government.—I am, sir, yours faithfully,

W. D. GIBBON, per H. W. Gavin.

Colonial Secretary's Office, Colombo, 25 Aug. 1899.

Sir,—Adverting to my letter of the 17th, January 1899, forwarding for the information of the Planters' Association, a copy of a Despatch from the Secretary of State for the Colonies together with a copy of a communication from Her Majesty's Ambassador at St. Petersburg, on the subject of the duties levied on Tea by the Russian Government, I am directed by His Excellency the Lieut. Governor to forward for the information of your Association, a copy of a despatch, received through the Secretary of State, from Her Majesty's Ambassador at St. Petersburg to the Marquess of Salisbury reporting certain alterations in the duties payable on imported tea under the Russian Customs Tariff.—I am, sir, your obedient servant,

(Signed) J. J. Thorburn, for Colonial Secretary.

[*Copy Referred to.*]

St. Petersburg, July 12th, 1899.

My Lord,—I have the honor to report that according to a decision of the Council of the Empire, passed on the 4/16 June, 1899, and published in the Bulletin of Laws of the 25th June—7th July, 1899, the following alteration under the Russian Customs Tariff in respect of the duty payable on tea are decreed:—

1 Brick Tea, Black and Green, imported into Russia, across the European frontier to pay duty at the rate of 11 Roubles, 25 Copecks per poud (former duty 31 Roubles 50 Copecks per poud.)

2. Black, flower, green and yellow teas imported at the frontiers of the Steppe, Irkutsk and Cis-Amur Governor-Generalship's to pay duty at the rate of 22 Roubles 50 Copecks per poud. (Former duty 19 Roubles 50 Copecks per poud.)

With the completion of the Russian Lines of rail to the Pacific the rates of duty on tea will be subject to further consideration.—I have, &c.,

(Signed) Charles S. Scott,

The Marquess of Salisbury, K.G., &c., &c., &c.

THE PROPOSED ABOLITION OF THE ENGLISH TEA DUTY.

Kandy, August 26.

Sir,—I enclose copies of some correspondence *re* the abolition of the English Tea Duty, which will no doubt be of interest to your readers.—Yours faithfully,

W. D. GIBBON,

Per. H. W. Gavin,

Acting Secretary to the Planters' Association of Ceylon.

Kandy 23rd May, 1899.

The Secretary, Indian Tea Association, Royal Exchange Building, Calcutta.

Dear Sir,—Adverting to my letter of the 14th ultimo, I now herein annex for your information and guidance copy of Resolution passed by the Committee at a recent meeting when your letter was considered.

In terms of the first part of the resolution I transmit herewith printed copies of the correspondence that passed between a member of the Committee (Mr. E. J. Young) and some of the leading London Brokers which probably to a certain extent inclined the Committee to take the view expressed in the resolution to which you draw attention. I also hand you extract of a speech made by the Chairman, Planters' Association on the subject at the annual general meeting.

It may be added for further guidance that the Committee of the Planters' Association hesitates to support an agitation for abolition of the Duty on the ground that there would be no check on teas entered for home consumption and that without this check, the market might be flooded with *rubbish teas*, which it is understood under present conditions are stopped at the Customs. There is also some doubt whether a reduction of the Duty would directly benefit the consumer and would not chiefly benefit the *low priced Teas* of China and other competing countries.—I am, Dear Sir, Yours faithfully,

(Signed) A. PHILIP,

Secretary to the Planters' Association of Ceylon.

RESOLUTION REFERRED TO.

"That for the guidance of the India Tea Association, copies of the correspondence that passed between Mr. E. J. Young and the London Brokers be forwarded with connected papers, and that the India Tea Association be asked if they will favor the Planters' Association with a full expression of the views of the India Tea Association in support of the opinion so strongly held that the total abolition of the English Import Duty should be agitated for."

Indian Tea Association, Royal Exchange Building,

No. 463—O. Calcutta, 17th August.

The Secretary, Ceylon Planters' Association.

ABOLITION OF THE ENGLISH IMPORT DUTY.

Dear Sir,—I am directed by the General Committee of the Indian Tea Association to address you, in continuation of my No. 334-O., of 16th June, and with reference to your letter of 23rd May, on the above question.

The resolution passed by your Committee, and the papers to which it refers, have had their attention. In giving expression to the views held by my Committee it will, I think, be convenient to first of all deal with the points referred to in your papers.

The reasons given for the attitude taken up by your Committee may, I think, be summarised as follows:—

1. That abolition will remove all check upon teas entered for consumption and that thus the market might be flooded with "rubbishy" teas,

2. That reduction or abolition might chiefly benefit low-priced teas from China.

3. That the time is not propitious for agitating the question.

In regard to the first objection I am to point out that whether an article of food is dutiable or not it is subject to the same laws in respect of its fitness for human consumption. Abolition would not remove any of the checks imposed as obstacles to adulteration so far as the law goes, and the question resolves itself therefore into this: as to whether or not the Customs no longer having to carefully weigh the tea would relax their vigilance, and whether, if they did, other checks in existence, or which might readily be introduced if required, would not operate sufficiently. Is there any reason to suppose that adulterated tea would escape detection when other imported non-dutiable foods do not? One does not hear complaints on this score in connection with grain, cheese, butter, eggs, tinned provisions, and so on, and my Committee think the objection is hardly worth considering. They observe, however, that you use the word "flooded" in connection with the expression "rubbishy teas," and they think you may include under the adjective "rubbishy," teas that are not adulterated in any way, but merely extremely poor. If so, they would ask you whether these come into the question at all. My Committee are under the impression that tea, however poor, so long as it

is tea, and not unfit for human consumption, cannot be stopped under present conditions, any more than it would be in the absence of an import duty.

Your second objection is of course the more important and it covers more ground. Arguments supporting this objection are all based on the fact that as the duty of 4d bears a greater proportion to the average cost of China tea in bond than it does to British grown tea, reduction or abolition of duty would amount to a larger percentage in the case of the former than of the latter, and on the idea that this relatively larger reduction would have an appreciable effect upon consumption, also relatively. It is admitted that reduction of duty in the post has tended to increase consumption as a whole, and that further reductions would have similar effects. Why should the relative effects be different ? The reduction of duty from 6d to 4d did not check the progress of British-grown teas, and my Committee do not believe that a further reduction would do so. They cannot find anything in the history of India and Ceylon tea in any country to support the assumption that a high or low duty affects the progress thereof in relation to China tea. British tea has won its way so far because it is a better article, and where known meets better the public taste, and, in the opinion of my Committee, it will continue to hold its own in any field where it has an equal chance. Therefore anything that tends to increase the consumption of tea as a whole will be to the benefit of India and Ceylon. They further direct me to point out that this argument has never yet been brought forward in any other connection. India and Ceylon have never considered the question of duties when attacking new markets, but have spent money freely in countries where tea was free, and where duties range from 1d up to say 1s 10d per lb. in the United States there was no duty when the joint campaign was begun there, nor did anyone suggest that it would be advisable to attack Russia first because she levied a one and tenpenny duty. On the contrary the 10 cents duty levied by the United States in consequence of the Spanish war was looked upon as a misfortune, and India and Ceylon do not so far as my Committee know consider its imposition an advantage to them in endeavouring to obtain an increased share of the American trade in tea. My Committee then contend not only that all experience bearing upon the subject is against the assumptions upon which the second argument is based, but that the policy of both Ceylon and India in capturing fresh markets has hitherto ignored all considerations of the kind. They think that the same principles may be applied in endeavours to expand old markets as to the exploitation of new ones.

With regard to the remarks made by your Chairman in this connection about the blending of cheap common teas, I am desired to say that, in the opinion of my Committee, everything which tends to lessen the cost of delivering good teas to consumers will tend to an increased use of such teas in blends. The 'shilling canister' undoubtedly has a depressing effect upon wholesale prices, and your Chairman is no doubt correct in his description of the present tendency in blending, but my Committee think that the best way of curing the evil is to make an honest shilling canister of British-grown tea possible.

The third point I have noted above is that the time for agitating for the reduction or abolition of duty is not propitious. My Committee would certainly not advocate an agitation which was not backed very strongly by proprietors and all interested in Indian and Ceylon tea as growers, but granting reasonable unanimity, which is the first thing to be obtained, my Committee advocate agitation at every possible opportunity. It is true that the British Government are meantime committed to an unprecedented rate of expenditure and may be unable to forego immediately any existing source of revenue, but a further expansion of revenue, or a change of policy, or of Government, may come very soon, and sooner or later may certainly be expected. It is very desirable, therefore, that Ceylon and India should come to one mind on this subject now, and be ready to take advantage of every opportunity to strengthen the sentiment which already exists in favour of a "Free Breakfast Table" in the United Kingdom.

I now turn to a matter upon which my Committee lay considerable stress, but which is only hinted at by one of the correspondents quoted in the papers you sent to this Association. I mean the saving in London warehouse charges—now felt to be so grievous a burden—which would inevitably follow abolition of duty. A duty imposes upon any trade affected, charges amounting to a considerable percentage in addition to such duty. In the case of tea this percentage would be but a moiety of the saving which Messrs. Walker, Lambe & Co. refer to when saying "the conditions under which teas must be entered and warehoused and handled for the mere purpose of securing and collecting the duty are necessarily cumbersome and expensive." When added together all these charges direct, and incidental, must be very heavy indeed, whilst if importers were freed from the necessity of going into 'Bond,' it is obvious that the field for warehousing would be extended, and the possibility of reducing such charges as would still be incurred much increased. At present, as you are aware, the London Warehousing Companies refuse to consider any suggestion to reduce charges, and under existing conditions they have practically a monopoly. My Committee believe that abolition of the duty would weaken, if it did not destroy this monopoly, and that a further reduction of the then remaining charges would be possible. These advantages would only accrue in the event of abolition, and this is why my Committee strongly advocate an agitation with this end in view in preference to asking merely for a reduction of duty.

In urging upon you these further reasons for agitating this question, my Committee would call attention to the fact that if the argument of what I may call relative effects upon the trade of British and China-grown teas holds good at all, it is good against a reduction of any charges that affect all teas imported into London and which are levied upon weight. This fact of itself seems to them to reduce the argument to an absurdity, and they trust your Committee will not be led to accept a theory which would logically debar any endeavour to reform any charges coming within the above category.

I regret that there has been so much delay in answering your letter, but my Committee thought that figures from Australia, where rates of duty have varied much, and are still-variable, might throw some light on the discussion Those from New South Wales are only just to hand. These figures, so far as they go, show that in Australia experience does not justify the fears expressed in regard to the future in England should the duty there be reduced or abolished. Abolition in New South Wales did not stop the decline of the China trade nor reduction in Victoria a very largely increased share to British-grown teas in a trade of greater total volume, and the causes for variations from year to year in the relative progress of the rival Empires, must be sought for elsewhere than in alterations of duties.

I send copies of the statements received which relate to Victoria, New South Wales and Queensland for your information.

My Committee hope that you will see your way to join them in urging upon both the Associations in London the desirability of pressing for abolition.—Yours faithfully, J. Taylor, Acting Secretary.

Accompaniments :—Three Statements, A, B and C, (The first shows the imports into New South Wales between 1889-98 with the duty imposed each year; the second those into Victoria and the third those into Queensland.

The earliest records available shew that in 1853 a duty of 3d per lb. was in force in Victoria. The following year the duty was raised to 6d per lb., and no alteration took place till 1865 when it was lowered to 3d per lb. and remained so till the 31st

December 1889. From the 1st January 1890 the duty was reduced to 1d per lb., but on the 13th July 1892 it was again raised to 3d per lb. and has remained so ever since.

H. V. P. Wollaston,
Secretary for Trade and Customs.

Department of Trade and Customs, Melbourne, June 28th, 1899.

THE BRITISH TEA DUTY.

Dessford, Nanuoya, 12th Sept. 1899.

Sir,—The attitude of Ceylon tea producers towards the question of the abolition of the English import duty on tea, is, I think, that of sitting on the fence until they are convinced that they will benefit by such abolition. This is my excuse for trespassing on so much of your space, in the hope of inducing a careful consideration of the question.

It is a trade axiom that the reduction of the selling price of any commodity to the consumer stimulates the consumption of that commodity, the converse of course being equally true. As an example, have we not always seen a prolonged season of low prices in the tea market followed by a rise, and we are told in the Brokers' circulars that "the recent low prices have stimulated consumption" and so reacted on the selling price.

Hitherto the reduction in price to the seller has been entirely at our expense, and the immutable law of supply and demand made such a lowering of price necessary in order to get the tea consumed.

When it is suggested that we should cheapen the cost of our teas (which, other things being equal, must mean an eventual reduction of price to the consumer) by the abolition of the one pound draft or the reduction in warehouse charges, &c., we have the whole of the producers with us, but, when the reduction or the abolition of the duty is mentioned, many producers seem to think that some occult force will be set in motion, by which the laws of supply and demand would be stopped if not eversed.

What would naturally follow the abolition of the duty is as follows: For the first year, possibly longer the 4d saved would be divided in some proportion between the producer, the middleman, and the consumer, but sooner or later the consumer would be the only one to benefit so far as price is concerned, the middleman would do a larger turnover from the increased consumption and the producer, supposing he is able to keep the ratio of supply to demand as it is at present, would then make the same profit per lb. as at present on a larger number of lbs. The price paid to the producer is and can only be governed by that ratio, always supposing there is free competition and no buyers' combination and the sudden rise in the lower qualities of tea during the early part of this year is to my mind sufficient proof that no such combination exists.

Again, the abolition of the duty reduces the amount of capital necessary to deal in tea and thus helps the small dealer against the large capitalist which in itself would tend to make a buyers' combination more difficult and increase competition, all in the favour of the producer.

In an article communicated to the *Observer* of the 5th inst., the writer bases his arguments largely on the number of gallons of liquid tea drunk, reasoning from his figures that there was no increase from the reduction in duty in 1890, but can he say or does he think that the lower classes do not drink a very much stronger brew than they did formerly?

Our deliveries of Ceylon teas increased nearly 11,000,000 lb. in the year 1890-1891, or the year following the reduction and nearly 19,000,000 lb. in the following year which shows that we certainly did not suffer from the reduction.

He also states that the producer gets a better living out of dutiable articles than out of free, and instances sugar, possibly forgetting that it is the bounty fed beet sugar that has caused the fall and that English consumers are buying their sugar at a lower price than the consumers in the sugar producing continental countries.

In other words if the continent chose to subscribe together in order that the Englishman can have cheap sugar, it is hardly a sound argument to instance it as a free article. Again last year wheat was a most remunerative crop, and I suppose that most shareholders in coffee concerns will agree that that product was as unremunerative as it well could be, the reason having nothing to do with duties, but being merely an instance of supply and demand, and the existing ratio of the one to the other being upset.

There are many other points such as the reduction of warehouse charges, which I have not touched on, as, though important, they are really side issues.

Apologising for the length of this.—I am, &c.

EDWARD ROSLING.

P. S.

		Average. d.
Total deliveries Ceylon tea	1889...30,166,256	10·99
" "	1890...37,652,750	10·56*
" "	1891...53,486,510	10·70
Home consump. only "	1892...64,000,000	10·07

* Duty reduced in April.

We more than doubled our output in four years at the loss of less han 1d per lb.—E.R.

"MUTATO NOMINE."

The *Ceylon Observer* reads the Government of Ceylon a lecture on its apathy in regard to the scientific aspect of planting. Well might we turn upon the Government of Madras, say *mutato nomine de te fabula narratur*, and then declaim in like manner, and with emphasis. In Ceylon they have tea-pests in full bloom, so to speak; they are feeling the effect. The present blights are, the *Observer* is informed, steadily spreading through the planting districts, and as our contemporary says, "if they get a firm hold, it will mean a great deal to the colony, and the Government as well as the planter will feel the sad effects." The ravages of leaf-disease in coffee in Ceylon have not been forgotten. The memory serves as a standing lesson as to the need for prompt action when pests and blights threaten in seeming force. In Madras also, many planters have suffered, and, although the Government has certainly assisted them to a small extent, it still refuses to give the agricultural industry the assistance of a permanent scientific expert. A botanist has been appointed, certainly, and from the fact that his main work hitherto has been with respect to sugarcane-diseases, we judge that he may, at some future time, be allowed to bestow some attention upon tea and coffee. But the appointment of one scientist is not enough for a Presidency like that of Madras, nor is the botany of the Presidency by any means the section that most urgently calls for scientific study. Financial difficulties are decreasing now, and we trust that the Government of Madras will shortly take into serious consideration the question of establishing a well-organized scientific department. There is an admirable model in the United States, and something of the same kind, on a reduced scale, would no doubt prove very valuable here.—*Planting Opinion*, Sept. 9th.

TRAVANCORE TEA SALES.

Average 8·20d. August 25th.

Garden.	Total. Quantity.	Aver. Price.	Bro. Or. Pek. or Flowery Pekoe. Quantity.	Price.	Pekoe and Unassorted. Quantity.	Price.	Bro. Pekoe. Quantity.	Price.	Pekoe Sou. Quantity.	Price.	Broken and Souchong. Quantity.	Price.	Fannings, Dust, and Various. Quantity.	Price.
Travancore ...	2867	6·11												
Arnakal ...	126 p	6¼	15	†6¼	49	†6	45	†6¾	8	5¾	1	5½	8½c	5½
Atchencoil ...	114½c	5¾	—	—	45½c	5¾	23½c	6¼	35½c	5½	4½c	5¼	7½c	5½
BA ...	12	5½	—	—	—	—	—	—	—	—	12	5½	—	5¼
Balamore ..	180½c	5¾	—	—	125½c	5½	45½c	6¼	—	-	7½c	5¼	3½c	5¾
Beldford ...	160½c	5¾	—	—	96½c	5½5¾	54½c	6	—	—	5½c	6	5½c	—
BM ...	6	5½	—	—	—	—	-	—	—	—	6	5½	—	5½6½
Bon Accord ...	90 p	6¼	—	—	31	6¼	31	6¾	15	5½	—	—	13½c	5¼6½
Braemore ..	111	6	—	—	49	6¼	34	6¼	—	—	22	5¾	6	5½6
Carady Goody ...	107 p	6	54	5¾6¼	15	5½	16	6	6	5½	—	—	16½c	--
Cherian Malay ...	116 p	6	114p	6 6¼	2	5¾	—	—	—	—	—	—	—	5¼
Corrimony ...	175½c	6¼	—	—	123½c	5¾	43½c	7½	—	—	5½c	5¼	4½c	5
Ellangy ..	120	5¾	—	—	58	5½5¾	27	6¼	30	5¼	--	—	5	6
Fairfield ...	60	6¼	21	6½	12	6	15	6¾	6	5¾	3	5½	3	—
Glenmary ..	85 p	6½	38	6½7	24	5¾	—	—	—	—	—	—	23 p	5¾7¾
Glenmore ..	130½c	6	—	—	74½c	5½5¾	52½c	6¾	—	—	3½c	5¼	1½c	5
Home ...	160½c	5¾	—	—	100½c	5½5¾	50½c	6	—	—	5½c	5¼	5½c	5
Isfield TC Isfield...	112 p	5¾	—	—	59	5½5¾	36	6¼	16	5½	1½c	4	—	—
Nagamally ...	38	5½	—	—	—	—	—	—	8	5¼	22	†5½	8	5½
Penshurst ...	103 p	6½	63 p	6¼7½	21	6	—	—	19	5¾	—	—	—	—
Seafield ...	109½c	6½	—	—	73½c	6	34½c	7¼	—	—	1½c	5½	1½c	5¼
South Trav. C Vn	182	6	—	—	67	6 6¼	86	6 6½	29	5½	—	—	—	—
,, ,, J	77	6¼	—	—	41	6	29	6¾	–	—	—	—	7	5¼
,, ,, K	128	6	—	—	51	6	42	6¼6½	25	5¾	—	—	—	—
SIT Co Kuduwa K	115	6¼	65	6¼7¼	29	5¾	—	—	—	—	—	—	21	5½6½
Stagbrook ...	110 p	7¼	33 p	8 †8	33	7¼	18	†6½	26	6¾	—	—	—	—
Travan T Coy. Pm	65	6¾	7	8¼	32	6	26	7	—	—	—	—	—	—
W ...	16½c	6¾	—	—	16½c	6¾	—	—	—	—	—	—	—	—

In these tables all packages are chests unless othe wise stated. ½c for half-chests; p for packages, prices marked thus † represent the highest offer in the room. In calculating these averages two half-chests or four boxes are taken as equal in weight to one chest.

THE TEA DRAFT DISPUTE.

The Birmingham Grocers' Association in their quarterly report presented at the meeting held on Aug. 22, after stating the conditions agreed to, say:—

The Committee trust that all importers who joined in the movement will also view the settlement in this light. The Committee desire to record that each section forming the joint committee has throughout the negotiations worked together in the fullest accord in a common cause, and where any interests of the one producing country may seem to have been at variance with that of the other, a mutual understanding of unity of action has been loyally adhered to. The new system of weighing teas cannot be put into force until it has received the sanction of H.M. Customs, and a petition will immediately be preferred by importers and buyers to have the alteration carried out. It is hoped that the new regulations may come into force on October 2, but until that date all teas will be sold on the old conditions. In view of the recent cessation of sales and consequent accumulation of teas in London, the Committee urge upon importers the necessity for at once instructing their brokers to offer their teas under the rules of the Regulating Committee formed for the purpose of controlling the supplies to be offered for sale. The Committee congratulate the trade upon having resisted the demands of the tea associations. The result will have a far-reaching effect, as it is now highly improbable that dealers in other commodities will attempt to abolish the draft. While the dispute with the Indian and Ceylon Tea Associations was on hand it was rnmoured that one of the members of the Birmingham Association, and a prominent tea dealer, had broken the compact in purchasing Indian and Ceylon teas on the market. Fortunately the Committee were able to give an assnrance that snch was not the case, and they thank the whole of the traders of the district for loyally supporting the trade associations in the course they adopted for the pnrpose of enforcing their demands.

MONSTROUS ROSE IN PERADENIYA GARDENS, CEYLON.

Monstrosity is of common occurrence in flowers as in other forms of creation, and it does not seem to effect any one class in particular. Seldom, however, is a more curious and interesting freak seen than that in the case of a rose which Mr. J Ferdinandus, chief clerk at Peradeniya Gardens, has discovered the other day in his compound. This is a well-formed rose flower with stalk, petals and sepals complete, growing out of the ovary of another rose which has shed its petals, who can say but this may be the origin of a new type specially suited for button-holes, as the neat knot (swollen ovary) at the base of the new development seems to be an improvement on the old. fashioned spiny and slender stalk.—*Cor.*

A PRACTICAL TEST OF THE NEW TEA-TRADE CONDITION.

An aggrieved London firm writes to us as follows, adding a practical statement showing the injury wrought by an increased number of tarers:—Even this week numbers of the "Joint-Committee," in defence of their insisting upon separate tares being taken, have said they "don't believe it would make any difference to anybody."

This is a strange argument to use for insisting on a clause to be inserted in an agreement and for petitioning the customs to insist on it also, viz, that it would make no difference to any one. The following however shows the injury inflicted on some, and the difference it may make to a good many of those concerned :—

292 Packages Ceylon Tea, ex "Ophir," of value £650, sold 1st August, 1899, chested as soon as made, and bulked in London.

Tares ran even and average tares were accepted.

There were tared	5 chests at a cost of 1/ each	
	12 chests at a cost of 10d each	£0 15 0
	17 chests.	
There were bulked	74 chests at a cost of 1/ each	
	218 chests at a cost of 10d each	£12 15 8
	292 chests.	
The taring and bulking together...		£13 10 8 actual cost.

Under the Clause G, proposed by the Joint Committee for the so-called agreement, 2nd August, 1899, insisting on separate tares being taken, the charge would have been—

bulking and taring	74 chests at 1/5=	£5 4 10
	218 do 1/2=	12 14 4
	292 packages.	£17 19 2
say extra charge	...	£4 8 6 proposed.

The above were bulked in London, because the Proprietors are of opinion that London bulking is better in several ways than Estate bulking.

Had the London bulking been forced on the Proprietors, as may occasionally happen to every garden Proprietor through the Tea being thrown up by buyers after sale on grounds of irregularity, the same extra charge would be incurred in every case, even if previously Estate-bulked and tares unquestioned, viz. : £4 8 6

and in addition		
new Warrants at 4d. / new Weight-notes at 2½d.	say=1d. per package	1 4 4
an extra charge proposed by the Joint Committe for reasons known only to themselves		£5 12 10

London, 25th August, 1899.

AUSTRALIAN AGRICULTURAL NOTES.

Sydney, Aug. 24.

Yesterday I paid a visit to the Land Office, round which I was conducted. Part of it is devoted to Agriculture, and in the Agricultural Library I saw pamphlets and reports from all parts of the world. The librarian told me tha Mr. Jackson, the principal of the Hawkesbury Agricultural College, considers the *Tropical Agriculturist* one of the most useful publications he receives. I was introduced to Mr. Campbell, the head Agricultural inspector in the Colony. "Yes;" he remarked, "tea grows like a weed here." In response to further inquiry, he showed me some that had been plucked close to Sydney. He said, however, it would never be a paying industry in this Colony as the labour was too dear compared with cooly labour in tea growing countries, and New South Wales will never enter into competition with Ceylon in that respect. At the present time the Government are experimenting in tea growing in the north of the Colony. "Here's some coffee," he said, showing me a tin full, "as good as you have in Ceylon."

I lent Mr. H. C. Russell, the Government Astronomer, my copy of the *T. A.* and he returned with the following note :—"Very many thanks for letting me see the *Tropical Agriculturist.* I am very pleased with the Magazine, it is full of carefully prepared data valuable to readers."

RAMIE FIBRE IN ALGERIA.

A NEW PROCESS OF EXTRACTION.

A Calcutta correspondent sends us the following interesting extract upon a subject which is of importance to several Ceylon planters at the present time:—The splendid possibilities of the Ramie fibre have long been recognized in the United States as well as elsewhere, but the processes of extracting the fibre have either been defective or too costly, except in China, the land of cheap labor. However, a Parisian House has here on exhibition a machine which, if its claims are justly founded, solves the problem satisfactorily. Along with it were specimens of ramie branches, fibres, balls of binding-wool in various weights and colours, skeins of beautiful embroidery thread, cord and tassel of artistic design and finish, and passementerie trimming. The treatment of the plant is said to consist in the introduction under pressure of carbonic acid gas and the gas of hydrochloric acid, alternately, which in five minutes' exposure so acts on the branches that the fibre is then easily crushed out. As to the details, the exhibitor apparently did not wish to say too much, but as to the results, he affirms that one machine is capable of treating sixteen tons per day of ten hours. A company is said to be forming for its manufacture and control and rumour hints that at least one contract has already been made in Algeria, for all the ramie that a certain property can produce. M. Bachelerie, 60, Rue Canmartin, Paris, is given as the address of the inventor.—*Philadelphia Manufacturer.*

THE CONGO BOTANICAL GARDENS.

VISIT OF THE NEW DIRECTOR TO CEYLON.

We referred a few days ago to a paragraph contributed to the *Morning Leader* by a Belgium correspondent regarding the formation of a botanic garden in the Upper Congo, the Belgian colony in Central Africa. This is probably the first botanic station (or experimental garden, one might say) of the kind which the Belgians have started, much unlike the British

colonies, in which the formation and development of such institutions have long been recognized to be of paramount importance to the prosperity of the land. There is however only one Kew gardens, and how the imagination could dignify an infant botanic station in the wilds of Africa by the name of "Kew" can only be accounted for by the fact that our London Garden, the greatest emporium of plants and botanical knowledge in the world, is a model to copy, though never imitated. The officer appointed, Mr. Leon Pynaert, of Ghent, as Director of the above scheme is also a recent student of Kew. Previously to starting on his new duties, the Belgian Government has sent him out to Ceylon and Java to gain a knowledge of tropical cultivations, especially cacao, coffee and rubber. Having spent a a pleasant fortnight in Ceylon, visiting all the botanic gardens and meeting co-Kewites, Messrs. Nock and Macmillan, he left on the 14th inst. by the ss. "Tonkin" for Java, where he hopes to make a longer stay.

Mr. Pynaert has been particularly pleased with what he has seen of Ceylon, and was agreeably surprised at the advanced state of the civilisation of the country. He could not help contrasting the state of Colombo with electric tramcars, &c., and also of Kandy and Nuwara Eliya with that of Coquilhatville, his headquarters in the Congo, which he said has only sixteen white people, all told.

THE PACKET TEA QUESTION.

SUCCESSFUL PROSECUTION.

The World's Tea Company was summoned at Kingston-on-Thames on August 29, for having unlawfully, and with intent to defraud, applied a false trade description within the meaning of the Merchandise Marks Act 1897 to tea sold by them in packets. The prosecution was instituted by the Surrey County Council, whose inspector, Mr. R A Houghton proved purchasing at defendant's premises in Kingston Market Place on July 30th, a half-pound packet of tea, which on being weighed, showed a deficiency of three drachms twelve grains; and a quarter-pound packet, which was deficient to the extent of three drachms 23 grains.

Mr. Bodkin, for the defendants, said that unless there was some written or printed representation applying to the article purchased, there could be no false trade description within the meaning of the Statue. In this ease the wrapper of the packet bore the words: "Ceylon and Indian Teas, 1s 6d per pound," and gave no indication whatever of the weight of the article sold. The Bench held that the wrapper gave an indirect indication, and imposed a fine of £5 and costs.

BOUNTY TEA TRADING.

A copy of a resolution, passed by the Birmingham Grocers' Association having been forwarded to Mr. Chamberlain, asking him to use his influence with the Home Office to put a stop to the lotteries in connection with what is known as the bonus tea trading system, the following reply has been received:

Highbury, Moor Green, Birmingham, Aug. 25, 1899.

Sir,—I am desired by Mr. Chamberlain to acknowledge the receipt of your letter of the 24th inst. and copy of resolution adopted by the Birmingham Grocers' Protection Association on the subject of bounty tea trading. At first sight Mr. Chamberlain imagines that the proper course would be to institute private prosecution under the Lotteries Act. He does not think that the Home Office has any power to undertake prosecutions in the name of the Government. He will, however, keep your request under consideration.—I am, sir, yours obediently,

J. Wilson.

PRODUCE AND PLANTING.

Tea Trade of Japan.—The tea trade of Japan is not in a very flourishing condition. The action of the United States Government in imposing a duty of 10c. gold a lb from June 14 on all tea imported had a marked effect upon the Japan tea season of 1898. The new Restriction Act, prohibiting the importation into the United States of inferior teas, continues to be strictly enforced, and many cases of rejection occurred during the year. Common teas have, therefore, for the most part been forced to seek a market in Canada, which has so far imposed no restrictions upon its admittance, but where, to judge from recent discussion in the Canadian Houses of Parliament, it appears by no means unlikely that similar precautionary measures will be taken for the exclusion of inferior teas. The total export of tea from Japan to Canada amounted to 11,512,145 lb, as compared with 8,605,492 lb during a corresponding period of the year before, an increase of 2,906,653 lb. In the United States tea costs 40c. gold per lb, with the new duty of 10c. gold per lb, and the beverage is therefore at a great disadvantage as compared with coffee. General depression of business followed the announcement of the enforcement of the duty, and in serveral cases large orders were cancelled. Most of the tea shipped to America has remained in bond owing to the lower price of that which reached the country prior to June 14. As nearly all last season's tea remains unsold, it does not look as if the season of 1899 would be a prosperous one. In Japan, moreover, the cost of tea-firing materials and labour has continued to increase, as compared with former years, and, strange to say, since the imposition of the new duty the prices asked for by the growers have likewise risen. The total export for 1898 amounted to 41,102,118 lb, valued at £838,740, as compared with 43,510,244 lb, valued at £798 327, in 1897. Of this quantity 31,861,149 lb. went to the United States of America, 7,680,644 lb. to Canada, and the remainder to various other countries, of which China with 501,660 lb, took the largest proportion.

Her Majesty's Customs and Produce.—In the annual report of the Customs Department just issued there is a table which analyses the items in our dutiable imports for the ten years 1889-98, showing the increase or decrease in each year of the quantities imported for home consumption. The most notable increase is to be found, under the head of Cocoa, which recorded a growth, between 1896 and 1897, of no less than 32·7 per cent., the total figures being 28,270,562 lb. in 1896 and 37,528,246 lb, in 1897. If the fiscal years 1996-97 and 2897-98 be taken, and the comparison confined to manufactured cocoa, an even greater proportional advance is observed—viz., 80·4 per cent. We are glad to see, however, that the home manufacturer's competitive instincts have awakened, with the result that in the last fiscal year imported manufactured cocoa went down from 8,029,151 lb. to 6 366,120 lb.—a decrease of 1,663,031 lb.; while the imports of raw cocoa rose from 30,087,311 lb. to 34,634,962 lb.—an increase of 4,547,651 lb. Going back to the table of calendar years, we find that between 1889 and 1898 the import of cocoa (both raw and manufactured) increased from 20,541,254 lb. to 40,192,049 lb.—that is, nearly doubled itself: a testimony at once to the growing favour of the beverage and to the fact that the "masses" are taking their share in the national taxation. These facts are further exemplified in the case of tea, the consumption of which grew from 185,578,298 lb. in 1889 to 235,353,767 lb. in 1898—an increase of

nearly 26·8 per cent. This increase is attributable also, in part, to reductions in duty and price; but it is noteworthy that with rising prices there was in 1898 an increase of 1·7 per cent. over the 1897 imports.

Coffee Production.—From figures compiled by Messrs. During and Zoon, of Rotterdam, some idea of the importance of Brazil as a factor in the coffee supply may be gathered. Since 1895, when 13,283,800 bags coffee were produced in all the countries of the world, the aggregate yield has considerably varied, sinking to 11,729,500 bags in the following year, increasing to 15,000,000 bags in 1897, and afterwards expanding to about 17,745,000 bags in 1898. This seems to have been the heaviest quantity ever raised in a single year. At the end of 1893 the aggregate quantity of coffee on hand, so far as it could be ascertained, was only 1,585,000 bags; whereas at the close of last year it embraced 4,734,000 bags, or about treble the former amount, and this great excess has been looked upon as a very serious matter for the importers.

The Outlook.—First, says the *Grocer*, excessive stocks must be worked off; next, supplies must visibly decrease; and thirdly, to strengthen the position all round, the consumption of coffee must steadily progress onwards without a break. With these conditions fulfilled, importers and growers may have the satisfaction of seeing their hopes of higher rates realised.

Assam Rubber Trees for the Soudan.—According to a report of Sir William Garstin, K.C.M.G., to the Foreign Office, there is a good prospect of the Soudan becoming a rubber country. There is, of course, an increasing demand for india rubber owing to its electrical and vehicular uses, while the natural supply is diminishing. It must, therefore, be cultivated, and it is believed that the rubber tree of Assam would flourish in most of the Soudan, especially south of Khartoum.

Big Figures.—It is pointed out by a correspondent that the Chancellor of the Exchequer in his Budget speech on April 13th seems to have understand the revenue brought in during the past financial year by the tea duty. According to the annual report of the Commissioners of Customs the amount of the increase was not £62,000, as Sir M. Hicks-Beach is reported to have said, but £155,297. Altogether £4,023,503 was realised in the shape of tea duty, which appears to be the largest yearly sum received since Mr. Goschen in 1890 reduced the duty from sixpence to fourpence. In weight the tea on which duty was paid exceeded 240,000,000lb—9,318,000lb more than in the previous twelve months. The whole of this amount, however, must not be credited to the year's consumption. As the Commissioners point out, just before March 31st, when the year ended, a big cheque was handed in at the Custom House, this large payment obviously covering tea which we are now consuming. Still, after allowance is made for this there was an advance in the clearance of about 3,000,000lb.

Indian Tea Companies.—The list of Indian tea companies registered in England, giving the acreage, capital, secretaries or agents, offices, directors and agents, compiled by Mr. George Seton, has been revised and brought up to date. From this it will be seen that the seventy-six companies have an acreage of 238,440 acres, and a capital of £9,578,440.—*H. and C. Mail*, Sept. 1.

"SIROCCO" MACHINERY.

A new and delicately-bound catalogue of tea machinery, issued from the well-known Belfast "Sirocco" Works, serves to confirm the recent reports that the presiding genius of that establishment, Mr. S. C. Davidson, has recently made some new and interesting discoveries in a wider field of engineering science than that with which he has hitherto been associated. While true to his early love, the tea industry, he claims to have attained results in his experiments with air forces which are calculated both to extend the scope of his operations as a successful engineer and enhance his reputation as an original thinker, who, untrammelled by usually accepted theories, boldly strikes out a course for himself, and offers to the sceptical striking proofs of the success of his achievements. The catalogue we have just received is therefore of more than ordinary interest, in that it describes and illustrates the results arrived at by this new departure in the

CONSTRUCTION OF CENTRIFUGAL FANS.

Before referring to that portion of it devoted to Fans, we will glance briefly at the machinery in the order in which it is found, the first place being given to tea machinery, which Mr. Davidson supplies for "every process in the manufacture of the leaf," the description of which, accompanied by suitable illustrations, is full and explicit on all points, including approximate dimensions and cost.

We have on previous occasions described the "Sirocco' tea machinery in detail, so that it is unnecessary to do more than chronicle their order in the list before us. First we have a useful machine known as a Leaf-Conveyor or Elevator. This, it is pointed out, is a convenient and expeditious machine for the conveyance of the tea-leaf from one part of the factory to another. Next we come to the

TEA LEAF WITHERING MACHINE,

which is now reported as doing its work in a remarkably short time, irrespective of atmospheric or other conditions, the leaf when thus withered producing, it is mentioned, a stronger liquoring tea than that obtainable by natural withering. The machine, we understand, is capable of keeping two rollers going, and is driven by a new and ingenious engine which proved quite a success. The "Sirocco" Rolling Machine, which comes next in the catalogue, is of the type which works without a top pressure cap, and it is claimed to be "up to date" in every respect. The Roll Breaker, Cooler, and Sorter, it is stated, carries out the operation of sorting and cooling freshly-rolled leaf, breaking at the same time any lumps and balls there may be in the tea. Then come full descriptions of the tea-drying machines—first, the Auto-Sirocco Tea Drier, which automatically subjects the wet leaf at the start to a high temperature, which immediately checks fermentation on the leaf entering the machine, and then finishes off the drying at low temperatures.

There is the well-known

DOWNDRAFT "SIROCCO"

with Multitubular Air Heater, and also with Cast-iron Vertical Flue Air Heater; and the various types of Self-acting Updraft "Siroccos," with their varieties of Side-drawer and Endslide tray arrangements, and fitted with similar Air Heaters. Following these, are illustrations of the new patent metal trays for "Sirocco" Driers; while a further section of the catalogue is devoted to Tea Sorters and Cutters, and the Davidson-McGuire Tea Packer, all of which are well known and do not need further description.

There is, too, a Tea Pellet Compressing Machine for dealing with tea dust, which is simple in construction, and converts the tea dust to pellet form, thus enhancing its value in the market.

While these machines, the use of which is confined to tea gardens and factories, have until recently formed the chief output of the Sirocco Works, Mr. Davidson has, as we have stated, been occupied of late in sloving other problems in the domain of engineering, and he now claims to have brought about a revolution in the construction and manufacture of Fans, a new departure, which has not only astonished engineers, but has rendered an early enlargement of his Belfast

works a necessity. Apart from their use as adjuncts of tea machinery there is a great demand for

"SIROCCO" FANS

in nearly every department of the industrial world. The illustrations of these Fans are accompanied by particulars of surprising trial tests. The leading features of this new departure are concisely described in the catalouge before us by the following comparison between the centrifugal fans at present familiar to us and Davidson's patent. Under the former we find as the hitherto accepted data for best construction :

"BLADES.—Comparatively few ; radially deep ; outer edges short axially, and either straight or curved backwards from direction of rotation ; ends unclosed their full depth, from the outer to the inner edges ; and the inlet opening for admitting the air to the centre of the fan approximately one-half of the fan diameter ; it having been accepted as an axiom that a small inlet (although detrimental to volume) was necessary for pressure."

In the "Sirocco" Fans, the construction above referred to is practically reversed on every point, viz :—

"BLADES.—Very numerous ; radially very shallow ; outer edges long axially, and curved forward in the direction of rotation ; ends open towards the inflowing air, from the outer to the inner edges ; and the inlet opening for admitting the air to the fan, of approximately equal diameter to that of the fan itself, whereby in the "Sirocco" fan maximum volume is combined with maximum pressure, which combination has not been obtained in any other fan hitherto made."

Mr. Davidson has thus evidently inaugurated a new and important change in the entire principle of construction of fan blades, and also as regards the inlet opening for the air, which in the "Sirocco" fan is about four times larger in area (relatively to the diameter of the fan) than in centrifugal fans as generally made ; whereby the frictional resistance to the inflow of a given volume of air is only a sixteenth of what it is in other centrifugal fans. With his usual objection to half measures and premature disclosures of experimental work, Mr. Davidson, before making full announcement of his revolutionary discoveries in connection with the operative principles pertaining to fan construction, satisfied himself in the most thorough way as to the results. The catalogue before us contains data on the subject of "Sirocco" versus other centrifugal and propeller fans which testify not only to the thought and labour necessary in the process of evolving practical issues from theory, but demonstrate the remarkable success achieved. One result not mentioned in the catalogue is that Mr. Davidson has

SUCCESSFULLY VENTILATED

several of the Courts in the Royal Courts of Justice, and has lately received the order to similarly ventilate a further number of them. Many other systems for the ventilation of these Courts have been tried and found wanting, and Mr. Davidson's success is in itself a convincing proof of the efficiency of his new fans.

It is not to be wondered, therefore, that

"A PHENOMENAL DEMAND"

has already arisen for "Sirocco" Fans, and that the Patentee is making arrangements on an extensive scale to meet this demand. We wish every success to his new invention, which seems destined in the wide field of engineering to which it applies to rapidly develop into a more extensive business than his now large and highly successful business in Tea machinery ; but we at the same time hope that this development may not involve a lessening of his interest in, or withdrawal of his inventive abilities from, the further development of machinery for Tea manufacture, which would be a serious loss to the Tea Planting industry.—*H. & C. Mail,* Sept. 1.

CEYLON TEA IN GERMANY.

THE YEAR AT HAMBURG.

Business in tea at Hamburg was limited, last year to about the same extent as in 1897. It is considered that the mild autumn and winter of last year were unfavourable to the increase of tea consumption in Germany and Austria. The importations of Indian and Ceylon teas were, however, in excess of those during 1897, and the consumption of these sorts appears to be developing, though slowly, in Germany. It is thought that the present efforts towards exploiting and developing the resources of China are likely to lead to the resuscitaton, by European assistance, of the cultivation and export trade of Chinese teas at a near date.—*Planter*, Sept. 16.

THE SHIPMENT OF TEA-CHESTS.—The Captain of the "Clan Macdonald" makes a small, but very useful appeal to planters to mark as "top" one of the non-morticed sides of their tea-chests—a practice which Messrs. Freudenberg are in the habit of doing. If this were done in the factory there would be a trifle less of the "loss in transhipment" which the draft-allowance is still held to account for in part.

THE PEARL FISHERIES OF THE DUTCH EAST INDIES.—A report by the United States consular agent at Macassar, in the Celebes, on the pearl fisheries in the Dutch possessions in the Eastern Archipelago, has been issued by the Department of State in Washington. The shells of the pearl oyster form one of the most important exports from Macassar ; and, up to the beginning of the present decade, they were sought almost exclusively by natives who fished in the shallow water of the bays without using a diving apparatus. In 1893 a London company sent a schooner, with some luggers to the Aru Islands to try fishing in deep waetrs ; but the little fleet was compelled to leave the Archipelago in consequence of a law that only vessels under the Dutch flag, owned by Dutch subjects or companies, should be allowed to engage in pearl fishing. Residents in the Eastern Archipelago now began to give more attention to the fisheries, and Europeans, Chinese, and Arabs made arrangements with native chiefs in whose waters shells were supposed to be, by which a rent or royalty was paid for the right to fish. At present fishing is prosecuted on the east coast of the Aru Islands, on the east of New Guinea, off Celebes and Timor. The chief market for the shells is Paris, London and other Continental cities taking but small quantities. Two hundred and fifty tons were exported from the Dutch East Indies in 1897, and the quantity is increasing. Aru shells sell at £140 a ton, those from New Guinea, Timor, and Celebes fetching from £80 to £100 a ton. The regulations permit of fishing all the year round, but, in fact, the monsoons prevent this. Natives of the Philippines are mostly employed on the work as they are better than those of the islands close to the fisheries. A cheaper kind of shell is also fished largely, and is sent to Germany and England where it is used in the manufacture of buttons.—London *Times*, Aug. 29.

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS FOR AUG 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Padupola in the Central Province, 21·20 inches, and the lowest at Maha Uswewa tank, in the North-Western Province 0·07 inches.

WESTERN PROVINCE.

Negombo, Mr. Bneknall (6) ... 0·08
Kalutara Mr Buu'tjens (36) 1·37
Labugama, Mr. Bond (369) ... 6·50
Henaratgoda, Mr. Silva (33) ... 0·96

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,600) .. 2·37
New Valley, (Dikoya) Mr. Ward (3,708) .. 11 63
Helboda, (Pussellawa) Not reeeived (3,300) ... —
Yarrow Estate, Mr. Peto (3,400)... 11·43
Peradeniya Mr. MacMillan (1,540) ... 3 50
Duckwari, Mr. Edwin (3,300) ... 4·55
Caledonia, Mr Goork .. (4,273) ... 7·03
Pussellawa, Mr. Powell (3,000) .. 7·50
Hakgala, Mr. Neck (5,581) .. 2·88
S. Wanarajah Estate, Mr. Tatham (3,700) ... 13·98
St. Andrew's (Maskeliya,) Not reeeived (4,200)... —
Padupola, Mr. Ward ... (1,635) .. 21 20
Mylapitiya, Mr. Fletcher (1,707) ... Nil

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) . 1·89
Jaffna Mr MacDonnell (8) Nil
Mankulam, (N. Road) Mr. Walker (167) .. Nil
Elephant Pass, Mr. .. Silva (7) .. Nil
Vangalachettykulam, Mr. Oorloff (179) ... Nil
Point Pedro, Mr. Pararaeha-singhe (24) .. Nil
Jaffna College, Mr. Cooke (9) ... Nil
Kayts, Mr. Kretser ... (8) .. Nil
Kankesanturai, Mr. ... Adams (10) . Nil
Pallai, Mr. Silva (24) .. Nil
Murlkandy, (North-Central Road) Mr. Silva — Nil
Nedunkeni, Mr. Sanmukam (122) ... 0·30
Chavakachcheri, Mr. Silva (16) ... Nil
Udupiddi, Mr. Hastings (35) ... Nil
Marichehukaddi, (14) Mr. Thamotharampillay Nil
Murungan, Mr. Beehingberg (52) Nil
Vavuniya Mr. Walker (318) Nil

SOUTHERN PROVINCE.

Ella Vella (262) Mr. Smith 7·32
Kekauadura, (150) do 1·03
Denagama, (286) do 7·34
Udukiriwila Mr. Lourensz (235) ... 1·85
Kirama, Mr. Ismail (260) 0·27
Hali-ela (200) Mr. Smith 5·80
Tissamaharama, Not received (75) ... —
Matara (15) Mr. Smith 3·68
Dandeniya, (157) do 5·70
Urubokka, (890) do 7·02
Elagala, Not reeeived (121) —
Tangalla, (94) Not received ... —
Mamadola, Mr. Cade (56) ... 1·48

EASTERN PROVINCE.

Irrakkamam, (42) Not received —
Devilana, Mr. Vanderstraaten (136) Nil
Sagamata, Not reeeived (40) ... —
Ambare, do (65) —
Kanthalai, Mr. Carte (150) Nil
Allai, Mr. Carte (95) 5·25
Rukam, Mr. Vanderstraaten (120) .. Nil
Periyakulam, Mr. Carte (20) ... 4·42
Chadaiyantalawa, Mr. Edge (57) ... 0·22
Kalmunai, do (12) Nil
Rotewewa, do (30) 0·38
Lahugala, do (70) 0 81
Naulla, do (30) 0·10
Andankulam, Mr. Carte (41) ... 3·35
Manalpuddy, Mr. Vanderstraaten (21) Nil
Maha-Oya-Tank, Mr. Vanderstraaten (190) 5·17

N.-W. PROVINCE.

Magalawewa, Not received (176) .. —
Maha Uswewa tank, Mr. Crabb (160) ... 0·07
Tenepitiya, Mr. Churchill (8) ... Nil
Batalagoda, Mr. Fonseka — 0·53

N.-C. PROVINCE.

Kalawewa, (268) Mr. Carson Nil
Maradankadawala, Mr. Carson (443) ... Nil
Mihiutale, Mr MacBride (354) ... Nil
Horowapotana, Mr. MacBride (217) ... Nil
Madawachchiya, Mr. MacBride (285) ... Nil
Topare, (200) Mr. Jayewardane ... Nil
Minneriya — Mr. Eves Nil

UVA PROVINCE.

Bandarawela, Mr. Toeke (4,000) ... 1·00
Haldummulla, Mr. Viramuttu (3,160) ... Nil
Kumbukan, (446) Mr. Emerson ... 0·55
Koslanda, (2,258) Mr. Emerson ... 0·72
Tanamalwila, Not received (550) ... —

SABARAGAMUWA.

Ambanpitiya, Mr. Caldicott (729) 7·29
Pelmadulla, Mr. Clarke (408) 7·50
Kolonna Korale (Hulanda-oya) (203) Not received —
Avisawella, Mr. Jeffery (105) 5·08

RATWATTA COCOA CO., LIMITED.

REPORT.

The Directors beg to submit their report and statement of accounts for the season ended 30th June, 1899.

The shareholders were duly advised that for convenience of working it had been decided to extend the season to 30th June so as to secure all the cocoa crop; and the agricultural year from now onwards will date from 1st July to 30th June.

The season has been one of growth and development, and a first crop from the oldest cocoa field has been harvested.

The cocoa crop from the 1893 clearing (72a. 1r. 23p.) turned out 172 cwt. 1 qr. 11 lb., or say 2⅓ cwt. per acre. This was sold in the country at an average of about R43·60 per cwt. The estimate of 300 cwt., justified by the profuse blossoms, has not unfortunately been realized. The trees, it is thought, are too young yet to mature more than a small percentage of the blossoms, and that percentage is very difficult to gauge.

The Tea crop, including 23,395 lb. bought leaf, turned out 60,601 lb., which is calculated to be about 460 lb. per acre from the acreage plucked. This sold at an average of a little over 33½ cents.

On the 18 months' working there is a profit from the crop-bearing portion of the Estate of R5,738·23; but, on the other hand, there has been a further outlay of R20,203.74 on Buildings and Machinery and fields not in bearing, including a new clearing referred to below.

During the season under review 75 acres of forest were cleared and planted with Tea, the most suitable portions being also planted with Cocoa.

The young Tea clearings are not so far advanced as they should have been, owing to a conflict with weeds and the plants having been somewhat immature. These faults, however, are now less apparent, and good progress may be expected during the current season.

A survey of the whole property has been made by a competent Surveyor, and his plan is now in the hands of the Surveyor-General for examination and verification.

The following is a definition of the Company's property as at 30th June :—

	A.	R.	P.			
Cocoa planted 1893 ...	72	1	23			
Do do 1894 ..	85	0	29			
Do do 1895 ...	65	2	07			
				223	0	1
Tea planted 1890 (and cocoa)...	118	3	27			
Do do 1896 do ...	24	0	00			
Do do 1897 do ..	99	3	27			
Do do 1898 do ..	75	0	00			
				317	3	
Grass				3	0	00
Total cultivated ..				543	3	33
Jungle				181	0	00
Total acreage ..				724	3	33

Mr. Huxley visited the estate in July along with Mr. Pyper, the Managing Director, and both are satisfied with the prospects. There was no disease of any kind visible either on Cocoa or Tea, and it only wants time now for the land to come into bearing to secure profits.

Next year's crops are estimated at 300 cwt. Cocoa and 50,000 lb. of Tea, together with 16,000 lb of Tea from outside leaf. The estimate of expenditure has not yet been finally passed by the Directors, but they will be in a position to give information regarding the same at the meeting.

It will be seen by the Balance Sheet that the Capital and Mortgage money is now practically all expended on property and Coast Advances; and, as there is not likely to be a sufficient surplus on current season's Revenue account, arrangements will have to be made to meet present liabilities and any further capital outlay.

Mr. Gordon Pyper having been appointed Managing Director for a term of years, Mr. Edmund Jeffries only retires from the Directorate by rotation, but he is eligible for re-election.

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers
Agra Ouvah Estates Co., Ltd.	500	875	900
Ceylon Tea and Coconut Estates	500	—	500 n'l
Castlereagh Tea Co., Ltd.	100	90*	—
Ceylon Hills Estates Co., Ltd.	100	—	30
Ceylon Provincial Estates Co.	500	485	500
Claremont Estates Co., Ltd.	100	15	..
Clunes Tea Co., Ltd.	100	—	90*
Clyde Estates Co., Ltd.	100	—	90
Delgolla Estates Co., Ltd.	400	--	140*
Doomoo Tea Co., of Ceylon, Ltd.	100	—	60*
Drayton Estate Co., Ltd.	100	135	—
Ella Tea Co., of Ceylon, Ltd.	100	55*	60
Estates Co., of Uva, Ltd.	500	—	350
Gangawatta	500	—	—
Glasgow Estate Co., Ltd.	500	—	900
Great Western Tea Co., of Ceylon, Ltd.	500	640	—
Hapugahalande Tea Estate Co Ltd	200	—	250
High Forests Estates Co Ltd	500	—	550
Do part paid	350	375	...
Horekelly Estates Co., Ltd.	100	80	—
Kalutara Co., Ltd.	500	—	390
Kandyan Hills Co Ltd.	100	50	—
Kanapediwatte Ltd.	100	—	85
Kelani Tea Garden Co., Ltd.	100	...	65
Kirklees Estates Co., Ltd.	100	—	142·50
Knavesmire Estates Co., Ltd.	100	..	75
Maha Uva Estates Co., Ltd	500	—	575
Mocha Tea Co., of Ceylon, Ltd.	500	—	625
Nahavilla Estate Co., Ltd.	500	—	500
Nyassaland Coffee Co. Ltd.	100	..	90
Ottery Estate Co., Ltd.	100	116	150
Palmerston Tea Co., Ltd.	500	..	415
Penrhos Estates Co., Ltd.	100	95	97·50
Pine Hill Estate Co., Ltd.	60	—	50
Pitakanda Tea Company	500	1,000	—
Putupaula Tea Co., Ltd.	100	..	100
Ratwatte Cocoa Co., Ltd.	500	—	500 n'l
Rayigam Tea Co., Ltd.	100	62·50*	62·50
Roeberry Tea Co., Ltd.	100	—	50
Ruanwella Tea Co., Ltd.	100	...	75
St. Heliers Tea Co., Ltd.	5 0	500	—
Talgaswela Tea Co., Ltd.	100	—	35
Do 7 per cent. Prefs.	100	80	..
Tonacombe Estate Co., Ltd.	500	—	450
Udabage Estate Co., Ltd.	100	..	40
Udugama Tea & Timber Co., Ltd.	50	..	10 n'l
Union Estate Co., Ltd.	500	—	300
Upper Maskeliya Estate Co., Ltd.	500	..	500
Uvakellie Tea Co., of Ceylon, Ltd.	100	65	70
Vogan Tea Co., Ltd.	100	85	90
Wanarajah Tea Co., Ltd.	500	—	1145
Yataderiya Tea Co., Ltd.	100	350*	375

CEYLON COMMERCIAL COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers
Adam's Peak Hotel Co., Ltd.	100	..	60
Bristol Hotel Co., Ltd.	100	90*	92·50
Do 7 per cent Debts.	100	102·50	.—
Ceylon Gen. Steam Navgt. Co., Ltd.	100	—	210
Colombo Apothecaries Co., Ltd	100	140*	—
Colombo Assembly Rooms Co., Ltd.	20	..	12·50
Do prefs.	20	..	17
Colombo Fort Land and Building Co., Ltd.	100	85*	..
Colombo Hotels Company	100	—	300*
Galle Face Hotel Co., Ltd.	100	..	150*
Kandy Hotels Co., Ltd.	100	95*	—
Kandy Stations Hotels Co.	100	..	35
Mount Lavinia Hotels Co., Ltd.	500	—	400
New Colombo Ice Co., Ltd.	100	170*	—
Nuwara Eliya Hotels Co., Ltd.	100	—	25*
Public Hall Co., Ltd.	20	15	—
Petroleum Storage Co.	100	—	—
Do 10 % prefs.	100	35	40

*Transactions

LONDON COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers.
Alliance Tea Co., of Ceylon, Ltd.	10	8½—9	—
Associated Estates Co., of Ceylon Ltd.	10	..	6—7
Do. 6 per cent prefs.	10	..	9—9½
Ceylon Proprietary Co.	1	..	12·6—17·6
Ceylon Tea Plantation Co., Ltd.	10	..	26½—27
Dimbula Valley Co., Ltd.	5	—	5½—6
Do prefs.	5	—	5½—6
Eastern Produce and Estates Co., Ltd.	5	..	6—6½
Ederapolla Tea Co., Ltd.	10	.	8—9
Imperial Tea Estates Ltd.	10	..	5—6
Kelani Valley Tea Asson., Ltd.	5	..	5—6
Kintyre Estates Co, Ltd.	10		6—8
Lanka Plantation Co., Ltd.	10	4½	5—6
Nahalma Estates Co., Ltd.	1	.	½—1
New Dimbula Co., Ltd.	1	..	2½—2½
Nuwara Eliya Tea Est. Co., Ltd	10	..	9¾
Ouvah Coffee Co., Ltd.	10	7	7*
Ragalla Tea Estates Co., Ltd.	10	...	9—11
Scottish Ceylon Tea Co., Ltd.	10	..	14—16
Spring Valley Tea Co., Ltd.	10	..	5—6
Standard Tea Co., Ltd	10	.	12—13
Yatiyantota Ceylon Tea Co., Ltd	10	...	8—9
Yatiyantota pref. 6 o/o	10	..	10—10¼

BY ORDER OF THE COMMITTEE.

Colombo, 29th September, 1899.

RAINFALL RETURN FOR COLOMBO

(Supplied by the Surveyor-General.)

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897	1898	Av of 29yrs.	1899
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch	Inch	Inch	Inch.	Inch.
January ..	0·81	1·45	7·39	5·42	0·62	5·00	2·92	3·81	2·32	3·09	6·98
February ..	4·36	2·81	5·32	2·36	0·52	0·81	0·35	1·68	1·98	1·90	2·78
March ..	5·34	9·43	1·52	5·15	7·44	1·84	5·64	3·66	4·21	4·92	0·88
April ..	14·27	5.93	13·92	20·39	12·51	9·34	5·93	10·97	22·81	11·47	6·66
May ..	6·48	17·65	3·00	10·32	3·00	10·09	9·31	8·30	5·80	11·89	17·73
June ..	1·87	9.79	6·62	11·01	11·32	13·99	8·37	10·14	10·94	8·34	9·23
July ..	3·32	4·59	1·10	2·20	1·72	0·52	2·85	5·24	6·15	4·49	1·11
August ..	0·73	1·65	1·86	1·01	0·86	0·92	6·35	9·09	0·97	3·77	0·62
September	1·50	4·42	1·14	1 99	0·78	4·09	10·99	4·58	6·90	5·13	1·48*
October ..	13·33	35·28	12·24	5·59	20·81	30·36	16·78	4·71	20·60	14·57	
November..	12·32	18·37	5·86	18·10	14·63	5·83	19.81	11·66	17·38	12·80	
December..	8·47	7·66	0·86	·13	3·25	9·44	11·76	8·89	3 05	6·45	
Total..	72·80	119·03	60·83	89·67	77·46	92·23	101·06	82·73	103·11	88·82	47·47

* From 1st to 27th Sept. 1·48 inch, that is up to 9·30 a.m. 28th Sept.—ED. *C.O.*

INDIAN TEA PROSPECTS.—The prospects of the Indian tea industry. the Calcutta correspondent of the Allahabad *Pioneer* reports, continue to brighten very considerably. With the dispute in London brought to a favourable termination, with values in Calcutta distinctly improving, a better demand from the outside markets, and better weather in most of the districts which will afford a chance of desirable quality being soon available, the hopes of those interested in tea are on a higher level than of late, when the outlook was decidedly gloomy. The weather in the tea districts has been generally favourable, except in North Assam, where it has been too cold,

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo 26th Sept, 1899

EXCHANGE ON LONDON :—Closing Rates: *Bank Selling Rates*:—On demand 1/4 3-32; 4 months' sight 1/4⅛ to 5-32; 6 months' sight 1/4 5-32.

Bank Buying Rates:—Credits 3 months' sight 1/4 ⅜; 6 months' sight 1/4 ½; Docts 3 months' sight 1/4 7-16; 6 months' sight 1/4 9-16.

Indian Bank Minimum Rates 5 o/o to 6 %

Local Rates: 2 o/o Higher.

COFFEE :—

Plantation Estate Parchment on the spot per bus—R12.00

Plantation Estate Coffee, f.o.b on the spot per cwt R72.50

Liberian Parchment on the spot per bus—None.

Native Coffee f.o.b per cwt. R38.00

TEA:—Average Prices ruling during the week—Broken Pekoe per lb. 46c. Pekoe per lb. 38c. Pekoe Souchong per lb. 34c. Broken Mixed and Dust per lb. 29c.—Averages of Week's sale.

CINCHONA BARK:—Per unit of Sulphate of Quinine per lb 7c.

CARDAMOMS:—Per lb R1.80

COCONUT OIL:—Mill oil per cwt. None.

Dealers' oil per cwt. R13.75; Coconut oil in ordinary packages f.o.b. per ton R307.50

COPRA:—Per candy of 560 lb. R42. 50

COCONUT CAKE:—(Poonac) f.o.b. per ton, R85.00

Cocoa unpicked & undried, per cwt. R42.00

Picked & Dried f. o. b. per cwt. R48.50

COIR YARN.—Nos. 1 to 8 { Kogalla R17.25 / Colombo R16.00

CINNAMON :—Nos. 1 & 2 only f.o.b. 62c.

Do Ordinary Assortment. per lb 56½c.

EBONY.—Per ton None.

PLUMBAGO:—Large Lumps per ton, R1,100

Ordinary Lumps per ton, R1,000

Chips per ton, R700; Dust per ton, R600; Dust Flying R200.—

RICE.—Soolai per bag, R8.25 to 8.87

,, per bushel, R3.15 to 3.52

Pegu & Calcutta Calunda per bushel. R3.25 to 3.35

Coast Calunda per bushel, R3.30 to R3 40

Mutusamba per bushel R3.50 to 3.75

Kadapa and Kuruwe, per bushel } None.

Rangoon, raw 3 bushel bag. }

Soolai Kara per bushel R3.08 to 3.15

Coast Kara per bushel R3.20 to 3.25

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, Sept 26th, 1899.

COFFEE :—

Estate Parchment :—per bushel	Nil.
Chetty do do	Nil.
Native Coffee per cwt.	Nil.
do F. O. B per cwt.	Nil.
Liberian coffee:—per bushel	R3·50
do cleaned coffee:—per cwt	R22·50
Cocoa unpicked:—per cwt	R40·00 to 46·00
do cleaned do	R42·00 to 48·00
Cardamoms Malabar per lb	R1·00 to 1·10
do Mysore do	R1·65 to 2·00
RICE :—	
Soolai per bag of 164 lb. nett	R8·50 to 8·87
Slate or 1st quality:—per bushel	R3·25 to 3·30
Soolai 2 & 3rd. do do do	R3·15 to 3·25
Coast Calunda	R3·30 to 3·40
Coast Kara	R3·20 to 3·25
Kazala	R3·08 to 3·12
Muttusamba Ordinary	R3·50 to 3·75
Cinnamon. per lb No 1 to 4	R00·57
do do 1 to 2	R00·65
do Chips per candy	R92 50 to 95·00
Coconuts Ordinary per thousand	R35·50 to 38·00
do Selected do	R36·00 to 39·00
Coconut Oil per cwt	R13·62½ to 13·75
do do F. O. B. per ton	R272·50 to 275·00
POONAC :—	
Gingelly per ton	90·00 to 92·50
Coconut Chekku do	R75·00 to 77·50
do Mill (retail) do	R75·00 to 80·00
Cotton Seed do	R75·00 to 80·00
Copra per candy	
OONAC :—	
Kalpitiya do	R42·50
Marawila do	R42·00
Cart Copra do	R40·00 to 41·00
Satinwood per cubic feet.	R2·00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R30·00
Palmyra do do	R8·00 to 17·50
Jaffna Black Clean per cwt	R14·00
do mixed do	R11·50 to 12·50
Indian do	R8·00 to 13·50
do Cleaned do	R10·50 to 17·50
Sapanwood per ton	R50·00 to 55·00
Kerosine oil American per case	R6·00 to 6·25
do bulk Russian per tin	R2·75 to 3·00
do Russian per case	R5·60 to 5·90
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R38·00 to 40·00
Kapok cleaned f o b do cwt	R24·00 to 25·00
do uncleaned do	R7·50 to 8·00
Plumbago per ton, according to grade — Large lumps	R700·00 to 1,100·00
do do	R550·00 to 1,050·00
Chips	R300·00 to 700·00
Dust	R150·00 to 600·00

CEYLON EXPORTS AND DISTRIBUTION 1899.

COUNTRIES.	Tea. 1899 lbs.	Tea. 1898 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cinchona Branch & Trunk lb. 1899. lbs.	Cinchona Branch & Trunk lb. 1898. lbs.	Cocoa cwts.	C,moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.	Coconut Oil. 1899 cwts.	Coconut Oil. 1898 cwts.
To U K. ..	74278984	72404989	12735	..	12735	430906	507021	32061	254468	734574	597627	112485	81793
,, Austria ..	7491	12633	1	..	1	..	..	...	...	..	105966	2064	8353
,, Belgium ...	12349	10540	90	..	90	..	4421	357	380	68260	95760	1602	903
,, France ..	74217	61419	165	...	165	33	22471	34	...	68354	1750	..	4209
,, Germany ..	278036	252529	125	..	125	..	..	22	21651	364905	422586	3739	8798
,, Holland ..	22874	22631	..	..	..	...	..	..	...	..	..	...	..
,, Italy ..	11761	3270	..	..	..	..	..	...	20	65800	111520	404	397
,, Russia ..	2719244	1634865	24	..	24	...	..	...	923	..	...	..	..
,, Spain ..	13800	27650	..	...	..	..	...	..	...	172400	37800	..	..
,, Sweden ..	42494	28450	..	..	..	..	..	...	4036	500	..	206	..
,, Turkey ..	15177	25839	1	..	1	...	...	..	336	...	..	..	..
,, India ..	413493	843152	120	..	120	..	..	1	38652	...	..	45288	92299
,, Australia ..	11966586	10960388	2878	..	2878	..	...	235	..	5400	20160	720	422
,, America ..	2206213	1816009	442	..	442	94005	186819	514	6240	100600	28000	72640	48247
,, Africa ..	221138	294448	...	..	..	..	724	..	2206	400	1240	...	19
,, China ..	935946	852173	28	...	28	...	2026	...	5951	45000	...	3184	2434
,, Singapore .	47232	46426	78	..	78	..	—	..	480	..	..	22333	82026
,, Mauritius ..	73701	7300	..	..	..	..	..	..	...	...	..	..	..
,, Malta .	192352	138219	..		..	...	..	..	..	..	..	..	...
Total export from 1st Jan. to 26th Sept. 1899	93473088	89442930	16687	—	16687	524944	723482	33224	335343	1627193	1422409	264665	329891

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From Lewis & Peat's Fortnightly Prices Current, London, August 23rd, 1899.

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ...	44s a 100s
Zanzibar & Hepatic ,,	Common to good ..	11s a 75s
BEES' WAX,		
Zanzibar & Bombay { White ,,	Good to fine	£7 a £7 10s
{ Yellow ,,	Fair ,,	£5 10s a £6 10s
Madagascar ,,	Dark to good palish	£6 a £6 12s 6d
CAMPHOR, China ,,	Fair average quality	125s
Japan ,,	,, ,, ,,	130s
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 7d a 2s
Ceylon.—Mysore ,,	Fair to fine plump ..	3s 8d a 3s 10d
	Seeds ..	1s 9d a 2s 5d
,, Tellicherry ,,	Good to fine ..	2s 11d a 3s
	Brownish .	2s 6d
,, Long ,,	Shelly to good ..	2s 6d a 3s 6d
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4d
Madras ,,	..	3½d a 3¾d
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	29s 6d a 40s
CINCHONA BARK.—		
Ceylon lb.	Crown, Renewed	5d a 7d
	Org. Stem	3⅞d
	Red Org. Stem	2¾d a 3½d
	Renewed	3⅜d
	Root	3½d
CINNAMON, Ceylon per lb. 1sts	Ordinary to fine quill	10d a 1s 6d
2nds	,, ,,	9½d a 1s 5d
3rds	,, ,,	9d a 1s 4d
4ths	,, ,,	7½d a 11½d
Chips	,, ,,	2d a 8½d
CLOVES, Penang lb.	Dull to fine bright bold	4¼d a 1s
Amboyna ..	Dull to fine	4d a 5¼d
Zanzibar and Pemba }	Good and fine bright	3¼d a 4¼d
	Common dull to fair	3d a 3¼d
Stems ..	Fair	2d
COCCULUS INDICUS cwt.	Fair	8s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	104s a 120s
	Middling to fine mid .	93s a 102s
	Low mid. and low grown	81s a 92s 6d
	Smalls	35s a 75s
Native	Good ordinary	30s a 70s
Liberian ,,	Small to bold	25s a 35s
COCOA, Ceylon ,,	Bold to fine bold	82s 6d a 92s
	Medium and fair	65s a 77s 6d
	Triage to ordinary	4[illegible]s 6d a 62s 6d
COLOMBO ROOT ,,	Ordinary to good	14s a 21s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair .	£14 a £23
FIBRE, Brush ,,	Ord. to fine long straight	£10 a £21
Cochin ,,	Ordinary to good clean	£18 a £22
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	,, ,, very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	40s a 55s
CUTCH ,, ,,	Fair to fine dry	28s a 35s
GINGER, Bengal, rough ,,	Fair	21s
Calicut, Cut A ,,	Good to fine bold	69s 6d a 75s
B & C ,,	Small and medium	27s 6d a 50s
Cochin Rough ,,	Common to fine bold	20s a 26s
	Small and D's	17s a 19s 6d
Japan ,,	Unsplit	20s 6d
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £15
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 2/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ...	£4 8s a £8
	,, ,, red	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 55s
Turkey sorts ,,		70s a 85s
Ghatti ,,	Pickings to fine pale ...	12s 6d a 35s
Kurrachee ,,	Good and fine pale ...	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras ,,	Dark to fine pale ...	27s 6d a 35s
ASSAFOETIDA ,,	Clean fr to gd. almonds	40s a 95s
	Ord. stony and blocky	24s a 47s 6d
KINO ,,	Fine bright	4s
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	17s a 20s
siftings ,,	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 2d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 2d
	Common to fine	1s a 2s 4d

	QUALITY	QUOTATIONS.
INDIARUBBER, (Contd).		
Java, Sing. & Penang lb.	Foul to good clean ..	8d a 3s
Mozambique ,,	Good to fine Ball ..	2s 8d a 3s 5¼d
	Ordinary to fair Ball..	2s a 2s 10d
	Low sandy Ball ..	1s 3d a 1s 6d
	Sausage, fair to good .	3s 2d a 3s 6d
	Liver and livery Ball	2s 4d a 3s 2d
Madagascar ,,	Fr to fine pinky & white	3s a 3s 4½d
	Fair to good black .	2s a 2s 3d
	Niggers, low to fine ..	1s a 2s 6d
INDIGO, E.I. ,,	Bengal—	
	Shipping mid to gd violet	2s 10d a 4s
	Consuming mid. to gd.	2s 6d a 2s 9d
	Ordinary to mid.	2s 2d a 2s 5d
	Mid. to good Kurpah	1s 11d a 2s 5d
	Low to ordinary	1s 8d a 1s 10d
	Mid. to good Madras	1s 4d a 2s 2d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 5d a 1s 11d
	Pickings	1s 1d a 1s 3d
MYRABOLANES, Madras } cwt	Dark to fine pale UG	5s a 6s
	Fair Coast	5s 6d a 6s
Bombay ,,	Jubblepore	4s 3d a 7s
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	1s 1d a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 18s
NUX VOMICA, Bombay per cwt.	Ordinary to middling	4s a 5s 6d
Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	6s a 6s 2d
CASSIA ,,	According to analysis	3s 11d a 5s 6d
LEMONGRASS ,,	Good flavour & colour	2¾d a 2⅞d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3½d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1s 1/0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody..	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf ...	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	5⅜d a 5½d
Singapore	Fair	5½d a 5 9-16d
Acheen & W. C. Penang	Dull to fine ...	4½d a 5¼d
PLUMBAGO, lump cwt.	Fair to fine bright bold	64s a 72s
	Middling to good small	25s a 50s
chips ,,	Dull to fine bright	23s a 57s 6d
dust ,,	Ordinary to fine bright	12s a 35s
SAFFLOWER ,,	Good to fine pinky ..	60s a 65s
	Middling to fair ...	60s a 65s
	Inferior and pickings	40s a 57s 6d
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £35
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay ,,	Lean to good ..	£4 a £5
Madras ,,	Good average .	£4 a £5 nom
Manila ,,	{ Rough & rooty to good	£4 10s a £5 15s
Siam ,,	{ bold smooth ..	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	55s a 60s
SENNA, Tinnevelly lb	Good to fine bold green	4½d a 6½d
	Fair middling medium	3d a 3¾d
	Common dark and small	2d a 2¾d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's D's and B's Small ...	£4 a £6 2s 6d
Mussel ,,	Small to bold ..	£1 a £2 17/6
TAMARINDS, Calcutta ..	Mid. to fine bl'k not stony	15s a 16s
per cwt. Madras	Stony and inferior ..	7s 6d a 8s 6d
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	18s 6d a 23s
TURMERIC, Bengal cwt.	Fair ...	18s
Madras ,,	Finger fair to fine bold bright	25s a 26s 6d
Do. ,,	Bulbs .	17s
Cochin ,,	Finger .	17s 6d a 18s
	Bulbs ..	8s 6d a 9s
VANILLOES— lb.		
Mauritius and Bourbon } 1sts	Gd. crysallized 3½ a 9 in	20s a 29s 6d
2nds	Foxy & reddish 4½ a 8 ,	21s a 25s
Seychelles 3rds	Lean and inferior ...	10s a 14s
VERMILION lb.	Fine, pure, bright ..	2s 3d a 2s 4d
WAX, Japan, squares cwt	Good white hard ...	30s a 31s

THE

AGRICULTURAL MAGAZINE,

COLOMBO.

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for October:—

Vol. XI.] OCTOBER, 1899. [No. 4.

OCCASIONAL NOTES.

THE *Kew Bulletin* for January and February last contains a reference (with plate) of cacao disease in Trinidad. It would appear that the disease is almost entirely confined to the pods, and is caused by two species of fungi, *Phytophthora omnivora* and *Nectria bainii*. The latter is said to be of the same character as the cause of the cacao disease of Ceylon as described by Mr. Carruthers. Mr. Hart of Trinidad is inclined to think that the cacao in Ceylon has a much lower vitality than in Trinidad, and consequently more liable to disease. The pod disease is of course no new thing, but it is said to have been more than usually severe last year, in some districts causing a loss of as much as 50 per cent of crop. The fungus *Nectria bainii* has been so named in complement to Mr. Bain who first called attention to the disease, by Mr. Massey of Kew, and is fully described by the latter.

The Committee of the Colombo Agri-Horticultural Society met on the 19th September, and considered a report made by the Honorary Secretary (Mr. C. Drieberg). Annexed to the report was a statement showing the financial position of the Society, which showed that there was a fairly large balance on hand. No arrangements were made for a Show being held next year, pending the arrival of the Hon. Mr. F. R. Ellis, the permanent Chairman of the Society, though the Committee appeared to favour the idea of holding future Shows annually in the rural districts, and only once in three years or so in the capital.

Mr. Pearson who left Ceylon last year after making scientific investigations in connection with the extraction and preparation of Rubber, is we see appointed assistant (for India) in the Harbarian of the Royal Gardens, Kew, in succession to Dr. Stapf.

We are glad to hear of the success which has attended Mr. Veterinary Surgeon Chinniah's inoculation of cattle against rinderpest on Oodeville Estate, Kandy. We understand that Mr. Chinniah finds pure bile more satisfactory than glycerinated bile as an inoculating medium.

It is reported that the Commission appointed to consider the advisability of establishing a Department of Agriculture are about to recommend that a Board of Agriculture will suffice for present needs, and further that the School of Agriculture should be transferred to Kandy. As a centre where both low and upcountry products could be grown, Kandy is much to be preferred to Colombo as a site for the school, but it is to be hoped that there will be ample scope for practical work, of which there is little opportunity under present conditions, and that the classes will move about the country instead of being confined to one spot.

COLOMBO SCHOOL OF AGRICULTURE.

(From Mr. C. Drieberg's Report to the Director of Public Instruction.)

No changes have taken place in the constitution of the School of Agriculture during the past year. The Commission which was expected to deal with the question of re-organising the Institution did not meet, and the work was carried on the the same lines and nnder the same conditions as before. With the appointment of another Commission to consider the larger question of organising an Agricultural Department for the Island, it is to be expected that there will be some important changes, whereby the scope of work and the usefulness of the School of Agriculture will be extended.

The importance of Agricultural Shows from an educational point of view is admitted on all hands, and on the occasion in question the promoters took advantage of the opportunity to give practical demonstrations on special subjects, such as budding and grafting, cream separating, &c., which greatly enhanced the importance of the Show as a medium of instruction Agricultural Shows are of rare occurrence in the Island, and the students of the School of Agriculture were singularly fortunate in the fact that the last Show was held at their very doors, and in being so closely associated with the undertaking from which, as an object lesson in their course of instruction, they were able to derive the maximum benefit. I have in my previous reports strongly urged the importance of regularly holding Agricultural Shows, which, had Government seen its way to guarantee a vote against possible losses, might have been held annually. As it was, the last show paid its own expenses, and there was no necessity to draw upon the guarantee which was so liberally made by Mr. Davidson, the Mayor.

As in other years, a large amount of correspondence was gone through in reply to letters received from correspondents in and out of the island, and in consulting others with the object of furthering the agricultural interests of the Colony. As an instance of such an intercommunication I might mention the fact of the opening up of a trade in kekuna oil *(Aleuritis triloba)* to meet the demand that has arisen from abroad for this long-neglected product. I have been working a good deal with other oils so as to bring such merits as they might possess to the notice of the trade, while the question of making plantain flour a marketable commodity has also engaged my attention. On this latter subject I have made two reports to Government. The nurseries of the Rhea or Ramie plant have been practically abandoned, owing to the lack of interest shown by local growers in the fibre industry. The more important introductions in the way of new plants are the Florida velvet bean (*Mucuna pruriens*), highly recommended as a soil renovator (though useful in other ways), a new variety of the sweet potato (the *Nancimum*) and seeds of the early amber sugarcane. My thanks are due to the Director of the Royal Botanic Gardens, Peradeniya, Mr. Williams of Henaratgoda, Mr. John Ferguson, Mr. George Warr of New York, the U.S. Department of Agriculture, Mr. Church of Japan and others, for seeds and plants presented to the school.

The reading room has been well supplied with agricultural papers and reports and the publication of the Agricultural Magazine, which completed its ninth volume in June, 1898, is kept up with regularity.

The second batch of students trained in the Forestry School passed out at the end of February. They are now employed in the Forest Department as follows:—

Mr. Fontyn, Forest Ranger, Kurunegala; Mr. C B Karunaratne, Forest Guard, Hanwella; Mr. B L Mendis, Forest Guard, Hambantota; Mr. M A Fernando, Forest Guard, Passara; Mr. R de Silva, Forest Guard, Kandapola. The first two were drafted from the Department and the others were admitted from the School of Agriculture after a competitive examination. The new class should have begun work in March, but owing to the delay in the arrival of the Forest Officers who were to form the class, regular work did not commence till May. The new class, consisting of Messrs. J S Perera, M B Seneviratne, G Rajapakse, W C Rowlands, W Ferdinands, and D E Tiathonis, was taken on tour by the Conservator of Forests in November and travelled to Kurunegala, from where the Sundapola, Aivandrum, Rukgolla, and Kalugalla forests were visited, and thence to Galboda, Nanuoya, and Haputale.

There is nothing of special importance that I can refer to in the Training School and Practising Schools. The Veterinary classes were kept up by Mr. Sturgess, who reports that Mr. J. E. Fernando was the best student of the year and will have his recommendation for the Government Veterinary Scholarship when it next falls vacant. The Government Dairy has grown since my last report was written; the demand for milk has increased, and additional accommodation had to be provided for the stock. On December 31, 1898, the entire dairy herd consisted of 84 cows, 94 calves, three stud bulls, and four draught animals. It will be observed that we have a large number of young stock on hand, many of them half-grown animals, which take up a good deal of room. On the recommendation of the Colonial Veterinary Surgeon, Government have decided not to sell such young stock which the dairy can spare, in Colombo, but to send them to the Provinces to be sold by the Revenue Officers, where it is expected they will come under the notice of the smaller native landowners and cattlekeepers, by whom they will be purchased. The object of the new arrangement is a good one, but it is doubtful whether it will be attained in practice. For one thing the dairy will not be a gainer by the sales being conducted in the Provinces instead of in Colombo, where there is naturally more competition at the sales. Again, the wealthier landowners of the Provinces, who have hitherto had to purchase our stock in Colombo, would under the new arrangements be able to secure the animals at lower rates owing to comparative absence of competition; while few, if any, of the small landowners who are expected to purchase the cattle can afford the expense of keeping young stock for a year or two till they can be made use of. But even if purchased by such people, the animals would probably be allowed to lead the vagrant life of village cattle, with the result that the ultimate object of the scheme will be frustrated. It would be a better plan for the Kacheheries to own the animals, which should be placed in charge of headmen, so that the animals may be well cared for, and the villagers permitted to make use of them at nominal rates, if not free of charge. So far no young stock has been sold in

the Provinces, as owing to the prevalence of cattle plague in the Kurunegala District, where the first lot of animals was to have been sold, the Government Agent did not think it advisable that any of our stock should be sent to him. The dairy was free from any epizootic disease, though rinderpest prevailed more than once in Colombo, and even in the immediate vicinity of the dairy. This I attribute to the careful measures adopted during times of disease. At such seasons our stock were confined within the "ring fence" area, and the buildings and premises kept thoroughly disinfected. These precautionary measures entailed some expense in the matter of disinfection and extra provision for feeding the dry cows and young stock that at other times are to a great extent kept on the pasturage of the Havelock racecourse (rented by the dairy for R60 per mensem as pasture ground for the stock), but the money is, I think, well spent. During the year there was but one suspected case of rinderpest at the time when the disease prevailed among the Turf Club draught bulls a few hundred yards from the dairy. At the first indication of illness the animal was removed to the quarantine shed, and on the symptoms becoming aggravated it was decided to destroy it. This was done and the carcase buried deep with lime. There were only six deaths during the year, two among the cows and four among the calves.

On March 8th a batch of 31 cows (with 14 calves) and a bull came over from Sinde, having been imported at a cost of R3,310·17, while 20 cows, 16 calves and one bull were sold on the 4th March and brought in, after deducting all incidental expenses of the sale, R1,358·85. The total quantity of milk supplied was 136,405 pints, of which 111,225 pints were produced in the dairy. The largest quantity produced in any one month was 9,000 bottles in July, when the dairy met the whole demand. The revenue of the Model Farm after deducting expenses and the annual rent of R1,350, aggregated R3,281·61. The Farm is a much-frequented resort since the opening of the golf links and the clearing of the low jungle by the Golf Club. The grass lands attached to the dairy were, as before, worked departmentally as an annexé of the Dairy Farm, with satisfactory results.

To briefly state the financial history of the dairy: Government voted a sum of R19,539·12 in 1893 (the year in which the dairy was established) for building, stock, utensils, &c. In 1894 an advance of R11,500 more was made for working the dairy. The latter sum was repaid in 1895, while of the original capital voted (R19,539·12) R8,890·51 had previously been repaid to the Treasury. This left R10,648·61 as the balance due on capital cost. At the end of 1898 the balance of cash in hand or due to the dairy was R9,604·29, so that with stock in trade to the value of R15,000 it will be admitted that the dairy is in a very solvent condition. I would even add to the assets a further sum of R4,400 paid as compensation to the late lessee of the Model Farm, when the property came into the possession of the dairy, as this sum should without difficulty be recovered from any future lessee. The income from the Farm has more than doubled since 1893 when it was acquired; and who would not be willing to invest R4,400 to secure an income (after deducting rent and other expenses) of over R3,000 per annum? So that the former sum might reasonably be put down as a "debt receivable" and the present assets of the dairy increased from R13,955·68 to R18,355·68.

C. Drieberg, Superintendent.

OBSERVATIONS ON AGRICULTURAL EDUCATION IN CEYLON.

(Concluded.)

I have tried to ascertain the views of some of the leading native agriculturists of the island, and from all that I could gather, they expected that the Agricultural School would carry out experiments on the various products tried on a small scale at the school itself and on a large scale outside, with a view to showing how economic products could be cultivated on a commercial scale. But this, I think, was too much to expect from a school which was commenced in such a humble way. There is a great deal for it to do before venturing upon such speculative enterprises. The Director of the Royal Botanic Gardens has already set to work in this direction, and we have had valuable reports of his experiments in the cultivation of Para-rubber. Other products will, it is to be hoped, also receive due attention in time. The students of the school ought to be given an opportunity of acquainting themselves with the nature of such experiments, and to this end should be taken on tour at stated periods during the year and not kept confined to Colombo alone.

The improvement of native agriculture is so directly connected with the education of the people, that I do not think it would be wise to sever the School of Agriculture with the department of Public Instruction.

The Sinhalese villager is, as a rule, not over-industrious. There are a great many products that he can grow in his garden if he will only take the trouble to do so, and learn how to grow them. He will allow the jungle to grow up to the very door of his house, whereas if he will clear it and plant something useful it will add a charm to his dwelling, while at the same time he will reap the produce which he can himself use or sell and procure the means of securing additional home comforts. Pepper, different kinds of yams, betel, onion, ginger, turmeric, chillies, cocoa, a few medicinal, foliage and flower plants, some vegetables, &c., are what should be seen around the dwelling of every villager, in place of weeds and filth as is more often the case. Now and again we find an industrious villager grow some of these products near his house, but it often happens that his neighbours help themselves to the produce. If such cultivation as I have referred be more generally adopted, I am inclined to think that there will be less thieving and generally less crime also in the villages. Betel and ginger may be said to be necessaries of daily life in the villages; the former for masticating, the latter for use in curries and as a remedy for almost every little ailment. A common complaint of the villager is that he cannot grow anything near his house because his cattle destroy or consume it. This raises another question which requires attention. The neglect of village cattle is a notorious fact, and a more rational system of cattle-keeping is much to be desired. If the cattle are looked after as they should be the crops will not suffer. Another thing which the villager must be taught is the value of cattle

manure which is generally allowed to run to waste and often becomes a serious nuisance. In garden cultivation this manure will be of the greatest value. If the younger members of the family could be induced to take an interest in gardening, I anticipate a great improvement in the character of the future men of the villages.

I have stated so much in order to point out in what direction we should work for improvements in native agriculture. How easy will it be to bring about reforms in this line if all our Mudaliyars and Ratemahatmeyas are trained agriculturists. They will then have model gardens round their walauwas and could exercise their influence among the villagers in distributing the various products that are useful to the people and showing them how, and encouraging them to grow them. The experimental garden that I have started in my own property in Kandy with the view of helping the teachers in my district is, I am glad to say, already beginning to bear fruit. I have put almost every bit of it into some use and various products are grown with success. Some of the teachers who have visited the garden have taken a lesson from me, and are trying to establish similar gardens in connection with their schools. The most prominent school gardens so far as I can remember just now are those at We-onda, Morape and Pannela. I am particularly pleased with the garden of the We-onda teacher. My time is so much taken up with examination work that I do not find sufficient opportunity of attending to agricultural work of this nature. School teachers must be taught in the first place, as most of them are as ignorant as the villagers themselves on those matters.

Ceylon in my humble opinion is not yet ripe for an Agricultural Department on as elaborate a scheme like those which are at work in America, Australia, &c. Let the Government by all means appoint a consulting entomologist, and if funds are available an agricultural chemist too. Their services can be profitably utilised in connection with the Agricultural School also, and should add much dignity to that institution. A re-organised Agricultural School in conjunction with the Royal Botanic Gardens as at present constituted are amply sufficient to effect the necessary improvement in native agriculture.

I could submit the following recommendations in this connection :—

1. The School of Agriculture should remain under the control of the Director of Public Instruction. A few gentlemen should be appointed as an Advisory Board, which should consist of the Director of the Royal Botanic Gardens, Scientific experts, Government officials and leading cultivators.

2. The school should be allowed to remain where it is at present, for various reasons, and with the Government dairy attached to it. There is every prospect of reviving the old Normal School also in the same place. The students, however, should be taken to different parts of the island at stated periods during the year with the view of giving them lessons in Practical Agriculture on a large scale, as may be illustrated by such experimental gardens as may be established or shown in actual cultivation on a commercial scale. The period of training should extend over three years.

3. The Syllabus of Instruction should be revised, and the services of a really competent Practical Instructor trained at the Saidapet Agricultural College at Madras should be engaged. Mr. Jayewardene, the late Practical Instructor, who had received only a year's training at the Saidapet College, proved to be an acquisition to the school, and since he resigned his post the want of a good instructor has been much keenly felt. There are a great many things that the Ceylonese can learn from the Indian Agriculturist. A man trained at Saidapet College is just what is wanted here. His salary may begin with R150 a year and rise by annual increments to R200. The present Practical Instructor is an old boy of the school, and he can be easily provided with a place elsewhere. The Syllabus may be revised to include the following subjects only :—

1. English language, such as Reading and Essay writing.
2. Theoretical and Practical Agriculture.
3. Chemistry, Botany and Geology.
4. Veterinary Science and Entomology.
5. Dairy farming including cattle management, butter-making, &c.
6. Elementry surveying.
7. Arithmetic and Book-keeping.

4. The Superintendent will be directly responsible for the working of the School. His time will be fully taken up with the general management of the school, dairy, &c.; he must be provided with a competent staff of teachers to assist him in the teaching of Science, &c.

5. Provision must be made to allow both the Superintendent and the Instructor to travel about in the country with a view to studying its agricultural requirements.

6. In every district which is in charge of a Mudaliyar or a Ratemhatmeya there are a certain number of Government Schools over which they exercise some supervision. Each school should be provided with an acre of land, and the school bungalow should, if possible, stand on it. This land should be laid out and planted in such a way as to serve as a model for the boys to copy.

7. Every boy attending school should be encouraged to have his own little garden near his house, the plants to be grown there should be supplied to him from the school garden. These gardens should be periodically visited by the teacher or the Agricultural Instructor.

8. Prizes should be offered to the best-kept garden and small annual Agricultural Shows held in connetion with schools; at which the boys must exhibit the products from their own garden. The prizes offered need not be expensive ; books, slates, paper, pencils, &c. will be sufficient to begin with, and such prizes will be much appreciated by the boys. A separate vote should be allowed by Government to meet the expenses of prizes, &c.

9. These Agricultural Shows should be gradually extended, so that others, besides school boys, may exhibit and compete for prizes. A fresh impetus will thus be given to village school education.

10. The Mudaliyar or the Ratemahatmya must take a leading part in organising village Shows.

11. Theoretical agriculture is at present taught in every village Government School from the Fifth Standard upwards. It is important that some competent man should teach this subject. In addition to his routine work such a man could arrange to give popular lectures in Agriculture and allied Sciences. Such lectures should be carefully prepared so that they may be interesting, instructive, and entertaining to the villagers.

12. A competent Agricultural Instructor should be appointed to take charge of the agricultural education of each district, and he must work on the lines indicated above. His work should be constantly supervised by somebody from the Parent School.

13. Every Mudaliyar and Ratemahatmeya should in future be required to pass an examination in Agricultural Science. This should be made one of the qualifications for appointment to such posts. When the Agricultural School is re-organised and a competent staff appointed such as will command the confidence of the public, there is no reason why some of the younger Mudaliyars and Ratemahatmeyas should not be asked to go through a course of study in it and obtain diplomas.

14. The village Agricultural Instructor should also be the village Veterinary Surgeon. He should teach the people how to tend cattle. They must be induced to grow fodder for their cows and attend to the sanitation of their dwellings.

THE ANNATTO DYE OF COMMERCE.

The oldest book on the agricultural products of tropical countries that I have come across is by George Richardson Porter published in 1833. Cacao is there described as the chocolate tree of Mexico, but no mention whatever is made of annatto. Evidently this new product was then unknown to be of a commercial value. Its use in the preparation of cacao for the table by the Spanish seems to have first brought it to the notice of the other nations of Europe and put into different other uses. This might possibly have been in the middle of the present century. But in Ceylon no attention seems to have been attracted by the plant, although it was found to be growing almost wild—if not cultivated as an ornamental tree or merely as a fence or hedge-row —until the year 1880, when Eliot James' *Indian Industries* appeared in print, the coffee enterprize was coming to an end, and planters began to turn their attention to other products. It was the late Mr. George Wall and his friend the late Mr. A. G. K. Borron that made the first attempt to include annatto amongst other new products cultivated on their partly-abandoned estates Ankanda and Crystal Hill in Matale East; and the first crop from these trees was the first parcel of annatto seed exported from the island when the price paid for West Indian seed in London was 5d. to 6d. per lb. But the employment of Tamil labor, and the process in which this crop was harvested was so expensive—not to speak of freight and other incidental charges—it was found that in the long run annatto sent to Europe in seed would not pay. It is interesting in this connection to notice what the late Director of the Royal Botanical Gardens wrote in his report for the year 1881. Under the heading *annatto* there is a long paragraph with this sentence in his own words:—

"Several gentlemen have made inquiries as to "the mode in which this is prepared for the "market; and as I could find no very definite "published account, I applied to the authorities "at the Royal Gardens, Kew, for information." The gentlemen referred to were evidently those who were disappointed at the result of their exports to London; and in future, instead of shipping the seed, intended to convert their crops into the manufactured dye, by which means not only a saving of 20% was expected to be made in the freight, but also keep pace with the other countries that sent the article to the market. The information obtained through Dr. Trimen's efforts given in the report were however not of much value; and if anybody had succeeded in producing a marketable sample of the dye in the island subsequently, it was the late Mr. Borron. The writer who was then his assistant need not dilate on the subject here. Their united exertions in this respect is well known to those who are interested in that line of business. It may however be remarked that before the development of anything like a paying business which required time and more capital, it was very fortunate for the planters that Sinhalese labor should have at that time become very plentiful and cheap in the country. Hitherto it was only the adult male that sought employment on estates as coolies, whilst his family remained in the village tending to their cattle and their small coffee gardens. The coffee leaf disease came on and destroyed these village gardens, and starvation stared in the face of those who depended on them for their support. Hence scores of Sinhalese women and children became only too happy if they could have got any work to do on the neighbouring estates, and were willing to do it for merely a day's meal. The first European capitalist who employed this cheap labor was Mr. Borron to harvest the crop of annatto on Crystal Hill in July, 1884. Then followed a revolution in the annatto trade, and the writer had the satisfaction of seeing that (instead of worrying his head to discover the secrets of manufacturing the dye) he was able to place the seed itself on board the ship at Colombo at a cost of 6 cents per lb. against 20-25 cents a lb. it had cost before. Encouraged by this success large areas of abandoned coffee lands were immediately brought under cultivation in the Matale district. Others followed suit, and in a couple of years later there sprang up flourishing fields of annatto in Wattagama, Kurunegala, Kadugannawa, Gampola, and even far away in the Kelani Valley and Badulla districts. Even the villagers introduced it into their gardens and gave the Moorish boutique-keepers another commodity to their petty trade. In fact, it was an Assistant Government Agent who told his immediate superior that this new product would be the salvation of the natives, and got a monograph treating on its cultivation published in Sinhalese. There was one person, Dr. Trimen, who stood against these widespread extensions; these were

his words written in the report already mentioned: "The trade in annatto is a limited one. It is used "as a dye occasionally, but its principal employ-"ment is for colouring cheese and butter." But this timely warning was disregarded, and no wonder that when at last this "annato craze" had reached the climax, a reaction should have set in, and over-production should have brought down prices in the home market. The following are the words, one in the trade (Messrs. R. J. Fullwood and Bland of 61, Bevenden St., Hoxton, N.) wrote at the time: "The Ceylon people made a great mistake "in 1888, in sending *one* consignment of 150 "barrels; the consequence of so large a quantity "being thrown in the market was, that they were "sold for less than cost of freight, dock charges, "&c." *vide Kew Bulletin*, July 1890, p 143.

Then followed what was quite natural, namely, the wholesale destruction of the annatto trees on most of the European estates and the lands put under tea or cacao. It was very fortunate for those who had resorted to this bold alternative; for, by the time these tea fields commenced to bring in handsome returns, and the cacao come into bearing, annatto, wherever it was still allowed to stand began to show indications of exhaustion and decay; and the fact was then found out that it was a permanent tree. Its natural limit was to grow for seven or eight years, and then die off. If it stands longer, it will be after it had ceased to bear fruit. This is the opinion of your humble servant the writer, whose practical experience in growing this product extends to a period of fifteen years. Opposed to this, instances might be pointed out where the trees have been known to be growing for a longer time, but they are only isolated cases—exceptions, not the rule.

In my next I shall dwell upon the cultivation and diseases incident to this product, with some other notes as may be interesting to the readers of your popular Magazine.

A. VAN STARREX.

VETERINARY NOTES.

The Age for Castrating Domestic Animals.

The question when an animal should be castrated has often been asked. In cases of surgical interference, necessitated by pathalogical changes in the glands, no age has got to be observed excepting the fitness of the system in general to stand the effects of an operation. But in ordinary instances of castrating farm or domestic animals either with a view of fattening them, preventing the propagation of weeds, or checking vice, &c., the earlier the animal undergoes the operation the better. Any time after the development of the gland has taken place and before the animal is half-grown the operation must be performed. For example, a horse is full grown at six years and the gland is developed at one year; and so the best age for castration is between one and three years in the colt. When an animal is castrated early, his tissues being young and healthy, help to bring about a healthy termination of the operation within a short time, and at this period of the animal's life feel there is less chance of the animal's death from shock unless he is allowed to bleed severely.

A Case of Tetanus due to the Syce Replacing a Broken Nail of the Shoes.

In answer to a call I proceeded to see an animal belonging to Dr. Muttucumara, who told me that the horse limped badly, but as it was dark, I was not able to examine the animal well. I told the ower that the lameness was either due to some injury to the foot or to splints. On examining the foot later nothing was noticeable, and when the horsekeeper was questioned whether he removed any nail from the hoof he denied flatly. On the third day I received a message that the animal felt pain at the fetlock. On examination, found that the horse flinched when the inferior suspensary liganut was pressed, and accordingly the region of the liganut was blistered. The following morning the animal showed symptoms of tetanus and succumbed. On postmortem a nail was found to have penetrated the sensitive hoof at the outside quarter. It was only after the death of the animal that the horsekeeper admitted his interference.

Tracheotomy in a Case of Roaring.

A case was brought to me with the history that the animal emitted a loud sound while galloping and that he was unable to breathe freely when driven for a short distance. I saw the animal trotted and found that he was a roarer. I suggested tracheotomy as the only means of enabling the animal to prolong his life. The owner (Mr. Babapillai) consented and the operation was performed standing, on the 25th of May last. The horse is being worked since the 15th day after the operation. The tube was devised and made to my order, and a gauze shutter was also devised to prevent exposure of the wind pipe to chill and also to prevent dust &c. falling into it.

PRESERVATION OF EGGS.

The appended report has been sent us of trials made at the Central Experimental Farm, Ottawa, Canada, of the two best reputed methods of preserving eggs, viz:—Solution of water glass, (silicate of soda), and lime-water. Out of twenty different materials and plans which were tried, only three of which were found to be effective and reported "all good." These were varnishing with vaseline, lime-water, and water glass, and we find that the last two were found effective at Ottawa:—

Central Experimental Farm,
Ottawa, May 19th, 1899.

Sir,—Having received numerous inquiries from farmers during the past two months respecting the merits of "water glass" as a medium in which to keep eggs, we are led to think that certain conclusions drawn from an experiment, lately brought to a close, with this and other preservatives will be of interest to your readers. The investigation was commenced last September, perfectly fresh eggs from the Farm poultry house

being used for the test, which consisted in immersing the eggs for varying lengths of time, from a few hours to six months, in (*a*) lime-water, and (*b*) 10 per cent solution of "water glass." Those eggs which were treated for a few hours, days or weeks, as the case might be, were subsequently placed, together with the untreated eggs to be used as a check, in a rack within a drawer in the laboratory till the close of the experiment, March 30th, 1899. All the eggs were at a temperature from 65° to 72° F. throughout the trial. The testing consisted in breaking the eggs into a glass and noting the appearance of the 'white' and yolk, whether the yolk was stuck to the shell, size of air-space, odour, &c. The eggs were then poached and again the odour, appearance, &c. noted. Without giving in detail the results of the various trials, it may suffice for the present purposes to summarize the conclusions reached, as follows:—

CONCLUSIONS.

1. In no instance, either of treated or untreated eggs, were any 'bad' eggs found.

2. In all cases where the eggs were not kept covered throughout the period of the test with the preservative solution, shrinkage of the contents had taken place, as shown by the larger air-space, less globular form of the yolk, and in many instances by the adherence of the yolk to the shell. The eggs treated for seven days and less with lime-water showed somewhat less shrinkage than those treated a similar length of time with silicate of soda.

3. It would appear that lime-water and 'water-glass' used continuously are equally efficacious in preventing shrinkage. They may also be said to give practically the same results as regards both external and internal appearances, flavour, &c. of the eggs preserved. Since 'water glass' (silicate of soda) is more costly and more disagreeable to use than lime-water, we could not from the present results recommend the former as the better preservative.

4. The albumen or 'white' in all the preserved eggs was very faintly yellow (though not to the same degree in all the eggs), the tint becoming deeper on boiling.

5. No offensive odour was to be perceived from any of the eggs when broken, but in all instances a faint but peculiar musty or slate odour and flavour developed on poaching.

6. It is probable that no preservative will prevent the loss of flavour possessed by the fresh egg, but those which wholly exclude the air (and thus at the same time prevent shrinkage from evaporation) will be the most successful. Continual submergence is evidently better than treatment for a few days. The lime-water may be made by putting two or three pounds of good fresh lime in five gallons of water, stirring well at intervals, for a few hours and then allowed to settle. The clear supernatant fluid can then be poured over the eggs, which have been previously placed in a crock or water-tight barrel.

Some authorities recommend the addition of a pound or so of salt to the lime-water, but the writers are of the opinion that this is unnecessary, and probably leads to the imparting of a limy flavour to the eggs by inducing an interchange of the fluids within and without the egg. The all essential points to be remembered are:—(1) That the eggs to be preserved shall be perfectly fresh, and (2) that they shall be covered with the preservative fluid.

FRANK T. SHUTT,
Chemist, Dom. Expt. Farm.
A. G. GILBERT,
Poultry Manager, Expt. Farm.

MUSHROOMS.

Mr. Tardent, a frequent contributor to the *Queensland Agricultural Journal*, supplies some useful information regarding mushrooms to the September number of that journal, quoting Mr. A. de Zaczewsky, who is referred to as one of the greatest living authorities on mycology, in saying that "from the most ancient times mushrooms have been considered as an extremely healthy esculent. Modern science has confirmed that opinion. According to analysis made by the greatest authorities known to chemical science, mushrooms are by far the most nutritious of vegetable substances, not excluding bread. The proportion of protein they contain brings them nearer to meat than to plants. In addition, they contain an important proportion of assimilable phosphorus."

In Paris alone over £1,500 worth of mushrooms are being sold *daily*. In Italy and Germany they form an important part of the alimentation of the people. For Russia there are no available statistics, but the writer of these lines can affirm, with Mr. de Zaczewsky, that in certain localities the people live nearly exclusively on mushrooms, especially at the time of the heaviest outdoor work.

The only drawbacks to the use of mushrooms are the cases of poisoning which occur nearly every year. According to Mr. de Zaczewsky, there are absolutely no empiric means of ascertaining the true nature of mushrooms. Neither the shape, nor the colour, nor the smell or flavour can be taken as a sure indication. Of course it is pure superstition to believe with some ignorant people that those mushrooms are poisonous which grow near a snake-hole, or close to a rusty nail, a mouldy piece of cloth, or a poisonous plant. Neither is it true that we can eat safely mushrooms which have been gnawed by insects. There are snails and insects capable of eating with impunity mushrooms which are highly poisonous to man. Even cows can eat varieties which it would not be safe for man to touch. But dogs, cats, and rats are affected similarly to human beings, and we can safely try on them suspicious varieties. Another groundless prejudice is to believe that if a silver coin or spoon or an onion become blackened by being put in the water in which mushrooms have been boiled, it is a sign of poison. It is not a poisonous substance which thus darkens those objects, but the presence of sulphur, which combines with other elements, forming thus sulphydric acid. Onions or silver boiled with eggs will become dark, too. Still, nobody would say that it is because eggs are poisonous.

As to the effects produced on our system by poisonous mushrooms, they are of two kinds,

Some varieties, as the *Russules*, act directly on the digestive organs, causing there an acute inflammation ordinarily from two to three hours after they have been eaten. These are very seldom fatal. An emetic such as ipecacuanha, or, still better, 15 grammes of emetic mixed with 30 grammes of sulphate of soda in a glass of water, to be taken in two draughts at intervals of five minutes, will be sufficient to free the stomach and save the patient.

Other varieties, such as some of the *Amanitæ*, are far more dangerous. Their poisonous principle is a narcotic, acting, not on the digestive organs, but directly on the nervous system. The effect takes place from six to forty-eight hours after eating the mushrooms, when the poison has all passed into the blood. It first causes headache, confusion of ideas, dejection, and stupor. Then follow nausea, vomiting, palpitations, acute abdominal pains, oppression, and intense thirst. The face is pale and panged; convulsions, delirium, and fantastic visions bring the patient into a comatous state. That condition, which is accompanied by intense pains all over the body, may continue for many days. But the result is nearly always fatal. Large draughts of strong tea or coffee are used to counteract the prostration. When the stomach is entirely free from the poisonous substance, then use ether and ammonia to prevent nervous accidents. Should the patient recover, he remains for a long time very weak, and the greatest care and precautions are to be used during his convalescence.

Such a terrible possibility as the above described should, it seems, be sufficient to deter anyone from eating mushrooms. Fortunately there is, according to Mr. de Zaczewsky, a perfectly safe means of eating with impunity even the most poisonous of mushrooms. It was discovered many years ago by Mr. Gerard, assistant botanist of the Jardin des Plantes in Paris. In the presence of a commission appointed for the purpose by the Academie des Sciences, he ate, and every member of his family did the same, some of the most poisonous varieties. The experiment was so conclusive that the members of the commission joined in the feast, and enjoyed with impunity some of the deadliest varieties of the *Amanitæ*.

The recipe is simplicity itself. Copy it, and paste it in a conspicuous place.

For every pound of mushrooms cut into pieces, take 1 quart of water, add to it 2 or 3 spoonfuls of vinegar or of salt. Soak the mushrooms in this for two hours. Then strain off the water and throw it away, as it contains all the poisonous principle of the mushrooms. Rinse the mushrooms well and boil in water for a quarter of an hour. Wash them in hot water and prepare in the usual way.

GENERAL ITEMS.

Mr. D. H. Maury, engineer and superintendent of the Peoria Waterworks Company, Illinois (U.S.A.), writes as follows to *Engineering News*:—In your issue of 11th May, I note an abstract from a paper read by Mr. Ernest R. Woakes, before the American Institute of Mining Engineers, the item quoted relating to the necessity in the tropics of felling timber during the waning moon. I can entirely corroborate Mr. Woakes's statements in this connection, and I am all the more glad to do so because he is an old friend, as I happened to be for several years engaged in engineering work near him in Columbia, South America. It was an absolutely invariable rule there that all timber should be felled in *menguante*, or during the waning of the moon. The *creciente*, or the periods of the moon's increase, was employed in sawing the felled timber, all work having to be done by hand with a pitsaw. I have repeatedly tested the effect of the tropical moon on timber. On one occasion, in building a fence of the native bamboo, I had all the bamboo cut from the same thicket, and felled it all, except enough for one panel, during the waning moon. This one panel, which was cut while the moon was waxing, turned black in a few days, and had begun to rot in less than six weeks. The rest of the fence grew white and hard, and was in perfect condition when last I saw it, some three years after it was built. In making clearings for mining work, I have frequently noticed the rise and fall of the sap in the stumps of the felled trees, and have observed the sap to continue during each *creciente* to run out of the pores on the top of the stump down the sides of the stump for several months after the tree had been felled. During *menguante*, the same stump would be dry.

A writer in the *Australian Pastoralist's Review* says:—As I am a firm believer in the efficacy of the divining rod, your article on it in the *Review* of the 15th instant attracted my attention, as it should that of all who have to do with sinking for water in dry country. Sceptics may scoff, and unbelievers laugh as they like, but I assert there is a virtue in the divining rod; that it will indicate where underground streams are flowing, and that with certainty and accuracy when used by a person in whose system there is more than the average amount of electricity. The person holding the rod is, as it were, the battery, and, by holding the rod (I use a copper wire bent in a semicircle) at arm's length with one end of the rod towards him, will continue to attract it until he passes over something possessing a greater power of attraction than his body. If you hold the rod so tightly in your hand that it cannot twist round, it will rise up fully 45 per cent. if the subtle power arising from the earth be fairly strong. Upon one occasion, when experimenting with the rod in the south-west of South Australia, it rose to perpendicular, and then dipped slightly from me. When you have passed beyond the greater attraction than is possessed by the "diviner," the point of the rod will turn towards the holder. I have found the rod work better in summer than winter—sultry weather for choice.

Says an *Exchange*:—There are four items which every owner of cows should constantly remember. The first is to keep a record of the milk production of each cow for a year (if he can record the butter yield and cost of food for each, so much the better). The second point is to prevent the production of horns on his young cattle by

removing the hair around the "bosses" where the horns would be produced, then damp lightly with water, and rub only on the bosses with lunar caustic until the skin appears inflamed—about two or three minutes. The third point is to remember that a tablespoonful of carbonate of soda in a winebottle of water, if administered to an animal which has eaten grain, lucerne, clover, or other food causing it to be "blown" (otherwise called "tympanitis," or "hoven," or "blast") will at once remedy the evil. Lastly, when a cow is attacked with "milk fever" after calving, the best remedy is to give her at intervals of three hours two doses of brandy and water—about half-a-bottle at each time—and keep the bowels open.

A writer in an American sporting journal gives the following rule to estimate the height a colt will grow to:—Take a colt at any time between six weeks old and one year; stand him on a level surface, so that he will stand naturally, then measure the distance from the hair of the hoof to his knee-joint, and for every inch, or fraction thereof, he will be hands high when matured. If he measures 15 inches he will grow to be 15 hands high; if 15½ inches he will be 15½ hands high; and so on.

The remedy for soft butter is as economical as simple. Purchase an 8 or 10 inch common, unglazed flowerpot. Wash thoroughly in clear water, then let it stand for an hour submerged in as cold well-water as can be procured. When saturated, drain a few minutes by turning the pot upside down. Prepare your butter on a plate a few hours before meal-time. Fit a cork into the hole in bottom of the pot to exclude all hot air.

Try this remedy for warts: Saturate the warts every few days with pure castor oil and they will disappear, leaving the surface as smooth as though they were never there. We have known of several cases where warts were removed from the nose of colts by simply rubbing them with lard occasionally.

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REMEDIAL MEASURES AND INSECTICIDES.

By E. E. Green, Government Entomologist.

(*Continued from page 231.*)

BEFORE quitting the subject of general remedial measures and entering upon detailed descriptions of particular processes, something should be said upon the important question of the introduction of 'natural enemies' of the *Coccidæ*. The same circumstances that make an imported pest so exceptionally dangerous act in our favour in the importation of beneficial insects. Just as the absence of its established natural enemies enables an insect pest to multiply without hindrance, so the introduction of a beneficial insect without its own natural checks will also permit of its rapid increase as long as an ample supply of congenial food is obtainable. When the food supply begins to fail, which means when the pest has been mastered by its imported enemies, then they will both decline together. There need be little fear that, when the food supply has been exhausted, the imported insect will itself become a pest. A predatory insect, by which is understood one that preys upon other insects or animals, will seldom, if ever, alter its diet and become a vegetarian.

It is noticeable that an insect seldom assumes any importance in its original home, unless through some accidental or artificial interference with the balance of nature in that part. (For instance, it has been asserted that the widespread destruction of moles in England has resulted in a marked increase of damage to pasture land from the grubs of the 'cockchafer' beetles and 'crane-flies,' upon which the moles fed.) Consequently, if we are to obtain any benefit from the use of natural agents, we must endeavour to reproduce the conditions prevailing in the country where the insect in question is known to occur, though without attracting notice as a pest. Or, if the original home of the injurious insect is unknown, we may reasonably hope for good results from the introduction of an insect that is found to prey upon some allied pest in another country.

The most important natural enemies of the scale insects, or, at least, those that have attracted most attention, belong to a family of small beetles popularly known as 'lady-birds.' The complete success attending the introduction of an Australian lady bird (*Vedalia cardinalis*) into California, where it cleared the orange orchards of the destructive 'Fluted-scale' (*Icerya purchasi*) has led to numerous other experiments of a similar kind. These experiments have not always been successful. There must, of necessity, be many failures. We are still only in the experimental stage of the work. Even when the beneficial insects has been successfully established in a country, it is by no means certain that it will thrive. There may be climatic or other conditions against it. In that case, all we can do is to try another insect. Occasional, or even repeated, failures should not discourage the repetition of the attempt. The value of a single success will far outweigh the cost of many failures. In the course of such experiments the causes of failure will in time be ascertained, and improved methods be employed. The freezing method recommended by Mr. Kœbele seems to be rather an uncertain one, and has led to many disappointments. I am inclined to hope for more satisfactory results from the employment of 'Wardian cases,' as suggested to me by Mr. Lounsbury. In these the insects will remain active and be supplied with food. There are certain obvious dangers connected with this method, such as the possible introduction of the insect pest upon which the 'lady-birds' have been supported during the voyage. For this reason the business should be conducted under the supervision of trained entomolongists only. In choosing the food supply, an insect that already occurs in the country to which the lady-birds are consigned should, if possible, be selected.* But, under any circumstances, the imported beetles should not be liberated immediately, but should be transferred to fresh breeding cages and supplied with local food, and the cage in which

* In a recent consignment of 'lady-birds' received from the Cape of Good Hope, the cochineal insect (*Coccus cacti*) was very judiciously chosen for the purpose. This insect is practically confined to the 'Prickly Pear' cactus, and is therefore not liable to become a pest.

they arrived should at once be throughly disinfected. In sending stocks by Wardian case, the larvæ of the beetles may with advantage be included. These will complete their transformations during transit, and are more likely to survive the voyage than the adult insects.

There are other natural enemies of the Coccidæ that may some day be advantageously employed in the same way. Amongst the two-winged flies *(Diptera)* we find the *Lestophonus iceryæ*, which attacks the 'Fluted-scale.' Nearly every species of scale insect is subject to minute internal parasites belonging to the wasp family *(Hymenoptera)*. The family *Neuroptera* supplies the 'Lace-wing flies,' the larvæ of which are known as 'Aphis-lions,' from the voracious way in which they feed upon Aphides and scale insects. Even the butterflies and moths *(Lepidoptera)* provide a few coccid-eating species, such as the caterpillars of the butterfly *Spalgis epius* and of several months of the genus *Eublemma*. The 'lady-birds' are included in the family *Coleoptera*.

Besides natural enemies belonging to the animal kingdom, scale insects are subject to diseases belonging to the vegetable world. There are several parasitic fungi that render great assistance in reducing the numbers of our Coccid-pests. In Ceylon, during the wetter months of the year, the 'green bug' *(Lecaniumviride)* dies off to a large extent, attacked by a greyish mould which, after killing the insect, spreads outwards as a delicate fringe of interlacing whitish threads. A bright orange-coloured fungus (Septoria ? sp.,) is useful in checking the increase of *(Fiorinia fiorinia* and *Chionaspis biclavis* on the tea plant, and *Aspidiotus aurantii* on orange trees. A very similar fungus *(Sphærostilbe coccophila)* that attacks *Aspidiotus perniciosus* in Florida (U. S. A.) has been the subject of some very interesting experiments to test the possibility of communicating the disease to previously healthy colonies of the insect. Dr. L. O. Howard gives the following particulars of the experiments:*—

'An interesting and important development of the past two season's work has been the identification and study of the parasitic fungus, *Sphærostilbe coccophila*, Professor Rolfs, of the Florida Station, has devoted a bulletin largely to the consideration of this fungus, which, as previously stated, seems to be prevalent throughout the Southern States. He has shown experimentally that the fungus may be transferred to trees affected with San Jose scale, and the disease produced among the scales. His process was to inoculate acid bread with pure cultures of the fungus, and three weeks later the application was made in the following way:—A piece of the bread about an inch square was placed in cold water, and shaken until the bread was broken up and the spores distributed in the water. This water was then applied to the scaly tree by means of a sponge or cloth, or sprayed on. The applications were made in Midsummer of 1896, and observations were made as to the results late in February, 1897. Four of his experiments resulted successfully, and three unsuccessfully, while in the eighth experiment the result was doubtful on account of the tree having died between the times of treatment and inspection. Twigs from Florida containing Sans Jose scales, infested by the fungus, were sent to Mr. Horace Roberts, at Fellowship, N. J., about the middle of June. On September 25th Dr. Smith found the fungus upon almost, if not quite, all of the trees on which twigs had been tied. A number of instances have come to our observation of the death of the scale in a wholesale manner from the spontaneous work of this disease, or from some other cause. For example, we received scale-infested cuttings in January, 1897, from an orchard which was said to have been freed from scales by this fungus disease. Careful examination showed that upon one cutting, out of 183 scales, but four were living; on a second cutting, out of 723, but two were living; on a third cutting, out of 579, but twenty-eight were living, thirty-four living scales out of 1485—a mortality rate of 97·7.'

I have, myself, repeatedly succeeded in disseminating the disease affecting *Lecanium viride* by tying branches with diseased insects on to trees on which the bug had hitherto remained quite healthy.

There are several methods by which spores of these parasitic fungi may be disseminted. As in the last-mentioned experiment, they may sometimes be communicated by merely transferring affected branches to the neighbourhood of the healthy insects. In such cases the spores are carried by the wind to their destination. But in some of these fungi the spores are gelatinous and agglutinated, in which case the wind would fail to disperse them. Fungi of this kind may be crushed up in water and used as a spray; or artificial cultures may be made and mixed with water, to be used in the same way. In the ordinary course of nature these gelatinous spores are probably carried from tree to tree on the feet of birds.

General List of Substances and Processes Employed in the Treatment of Scale Insects.

The Gas Treatment.

Hydrocyanic acid gas is the material employed in this process. It is generated by the admixture of cyanide of potassium, sulphuric acid and water. For the details of treatment I cannot do better than quote *in extenso* from the admirable paper on 'Gas Treatment for Scale Insects,' compiled by Mr. C. P. Lounsbury from his personal experience as Government Entomologist at the Cape of Good Hope. The process described was principally employed against *Aspidiotus aurantii*—an insect that appears to be distinctly on the increase in Ceylon. I may add that I have followed Mr. Lounsbury's directions in my own experiments with most satisfactory results.

'*Generation of the Gas.*—Hydrocyanic acid gas is generated by the action of sulphuric acid on potassium cyanide in the presence of water. The required quantities of the cyanide and water are first placed in the generating vessel, the cyanide being broken into small pieces not above the size of lump sugar. The tree is then covered with the tent or sheet and vessel slipped under almost to the base of the tree; reaching in, the operator then adds the acid, pouring it slowly into the vessel so as to avoid its splashing an thus burning his hand or the cloth. He immediately withdraws and the men shovel a little soil on the edges of the cloth all around, to more throughly prevent the escape of the gas.

'The rapidity of the evolution of the gas depends largely upon the size of the pieces of cyanide. If these are like powder, the reaction is violent and immediate; but, if in lumps, the reaction takes place more slowly and continues for a minute or longer. The slow reaction is desired, partly because less injury results to the foliage immediately above the vessel. But the lumps must not be too large, for then the reaction is liable to be imperfect owing to a black coating (carbon ?) forming over the lumps and preventing further decomposition by the acid. The water should not be added too soon or part of the cyanide becomes dissolved and gives a violent reaction. The residue which remains in the dishes is buried and; the dishes are washed in clean water before being again used.

'*Time necessary for Treatment.*—The cover is left over the tree for thirty minutes in the case of small trees, and forty-five in the case of those over twelve feet in height. At the expiration of this period the generating vessel is removed, and the residue buried in the soil.

'A number of trees are fumigated together, the endeavour being to treat as many at a time as can be covered and uncovered during the period of exposure. In this way the men are kept continuously busy, the time for the removal of the first tent arriving by the time that the last tree is covered.

* *Bulletin*, No. 12. (New Series.) U. S. Department of Agriculture (Division of Entomology).

'*Absence of Sunlight necessary.*—The originators of the fumigation process observed that the gas was most efficacious, and that less injury resulted to the foliage when the operations were performed at night than when they were carried on in sunlight. It is said that chemical changes are produced in the gas by the action of sunlight, and that the resulting gases are more injurious to the plant life and less to animal than hydrocyanic acid gas. Whether or not these theories are correct is of small practical importance, for the foliage of a tree will suffer serious injury if the tree is left covered with an air-tight oiled tent for half an hour in sunlight, without the gas being present. Having ascertained this fact by experience, the foreman in charge of the Board's outfit refrained from covering trees until the sun had sunk from sight on any but cool, dull days. The great majority of the trees treated have been fumigated after sunset. The ideal night for fumigating is quiet, cool, and moonlight, and without dew.'

It is evident, from the above that the period available for this process is somewhat limited. However, when only a few trees have to be treated, the hour immediately preceding nightfall will be ample for the purpose. I have personally found no ill effects following the operation when performed on dull, cloudy days, when the sun is entirely obscured.

Although hydrocyanic acid gas will certainly kill every insect—and even their eggs—if used in sufficient strength and for a sufficient length of time, both the necessary strength and time will be found to vary with different species of insects, and must be made the subject of careful experiment. I find that *Orthegia insignis* is a very difficult insect to kill, and requires a double strength of gas, continued for fully three-quarters of an hour.

Mr. D. W. Coquillet, one of the first to employ this process, gives the following directions for making an air-tight tent: *—'The material commonly used in the construction of the tent is what is known as blue or brown drilling. A few persons have used ducking instead of drilling, but this is much inferior to the latter; in the ducking the threads extend only lengthwise and crosswise, whereas in the drilling they also extend diagonally—this belonging to the class of goods to which our merchants apply the term "twilled"—and for this reason the drilling is both stronger and closer in texture than the ducking.

'After the tent is sewed up it is given a coat of black paint, as it has been ascertained that tents treated in this manner last longer than those which have been simply oiled with linseed oil. Some persons mix a small quantity of soap-suds with the paint in order to render the latter more pliable when dry, and therefore less liable to crack. Instead of thus painting the tent some persons simply give it a coating of size. Sometimes a small quantity of whiting or chalk is added to this sizing, with or without the addition of lampblack. A few make use of the mucilaginous juice of the common cactus (*Opuntia Engelmanni*) for this purpose. To obtain this, the cactus leaves or stems are cut or broken up into pieces, thrown into a barrel, and covered with water after which they are allowed to soak for three or four days. The liquid portion is then drawn off, and is ready for use without further preparation. Tents which I saw that had been prepared with this substance were to all appearances as air-tight and pliable as when prepared in any other manner.'

For the oiling, Mr. Lounsbury recommends a mixture of four parts boiled linseed oil to one part turpentine. The cloth should be first well wetted with water, and the mixture spread lightly over the surface with a brush. A thin coating is found to be sufficient. Mr. Lounsbury has since informed me that he now uses, with completely satisfactory results, tents made of cloth merely shrunk in water, without any subsequent oiling. Such tents are, of course, much lighter and more easy to manipulate.

Mr. Coquillet gives the annexed table, showing the quantities of chemicals required for different-sized trees.

Height of tree.	Diameter of tree top.	Water.	Sulphuric acid.	Potassium cyanide.
Feet,	Feet.	Fluidoz	Fluidoz.	oz.
6	4	⅔	⅓	⅓
8	6	2	1	1
10	8	4½	2¼	2¼
12	10	8	4	4
12	14	16	8	8
14	10	10	5	5
14	14	19	9½	9½
16	12	16	8	8
16	16	29	14½	14½
18	14	26	13	13
20	16	36	18	18
22	18	52	26	26
24	20	66	33	33

Mr. Lounsbury, after practical experience at the Cape, publishes the following figures, from which it appears that he found smaller quantities sufficient. This is doubtless, due to difference in purity of the chemicals. Mr. Lounsbury was working with cyanide of 98 to 100 per cent. purity, while Mr. Coquillet was using cyanide of only 33 to 58 per cent. It is therefore important to know the exact amount of pure potassium cyanide in the particular brand employed.

Height.	Diameter.	Water.	Acid.	Cyanide.	Space enclosed.
Feet.	Fect.	Fluid oz.	Fluid oz.	oz.	Cubic feet.
4	3	¼	⅛	⅓	25
6	4	½	¼	¼	65
8	5	1	½	½	140
8	6	1½	¾	¾	200
10	6	2	1	1	255
10	8	3	1½	1½	435
12	8	3½	1¾	1¾	535
12	10	5½	2¾	2¾	815
14	8	4½	2¼	2¼	635
14	10	6½	3¼	3¼	970
14	12	9	4½	4½	1355
16	10	7½	3¾	3¾	1130
16	12	10½	5¼	5¼	1585
16	14	14	7	7	2105
18	12	12	6	6	1810
18	14	16	8	8	2415
18	16	20	10	10	3085
20	14	18	9	9	2720
20	16	23	11½	11½	8485
20	18	29	14½	14½	4325
22	18	32	16	16	4835
22	20	39	19½	19½	5865
24	20	43	21½	21½	6500

The gas treatment has been largely used in combating scale insects (Particularly *Aspidiotus aurantii*) on orange trees. It will be found the most effectual method for exterminating *Orthezia insignis*, or any other insect, upon individual trees.

Soap and Soapy Emulsions.

Soap by itself has considerable insecticidal properties. In fact, in many popular mixtures, it is extremely probable that the soap is the most efficacious ingredient. It acts by asphixiation, forming an impervious film over the breathing pores of the insects.

Whale-oil soaps are found to be the best for the purpose. In *Insect Life*, vol. vii. p. 369, the following conclusions are drawn from numerous experiments upon trees infested with the San Jose scale (*Aspidiotus perniciosus*) in America ;—'Soap washes

* U.S. Department of Agriculture (Division of Entomology). *Bulletin*, No. 23.

particularly of whale-oil soap, have yielded the most satisfactory results; and at the rate of two pounds to the gallon, under the conditions of thorough drenching of the entire plant, with five or six days of subsequent fair weather, will destroy all the scales, whether applied in fall or in spring. The results with soap in less strength indicate that under the most favourable conditions the same result may be reached with mixtures containing only a pound and a half or more soap. The action of the soap at the rate of one pound or more to the gallon, applied in the fall, is generally to prevent blooming and fruiting the following spring, but the vigour and healthfulness of the tree are greatly increased. Applied in spring at the time of blooming, it does not injure the plant nor affect the setting of the fruit to any material extent in the case of the peach, and not at all in the case of the apple.

'The experiments, as a whole, indicate the vastly superior merit of the soap wash and its fall application. The great vigour of the plant resulting from the fall treatment more than offsets the possible failing of bloom. Owing to the impossibility of controlling weather conditions, and the practical difficulty of wetting every part of the plant, one spraying cannot often be relied on to accomplish the death of all the scales, but two conscientious drenchings may be expected to accomplish this result. These may be (1) at the time of, or shortly after, the falling of the foliage in autumn, and (2) just before blooming in spring.'

Other soaps (hard laundry soap) are efficacious, but not to the same degree.

In another of the American reports* is an instructive paper on insecticide soaps, by Mr. C. L. Marlatt, from which I take the liberty of quoting largely:—'The decided insecticide value of the so-called whale-oil (more properly fish oil) soaps, against scale insects particularly, has been fully demonstrated in the last few years in the work against the San Jose scale and has fully substantiated Professor Cornstock's early recommendation of this means of controlling scale-insect pests. The merit of these soaps is not only in their effectiveness as insect-destroyers, but from their being entirely without injurious effect on the treated plant. In this respect they are perfectly safe in the hands of any person, in contradistinction to all oily washes, which are very liable to be injurious in greater or less degree, although the injury may be insignificant or perhaps not apparent immediately, or during the first season.'........'The use of soaps is attended with certain difficulties.'........'To be satisfactory for insecticide use it must, when dissolved at the desired rate, say two pounds to the gallon of water, remain a liquid capable of being sprayed with an ordinary nozzle at an ordinary temperature. This may be determined by a very simple test, and one which should be invariably given any soap before it is accepted for spraying operations. It consists in simply dissolving a small quantity of the soap at the desired rate, and allowing it to cool.'

Many soaps solidify or become gelatinous and fenacious on cooling. These are useless for spraying purposes. The common country soap of Ceylon has this defect. I have experimented in a small way with soap mixtures; but it is difficult to obtain here a brand that combines suitability with cheapness. Such a brand is a great desideratum. I find that one of the most useful properties of the soap mixtures is to prevent the escape of the young larvæ by blocking up the natural exists, and on this account the treatment is to be very strongly recommended.

(*To be concluded*)

GESTATION OF THE ELEPHANT.

Sir, Our Burma *mahauts* invariable maintain that the period of gestation in the elephant extends to three years. It may, therefore, be of interest to put on record an observation bearing on this statement.

Forest elephants in Burma are simply hobbled and turned loose in the nearest jungle to feed, and hence, unlike the Commissariat animals, are practically in a state of nature, and breed freely.

In June 1897, one of the *mahauts* reported that his elephant had been covered by the tusker attached to the division, whilst the animals were turned out to feed. The act was observed every evening for about a week, from about the 18th to the 25th May, 1897. Neither of the animals showed signs of sexual excitement previously, though the male paid assiduous court to the female for a few days before coition was permitted. They were both at work at this period—dragging logs—and gave no trouble to their attendants. The report was noted, but, I am sorry to say, forgotten, till the 3rd November 1898, when in the evening, the elephant gave birth to a female calf.

Fortunately, that day she had only carried a light load for a short march. The baby, though so weak that it had to keep itself upright by holding on to a bamboo with its mouth, was perfectly healthy and well formed, and after a day, could stand and suckle. The period of gestation, therefore, had been a little over seventeen calendar months, or almost exactly eighteen lunar months.—C. B. S.—*Indian Forester*.

* *Bulletin*, No. 6 (New Series), U.S. Department of Agriculture (Division of Entomology).

JOB'S TEARS (*COIX-LACHRYMA-JOBI*)—A USEFUL FODDER.

By F. Manson Bailey, F. L. S., Colonial Botanist.

During Lord Lamington's tour round New Guinea in May last, at almost all the places visited was seen a luxuriant growth of the grass known as Job's Tears (*Coix Lachryma-Jobi* of the botanist). The growth of the plant and the beauty of its seeds made such an impression on Lord Lamington that he requested me to take seeds of each to Queensland for cultivation, which I did; and the accompanying plate illustrates the product of a single seed sown in my garden at Spring Hill, is by no means favourable soil or situation for foddergrowing. The plant represented comprised 26 stems from 2 to 4½ feet high, leafy throughout their whole length— in fact, it is a model fodder plant, suiting the climate both North and South of the colony and from this point of view is now brought to the notice of dairy men and farmers generally. The present form seems to be of a more succulent character than that generally found in garden culture. The two kinds met with in New Guinea differed considerably in the form of the seed—The one being tear-shaped, and the other linear or oblong; both are usually of a bluish-grey colour. The stems of each, from a single plant, are numerous and very leafy. So far as I have been able to judge, the long-seeded form is of smaller growth but my seeds of this were sown later than those of the other. I may remark that I have had specimens of this grass sent to me for determination from different parts of Queensland by persons who have met with it in a naturalised state, but whether these belonged to the New Guinea forms or not I cannot say. One advantage possessed by this plant over sorghum is that it does not make so strong a root, so that when necessary to plough out to renovate the plantation it will not form so strong a resistance to the work as the varieties of sorghum. The stems are also more slender and not so coarse. In sowing the seeds, place them about 1 foot apart in rows 2 or 3 feet asunder, during the months of September and October. The plants being perennial they will last for several years without renewing. The plant may also be increased by divisions of the stool, which allows of vacancies in the plantation being filled up.

The natives of New Guinea seem only to use "Job's Tears" for ornamentation purposes, the pretty bluish grey seeds being prized for making into necklaces and decorating their weapons, &c. I could not hear of the seeds being used for food by them, yet Sir J. D

Hooker tells us that the plant is cultivated in India for this purpose; therefore in all probability the seed of the two New Guinea forms may be put to the same nse in some parts of the island. Duthie states that in Oudh (India) the plant is largely eaten by cattle, and is said to be very fattening.

THE VANILLA BEAN.

This valuable product, which is highly prized for making extracts of perfumery and in cooking, has, within the past few months become very scarce, and the price, in consequence, has advanced to three times what it formerly sold for. Nothing has ever been found to take its place in cookery, or for perfumery, and consequently the price must remain high for some years to come, as it takes three years for the plant to come into bearing, after which it continues in fruit for several years, improving from year to year, if well cared for.

A recent published statement says that the shortage of 1894 was due to a frost, which destroyed whole plantations. Then in 1895 a clash between the Indians, who occupy and cultivate the large plantations around Papantla, Mexico, the centre of this industry, and the Mexican anthorities, who own the lands, resulted in the former being driven out, but not before they had succeeded in almost entirely destroying the vanilla plants as revenge. These two causes accouut for the shortage, as it requires three or four years before a plant will yield fruit. This shortage is much greater than is generally known. The present price of beans is $16·00 per pound, and it is not unlikely that it may advance to $18 or $20.

We have several times urged the planting of vanilla as a minor industry, as it will flourish here in almost any locality, where it has pleuty of water, but is particularly adapted to the rainy sections of Hawaii. Although it requires three to four years for the vines to come into full bearing, it will then pay better than almost any other industry, that does not require much capital. Nor will it interfere with any other light work, and is particularly suited to females. In a future issue we will give some particulars regarding its cultivation and mode of curing the beaus. —*Planters' Monthly.*

PARA RUBBER AND THE GOVERNMENT.

The following is the official report of a discussion on the supply of Para rubber seeds from Singapore at the U. P. A. at Selangor on Aug. 14th,—

The Chairman said that, in consequence of the attitude taken by the Singapore Government with regard to the supply of rubber seed to applicants from the Federated States, he had interviewed the Colonial Secretary in Singapore aud had been told that, in booking orders for rubber seed from planters in the Native States, Mr. Ridley had acted without authority from Government, and it was the intention of the Singapore Government to repudiate his action, as all orders for seeds from the Colony must be first executed. In consequence of this it had been decided at a Committee Meeting, held on the 22nd May last, that a sub-Commitee consisting of the Chairman, Secretary and Mr. Bailey should interview the Resident-General, laying all the facts of the matter before him for consideration and asking for his advice and support. (He the Chairman) and Mr. Bailey had seen the Resident-General, who said that those applicants who held no distinct promise in writing from Mr. Ridley had only a moral claim against the Government, and he doubted whether it could be enforced, but the case of Mr. Bailey was very different aud he did not see how it could be disputed. That was how the matter stood so far, but Mr. Bailey would tell them what his case was and what action he was taking.

Mr. Bailey said that early in 1897 he ordered 500,000 Para Rubber seeds from the Botanic Gardens, Singapore, and on 1st April, 1897, Mr. Ridley wrote saying he would supply him with that number as soon as he could at $10 per 1,000. As he was forming a Company to plant rubber in Selangor, he wrote officially to Mr. Ridley on 12th August, 1898, asking him what number of seeds he could supply him with from 1st September, 1898, to 1st September, 1899, as it greatly depended on the number of seeds available as to whether the Company went through or not. In repply Mr. Ridley said he would be unable to supply the complete order from the present crop, but, as he was the pioneer of the cultivation, he would guarantee that he should have half each crop of seed till his orders were filled. The represent crop of seed is expected to be 150,000 yet he is now offered only 15,000, which is a very different thing to above promise from Mr. Ridley.

The Resident General, at the interview mentioned by Mr. Carey, had stated that he had already put the matter into the hands of his lawyers.

The Chairman said he hoped the meeting would express their willingness to support Mr. Bailey in his action.

Mr. Lake asked if this expression was meant to imply that the Associatson should support the action in a momentary sense if necessary.

The Chairman said he certainly considered so, but there was not much likelihood that such help would be required.

The proposal met with the nnanimous approval of the meeting.—*Singapore Free Press.*

POSSIBLE INDUSTRIES IN TRAVANCORE.

ANOTHER LAND OF PROMISE.

A correspondent writing to the *Madras Mail* urges the small capitalist to look to Travancore and take note of the possibilities that exist there fore the successful cultivation of low-country products. As an inducement he leads off with a noteworthy example of what a small man at one time actually did.

THE FOUNDATION OF ONE FORTUNE.

The late Mr. Darragh, he says, started business in Travancore a little more than a quarter of a century ago with the very slenderest capital, and confining his operations chiefly to the products of the coconut tree died an extremely wealthy man. Not long before he died he turned his attention to cotton, and opened a mill in Quilon, which is still flourishing, although the cotton has to be conveyed to it all the way from Tinnevelly. Labour, however, is so abundant and so cheap that the mill is said to be thriving concern.

ANOTHER FORTUNE GOING BEGGING.

A part from the mill industry in cotton, which is in the position of being some what overdone, it is puzzling why the enterprising European capitalist has not attempted to work coir and copra by machinery. In Travancore, with its vast output of capra and coir, the most primitive and nnsatisfactory methods are still in vogue in extracting cocouut oil and in cleaning and weaving the coconut fibre into rope, and it was by exporting these materials that Dr. Darragh scored such a brilliant success. The establishment of an oil mill or two with other machinery for dealing with the fibre, would make the fortune of the first person who supplied these wants. Both water-power and steam-power are available, und fuel is as cheap as it can practically be any where, where it is not to be had for the mere gathering.

WHAT A FEW SAW-MILLS COULD DO.

Again any European who turned his attention to the vast timber supplies of the State would find it paid him Timber for railway sleepers is now selected from a limited variety, viz., sal, teak, deodar, payngadu and pine. Another writer in the *Madras Mail* calculates that at least three million railway sleepers are wanted annually in India for renewal and extension work, and state that a saving of one rupee on a sleeper represented a sum of thirty lakhs of rupees saved! All this shows that only a little energy and plenty of

capital is necesary to make the timber trade—more or less stationary and languishing in the absence of enterprise—flourish and bring in to the State and to the speculator a large income.

THE HUMBLE PLANTAIN,

is also held out as a Travancore Bonanza. We quote:—It may interest some to learn that great possibilities exist in the cultivation and exportation of the plantain and its prodncts. The fruit is now largely consumed in Europe, and it ought to be a matter of no great difficulty to establish on a firm footing a trade in this product from Travancore. Plantains in their raw codition plantains preserved, plantain flour, plntain fibre, etc., shonld bring in some profit. In fact, the value of Travancore as a great fruit-producing country is lost sight of.

THE POSSIBILITIES OF THE PINE.

Pineapples, for instance, grow with the greatest luxuriance, and are to be had in the season for the ridiculously low price of three pies per pine. The fibre is said to be particularly strong and silky, and is adapted for various kinds of manufactures. *Commerce* says it is a good substitute for flax and that a certain quantity of the fibre " prepared in Singapore tested against an equal quantity of flax sustained 350 lb., while the latter could not bear more than 260 lb. " It is also said to be snbstituted for silk, and that an excellent linen is made from it.

OTHER PRODUCTS AWAITING THE CAPITALIST.

Waiving for the present all notice of pepper, ginger, and other garden produce attention, may be drawn to the vast quantities of tapioca root available, which forms the staple food of the poorer classes, with rice. Very few people have any idea that the arrowroot plant grows wild in Travancore, aud that enterprice only a needed to develop the trade in this root. There are various other substances in the shape of vegetable oils of sorts--laurel oil— gums and resins, indigo, etc., Lem n grass oil has been manufactured to some extent, bnt as it forms a good base for perfumes, essential oils and etc , greater opportunities in regard to its use might be seized. Travancore has now a European Government contractor in Mr. Mitchell, who appears to have his eyes open and when the long expected railway becomes an accomplished fact a greater number of enterprising men may give an impetus to local trade. The possibilities of paper manufactnre in a land where material, fuel, water-power and a constant demand exist was long ago recognised by the formation of a Joint-stock Company and the construction of a mill on which lakhs of rupees were spent. After a time, the manufacture of paper was discontinued, for what reason is not quite apparent to the uninitiated. The plant lies idle, and the Company is moribun without any attempt being made to resuscitate the working, or wind up the affairs of the shareholders. If this letter, concludes the writer, will help to remind some energetic shareholder of his wasted money and his oppotunities, it will uot have been written in vain —*Madras Mail.*

DURBAN BOTANIC GARDENS.

A CURIOSITY, A BLACK BOY.

Mr. J. Medley Wood reports:—Since the date of my last report the weather has been exceedingly dry, only 0·91 in, having fallen at the Gardens since May 23, and during the August 0·22 in. only was registered. In consequence of this very unusual drought many of the plants in the Gardens are drooping, and flowers are exceedingly scarce. In addition to the usnal routing work, which has been very heavy, some of the hands have been engaged in oiling the woodwork of the Palm-house and giving the class another coat of paint, as the coat first given has been fonnd to be too thin; this work is now nearly completed.

The plant of *Xanthorraea hastilis*, the "Grass Gum Tree," or "Black Boy," a native of New South Wales has sent up a flowering spike from the centre of the rosette of leaves. This spike is now several feet high, aud is thickly covered with hundreds of small white flowers, and is a curiosity not often seen in South Africa, a photo has been taken of it, and I suggest that it shall be reproduced in the annual report. It is to be hoped that we shall not lose the plant, which is the only one we have, and is much admired by visitors. It can hardly be less than 25 years old, and is probably more than that. [The name "Black Boy," says a correspondent to ourselves (*T.A.*,) is only applicable as regards the appearance assumed by the plant in its native habitat, the Australian prairies, where its stout trunk becomes blackened both by bush fires and by a resinons excrescence on the trunk, when seen thus in groups at a distance they have a weird appearance, which readily suggest the black aborigines. The gummy exudation from the trunk is made use of as a gum; hence the plant is also known by the name "Grass-gum tree." It belongs however, to the Lily tribe, and not to the grass-family, although its large crowns of thin, long, wiry leaves have much the appearance of grass.] One of the trees of *Aleurites triloba* has been felled for the purpose of testing the wood, the trunk to the lowest main branch measured 24 ft. with a girth at 10 ft. from the base of 6 ft.

Two cases of deaths of cattle from supposed poisoning have occurred lately on the Berea. The first I did not hear of until too late, bnt as the second case, when two valuable cows were lost, was brought to my notice in time, I visited the locality in which the cattle had been grazing, the herd boy being with me to point out the exact place. Unfortunately the whole, or almost the whole, of the underwood bad been lately cut down. I think by the Corporation gang of labourers, but after some little search I found that many plants of *Moraeairidioides* had been bitten off, and the herd-boy assured me that he had seen the cattle eating the plant, and that no other cattle had, to his knowledge, been grazing near. I am not aware that this plant has poisonous properties, but the species known here as "Tulp" or "Tulip" all belong to the genus *Moraea*. It would, I think, be advisab'e that this plant should be chemically examined. The native say that this plant is not usually eaten by cattle.

I have received from Mauritius two cases containing many valuable plants. The steamer which brought them was placed in quarantine, and the cases were taken on to East London, and returned to us from that port by another ship, but I was pleased to find that the plants had not suffered very much damage from the long detention. From Botanic Gardens of Cambridge I have received a valuable case of plants, chiefly ornamental, which arrived in excellent condition. I have also received packets of seeds as under:—Guina, 1; Kew, 1; Paris, 6; Mysore, 1; Sumatra, per Mr. Van Leenhoff, 19; Adelaide, 84; Bangalore, 1; Zomba, 1; St. Albans, 1; Mr. J. Beningfield, sweet lemon and mango; Mr. M. Matthews, bulbs.

For the Colonial Herbarium the second part, completing the first volume of "Natal Plants," is now ready and may be obtained from the booksellers, or on application at the Gardens. The first part of the second volume, which is confined to the grasses of the Colony, and will contain 25 plates and descriptions, is in the printer's hands, and will be ready in a few weeks' time; and the third volume, which will be similar to the first, is in progress. I have received parcels of dried specimens of foreign plants from South Australia, 81 specimens; Sydney, 200; Queenstown (chiefly Transvaal plants), 212; and from Mr. J. F. Quekett 16 specimens of foreign mosses; and I have sent away parcels of dried specimens of native plants as follows:—M. Eysn, O. E. Meuzel, J. H. Maiden, J. F. Duthie, Dr. J. B. Palacky, Biltmore Herbarium, Field Columbian Museum, and to the United States National Herbarium, two parcels.—*Natal Mercury.*

THE VELVET BEAN.

So much has been heard of late of the Velvet Bean as a green dressing, &c., that the following extract from *Louisiana Planter* of 4th March, 1899, will be of interest. The plant has been imported by the Botanical Department, and has produced a fair crop of seed, but not sufficient for general distribution. During the year a section will be set aside at the experiment grounds, St. Clair, for the local trial of this Legume.

VELVET BEANS.—This valuable plant has been grown extensively in this state During the past year. Our agricultural press has been filled with accounts of its superior excellence. The plant is still on trial, but promises to become a rival to our best varieties of cow-peas, wherever it can be grown. Unfortunately it is not yet well acclimated, so far as the production of seed is concerned, since an early frost last year destroyed many immature pods. By planting very early and using some tree, house bush, or arbor upon which the vines can climb, the seeds can be matured before frost. Gradually by acclimation and selection, it is believed its cultivation can be successfully extended even north of this state. As it requires comparatively few seeds per acre, planted as usually done, in rows about four feet wide and two feet apart in the drill, it is worthy of extensive cultivation even for its enormous vines, which can be easily cured into an excellent quality of hay. It is an enormous nitrogen gatherer, as analysis elsewhere shows. The tubercles on its roots are the largest of any plant so far experimented with. Coral-like clusters of tubercles, each as large as a hen's egg have been gathered from its roots, and analysis made of them by Mr. Clarke, station chemist, at State Experiment Station, Baton Rouge, La., showed six per cent. of nitrogen. The vines may be cured into hay or turned under easily with a disc plow. In smmer old leaves are replaced by new ones and the ground, underneath the vines, becomes covered with dead leaves. The seed grow in velvety pods, which are collected into racemes, thus making them easy to gather. They are difficult to shell by hand. The seed are larger than a cow-pea, and a bushel will plant several acres.

The only work in the scientific investigation of this bean, that we have seen, is reported in Bulletin No. 35, of the Florida Experiment Station. Prof. A. A. Persons, chemist of that station, reports the following analysis of the bean, and then compares it with cow-pea.

"An analysis of the beans, not including the shells or pods, made by Professor A. A. Persons, gave the following results:—

ANALYSIS OF THE VELVET BEAN.

"Moisture at 100 degrees ..	..	11·93 per cent.
"Crude Ash ..	..	2·02 "
"Crude Protein ..	..	18·81 "
"Albuminoid Nitrogen ..	..	2·87 "
"Crude fat (either extract)	..	6·29 "
"Crude Fibre ..	..	7·45 "
"Nitrogen (free extract) ..	..	53·50 "

Calculated to a water-free basis, and compared with an analysis of the cow-pea under the same conditions, the following figures express the relative composition of the two:—

	Velvet bean.	*Cow-pea.*	
"Ash ...	2·20	10·50	per cent.
"Protein	21·36	14·30	"
"Fat ...	7·14	2·60	"
"Fibre ..	8·46	29·00	"
"Nitrogen (free extract)	60·75	43·60	"

"The nutritive ratio of the cow-pea is about 1·3. It is impossible to assign a definite ratio to the velvet bean, for the reason that, so far as I am aware, its percentage of digestibility has never been determined. The only manner of accomplishing this is by means of practical feeding experiments with stock.

"Assuming the digestibility of this velvet bean to be equal to that of the cow-pea, it will be found that it compares quite favourably with the letter and since it grows luxuriantly in different sections of the state, and since stock are known to feed upon it with great relish, it may, perhaps, play a prominent part as a forage crop in Florida in the future.

"It is to be classed among the feed stuffs which are especially rich in nitrogen [protein substances]. A feeding stuff so rich in nitrogen should not be fed alone but in conjuction with some coarse fodder containing a much larger proportion of carbo-hydrates [starch, etc.], such, for example, as corn fodder."

This analysis, supplemented by those given elsewhere in this bulletin, will furnish all the information necessary to form a correct estimate of the value of this plant as a nitrogen gatherer. There are rumours of a poisonous principle in the beans of this plant, but judging from the above remarks, and others made in the same bulletin by Dr. Clute and Mr. Green, on orange grower, of Orlando, Fla., these rumours are not founded in fact.

The velvet beans are largely used in Florida, and, to some extent, in this state, in the orange groves, both as a fertilizer for the trees and as a destroyer of weeds and grasses. It will completely destroy Bermuda and temporarily obscures coco or nut grass (*Cyperus rotundus*). It may, perhaps, successfully cope with Johnson grass.—*Trinidad Bulletin.*

MANURIAL PLANTS FOR TEA.

To say where seed can be obtained, and the cost it is a very simple matter, but to say what to grow is quite another and larger matter. The tea is already to a large extent in possession of the land on which it is proposed to grow legumes for its benefit; it has been systematically cultivated for more or less lengthened periods. On this class of soil it is proposed to grow legumes for the purpose of organising free nitrogen for the benefit of tea. Quite a number of practical considerations crop up at this stage of the enquiry, and in order to see what is really practical for tea we must look into them.

First comes the matter of convenience—getting freely about among the tea, facility for plucking, and pruning, and so forth. Any plant that materially interferes with these operations is manifestly out of the question, and that unfortunately places a number of eligibles without the pale, such as the Lupines; unless indeed they admit of systematically cutting down, which I think they do not. But we are so much in the region of the unknownable, or more correctly the theoretical, that I would beg the reader to take much that follows here as suggestive and matter for experiment; and likewise to fail not give us the result of any experimental knowledge he may possess, as a matter of first class importance to the tea industry at this stage.

Secondly there is the question of what will and what won't grow among tea plants, and when these plants will grow and when they won't grow to any advantage. These are points that cannot be answered off-hand. Again, it is highly improbable any one legume exists that will grow freely in all tea districts; and the different soils too: these are not going to grow legumes at random. I even question whether there are not thousands of acres that will not grow legumes to any advantage to the tea because it has been discovered certain plants organize free nitrogen.

I am strongly of opinion we have not, therefore, found a universal panacea for tea, and I would beg leave to caution planters against for a moment allowing themselves to imagine they have arrived on the verge of the millennium for debilitated tea, or that in this discovery there is found a sort of universal resuscitator. I nowhere gather that the most expert scientist is prepared to say or prove that the discovery has even caused a small revolution in agriculture where its advantages can be laid hold of to the fullest extent; let alone doing anything very great for tea. I am very far from wish-

ing to decry the discovery: it is interesting and important, but some scientific discoveries get too much magnified by some, and I think this is one of them. Agriculture, in particular rotations of crops, have all, unconcious of the scientific fact, been recognizing its practical utility for a very long period, but nothing at all out of the ordinary has happened. The way of this I think is because it is not a great disoovery, but essentially a small thing. Those preeminently distinguished and now venerable Agricultural Chemists, Lawes and Gilbert, make it abandantly clear. In spite of all we know thus far, the *nerrick*, as it were, of nature below the surface is largely undiscovered.

However, in the matter of organizing free nitrogen from leguminous plants for tea, the time very speedily comes when it is necessary to destroy the organizers by digging them into the soil, in favour of a rotation crop, and it is not until some time after destruction, during the process of full decay that the full advantages of the free nitrogen is available and consequently in the ordinary course of things the succeeding crop gets the advantage, if ineeded that is not nature's deliberate intention. In this case, however, it is for the tea plant; it will follow then that the rotation crop must also be dug in, and this crop to be of the best advantage all round must differ from the legume. The planter will do well to have always in mind that no soil, least of all much tea soil, will go on growing leguminous plants; and further that, although they organize free nitrogen by bacteria through the nodules of the roots, the plants themselves require a different nourishment, in part including abandance of lime, and no soil, and particularly tea soil, will go on successfully growing, of all plants legumes. There must be the indispensable and advantageous rotation and theretore in this case periodic destruction of both. Your correspondent will at once see this implies periodic renewal and re-sowing, and the pertinent question comes in here. Will the exigencies of tea operations admit of the planter saving his own seed? Because if it won't, then I fear it won't pay; unless indeed, and what certainly ought to happen by perseverance, the increase of tea is such as to admit of periodic purchase of new seeds. These are practical questions planters can solve for themselves. In any case it is well to have in mind that while nitrogen is locked up in the nodules of the roots of legumes it is not very likely to he of much service to deep-rooting tea; in order to be serviceable there must be a simple system of rotation, digging in, and renewals. But I believe the fact that some legumes organize free nitrogen is by no means the sum of advantage likely to accrue from planting them for the advantage of tea. I had here intended to have made a direct quotation from Mr. Cooke (Sirocco) but unfortunately have failed to find the particular sentence I wanted. However, this, if I remember rightly, is the gist of it:—" We do not sufficiently realize how much we gain or save by making less tea." This looks very like a paradox. Now I would advance a closely allied proposition, namely, that we do not sufficiently realize how much we should gain by doing less—in the way of cultivation—more especially if the cultivation is extended over lengthened periods, and I am fully convinced from a nnmber of experiments of the great good of rest; total abandonment of cultivation, allowing nature to come in and do, as she undoubtedly does, some beneficent work. Very many planters should be sent on a tour round the world on foot or a bicycle for two years, and if the soil and tea could only speak I believe it would say Amen to the proposal very promptly.

Coming to practical suggestions for your correspondent, I would advise him to try a bushel of the ordinary field the pea-soup pea of commmerce. I feel sure as a cold weather crop, and provided the soil is not difficient in lime, this would succeed in many cases well. Then it should be allowed to fully mature its crop, and here comes the question whether he should save his seed. I think from one bushel two might be taken and all the remainder dug in. What would happen precisely, I cannot say; for Assam doubtless the hot weather would be too much for the dug in seed, but if that was not, the rains would be, I quite expect. However, it would not much matter what happened, because the seed as well as the plant would be a highly nitrogenous manure. There are very few legumes or food plants which contain so much nourishment as the pea—about 930 per cent. per 1,000 parts for the seed. This plant lays low and grows dwarf, and would not, I think interfere with the tea, and if the newly dug in seed grew, that would be an additional advantage. Again I have formed a very high opinion of some annual grasses which grow luxuriantly, but not tall, during the monsoon, are excellent fodder plants, seed freely, and die down in cold weather. There is a period when a valuable dressing of manure can be hoed in, and any amount of seed insuring a full crop another year. It is so far as is known true these grasses do not organize nitrogen in the way legumes do, but they contain a quantity, and I venture to think it may very well be that good annual grasses would prove of the greatest possible service for tea lands; any serious wash is impossible, soddened land is practically impossible. Once a year at the correct seed period the land could receive one through hoeing, no further cultivation being necessary. Of these grasses I will send yonr Dibrugurh correspondent a small packet of two kinds and ask him to be good enough to sow on the appearance of spring rains and watch their behaviour for Assam if he is satisfied he can himself increase the area a thousand fold by collecting his own seed. They have the great advantage of being non-creeping, no under ground stems—termed by Botanist Soboles—and there is no possibility of a permanent choked up soil. My very strong impression is, herein lies a good thing for tea:—A legume for the cold weather season and a good annual grass for monsoons, and only two very thorough hoeings per annum, one for the grass, one for the legume. The grass seed will abide the monsoon period withont germinating to any extent, and would not be interfered with by the leguminous crop. Some other day I may make a communication to the *Planter* on snndry grasses, as I am getting seeds of a number from widely different parts of the world, but the time has not arrived to say anything further abont them. The burden of it is, everyone should make some definite experiment in the direction of snrface crop, which will protect the soil, and abolish in a very large measure cultivation, and yet forsooth it would be a kind of culture highly advantageous. When it is recognized that the tea plant is only a shrnb above ground and that by artificial means and that below it has the roots of a tree; and that without mannre you can neither add nor take from the soil over and above what natnre allows; and that by annual crops due in you come as close as probably it will ever pay to an immitation of nature's methods,—then I believe planters will see their current methods in the long run are vanity and vexation of spirit; and based on heavy knows what dustnr perhaps, to solely and wholly for the tea plant and not as a general principle for anything.—" SECATUR INDICUS," —*Planter.*

SOUTH SEA ISLAND PAPAYA.—The Curator of the Government Botanic Gardens and Parks, Nilgiris, reports the successful raising of a number of plants from seed of the South Sea Island Papaya (*Carica Papaya*) and observes:—" As soon as it becomes established, it is hoped that it will prove to be a desirable addition to the list of tropical fruits grown on the lower slopes of the Nilgiris to meet the demands in the local markets." The fruit of this tree at Bangalore is much larger than that usually seen on the ordinary Papaya.—*Planting Opinion*, Sept. 30.

THE CULTIVATION OF TEA: MEASURES TO PREVENT DISEASE.

COMMON SENSE TREATMENTS, CALCULATED TO HOLD GREY AND OTHER BLIGHTS IN CHECK, COMBINED WITH PROFITS TO THE ESTATE.

I doubt not that such direct treatment as the picking-off of diseased leaves will (as calculated to defoliate bushes) soon be held as of minor importance, in the treatment of Plant Diseases, and it might, therefore, be as well to review some methods, which, though indirect, might be looked upon as far more effective, and the least that can be expected if such methods are carried out carefully, is that the increased returns from the tea treatment will cover the cost of such.

Burying Prunings.—As being the most important of such, let us first take the Burying of Prunings. Dr. Watt's remarks on this subject, are worth reading. He seems to have concluded from the result of his flying visit to Assam, etc., that prunings should not be buried for the reason that they would be likely to foster parasitic growth—(though in stating this I might add that he mainly refers to Thread Blight, a pest peculiar in that it spreads by long fibrous mycelium, has the power of living on the dead buried matter, and of afterwards resuming its parasitic life on adjacent plants)—and I do not think his remarks apply so much to grey and kindred blights. However, both he and Mr. Massee, losing sight, I am afraid, of the object for which we grow tea, recommend the burning of prunings, condemning burying. Neither mentions the use of disinfectants in connection with such operations, and yet at the same time they have a lot to say about the great value of time, etc., as fungicides. So perhaps, we who are the most interested, might be permitted to view the matter in a more practical light and look upon burying as our cheapest and most feasible means of treatment—with two great advantages over burning: (1) a saving of almost all organic matter in the prunings, and (2) prunings would not have to be carried some distance—as in burning, in most cases—to suitable open spaces. It follows that doing so would give the wind every chance to scatter spores to great distances, whereas in burying a yard would represent the greatest distance to a place of burial. Prunings can be well buried—including careful sweeping of the ground, and the cutting of deeper holes than usual—with a dose of about 500 lb. of lime per acre, at a cost of about R20; the lime added quickly decomposes the mass buried, as well as acting as an indirect manure by freeing potash, nitrogen, etc., which may be locked up in the soil, in an insoluble form. As lime could hardly be used every time a field was pruned, some substitute might be formed, in solutions like the Bordeaux Mixture; such could easily be sprayed on the collected mass by the aid of an ordinary watering can or something of that kind, the only drawback at present being the prohibitive cost of sulphate of copper, as probably about 50 lb. would be used per acre. However, where this chemical is used in large quantities, it is extremely cheap; and, no doubt, when a demand was felt here, we should be able to purchase at a figure warranting our using such past experience on estates where prunings were buried solely in the way of manuring, thus proving how valuable such operations are. Personally I have done such work on a small scale for some years with most gratifying results, and a well-known property on which this system has been carried out for some six years, stands probably today as the freest from pests and the healthiest estate in the island. Mr. Bamber, I know, is strong on prunings being buried, provided, of course, such work is done in a thorough manner, and I am sure that we shall find he will have a good deal to say on this subject in the Report he will shortly put before us.

Burning.—Now for Burning, it is unfortunate that on almost every estate there are places too steep for burying or cultivation of this nature, and I believe there is also one district where the presence of something in the nature of thread blight, prohibits the burying of prunings; on such places burning must be resorted to as about the only method of treatment available. In this operation the value of the manure created plays but an unimportant part, the ash collected from the burning of prunings from an acre of healthy tea, would give about 20 lb. of potash, 6 lb. of phosphoric acid, and about 14 lb. of lime, losing about 40 lb. of nitrogen. This would be utilized were the prunings buried and, if these prunings were left undisturbed, most of the Potash, etc. in the ash would be available for the plants' use. And looking to the difficulty of properly re-distributing the ashes, it would be necessary, when applying artificially, to almost double the usual dose, where the ash has not being returned—in order to make up for the loss of same.

Destruction of Cheddie.—Mr. Massee says, remembering the very different kinds of plants on which this fungus is known to be parasitic (speaking of Grey Blight) it is probable that it also occurs on wild plants in the vicinity of tea. If such is the case,—and there is no doubt about it—all such should be removed if possible, as the *Conidia* is carried great distances by wind and other agencies, and no amount of attention to the tea would avail if the supply of *Conidia* necessary for inoculation, were grown in the neighbourhood. Now, there are two things which might be done with cheddie, etc., with a view to using such as manure. It might be buried in large pits (accompanied with a little Basic slag or Lime to assist rapid decomposition) to be afterwards applied as a bulk manure; or cheddie grass, etc., collected, might be burnt and the ashes collected under shelter till required. This would be of value, on account of the Potash and Lime contained; the amount of these would vary very much according to the class of vegetation, but we might take an average of 10 per cent as representing the quantity of Potash in the ash.

Another class of vegetation which would come under this head are the dense masses of belts and road trees we have in our fields, with the idea of either checking wind or acting as a fuel reserve. Such trees, it seems to me, do a great deal more harm than good, and excepting in districts like Udapussellawa are quite unnecessary. We will take gums; if we look at bushes adjacent to trees of this description, we find them in a most miserable condition. This is more due to the drip from

the leaves than anything else, as gums in most cases are deeper feeders than tea and therefore do not rob the latter, so much as other trees do. Grevilleas seem harmless, but if we examine them carefully, we shall find the branches covered with scaly bug, etc., the surrounding tea getting the benefit thereof; not to mention the shade created, which is so much to the liking of injurious growths. Another system to be condemned is growing trees for fuel amongst the tea. One need but look at the tea adjacent (a few months after these trees have been felled!) to wonder whether the fuel obtained were worth the damage done.

ARTIFICIAL.—Now, a few remarks on artificial manuring. It will be found that in many cases the results of application of artificial manures are unsatisfactory; this being due to our allowing our fields to go too far before manuring, the bushes being sluck; and if we examine the roots, we will find them in a like state. The result is, they are not in a condition to assimilate the manure applied, a part of which in consequence will be lost. One must allow for this in first application and give the bush a larger dose than would be required in succeeding ones. Surely the "Times," in claiming that Mr. Bamber has reduced the cost of manuring in the island by 50 per cent, makes an absurd statement and one very uncomplimentary to the Planting Community generally. I happen to know that Mr. Bamber is probably as suprised as we are at this statement, though I also know that the "Times" gathered this information from several different men. I can only say that Mr. Bamber's coming has indeed been a God-send—*to such*—but I most certainly think that the majority—including Mr. Bamber himself—would not for a moment dream of such extraordinary cheapening in the cost of manuring being possible. Mr. Bamber recommends cheap mixtures; so do others and such mixtures were used long before he came; and as he aims at permanent benefit to the soil, how we can attempt to place any value on his system till at least a trial of two years, I cannot see. At present the greatest tribute we can pay him, is that he came at the right moment and played an important part in the upsetting of the Castor Cake and Bone Era of Conservatism.

HANKOW THE TEA MART OF CHINA.

THE TOWN AND ITS INDUSTRY.

(Specially written for the "Ceylon Observer.")

Hankow does not perhaps stand pre-eminent as a health resort, and indeed those who have faced a summer or two in that place, might look upon Colombo as a sanitarium; but as

A CENTRE OF BUSINESS ENERGY

and activity it is, for three months—May, June and July—in a unique position.

Situated about 650 miles from Shanghai, up the Yangtzse, on its right bank, it stands in the very centre of China as the mart of the China tea trade. Not that tea is the only article it trades in, but undoubtedly tea has made Hankow famous. Big businesses are done in hides, bristles, feathers and "all sorts and conditions" of other articles; but tea has made Hankow what it is.

As the month of May approaches, the return of the tea-tasters, or "Chaaszees" as they are called, is noticed in Shanghai and erelong they take ship up to Hankow. There are three principal lines of steamers up to this port, known as Ewo, Taikoo and China Merchants; and if you ask a Chinaman which he prefers, he will answer thus:—Ewo is best for the Canton man who travels up, Taikoo best for the foreigner, and China Merchants best for Mandarins. This is borne out in fact and tea-tasters generally select Taikoo.

About three days are occupied in the journey and several interesting river treaty ports are touched at *en route*. Kiukiang is reached about a day before Hankow. All teas from Kiukiang districts arrive at this port first and several houses have representatives there in order to buy earlier than others. But the bulk of the teas are shipped up to Hankow and offered on that market.

QUIETNESS REIGNS SUPREME

in Hankow when the "Chaaszee" arrives and the Bund wears a dreary and forsaken aspect; but in a day or two all is changed with the arrival of the first musters. The tea-taster buckles on his armour in the shape of his oldest clothes and the tea battle opens! A tea season is no child's play when once started and the musters arrive in a seemingly endless stream. The tea-taster in a "quick" season must be in his tea room by 5-30 a.m. and start operations forthwith, nor stay his hand (or rather tongue!) till five or six at night, barring short intervals for meals.

THE TEA-TASTER

is *not* a rigid abstainer during the season as stated in a recent "Century" article, but he perhaps takes his stimulants in rather smaller quantities and discards smoking altogether until after dinner and the day's work is over.

He proceeds on very similar lines to those in Colombo, the essential difference being the very great care necessary, and taken, compared with that in the case of Ceylon teas.

A very good-sized sample is sent round by the Broker—much larger be it noted than that allowed by the Colombo trade—and he then proceeds to become acquainted with the quality of the tea before him, using the same utensils for this purpose as in use in Ceylon. The "Century" article errs very much in its description of this phase of the subject.

If the tea suits him, he tells the Broker to forward a chest muster and thus has the useful opportunity of seeing a full half-chest of the tea before he has even made a bid for it. Should he still like it, he then makes a contract for the tea at the price agreed upon; but he has the option of returning the chest muster and making no purchase should he, on second tasting, dislike the tea. It will be realised that this is of great assistance to the tea taster in selecting suitable teas for his orders and if an error is made it is more often his own lack of judgment rather than inability to see what the tea really is from a very small sample.

If the tea taster is exacting in making his staff work, he also works very hard himself,

and requisitions Sunday as an extra twenty-four hours in which to work. His godown soon begins to wear a very animated appearance, and weighing, marking, matting and rattanning operations are constantly in process.

The "Century" article states that tea is brought to Hankow in sacks as well as half-chests and is frequently re-fired. This, however, is hardly consistent with facts. Little or no tea with any pretension to quality is so packed, only the common tea dust and siftings used in "brick"-making being brought in this fashion, and the merchant certainly does very little or no firing; as he prefers to open as few packages as possible. *Common* tea is frequently repacked from half-chests to chests, but the bulk of the tea is shipped in its original packages.

A great advantage the merchant gets in buying China tea is

A SUBSTANTIAL ALLOWANCE

in weight given by the tea-men and thus a loss in weight is impossible. This is a fact that might be seriously borne in mind by the planters of Ceylon if they wish to capture new markets, especially the Russian. As stated in a previous article, another great advantage is the large size of the break which a merchant is able to buy.

The arrival of the first Russian steamer is the sign of great activity on the Bund, hundreds and hundreds of coolies being employed in carrying tea to the cargo boats for transhipment to the big steamer. Each Chinaman will carry two half-chests slung one on each end of a bamboo pole across his shoulders and the rapidity with which he goes is a great contrast to the slow bullock cart of Ceylon. Six weeks of this feverish activity brings the "rush" to a close, but there is plenty of work for all for another two months, though carried on in a more leisurely way.

By the end of August Hankow *residents* settle down to wait for autumn and winter sport and their ordinary work; and the tea-tasters ship once more for happier and less busy climes.

HANKOW ITSELF

is flat and uninteresting, its Bund being the chief promenade for walking. In the month of July, the plains at the back are flooded and continue so for some time, and Hankow is thus practically shut in and riding operations are very much curtailed. As the new Concessions given to the French, Russians and Germans are developed, the place will grow in importance and some even go so far as to say, will rival Shanghai, if not in beauty, at least as a trading centre. Adjoining the English Concession is the densely populated city of Hankow, containing 800,000 Chinese, the majority living in indescribable hovels and filth. Its size may be judged by the fact that its principal street is over three miles in length.

The condition of life during the Great Heat must be appalling as the Chinaman knows absolutely nothing of sanitation and it is reported that thousands die during the summer from various diseases. The principle of "survival of the fittest" is undoubtedly carried into actual practice to a very large extent in such a place as this. With all this, however, the average Chinaman seems to be a contented man and they seem to have solved the question of the "happiness of the greatest number."

Opposite to Hankow on the other side of the river is Wuchang, the capital of the Province of Hupeh, whose Viceroy is

THE CELEBRATED CHANG CHIH TENG,

famed for his Western learning. Famed until he is known, when he is found to be, at bed-rock, of much the same build and character as the ordinary Mandarin. He has established arsenals, iron works, cotton mills and an agricultural department, but with only partial success. He has competent Europeans to guide things, but from lack of material given them, they are unable to get any very good results. His agricultural department is still without ground for the planting of seed,—a *rather* important item in agriculture, one would think. Also, while at the outset, he was willing to buy every agricultural implement existing, now it is hard to get those really necessary. Thus is China's most advanced man only surface-polished with Western ideas and at heart still the old-fashioned Oriental. What China needs most to-day are strong, honest and conscientious leaders and until she gets them she will continue in the rut of impotence she is now in.

ASSOCIATED TEA ESTATES OF CEYLON, LIMITED.

DIRECTORS' REPORT.

FOR THE 12 MONTHS ENDED 30TH JUNE, 1899.

The area of the Company's Estates planted with tea as per last report was ...	1,889 acres.
to which falls to be added as completed during the year ...	16 do.
and for certification of area at Doragalla	25 do.
Making a nett planted area in tea of	1,930 acres.

In addition to which there are 13 acres of fuel trees on Doragalla.

No further extensions are in progress.

The yield was as follows :—

	lb.
Silver Kandy	100,210
Chesterford	280,514
Horagoda	45,700
Doragalla	238,032
	664,456

This shows a decrease of 43,513 lb. on the previous 12 months' yield, and of 119,294 lb. on the aggregate of the Superintendents' estimates. The two high-lying estates gave an increase of 34,371 lb. and the two low-country properties a falling off of 77,884 lb. The Superintendents and the Visiting Agent are unable to give any reason for the deficiency beyond natural causes, the weather in the low country having been unsatisfactory for producing a heavy yield of tea.

Of the crop, the entire produce of one estate was sold in London, and of the three others

partly in Colombo and partly in London. The portion sold in Ceylon, 288,215 lb., realised an average of 37·81 cents, and the 376,241 lb. sold in London, an average of 7·81d, making together, after allowance for freight and charges on the London portion, a total average of 7·28d per pound. This compares with 7·11d per pound for the previous year, and in view of the general level of prices is considered satisfactory.

The Superintendent of Chesterford Estate resigned his position in March, and the Superintendent of Silver Kandy was summarily dismissed on 25 May, under circumstances that may lead to legal proceedings. The item of £414 6s 9d appearing on the balance sheet as a doubtful debt, is money due by the latter to the Company. New Superintendents were appointed in each case, and so far as can be judged, the work under them is proceeding satisfactorily.

The estimates for the 12 months ending 30th June, 1900, are for a crop of 705,000 lb; which will, if realised, be an increase of 40,544 lb. over the yield for the previous year. The estimates are probably on the conservative side, and may with favourable weather conditions, be exceeded. The estate of cultivation, and the circumstances generally of the estates are in every way in satisfactory shape.

The revenue Account shows a nett profit of £3,622 0s 3d, to which falls to be added the balance of £9 4s 4d brought forward from last season, and £19 1s 6d on adjustment of previous year's accounts, making a total of £3,650 6s 1d. Out of this the Directors paid the Interim Dividend at the rate of 3 per cent on the preference share capital, and from the balance they propose to pay the final dividend on same at the same rate (making six per cent for the year) which will absorb £1,800, and to carry forward the balance to the next account.

The Directors regret that the anticipations expressed in the last annual report, and in the circular sent out on the 31st March, 1899, have been unfulfilled, and that consequently the revenue was insufficient to pay any dividend to the holders of the ordinary share capital. It looked during the spring as if a higher level of value was likely to prevail in the future for all tea, but circumstances led to a rapid and continuous fall in prices, and a very low level was current when a large proportion of the season's crops were being realised. In spite of this, prices show, with the exception of one estate, an increase. A profit is shown on rice supply, and exchange was effected at an advance of only three-eighths of 1d per rupee on the previous year. The adverse feature is obviously the deficiency in yield, which may be taken as explanatory of the bad result. The accounts show a material expenditure on manuring, which will be continued during the new season, as the Directors have satisfied themselves that a substantial increase in yield is likely to be obtained by liberal treatment of the cultivation in this manner. The continued failure of the properties to realise the profits expected from them when the Company was formed, has been a matter of grave concern to the Directors, who in a view of the financial results have again drawn only half their fees. The Secretaries have also again made a considerable rebate on the sum payable to them for the London management of the Company, and have waived the commission payable to them upon the amount of profits divided.

Only the small additional outlay referred to in last report has been made upon block account, the Directors having decided to charge to revenue account, on an average spread over several years, any items relative to ordinary additions to buildings and machinery.

The Directors decided that it was contrary to the interests of the Company to take part in the attempt recently made by certain Tea importers to force upon the buyers in London a change in the conditions of sale by abolishing the pound-draft hitherto allowed on each package. While they would have been pleased to see this allowance abolished by mutual agreement, they considered it unwise to join in a quarrel with their customers, and consequently the teas of this Company were offered and sold on the old terms. The Directors have also declined to join in the proposed arrangement for regulating the quantities offered for sale, as they do not consider it would be in the interests of the Company to do so.

Mr. A Bethune, the former proprietor of one of the estates now owned by this Company, having retired from Ceylon after 20 years spent there in planting, has been invited to join the Board, and his name will be submitted to the shareholders at the general meeting for election as an additional Director. The members of the Board consider that his special knowledge of the estate in question, and his general practical experience, will prove of material advantage to the London-executive and to the Company's interests generally.

Under the articles of Association, Sir Alexander Wilson retires from the Directorate, and, being eligible, offers himself for re-election.

An Auditor falls to be appointed by the shareholders at the general meeting. Mr. J M Henderson, F.C.A., is eligible for re-election.

PRODUCE AND PLANTING.

American Tea.—On the strength of a brief paragraph about the snccess of tea-growing experiments in the Southern States, some of the newspapers have endeavonred to construct a mountain ont of a molehill. We can imagine that a few timid shareholders in tea companies have been made unhappy by the following paragraph, which has gone the usual ronnd: "It is predicted that America will in time rival China and Ceylon in the prodnction of tea. Experiments made in tea cultivation in the United States are said to have proved a complete success." The "prediction" comes from Fleet Street, we imagine, and we do not notice any serious decline in tea shares in consequence of it.

An Attempt to Scare Tea Drinkers.—The latest news from the United States abont tea is that certain people interested in coffee are endeavouring to create prejudice against tea by circnlating exaggerated rnmours about its injurious effect. That game has been tried here, bnt did not sncceed. A New York telegram of Wednesday's date to the *Leader* has the following: The sensation today is the reported prostration through excessive tea-drinking of Mrs. Leslie Carter, America's greatest actress. The newspapers take the occasion to print violent articles on the baneful effects of tea, pointing the moral in the physical decline of the English race. The *World* editorially writes: 'Our cartoonists should inform np-to-date facts and depict John Bull as small and scrawny whereas Uncle Sam should be depicted as big and pot-bellied.' Several merchants whom I have consnlted tell me that the tea-drinking scare is being fostered by the coffee trnst, which fears that Sir Thomas Lipton's presence may induce Americans to take to tea."

Indian and Ceylon Teas in the States.—Whether it is due to a desire to push Ceylon tea or not, some

of the American newspapers are publishing information, says the *Pall Mall Gazette*, in respect to the increase in the popularity of the commodity which should gladden the hearts of the planters and cause Mincing Lane no little satisfaction. "The phenomenal increase in Ceylon and India tea has become very striking," is the somewhat tautological comment of one journal. The change of attitude on the part of the American public dates, it seems, from the time of the World's Fair, before which the Indian teas were practically unknown. Each year has shown a decided increase in consumption over the preceding period. No figures are given in support of the contentions, but we suppose that the statements themselves are deserving of some weight. The astute American mind is now considering whether or not tea can be produced in the United States. The conclusion arrived at is that there are several States where the climatic conditions are favourable, but that the cost of labour is too high. There is some hope, however, that the raising of tea in certain of the newly-acquired possessions of the United States will be attempted. Of course, the consumption of tea cannot be allowed to come under consideration without the inevitable reference to the Anglo-Saxon brotherhood. "What a contrast there is between that tea party," said one well-known merchant referring to the acceptance of a present of tea by Admiral Dewey at Colombo, "and the other one in Boston harbour! How indicative of the change of sentiment between two peoples!" Well, if the United States consumers will only buy enough, we can assure them that our Indian planters will be very grateful, and will show not a little enthusiasm on the subject of the Anglo-Saxon alliance.

The Tea Trade of Formosa.—In the Consular report on the trade of Formosa the reference to tea is full, although it resembles official reports from other parts of the Far East in that it points to no improvement in the tea trade generally.

South Indian Planters in Council.—The planters of Southern India seem animated with a spirit of enterprise. Those of them who grow coffee desire to know all about the latest and best machinery for curing the product, and it is a pity that they cannot find the necessary machinery here without looking to the United States for it.

Cinnamon.—The supply at the periodical sales on Monday, the 28th ult., was extremely light, indeed far too scanty for the prevailing demand, and the 960 bales Ceylon put forward went off briskly at a further advance in value. The greatest improvement was seen in first and second sorts, which were 1d to 2d per lb dearer, and even the inferior qualities, that were less eagerly competed for, brought ½d to 1d better prices than were established at the auctions in May last, viz.: Firsts, fine and superior garden cinnamon at 1s 4d to 1s 7d, common to good at 10d to 1s 2½d; seconds, fine and finest plantation at 1s 4d to 1s 7d, ordinary to good at 7d to 1s; thirds, best at 1s 1d to 1s 5d, low woody to fair at 5½d to 11d; fourths, from 5d up to 1s 1d; and broken (in five boxes) at 7½d to 8d per lb.—*Home and Colonial Mail*, Sept. 8.

COCHIN MARKET.

C.N. Oil.—The market reopened this week with our last quotation, but with an increasing demand mainly from Bombay, prices advanced and a good business has been done at R89 to R89/8 per candy for prompt and R91 for one month forward delivery. The European firms have also brought a few parcels of good white oil at R88/12 net per candy. |Market closes today firm at R90 per candy. The latest quotations from Bombay were R4/6 to R4/7 per maund of 28 lb., and Rangoon R58 per 100 visses equal to 365 lb.

Coir Yarn.—A good business is passing with Europe on c.i.f. terms for forward shipment. Supplies arriving from the interior meet with a good demand both from shippers as well as dealers at prices ranging R30/55 per candy according to quality.

Rope Yarn.—This yarn is largely enquired for both from Europe and Indian ports. A good business is reported. We quote today, dry yarn fine color and make R34/42 and candy baled weight.

Coir Fibre.—A few parcels of common fibre arrived during the week, and changed hands at R27/28 per candy. Good bright fibre is worth today R34 per candy.—*Cochin Argus*, Sept. 23.

RUBBER—ARTIFICIAL AND NATURAL.

Artificial Production of India-Rubber.—The artificial production of india-rubber has long been a fascinating problem for chemists. Dr. Tilden has now succeeded in producing it in small quantities, although its commercial production does not at present seem very near realisation. A hydrocarbon known as isoprene was discovered years ago by Greville Williams amongst the products of the destructive distillation of india-rubber, and in 1884 Dr. Tilden obtained it by the action of moderate heat on turpentine. Some isoprene, which was made by Dr. Tilden in the course of his researches in terpenes, was preserved, and on examining these he was surprised to find the contents of the bottles completely changed, and in place of a limpid, colorless liquid the bottles contained a dense syrup, in which floated several large masses of a yellowish solid. This, on examination, turned out to be india-rubber, exhibiting all the characteristic reactions of that body with solvents and also its power of combining with sulphur to form a tough elastic body. The change from isoprene to india-rubber is extremely slow, taking several years to complete, and so far, Dr. Tilden says that although he has tried everything he can think of, all attempts to hasten the action have resulted in the production of a body known as colophene, a thick, sticky oil, quite useless for all purposes to which india-rubber is applied.

Barren Rubber Trees.—From a recent official report we learn that the cultivation of rubber in Madras has proved a practical failure, as, curiously enough, although the trees grow splendidly, they refuse to yield or even produce rubber. The Ceara rubber tree was experimentally planted in several localities in Southern India, and from the way in which the trees grew it was hoped that in due time large quantities of the juice would be secreted and an export trade spring up. Unfortunately these hopes have not been realised, since it has been found that the trees refuse to "bleed" at all when the bark is cut, or do so in such small quantity that it does not pay, expenses of cultivation. Mr. Hooper. who has made a microscopic examination of the inner bark, finds that while the laticiferous vessels or caoutchouc ducts are not absent they are undeveloped and scantily distributed in the bark. This unfortunate result is attributed by Mr. Hooper to the fact that the climatic conditions or soil are not suitable for encouraging the secretion of rubber in the trees.

Rubber of the Soudan.—Whilst on the subject of rubber, it is of interest to learn from the recently-issued report of Sir William Garstin on the subject of the Soudan, that on the White

Nile, in the Bongo and Rohl districts, the india-rubber creeper (Landolphia florida) is found in great profusion, which, as is pointed out, should be an important asset in the future trade of the Soudan, although, of course, the rubber produced from this plant is not of such good quality as that from Para or Assam. We are accustomed to look upon the Soudan as anything but a source of wealth to its holders, but from this report of Sir William Garstin's to the Foreign Office it would appear that there are great potentialities of wealth in the district, and there is urgent need of a scientific examination of the country with a view to the development of its natural resources. The vast forests which line the banks of the Upper Blue Nile, and extend as far as the Abyssinian frontier, and those of the province of Bahr-el-Ghazal, should prove sources of future wealth. In regard to the mineral wealth of the district, very little appears to be known Iron ore is found in the Bahr-el-Ghazel province and also at Darfur, and gold mines were at one time worked in the mountains south of Fazogl. At present coal does not seem to have been discovered.—*Daily Chronicle*, Sept. 8th.

NEW COMPANIES.

NOKHROY (ASSAM) TEA CO., LTD., (63479).—Registered Aug. 31st, with capital £10,000, in £1 shares, to acquire any tea estates, lands, warehouses, factories and machinery, to extend, improve, or add to such estates and generally to do all things appertaining to the business of tea planters and merchants. The number of directors is not to be more than 5; the subscribers are to appoint the first; qualification 150 shares. Registered by E. A. Jay 50 Bental Road, Stoke Newington, N.

STRAITS TIN, LTD., (63,455).—Registered Aug. 30th, with capital £10,000 in £1 shares, to acquire and turn to account any property in the Straits Settlements or elsewhere, and to carry on the business of miners, prospectors, farmers, merchants, financiers, etc.—*Investors' Guardian*, Sept. 9.

PALLEGAMA GRANT ASSOCIATION.

REPORT.

The Directors regret that it has been found necessary to stop further expenditure. This has been done with the exception of advances to the timber contractor to enable him to convey to the Matale Timber Depot the Ebony lying felled on the Estate.

Under the circumstances the Directors recommend that no further expenditure be incurred at present, and that the Agents and Secretaries be requested to settle so far as possible outstanding liabilities from proceeds of produce bearing in mind the loan specially contracted against the timber,

In the terms of the articles of Association Mr. E. Rosling retires, but is eligible for re-election.

The Balance Sheet made up to the 31st August shows on the one side:—Capital—2,000 shares fully paid up, R200,000; Debts due by the Company—To Timber Contractor, R500; to Auditor, R100; to Agents and Secretaries, R249·59; to Estate Account Balance Sheet, R686·05; to Loan Account, R1,107·26; —R2,642·90; total, R202,642·90. On the other side we have:—Property (Immovable)—Balance from last account, R201,893·59; Nett expenditure from date of last report to 31st August, 1899, R983·37; Less amount at credit of Profit and Loss, R307·07 = R676·30;—R202,569·89; Cash in Bank—R73·01; total R202,642·90. The Profit and Loss statement shows a balance carried to Landed Property account of R307·07.

AN AMERICAN SCIENTIST ON TOUR.

THE latest scientific visitor we have to welcome to our shores, is Dr. Edwin Mead Wilcox, Travelling Fellow in Economic Botany, of Harvard University, Cambridge, Mass, U.S.A., whose arrival and departure for the hills we chronicled a few days ago. Dr. Wilcox has since his arrival been staying at Kandy and studying the island's products at the Royal Botanic Gardens, Peradeniya, with the ever ready assistance of Mr. W. Nock, the Superintendent in charge. We had at first understood that Dr. Wilcox's visit was partly in connection with the experiments—or continued efforts rather—in tea-growing in the Southern States of America. But this, we learn, is not the case. Dr. Wilcox is making a tour, which is mainly confined to Ceylon, the Straits Settlement and Java, in connection with the project of starting a Sub-Tropical Department in Cuba in connection with Harvard University. The site of the proposed Department, corresponding in a sense—since it will be instituted with Government assistance—with Peradeniya here, will be in the mountains about seven miles from Cienfuegos, one of the two Southern termini of the railway that passes through Havana on the North. The interest of Dr. Wilcox lies chiefly, therefore, in sugar: and he proceeds by the "Bengal" (in about a fortnight's time) to Java, where Dutch methods of cultivation both in this product and in cinchona and tea will receive further study. Meanwhile Dr. Wilcox returns to the hills tomorrow, being specially desirous of visiting one or two cacao estates in full working, as well as of obtaining first-hand information upon tea. He will also, if time permits, make a visit to a citronella plantation in the Southern Province with a view to getting as complete a knowledge (as an eye-witness) of tropical products in full growth, that are likely to be of service in Cuba. Coconuts, we are told, are not expected to be taken up in this latest acquisition of the American nation. *En passant* we learn that the form of Government to be imposed upon Cuba is by no means decided yet; that a certain amount of lawlessness still prevails, reminding those in charge of American interests there of the former *régime* when Spaniards and Cubans by turn would come in bodies and fire a few shots upon the plantation dwellings, only ceasing when money had been given them to go away—then only to return at a convenient season, as did the Danes in Northumbria ere the power of a Saxon king was triumphant on English soil. Even now Cubans interfere much with the working of sugar properties, and the same one-sided guerilla warfare, periodically bought off, is often carried on. Not until more American soldiers can be spared for garrisoning Cuba—and the long drawn-out fighting in the Philippines now repels this prospect into the dim distance—can the exploiting of the fertile soil of Cuba be taken in hand with safety and success. We are gratified to learn that the *Observer* publications are recognised in the American Universities as giving the best book-knowledge to be had of Ceylon, and to hear that the *Tropical Agriculturist* is regularly consulted by

the numerous scientific students with a bent for colonisation and who are interested in the widely-collected information that is there brought together. We wish Dr. Wilcox a successful tour and hope that his impressions of this island may be among the pleasantest and most useful that he carries back with him to Harvard.

INDIAN TEA ASSOCIATION AND LONDON WHAREHOUSE CHARGES.

The following is from the official minutes of the meeting of the General Committee of the above Association, held in Calcutta on the 5th instant:—

Considered letters, of dates varying from 7th to 29th August, from the twenty-six Calcutta Tea Companies, urging upon the Committee the necessity of taking action, in conjunction with the Committee of the Association in London, in order to obtain a reduction of the excessive charges at present levied by Bonded Warehouses in London. The letters had been previously circulated, and the General Committee in their letter of 17th August to the London Committee of the Association had pointed out that the question was being agitated in Calcutta, and had also enquired with reference to the fresh steps it was understood they had in contemplation, the nature of the action now proposed to be taken by the London Committee. Replies had been sent to the letters from the Companies stating that the whole question was under consideration and that the London Association had been addressed in regard to it. Further letters had subsequently been received from certain of the Companies in question, asking to be furnished with a copy of the letter addressed to the Committee of the Association in London.

The Committee also had before them a Memo., dated 29th August, drawn up by the Chairman of the Association on the subject. In this Memo. the letters received from the various Companies referred to were analyzed. It was also pointed out that judging from some of the letters there appeared to be an impression in the mind of the Directors of certain Companies that the question of the necessity for a reduction of the charges had not hitherto been considered by the Committee or at least had been dropped by them. This was of course incorrect, as the matter had been before the Association, both here and in London for some time past, and had been referred to in the Annual Reports, and also in speeches at the annual general meetings and the Committee had uniformly and at every opportunity followed the policy then indicated, and apparently unanimously approved of by members. The Memo. also dealt with other points in connection with the subject, especially with the question of the best course of action to be adopted in order to obtain a reduction of the charges with the least delay. The question was discussed generally by the Committee, and the following conclusions were arrived at:—

(*a*) That further simple agitation, without any counter-proposition in the event of a reduction not being conceded by the warehouse proprietors, would be ineffective.

(*b*) That the best method of procedure would be the establishment of a warehouse, or warehouses, to be worked on co-operative principles by tea concerns.

(*c*) That the agitation in favour of the abolition of the British import duty should be carried on concurrently with any action taken in the above direction.

The Secretary was instructed to draft a letter to the Committee of the Association in London, in continuation of the letter of the 17th August, stating these conclusions and giving the reasons on which they were based.

TROUT BREEDING AT NUWARA ELIYA.

The stewponds at Nuwara Eliya, containing the fry obtained from the last batches of trout ova, have not yet been dragged, owing, says a local "paper," to the present unfavourable weather at the Sanitarium. Having been used to quiet water all this time, it is feared that if the fry are put into the streams serious injury to them may result, and the authorities are therefore awaiting the cessation of the heavy rains. So far, the stewponds have proved a great success, and the experiment has also met with very satisfactory results at Calsay (Nanuoya), St. Leonards (Udapussellawa), and on the Horton Plains. At Nuwara Eliya there are three ponds situated behind the hatchery, and while two of them contain the ordinary fry, the third holds those of the rainbow species. Mr. Elhart who is in charge of the trout, thinks that of the ordinary fry there are about 1,500 and some 200 of the rainbow variety. All are healthy, and range in size from four to six inches. They are fed twice a day with shrimps caught in the local streams, and they take to this food very well. It may be remembered that the amount of rainbow *ova* got out was 10,000. Half of this amount was handed over to Mr. Wilson Wood, of Kotagala; but a large percentage is said to have died in transit. The consignment did not arrive in good condition, and the yield under the circumstances must be considered satisfactory, and the healthy appearance of those in the stewpond at Nuwara Eliya ought to be an inducement to the authorities to get out another consignment. When the next batch of ova is to be got out has not yet been settled; but the annual meeting of the Fishing Club at Nuwara Eliya is to be held next month, when the matter will be considered. We learn that the stewpond at Queen's Cottage has not been a success, and when last dragged there were a very few fry found in it. This is attributed to the spill not being a suitable one. The fry got washed away, and the pond besides is not fenced, with the result that otters have every chance of getting into it. Otters are said to be plentiful now at Nuwara Eliya, and seven or eight have been caught this year in traps. There are about twice the size of a cat, and R7·50 is being offered for each other killed, while traps for the purpose are also supplied. They have not been able to attack the stewponds, owing their being fenced in, but the streams are frequented and the traps are generally laid by the edge of the water.

The Fishing Club generally is receiving good support, and the number of license issued compares favourably with the past year. Mr. W. E. Davidson has spared no pains in attending to the stewponds, and takes the greatest interest in the welfare of the Club.

MINOR PRODUCTS REPORT.

CITRONELLA OIL.—For forward shipment business continues to be done on the basis of 10d per lb, c.i.f., in drums, in quantity. Spot is quiet at 1s to 1s 1d per lb.

CINCHONA.—The shipments from Ceylon for the week ending August 14 were nil, and the total exports from January 1 to August 14, 1899 show a decrease of 170,623 lb., as compared with the corresponding period of 1898. The cinchona-bark auction, to be held in Amsterdam on September 28, will consist of 5,459 bales Ledger and hybridin; 1,349 bales 702 cases Succirubra. The stock in first hands at Amsterdam consisted on September 5 of 2,165 packages Government bark; 8,858 packages private, including the quantity to be put up in the auction of September 28.—*Chemist and Druggist*, Sept. 9.

PREVENTION OF COFFEE-STEALING IN INDIA.

THE PROPOSED NEW LAW.

The publication in the *Gazette* of the draft Coffee stealing Act Amendment Bill marks, says the *Madras Mail*, another step forward in the adjustment of the planter's relations with his neighbours and his fellow men. It is now a quarter of a century since planters first brought to the notice of Government the need for legislation against coffee-stealing, a crime that was said to be "increasing terribly." In 1878 The Madras Coffee-Stealing Prevention Act, was passed. The Bill originally drafted provided that within certain localities, to be notified, it was to be declared unlawful for any person to deal in coffee without a license from a Magistrate, with whom the granting of such license was optional; every licensed dealer was to be bound to keep books and accounts showing details of every transaction in coffee made by him. Penalties were attached to breaches of these provisions, to the dealing in coffee by any person other than a licensed dealer, to the selling or bartering coffee to any person other than a dealer, to the buying of green coffee from any person other than a licensed dealer or owner of a coffee estate or some person authorised by him, to the possession of green coffee by a labourer employed on a coffee estate, who failed to account satisfactorily for such possession, to the removal of coffee from any premises without permission, and to the gathering, removal or loading and unloading of coffee on any estate between sunset and sunrise. In case of a second conviction for certain of the offences specified, flogging was to be awardable, and despite sundry saving clauses regarding purchases for domestic use, the draft Bill was seemingly a very formidable piece of legislation. The planters approved of the licensing system thus provided for, but objected to the limitation to *green* coffee indicated above, and desired certain protective regulations concerning coffee in transit. The Standing Committee agreed to alter "green" to "green gathered," but asserted that the "special protection which the coffee-planting industry might fairly demand could not properly extend beyond the crop on the ground and the harvested crop in transit through the coffee growing Districts." This is the principle that guided the farmers of Act VIII of 1878.

Complaints began as early as 1879, partly because the application of the Act was thought to be confined within too narrow limits. A host of receivers of stolen coffee were officially reported to be springing up. Not until 1893 was the question of amending the provisions of Section 9 of the Act raised, though this was from the beginning the weak spot of the Act. Since 1893 there has been a steady and persistent representation by the United Planters' Association, and the Nilgiri Planters' Association in particular, of the need for amendment of the Act. The matter eventually came before the South of India Planter's Enquiry Committee, and the result was certain recommendations which have now been embodied in the draft Bill. The words "parchment or cherry dried" are now added to Section 9, which will thus run as follows:—

"Any cooly, maistry or other labourer employed on a coffee estate found with green gathered, parchment, or cherry dried coffee in his possession, and failing to account satisfactorily for such possession, shall be liable, on conviction by a Magistrate, to pay a fine not exceeding five hundred rupees."

Provision is also made for the rendering by coffee planters of certain returns, according to forms to be laid down by Government. The object of this is clear. Sellers as well as purchasers of coffee are brought within the scope of the new Bill; and the provision just referred to will enable District officials not only to ascertain, for example, the amount said to have been obtained by a dealer from his own garden or by purchase, and its disposal, but to ascertain also the amount really produced in the dealer's garden. Properly applied, this Section should strike a severe blow at one of the commonest forms of roguery in connection with the theft of coffee and the receiving of stolen coffee.

THE SOUTH INDIAN COFFEE STEALING BILL.

The following is the full text of the Coffee-Stealing Bill published in Madras *Gazette*:—

No. 3 of 1899.

A BILL TO AMEND MADRAS ACT VIII OF 1878 (COFFEE-STEALING).

Whereas it is expedient to amend Act VIII of 1878 (coffee-stealing); it is hereby enacted as follows:—

1. This Act may be called the Coffee-stealing Act Amendment Act.
2. It shall come into force at once.
3. After Section 5 of the Act the following Section shall be inserted:—

5-A. Every person in occupation and enjoyment of a coffee estate who sells, barters or gives in exchange, any coffee shall at the time enter or cause to be entered in a book to be kept by him a true record of such transaction specifying.

(*a*) The name, residence and occupation of the person to whom such coffee was so sold, bartered or given in exchange.

(*b*) The date of the transaction, and

(*c*) The quantity and description of the coffee so sold, bartered or given in exchange.

4. In Section 6 of the Act for the words "Section 5" the words "Section 5 and 5-A" shall be substituted, and after the word "purchasing" the words "or selling" shall be added.
5. In Section 8 of the Act after the figure 5 the figure and letter 5-A shall be inserted.
6. In Section 9 of the Act after the words "green gathered" the words "parchment or cherry dried" shall be added.

TEA IN EAST AFRICA.

From an article in the *Zanzibar Gazette* of the 30th August we take the following:—

Tea.—We have decided to give this product a trial because of the healthy appearance of the tea bushes at Miss Thakeray's shamba, Mbweni, planted by Sir John Kirk. These were pruned down in October and flushed well, bearing enough new growth in two months to form a plucking surface and leave six inches of pruning wood. Half a maund of Horagalla, Ceylon, Assam Hybrid has been obtained and planted in the new nursery at Mpapa and is growing well. This should give us enough plants for six acres, planting five by five, and leave a margin for supplies and distribution.

I don't think that Zanzibar will ever enter the lists as a tea-producing country, even if low country varieties are found to flourish here, as the labour supply is too small and uncertain. The plentiful supply of organised labour in Ceylon is one of the chief reasons why that country has taken the lead in this industry, while Natal is an example where the comparatively adverse conditions of labour have operated unfavourably. In our present unstable condition of labour we could not do more than grow a few acres for local consumption and perhaps induce the Arabs and natives to cultivate a few trees for their own use. Another point to remember is that tea is a declining market and is probably already over: produced.

UNITED PLANTERS' ASSOCIATION OF THE FEDERATED MALAY STATES.

Parts of Minutes of a General Meeting held in the Selangor Club, Kuala Lumpur, on Monday, 14th August.

Present: Messrs. E. V. Carey (*Chairman*), W. W. Bailey, C. Meikle, L. Dougal, C. M. Cumming, W. Coates, H. d'E. Darby (*Members of Committee*), W. Meikle, G. Shepherd, E. B. Skinner, A. Cathcart, W. Irvine, J. H. Power, A. B. Lake, R. C. Tollemache, J. D. Toynbee, M. Stonor, L. Brooke, F. Callaway, A. Barnwell, W. Greig, H. M. Darby, F. B. Hicks and Tom Gibson (*Hon. Secretary*). *Represented by proxy*.—Messrs. L. Hawkins, V. R. Wickwar, James McClymont, Quintin McClymont and W. R. Rowlands.

Plantain Trade with West Australia.—The Hon. Secretary read a letter from the Resident-General forwarding copy of an inquiry from the Secretary to the Department of Agriculture, Western Australia, as to the possibility of exporting bananas from the Straits Settlements to Western Australia. The Chairman said he had replied to the Resident-General's letter giving him particulars as to the area under plantains cultivated by Europeans in Selangor and asking for information as to prices and demand in Australia. A day or two ago he had heard from the Resident-General in reply forwarding copy of a further letter from the Secretary to the Department of Agriculture, Western Australia, giving information as to best way of packing, quantity likely to be in demand and prevailing prices, and from this letter he had come to the conclusion that the suggested trade was such an extremely small business that it was scarcely worth while pursuing the subject any further, and had written to this effect to the Resident-General.

For the information of the meeting he would mention that in 1898 it appeared that 14,000 cases of plantains were imported into Western Australia, and that, roughly speaking, meant 42,000 bunches. 100 acres, planted 20'×20', could safely be counted on giving 43,600 bunches per annum and, as there were about 325 acres under plantains on European-owned estates in the Klang district alone, it must be patent to all that there was nothing in it.

Supply of Para Rubber Seed from Singapore Gardens.—The Chairman said that in consequence of the attitude taken by the Singapore Government with regard to the supply of rubber seed to applicants from the Federated States, he had interviewed the Colonial Secretary in Singapore and had been told that, in booking orders for rubber seed from planters in the Native States, Mr. Ridley had acted without authority from Government, and it was the intention of the Singapore Government to repudiate his action, as all orders for seeds from the Colony must be first executed. In consequence of this it had been decided at a Committee Meeting, held on the 22nd May last, that a sub-Committee consisting of the Chairman, Secretary and Mr. Bailey should interview the Resident-General, laying all the facts of the matter before him for consideration and asking for his advice and support. He (the Chairman) and Mr. Bailey had seen the Resident-General, who said that those applicants who held no distinct promise in writing from Mr. Ridley had only a moral claim against the Government, and he doubted whether it could be enforced, but the case of Mr. Bailey was very different and he did not see how it could be disputed. That was how the matter stood so far, but Mr. Bailey would tell them what his case was and what action he was taking.

Mr. Bailey said that early in 1897 he ordered 500,000 Para Rubber seeds from the Botanic Gardens, Singapore, and on 1st April, 1897, Mr. Ridley wrote saying he would supply him with that number as soon as he could at $10 per 1,000. As he was forming a company to plant rubber in Selangor, he wrote officially to Mr. Ridley on 12th August, 1898, asking him what number of seeds he could supply him with from 1st September, 1898, to 1st. September, 1899, as it greatly depended on the number of seeds available as to whether the company went through or not. In reply Mr. Ridley said he would be unable to supply the complete order from the present crop, but, as he was the pioneer of the cultivation, he would guarantee that he should have half each crop of seed till his orders were filled. The present crop of seed is expected to be 150,000, yet he is now offered only 15,000, which is a very different thing to above promise from Mr. Ridley.

The Resident-General, at the interview mentioned by Mr. Carey, had stated that he had a legal claim and he had already put the matter into the hands of his lawyers.

The Chairman said he hoped the meeting would express their willingness to support Mr. Bailey in his action.

Mr. Lake asked if this expression was meant to imply that the Association should support the action in a monetary sense if necessary.

The Chairman said he certainly considered so, but there was not much likelihood that such help would be required.

The proposal met with the unanimous approval of the meeting.

Proposed Agricultural Department.—The Honorary Secretary read a long letter from the Resident-General in reply to one from the Association urging on him the desirability of forming an Agricultural Department for the Federated Malay States. The Resident-General, while assuring the Association that the proposal is one which has his fullest sympathy, as the benefits to be derived from such a Department, if properly managed, are unquestionable, said the only point to be considered is whether the Federated Malay States can afford the funds required for such a purpose—he points out that the Association is mistaken in supposing that the present high price of tin is making such an increase in the revenue, that, after meeting the charges for railway construction, there are funds available for other purposes. On the contrary, the question is whether the funds can be found to complete the railway by the year 1902, a date which it was originally hoped would see the whole extension completed. The Government, however, has recently begun the organisation of a Forest Department to the prospective value of which they attach very great importance, and it might be possible for this Department to undertake some of the work the Association think should be entrusted to a new Department of Agriculture. The Resident-General further says that the question will receive his best consideration and asked the Association to favour him with an estimate of what the Committee, as experts, consider would be the annual cost of such a Department as they would recommend, for, say, a term of three or five years, showing the approximate area to be cultivated and the probable revenue that might be expected from the sale of seeds and plants.

The Chairman said that the above letter had been considered by the Committee on 22nd May, and the Honorary Secretary had been instructed to write thanking the Resident-General for his obvious sympathy with the request of the U.P.A., particularly with regard to the last paragraph, and informing him that the Committee hoped to submit certain suggestions on the subject at an early date. With a view to doing so, the Hon. Secretary was also instructed to send a circular to all members asking them what particular products they think should be experimented with and what information is wanted. This had been done and a number of replies had been received.

It was quite evident from the Resident-General's letter such a comprehensive scheme as that laid before him originally would not go through, so they had now to confine themselves to the Resident-General's suggestion in the last paragraph. The Committee had gone carefully into this matter and had come to the conclusion that if Government could be got to carry out certain experiments with those products at present of most importance to planters—viz., rubber, coconuts and coffee—great benefits might be derived by the planting community. It must not be thought that the

committee in mentioning these three products only had lost sight of many others which might be of importance, but what was wanted was a start, and he thought all present would admit that the three mentioned were the most important to planters at the present time.

After discussion the Chairman drafted the following resolution, which was proposed by Mr. Bailey, seconded by Mr. C. Meikle and carried unanimously—viz:—"That a letter embodying the views of the different members of the Association be drafted by the Hon. Secretary and circulated amongst the members of the Committee suggesting to the Resident-General that exhaustive experiments dealing with the products named should be undertaken in Perak under the guidance of Mr. Derry; and that a sum sufficient in that gentleman's opinion to put these experiments through in a thoroughly workmanlike manner be provided by the Federated Malay States Government, and that Mr. Derry's opinion be invited as to what the probable monthly cost of such experiments will be."

A Proposed Association for Stimulating the Consumption of Coffee.—The Chairman, in introducing the above subject to the meeting, said he hoped every member would give it his best attention as it was one of the most important that had ever come before the Association. Mr. Hicks had sent him a copy of the *South American Journal* containing the proposed scheme, and on reading it he had been struck with the excellence of the idea.

The suggested scheme of an universal self-imposed tax of five gold cents a bag—equal to about 10 of our cents—proceeds of which would amount to an annual revenue of £125,000, appeared to him so simple and so likely on account of its pressing so lightly upon the individual, to recommend itself to all producers that he thought some action should be taken in the matter and that was the main reason for calling this meeting. The great feature of the proposed scheme was it comprehensiveness, embracing, as it does, the interest of all growers, whether of the high-grade Arabica or the less valuable Rio and Santos and Liberian coffees, which are absolutely identified, and the suggested tax whilst if universally supported, it will provide such an enormous fund, still presses so lightly upon the individual as practically to amount to no tax at all, it was in fact the only workable proposal that had ever been laid before producers of coffee, and he sincerely hoped that the members present would give it their warm approval.

The following resolution was passed:—"That the Hon. Secretary be authorised to forward the *South American Journal* coupon to that paper, signed by the Chairman of the U. P. A.. expressing their cordial approval and warm support of the proposed scheme, and further that the Government be asked, if in the event of the suggested proposal reaching a point where it is ready to be worked upon, they will co-operate by levying a 10 cents per pikul bag tax upon every bag of coffee exported from the Federated Malay States."

Mr. H. M. Darby seconded and it was practically carried unanimously, there being only one dissentient vote by proxy.

Mr. Brooke said he thought the scheme should be made as public as possible and would therefore propose the following resolution—viz.,

"That the Hon. Secretary send copies of the article to all other bodies and associations with whom we are in touch in this part of the world."

Mr. Lane seconded the resolution, which was carried unanimously,

TOM GIBSON, *Hon. Secretary, U.P.A., F.M.S.*

CACAO PESTS.

The "local fly"—I call it the paddy-field fly (writes a planting correspondent from Matale)—is on again. I captured about two dozen at 9 a.m. yesterday from my umbrella, while going through a cacao field. This, I believe, is about its tenth or eleventh appearance since April, 1897, the last being in February this year. Unlike the *helopeltis*, this fly seems to attack everything in vegetation, both cultivated as well as what is growing wild. No wonder this happens just after the paddy crops have been harvested, and lands for chena cultivation are being burnt and cleared all round. Much of the disease in the cacao, and paucity of flush in the tea, as it has been so destructive to my annatto, I am afraid, are all due to the attacks of this insect. To plant life its shadow is death! In April last I sent a specimen of this insect to the Director of the Royal Botanic Gardens, and he sent it on to the Director of the Museum; but neither could say what name it had in the world; and left its solution for Mr. Green after the latter had returned from Europe.

TRAVANCORE TEA SALES.

Average 9·02d. September 15th.

Garden.	Total. Quantity.	Aver. Price.	Bro. Or. Pek. or Flowery Pekoe. Quantity.	Bro. Or. Pek. or Flowery Pekoe. Price.	Pekoe and Unassorted. Quantity.	Pekoe and Unassorted. Price.	Bro. Pekoe. Quantity.	Bro. Pekoe. Price.	Pekoe Sou. Quantity.	Pekoe Sou. Price.	Broken and Souchong. Quantity.	Broken and Souchong. Price.	Fannings, Dust, and Various. Quantity.	Fannings, Dust, and Various. Price.
Travancore ...	777	6·54												
BA ...	8	5¾	—	—	—	—	—	—	—	—	8	5¾	—	—
Bon Accord ...	90 p	6¾	—	—	31	6½	29	7¾	17	6	—	—	13½c	5¾6¾
Ellangy ...	132	5¾	—	—	63	5¾ 6	25	6½	33	5½	3	4¾	8	5½
Great Valley ...	80½c	6	—	—	50½c	6	25½c	6¼	—	—	3½c	5½	2½c	5¼
Isfield T C Isfield...	35 p	6¼	—	—	16	6	12	7	—	—	—	—	7½c	5½
S T T Co Venture	89	6¾	—	—	48	6½	33	7½	—	—	1	5¾	7	5½5¾
Stagbrook ...	202	6¾	51	7 7¾	68	6½	—	—	42	6¼	38	6 6½	3	5¾
Vembenard ...	141	7	15	7¼	38	6¾	55	7½	14	6¼	10	6½	9	6½

In these tables all packages are chests unless otherwise stated. ½c for half-chests; p for packages.

PRODUCE AND PLANTING.

Import Duties on Tea.—A despatch, dated July 12 last has been received at the Foreign Office from H.M. Ambassador at St. Petersburg, reporting that, according to a decision of the Council of the Empire, passed on June 4-16, 1899, and published in the Bulletin of Laws of June 25-July 7, 1899, the following alterations, under the Russian Customs Tariff in respect of the duty payable on tea are, according to the "Board of Trade Journal," decreed: 1, Brick tea, black and green imported into Russia across the European frontier to pay duty at the rate of R11·25 per poud (former duty, R31·50 per poud). 2, Black, flower, green, and yellow teas imported at the frontiers of the Steppe, Irkutsk and Cis-Amur Governor-Generalships to pay duty at the rate of R22·50 per poud (former duty R19·50 per poud). With the completion of the Russian lines of rail to the Pacific the rates of the duty on tea will be subject to further consideration.

Tea Cultivation in the United States.—With reference to the exaggerated statements about tea cultivation in the United States, to which we referred last week, a writer in the "City Press," says: "I wonder what Mincing Lane thinks of the statement that experiments in tea cultivation in the United States have proved a complete success, and that America will in time rival China and Ceylon in its production. I do not know what is to prevent the successful cultivation of tea in the Southern States, but I could not think it likely to be profitable. There is about as much put upon the markets of the world as can be disposed of, and prices rule so low that there seems nothing to gain by further competition. There is, however, another side to the question. From the tea-drinker's point of view the revolution effected by the success of the Indian plantations has not been an unmodified advantage. I have never become reconciled to the flavour of the Indian tea, but have been sufficiently philosophical not to be very much troubled about it. If the American tea should prove to be superior in quality, and delicate in flavour, like the better teas of China and Japan, there may be some chance that its cultivation will pay." It will be seen that it is not from a tender regard for the feelings of India and Ceylon growers that this correspondent has been moved to write. While admitting that the experiments in America are unlikely to prove profitable, he is not averse to expressing a faint hope that there may be some chance for American tea if the growers can only produce that delicate flavour he loves so well. But even this does not demolish his contention that the cultivation of tea is not likely to pay.

Pushing China Tea.—The attempts made to revive the taste for China tea take various forms. The following, referred to by a correspondent of the "Liverpool Courier," refers to one of the latest of these. He writes: "It is the universal practice in London—and for anything I know to the contrary it may be the universal practice in the provinces—for hotel-keepers and publicans to designate the best liquors which they retail by the glass as 'special.' Hence the customer will call for 'a special Scotch' or 'a special Irish,' and even if he calls for a glass of port or sherry he will probably be asked if he wants 'special.' I mention this because it partly explains a significant little incident in my recent experience. I went into an unlicensed restaurant and called for a pot of tea. 'Special tea?' at once queried the dainty maiden in attendance. I was rather surprised and amused, for with a wide experience of such establishments I had never heard that question asked before. 'What do you mean by "special" tea?' I inquired. 'Why, good tea—China tea," she answered, with a strong emphasis on the word China. Of course I ordered the special tea, and, served as it was with the accompaniment of cream, I found it very well worth the extra charge of twopence. The incident set me upon making special inquiries, and as a result I find that the incident is simply the sign of a reaction against Indian and Ceylon teas and in favour of China tea. Having always used China tea in my household, and being familiar with its greater delicacy and superior hygienic qualities as compared with other teas, I rather wonder the reaction has not begun sooner. It has been hindered by the higher price of China teas which, taking them grade for grade, are about one-third dearer, whilst the very best qualities of China tea are more than double the price of the best Indian and Ceylon teas. Then, too the average housewife does not understand that China tea, especially if it is good, requires a minute or two longer to infuse. I now learn, however, that in the best hotels and the best houses in London it is China tea that is generally used, and that medical men are more and more advising their patients to give it the preference."

The Profits of Tea Retailing.—The "Grocer" quotes from a handbill issued by a London tea retailing concern, in which is the following: "Remember—tea is sold at a price within the reach of all, viz., 2s per lb. Owing to its immense strength and fine quality it will go twice as far as many ordinary teas, and is therefore cheaper. The —— Tea Company, Limited (incorporated under the Companies Acts, 1862 to 1898), will pay to every woman who becomes a widow the following sums of money: If, at the commencement of taking tea, the husband is under thirty years of age £30; forty, £25; fifty, £18; sixty, £12; seventy, £7; provided she has purchased a half-pound of tea for the five consecutive weeks prior to her becoming a widow. Customers who purchase a quarter-pound of tea weekly will receive half the above sums. In the interest of bona-fide customers the Company require that the husband shall be proved to be in good health at the commencement of the continuous taking of the tea. Quarter benefit in five weeks, half benefit in six months, full benefit in twelve months. List of moneys paid with the names and addresses of the widows who have received the benefit, can be seen at the registered offices of the company in London or at any of the company's branches."

Jyree Tea.—"By the kindness of Mr. G. S. Peterson, of Weston-super-mare," says the "Kew Bulletin," "we have received a sample of this so-called tea, and find that it is made of leaflets apparently belonging to some species of Acacia. Mixed with the leaflets are petals which may well be those of a Cassia, and a little ordinary tea had been added to one sample, but Mr. Peterson says that such is not always the case Jyree tea is the name under which this mixture has been offered for sale in Britain. It is of Indian origin, probably from Madras, and cannot as yet be said to have any extensive use. 'Jyree,' we are informed, is a name derived from that of the native servant of an Anglo-Indian who claims to have discovered its virtues. 'Jyree' oil is said to be a cure for aches and sprains; 'Jyree' soap is said to soften the skin, and 'Jyree' may be used, too, for softening leather."

THE CHARGES ON TEA.

Elsewhere we refer to the question of Customs rates and Warehouse charges. Upon the subject of bulking in London, a correspondent, signing himself "Planter," in the course of a letter which is an indictment *inter alia* of the agency system, so far as charges, commission, &c., are concerned, which we do not think it necessary to print in its entirety, says: "Notwithstanding the most painstaking personal supervision of this operation, which I carried out at the factory for years, break after break of tea was reported from London as irregular in quality, necessitating rebulking there, and I ultimately gave up the practice and packed each day's manufacture separately. In the light of observation made during the past two years in London, it has become quite evident to me that my agents have not supported my efforts to the extent I, as manager

of the estate, or as a shareholder, am justified in expecting of them. It is obviously against the interests of companies selling in London to have their teas bulked there, as the charges are heavy, and besides the teas deteriorate in quality from the operation, and it is surely the duty of the home agents to see that those charges are avoided. They, however, say the broker is the responsible party, and if this connection be correct, then on what grounds do they—the agents—claim to earn the 2½ per cent commission on gross sale proceeds of tho teas. My agents charge 2½ per cent at Calcutta and 2½ per cent on this side."

"The Geisha" up to Date.—An Anti-tannic Tea Infuser Syndicate has been formed to exploit the merits of a patent teapot, the invention of Miss Bain, and as one of the means to that end, arrangements have been entered into "to supply by cable notice sixty Geisha girls who would serve tea in full Japanese costume." Whether Japanese tea is to be served from tho teapot or whether Indian and Ceylon teas will be considered good enough does not appear from the circular issued to the shareholders. This circular, which extols the merits of the "Geisha" teapot, mentions that it "should more or less cause a revolution in the liquid tea trade, and be placed in the heart of every household. Being a source of novelty as well as utility, it should also open up a splendid field for advertising. It is our intention," says the circular, "to take advantage of this means of profit by introducing so many thousand teapots to the public, as, for instance, the Lyons, the A.B.C., Slaters, Limited, or any other large company that will remunerate us for such advertisement without disfiguring the article. With regard to the dry tea trade, we intend to manufacture specially-designed pots, such as the Tower teapot, Mazawattee, &c., and to sell to all agents who deal in these particular brands of teas, so that their advertisement will always be under the immediate eye of the user. The Carpetto Syndicate have kindly consented to push our concern to the best of their ability, and as they are more or less working in every theatre, restaurant, hotel, music-hall, mansion, club, &c., their aid should prove invaluable—in fact, they are now putting the 'Geisha' before the Gordon Hotels, London and North-Western Railway and others with a view to supplying them throughout. It is reasonable to suppose that, if the A.B.C. could form such a gigantic concern on aerated bread, an article such as we possess must eventually prove to be nucleus of the liquid tea trade. We hope at no very distant date, if successful, to place before the shareholders a group of City shops, which we have well in hand, with a view of working them on the lines of a

'GEISHA' TEA-HOUSE.

Our chairman has also entered into negotiations with Japanese agents to supply by cable notice (if necessary) sixty Geisha girls, who would serve tea in full Japanese costume. The absolute novelty of this idea, combined with a better and healthier cup of tea, should prove very lucrative to the syndicate if they think it desirable to take the matter up. An attractive display of 'Geisha' teapots is on view at the Greater Britain Exhibition, Earl's Court, and inquiries are daily reaching the office from various parts of the country asking where these teapots can be bought in London and the provinces. It is gratifying to report that the 'Geisha' has been awarded the Exhibition gold medal. We have quite unexpectedly executed a trial order from Paris for teapots, and are now packing several teapots in completion of a repeat order from Messrs. Cooper, Cooper and Co., Limited, London, which firm has now had over 2,000 teapots within the past few months. Several china and earthenware manufacturers have applied to us for permission by license to manufacture for sale to their own customers our patent teapots, for which they offer to pay royalty from 4d to 4½d per pot. For the present we have considered it prudent to grant only one license, and in that instance we have restricted the output to 100,000 teapots, which must be sold at prices and discounts uniform with our printed lists. We are at present considering offers from foreign manufacturers to make and sell in foreign markets; it is also our intention to have our teapots made in Japan at very low cost, and sample patterns are now on their way out."

The Teapot and the Tea.—As regards the effect of the teapot on the tea, a report from Mr. George Combe Stewart, F.C.S., M.B.P.C., &c., public analyst and consulting chemist at the County of the City of Glasgow, says: "I hereby certify that I have carefully tested, in a practical manner, an ordinary teapot fitted with the tea infuser and separator (Bain's patent) which was submitted to me. I have also read the descriptive pamphlet which you have issued to the public, and I am of opinion that there is nothing stated in the pamphlet which the performance of the apparatus does not fully justify. The following points, which are not mentioned in your circular, were brought out by me in my experiments—namely: 1. It is a considerale saver of tea over the ordinary methods of tea making as now practised in this country. Given a teapot large enough for a family meal there would be no necessity for second infusions, the last cup served being as free from tannic acid as the first served off. 2. It thoroughly filters the infusion, allowing no sediment or powdered tea to be found in the beverage, and uniformly insures a beautifully clarified and refreshing cup of tea. 3. It allows the boiling water to be kept in contact with the tea leaves just the exact and proper time for extracting all the theine, allowing none of the bitter elements to go into solution."—*H. and C. Mail*, Sept. 22.

COFFEE CURING.

MR. JAMES WESTLAND'S LETTER.

Planting Opinion to hand contains a copy of a letter addressed by Mr. James Westland, of Gammaduwa, to the Secretary, United Planters Association, of South India, and forwarded through the Ceylon Planters' Association. The greater part of it is devoted to a description of coffee curing in Ceylon, which need not be reproduced; but the beginning and end of the letter is as follows:—

Sir,—In today's paper appears your resolution inviting information from members of your District Associations as to the result of any special system adopted in the Curing of Coffee on Estates. Although not a member of your Association, I have been a long time connected with coffee growing, and have had some experience as a Coffee Estate Manager during my nearly thirty years' residence in Ceylon. My system of curing coffee on the estate may be the system generally adopted by Indian planters; if so, you will know how to treat this, but should it be slightly different from that in general use. I think it will pay your coffee planters to closely follow my system, which I carried out on Golconda from 1872 to 1888. Old sale lists will prove, with what result. . . . . . .

Coffee dried slowly, and given a half-day's sun a day or two previous to despatch, will, when finally cured, be a far prettier bean than coffee cured by two or three successive days in the sun. It may help you to realize the importance of the system if I mention, at the risk of appearing egotistical, that the owner of an extensive property in Haputale gratefully acknowledged these hints, and gave me, through his son who was then the President Manager, a present of a cheque for R250, because of the result from his adopting my system of curing, and afterwards, on every occasion his son left for England, I had the

supervision of his large property in addition to my other charges. It may also interest you to know that in Ceylon there is a coffee sieve known as Westland's Sieve Plate, made by Walker & Sons, Kandy, which is recognised as a very useful style of sieve to have on one's Pulper. It has oblong instead of round holes, and allows almost no cherry to pass unpulped.

This letter is written solely with the object of aiding my brother-planters who are still trying to make the most they can out of coffee, and you are welcome to make any use of it you think fit.

LOCAL TEA REPORT.

(September 1899.)

[TARRANT, HENDERSON & CO.]

Total number of packages offered during :—

	1899. pkgs.		lbs.	1898. pkgs.		lbs.
Jan. ..	40,704	equal.	3,196,299	48,698	equal.	3,855,261
Feb. ..	30,685	,,	2,426,407	27,105	,,	2,130.761
Mar. ..	43,109	,,	3,422,100	29,953	,,	2,359.291
Aprl. ..	34,029	,,	2,698,200	32,243	,,	2,562,835
May ...	56,082	,,	4,363,099	45.555	,,	3,631,532
June ..	41,720	,,	3,253,196	56,184	,,	4,451,588
July ..	41,930	,,	3,287,569	39,159	,,	3,077,724
Aug. ...	45,253	,,	3,393,269	41,899	,,	3,181,581
Sept. ..	36,786	,,	2,884,707	30,703	,,	2 403.584
	370,298		28,924,846	351,499		27,654,157

MARKET.—Throughout the month has been very firm with an upward tendency, and closing prices for the month showed a distinct advance over closing rates in August.

QUALITY.—Shows improvement.
WEATHER.—Generally unfavourable for growth.
EXCHANGE.—Firm.

GENERAL.—Statistically the position of tea throughout the world is generally strong, and, judging from present prospects, the output of both Ceylon and India is likely to continue on a moderate scale. There is evidently every reason for presuming that prices, particularly for common kinds, will remain firm until the end of the year.

MOVEMENTS OF TEA IN LONDON DURING AUGUST, 1899.

	Imports. lb.	Deliveries. lb.	Stock. lb.
Ceylon ..	9,413,876	8,633,180	24,373,006
Indian ..	13,472,938	10,015,542	28,474,353
Java & China ..	4,826,966	3,414,857	18,093,689
	27,713,780	22,063,579	70,941,048

SHIPMENTS TO THE COLONIES COMPARED WITH THE SAME PERIOD 1896-98.

	1899. lb.	1898. lb.	1897. lb.	1896. lb.
Jan. ..	825,457	1,290,955	956,977	775,127
Feb. ..	1,740,632	1,031,972	787,916	934,018
Mar. ..	923,463	1,151,687	1,279,468	1,444,466
Apr. ..	1,315,033	1,184,076	1,235,369	937,661
May ..	1,244,660	1,832,110	1,500,345	1,146,872
June ..	1,418,146	1,561,280	983,361	1,261,555
July ..	1,586,5C3	1,129,211	967,546	776,557
Aug. ..	1,647,010	1,179,516	1,077,555	647,463
Sept....	1,497,831	904,218	954,263	709,811
	12,198,735	11,265,025	9,742,800	8,633,530

EXPORT OF CEYLON TEA AS PER CHAMBER OF COMMERCE PRICE CURRENT DATED 3RD OCTOBER, 1899.

		1899. lbs.	1898. lbs.
To United Kingdom	..	76,887,609	74,534,260
,, Australia	..	12,222,006	11,258,725
,, America	..	2,219,553	1,816,009
,, Russia	..	2,719,244	1,914,486
,, Germany	..	289,578	267,619
,, France	..	76,014	61.519
,, India	..	417,300	864,622
,, Holland	..	22,874	22,631
,, Africa	..	231,088	301,740
,, Other places	..	1,414,852	1,159,810
	Total	96,500,118	92,201,421

MINOR PRODUCTS REPORT.

(*Chemist and Druggist*, Sept. 16.)

QUININE.—Dull and easier. Quotations in second-hands, have dropped about ¼d per oz. Today's quotation is 11½d per oz. spot (with buyers at 11¼d) and 11¾d for December delivery, which figure has been paid. Makers' prices are unaltered.

CINCHONA.—At auction on Tuesday supplies were again small, amounting to 1,907 packages (including 729 packages all more or less damaged by smoke in the late fire at Bull Wharf). The demand was quiet, although the bulk was disposed of at lower rates, or generally on a unit basis of 1⅛d against 1⅜d in August and 1⅙d at the last Amsterdam auctions.

CARDAMOMS.—Meagre supplies were catalogued today, consisting mostly of Ceylon-Malabars, for which there was no demand. The following rates were paid:—Ceylon-Mysore, dull bold long bleached 2s 8d to 2s 9d ; medium ditto 2s to 2s 2d ; small ditto 1s 10d ; splits and pickings 1s 5d. Ceylon-Malabars, medium lean brown 1s 8d. No seeds were sold publicly. Some of the parcels offered were not on show in time.

The shipments from Ceylon for the week ending August 22 were 6,711 lb.

SALE OF A COFFEE ESTATE.

This afternoon at Messrs. Powell and Co's sale-room, the valuable property known as the Silian Coffee Estate, about ten miles from Port Dickson, was put up for auction. This freehold property which consists of about 2,000 acres, together with buildings thereon, was disposed of to Mr. Rahmin for $8,500.—*Singapore Free Press*, Sept. 28.

THE INDIAN TEA TRADE, Mr. O'Connor in his review of the Trade of India in 1898, has a word of encouragement to say to those tea planters who are beginning to cry out about the decline in their industry. He points out that last year the outturn of Indian tea was the largest on record, giving a total of 157 million pounds, being more than double the quantity exported thirteen years ago. When a limited market is found in conjunction with an unlimited supply, the inevitable result is a heavy fall in prices. Yet Mr. O'Conor would not have the Indian planters give way to despondency. He recalls the fact that it took Indian tea twenty years to drive Chinese tea out of the market, and he reminds us that Indian tea is at present consumed in a comparatively limited area. A very large proportion of the white race of the world does not yet consume tea. In France, for example, the beverage is still used only for medicinal purposes. Mr. O'Conor warns the planters that in their efforts to force their way into these huge untapped markets they must be prepared for a struggle as strenuous as that undertaken by them when they entered the lists against China tea. But with courage and perseverance there is no reason why they should not forge ahead.—*Times of India*, Oct. 4.

CUSTOMS AND WAREHOUSE.

We append the Custom House rules as to teas bulked in London, and the warehouse charges on tea, which will be of special interest at the present time.

The difference between bulking, which costs 1s, and bulking and taring, which costs 1s 5d per chest of 129lb. gross, is 5d, a heavy item to pay for simply weighing an empty package. Ceylon bulks only 28 per cent of its import in London, while India bulks about 90 per cent here, thus increasing the cost of laying down its tea considerably, instead of following the example of its younger rival and completing the work on the factory. China and Java always put their tea on the market in a finished condition, while in India only a very small proportion of the planting community seem able to do this. The trade (including Lipton) all admit that they much prefer garden bulked tea (if it is properly done, of course), as it saves the tea from being exposed to much injury to its keeping qualities. Where the bulking is done here the tea suffers, while the lead lining of the box is almost destroyed. Before long it will be absolutely imperative that all the work be done in the factory, thus saving London charges. The example of the few Indian tea companies which bulk on the garden might with advantage be followed by all. They seem to have no difficulty in carrying out the process, or in securing even tares:—

GENERAL ORDER, CUSTOM HOUSE, LONDON, DECEMBER 22, 1894.

TARING OF BULKED TEAS.

Officers are informed that paragraph 62 of General Order 127, 1892, in regard to the taring of Indian, Ceylon and Java teas, has been cancelled, and that the following regulations are to be observed instead thereof:—

In the case of teas bulked in warehouse, for which average tare has been allowed prior to the operation of bulking, that tare may be retained, provided the packages which were selected for taring on taking the landing account did not vary to a greater extent than 2 lb; or the actual tare of each package may be taken at the time of bulking.

If the selected packages varied to a greater extent than 2 lb, each package must be tared at the time of bulking.

All copies of G. O. 127, 1892, are to be noted accordingly.

By order of Board
JOHN COURROUX.

GENERAL ORDER, CUSTOM HOUSE, LONDON, FEBRUARY 11, 1899.

REWEIGHING OF TEA AFTER BULKING ABOLISHED; AND AMENDMENT OF GENERAL ORDER 107, 1894; AND CODE PARAGRAPH 441.

The Board direct that the general practice of reweighing tea after the operation of bulking be relinquished, the usual request for permission to bulk parcels of tea being still required as hitherto. In order, however, to maintain the principle of a check on all operations in bonded warehouses, the surveyors at the tea stations will occasionally as a test-check in the ordinary course of their daily visits call for the production and reweighing in their presence of some of the packages of tea after bulking and refilling. The board further direct that the regulations contained in General Order 102, 1894, as to the taring of bulked Indian, Ceylon, and Java teas be amended as follows:—

Delete the words—

If the selected packages varied to a greater extent than 2lb each package must be tared at the time of "bulking";

and substitute the words—

If the selected packages for an average tare vary to a greater extent than 2lb, and the surveyor be satisfied that the difference is only exceptional, an actual tare may be taken for the exceptional package or packages, and an average tare given for the remainder of the bed by selecting other packages in lieu of those rejected: provided that the warehouse keeper also agrees to the course adopted.

The Board further direct, in concurrence with the Board of Inland Revenue, that the provisions of Paragraph 441 of the Warehousing Code, which will be affected by the abolition be amended accordingly, by deleting the words—and payment to the collectors of a deposit sufficient to cover the expense of the officer re-weighing.

Copies of general orders, 127, 1892, and 104, 1894, and of the code, are to be noted accordingly.—By order of the Board, (Signed) R. T. PROWSZ.

BONDED TEA WAREHOUSES.

CHARGES ON TEA.

To apply to all parcels by ships reporting on and after July 1st, 1888, and to New Season's China tea arriving prior to date.

PACKAGE WEIGHING GROSS.	Not exceeding 16 lb.	17 lb. to 34 lb.	35 lb. to 44 lb.	45 lb. to 59 lb.	60 lb. to 79 lb.	80 lb. to 89. lb.	90 lb. to 129 lb.	130 lb. to 159 lb.	160 lb. to 199 lb.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	e. d.
Landing and Housing Rate ..	0 3	0	0 10	1 0	1 3	1 4	1 6	1 10	2 3
Management Rate ..	0 4	0 7	1 0	1 2	1 5	1 8	1 10	2 3	2 9
Bulking and Taring ..	0 4	0 6	0 8	0 11	1 2	1 3	1 5	1 8	2 0
Bulking, Taring or Weighing net separately ..	0 3	0 5	0 6	0 8	0 10	0 11	1 0	1 3	1 6
Rent per week ..	0 0¼	0 0¼	0 0¼	0 0½	0 0½	0 0½	0 0½	0 0¾	0 1

Discount 10 per cent.

The above rates are chargeable on the average gross weights on each break. When the fraction of the average weight is half a pound or more the higher rate will apply. Thus: The average of a break being 79½lb gross, the whole break will be rated at 80 to 89lb, but the average being less than 79½lb the whole break will be rated at 60 to 79lb —*H. C. Mail* Sept. 22nd.

Correspondence.

To the Editor.

THE LATEST ABOUT RUBBER.

London, Sept. 7.

SIR,—It may interest many of your readers, now that "India Rubber" is coming to the front, to know that we have received an important drawing and full particulars of the experience with this—*castilloa elastica* seed. In one case the seed had been planted in the shade, as was suggested and is adopted generally; the other was planted in the open. I had hoped to send you a photograph by this mail of a drawing which has been sent to us. I may tell you that the description at the foot of the drawing reads as follows:—

"Rubber plant raised from seed grown in open ground in full sunlight, 1st July 1898—measured and sketched 3rd July 1899, circumference of stem one inch above ground 5⅝ inches, height of topmost branch 4ft. 2 in., spread lateral of branches 5ft." Alongside of this "large tree" are three others, "average sized plants of many thousands sown in forest shade 3rd July 1898—sketched and measured 5th July, 1879, height 1 ft. to 14 inches. Leaves larger than plants sun-grown, but stems very slender and will not bear transplanting into sunlight.

I send you a small drawing showing the difference in the size of the stems, but this will, I hope, be very clear when the photographs are printed.

There is another point that I would like to refer to: in your last number of the *Tropical Agriculturist* you state that you are not aware if one of the new rubber machines has been sent out to Ceylon. As far as we know, none have been sent to Ceylon. The work was first done in the West Indies, then in Brazil, and, as they have been found to answer, the demand is much larger than the supply and we have to beg of those who have had machines to be moderate and patient, because we think they cannot require such a quantity at once. We are endeavouring to send out machines to new countries when applied to, as they are very simple and inexpensive.

As your paper is so widely read, there is another event which has occurred this week which may be of interest to your readers. It has been known now for some time that there is on the East coast of Africa a plant, the root of which cures blackwater fever, this quotation on the authority of an English surgeon who has well worked out the subject. He has sent home a hundred pounds of this root, which is evidently a plant of the acacia tribe, judging from the pod which arrived, in a rotten state, in the package. We have treated a certain quantity of this root in one or two ways, so as to bring it as near to the fluid extract as possible, because the surgeon stated that when he first found this bark it was to cure one of the native bearers on an expedition, and thinking that the man would be dead in the morning he spoke to the head man in charge of the coolies, when to his surprise he said: "Oh, the man will be perfectly well in the morning; I will give him a dose." He went with this man, dug up the roots, and watched the roots boiled down and the decoction given, and the result was as indicated, the man was well in the morning and able to carry his load. A supply of roots having been secured, they were tested on the East Coast and in every instance found to be efficacious upon Europeans.

We are sending out some of this fluid extract to be tested in cases of yellow fever in Brazil, and we are supplying different parties who have establishments on the East and West Coasts of Africa.—Yours truly,

THOS. CHRISTY.

RUBBER PREPARATION: THE NEW MACHINE.

London, Sept. 15.

DEAR SIR,—Having seen the note in your issue of Aug. 1st, I have pleasure in sending you herewith a drawing of our "Beta" Rubber Machine, and at the same time directions for working. It will no doubt be of particular interest to you to hear that with this machine Para Rubber can be coagulated with ease. The enclosed piece of rubber is cut off from a sheet of Castilloa Elastica as turned out by the machine. You will see of what particularly good quality it is. The price of this apparatus is £6 10s 0d including five spare sieves.

Up to now there has been a great divergence of opinion as to the proper method of laying out plantations of Castilloa Elastica, and I have this week received some valuable information on the subject from several English gentlemen who have established large plantations in Southern Mexico. They tried the two ways of planting which are in vogue: first, planting out the young trees in places partly cleared in the forest, and secondly, planting direct in the open sunlight without any shade at all. The results are quite extraordinary. Those sown out in the open in full sunlight on July 1st, 1898, when measured on July 3rd, 1899, had a stem the circumference of which was, one inch above the ground, 5⅝ inches, the height of the topmost branch being four feet two inches. These measurements were taken from an average plant.

An average plant of 11,000 sown in the forest shade on July 3rd, 1898, measured. on July 5th 1899, height between 12 and 14 inches, and the circumference of stem 1¼ inches.

What was particularly noticeable was that these plants, when transplanted into the open on account of their doing so badly in the forest, very soon died.

I trust by next mail to send you a photograph of the drawings, as a glance at this would show at once the extraordinary difference.—Yours truly,

GILBERT CHRISTY, F.L.S.

DIRECTIONS FOR USING THE "BETA" RUBBER MACHINE.

1.—The latex as brought in from the field must be mixed with 50 per cent. of clean water and then passed through a fine copper sieve to remove particles of bark, &c., &c.

2.—Pour the latex into the upper part of the machine or washer, turning the handle quickly. Have an assistant to pour in water continuously, so as to wash the latex through the wire gauze sieve which is fixed in the base, until the lower vessel is full. Then pass on to the next in turn, and fill up as many vessels as may be in use.

3.—The sieve must be removed and cleaned when required, by washing in clean water.

4.—Allow the vessels to stand until the rubber has risen like cream to the surface. When it is ascertained that the rubber has all come to the surface, draw off the

liquid from below, by opening the tap, until the liquor is seen to contain particles of rubber. Then stop and fill up again with clean water by pouring it into the aperture which carries it below the rubber at the base of the vessel. Perform this operation three or four times, or until the rubber rises white and clean. No loss of rubber occurs if the operator is careful to let the rubber all rise to the surface before drawing off the water.

5.—When the water is let off for the last time, some of the rubber will pass before the upper surface is sufficiently drained. This should be caught and returned to one of the vessels where washing is going on for the first time. The thickened cream or latex must now be poured into gauze sieves and set to strain over vessels holding water, so that no rubber may pass through and be lost, and this draining may also be returned to the washer.

6.—Allow the latex to stand in the sieves, occasionally filling up with washed latex until full. When fully drained the latex will coagulate of its own accord, and may be turned out in cakes or sheets. The drying of these sheets may be assisted by passing them through wooden rollers, and the sheets should be completely dried by passing through each a loop of twine, and suspending them in an airy place.

7. If it is required to hasten the process, a coagulator may be used, but better rubber is produced by simple evaporation.

8.—The parts of the machine must always be well cleaned immediately after use, as this operation becomes difficult if the rubber is left to harden on the sieve or the sides of the vessels.

9.—By keeping plenty of water with the latex during washing, any partial coagulation is prevented and a better class of product results. Latex mixed with water will stand without coagulating for 48 hours, without affecting the quality of the rubber produced.

10.—Rubber 9 produced by this process will keep longer, and, is of far better quality than by any other process, as all the matters likely to deteriorate the quality are removed by the frequent washing.

T. Christy & Co., 25, Lime Street,
London, England.

PLANTERS' ASSOCIAION OF CEYLON.

CEYLON TEA IN GERMANY:
MR. J. H. RENTON'S REPORT.

Kandy Sept. 20.

Sir,—I enclose for favor of publication copy of Report by Mr. J. H. Renton on the subjects of Ceylon Tea on the Continent of Europe and the Paris Exhibition,—Yours faithfully,

W. D. GIBBON.

Bukeburg, 15th Aug. 1899.

My Dear Lane,—I shall be in Ceylon, I daresay, as soon as this reaches you ; but it is as well you and the "Thirty Committee" should have a report on Ceylon Tea in Germany, as I have made exhaustive enquiries during my stay in Bremen, Hamburg and Berlin.

CONSUMPTION OF TEA IN GERMANY.

I was quite under the impression that the consumption of tea was increasing. It seemed to *me* to be more drunk. I have seen many more advertisements of tea than formerly, and that in the largest towns there are shops that sell only tea and coffee, seemed to me indicate a greater consumption of the article. The importers in Hamburg and Bremen, as well as the largest retail dealer in Berlin, assure me this is not the case. The importation of tea has increased, but this is entirely due to the increase in the population, and in fact that though the increase in imports has been an average one of from 10 to 15 per cent per annum for the past five years, the consumption per head, is not what it was 20 years ago. Though in Southern Germany the consumption may have grown a little, it has fallen off in some parts of Northern Germany, being displaced by beer and coffee. The reasons for the non increase in the consumption of tea are various—first during the past two years is the great cheapness of coffee. You can get good coffee ready roasted for 1s per lb. : this is after paying duty. The large turnover in coffee and competition compel the retailer to sell it fairly cheap. But in tea, there is a small sale and the retailer will not trouble himself with sale of the same unless he makes a good profit. In tea, the retailer must have his 33 per cent. the dealer his 15 per cent. and the importer his three per cent.; they won't work for less : there is a duty of 6d per lb. on tea. If tea is to reach the masses it must be retailed at lowest at 2s per lb., but with a 6d duty, and charges varying from 60 to 65 per cent. There is, you will see, not much chance of a *good* tea being sold at this price, how then can the frugal housewife get a good tea for 1s 6d ? Second, the non-staying power of tea : the average German takes only coffee, rolls and butter, to breakfast. At 1 o'clock he is ravenous on tea, but if he has had coffee he goes on much longer. Third, the difficulties in the way of the preparation : fresh boiling water, and a 2d tea pot. Tea is in 99 cases out of 100 not properly made, and the man who has tried it, once and liked it, when on the second and third occasions he gets a bad cup, gets disgusted and goes back to coffee. Fourth, the large increase in the production and consumption of beer. My lady friends in Hamburg tell me that in the days of their mothers and grandmothers it was considered very bad form for a lady to drink beer in the evening; now although tea is always prepared and there 70 per cent. of the ladies drink beer and wine. As regards the

CONSUMPTION OF CEYLON TEA,

it is used and used entirely for blending. Both the importer and retailer are of opinion that it will never be drunk by itself. Our medium and common teas are not in it, they say with other kinds ; they are flat and dull. Our good teas are liked, but are much too bitter and harsh to be drunk by themselves. The German Customs, in their returns, make no distinction in the country of origin. The largest importer in Bremen, gave me it as his opinion that about two-thirds of the total tea imported, was from China, and the other one-third Indian, Java and Ceylon ; and he considered that Ceylon had fallen off during the past two years, owing principally to the fact that Indians and Javas were relatively of much better value. Java teas had improved immensely. Their leaf was always good, but the liquor instead of as formerly being mere dirty water, now contained both strength and flavour. I myself was much surprised to see what very good teas indeed were being

SENT FROM JAVA.

This importer was emphatically of the opinion that Javas and Indians lent themselves much more easily for blending purposes than Ceylons, He dilated, and so did every one, I met on the non-keeping quality of Ceylon tea. This is an old and general complaint and I think it would be really worth our while to try, if Mr. Bamber can give us any help on this point,

Another importer placed the consumption of Chinas in Germany at three-fourths of the total import, and other kinds one quarter only. As regards a campaign for the pushing of Ceylon Tea in Germany, I found all the importers indifferent and some of them distinctly hostile. Some of them (personal friends of my own) seem to regard my mission as one meant to take the trade out of their hands and to transfer it to the retailer and wholesale dealer. My assurance to the contrary seemed at first to have little effect. I assured all these men that I wanted to work with the trade, and through the trade entirely. After a deal of conversation, I believe, I have got

TWO HAMBURG IMPORTERS,

and one Bremen one, to work with me. The two former will think the matter over, while the Bremen man is to get a series of well-written illustrated articles put in the illustrated newspapers, and further short articles in the other papers. I am to send him a supply of photos for this purpose. I have made it clear that we are quite as willing to assist their clients to advertise Ceylon Tea, as we are to assist Hagenbeck & Co. Hagenbeck's advertisements have evidently made a great deal of impression, but most of the importers think it is money thrown away, and hold that the immense amount of money spent will not be compensated for by the amount of business done. However, the very fact that his advertising has drawn the attention of the whole of Germany to him and his tea is significant.

HAGENBECK AND CO., BERLIN, AND THEIR WORK,

This firm have taken up Ceylon Tea, and pushed it on through business lines and with a vast amount of energy. They have only an office in Berlin, their warehouse is in Bremen, as is also their packing establishment. Their mode of work has been as follows:—Their travellers have visited 67 big towns in Germany. Prior to his arrival the town is placarded with posters and the dealers in that town and district receive musters of his teas. In every district he has now an agent or rather dealer and the dealers and travellers in turn take his teas round to the grocers. He works in tea and Ceylon Tea only. In addition to the 67 large towns his travellers have visited 37 smaller towns in Germany. I have of course not been able to verify this statement about the travellers, but their books show the following expenditure from time they started till 31st July:—

			Marks.
(1)	Placards in 67 towns. Advertisements in 31 papers. Cost of postage 165,000 for samples. 275,000 post cards with views. 100,000 circulars. Six particular posters. 3,000 transparencies. 40,000 post cards from Colombo ...		4,2700
		Marks.	
(2)	Two travellers ...	14,000	21,100
	Three Warehousemen..	3,500	
	Two clerks ..	3,600	
(3)	Rent of Warehouses in Bremen. Offices in Berlin. Furnishing of do. do.		6,600
(4)	Purchase of 92,000 lbs. tea ...		40,000
			110,400

or say £5,520 or in advertising alone £2,135, against which we have given them £750. (Since this was written payments have been given for £907 1s. 0d. being one-third of £1,154-7-5 and one-third of £1,566-15-6, in addition to the £750 grant, 5,000 lb. of tea for free distribution and R2,875·24 for duty.

Receipts:—		Marks.
£750 from Thirty Committee	..	15,000
Sales of 30,000 lb. tea	..	14,000
Profit on do	..	1,400
	..	30,400
Deduct receipts from Expenditure leaves a balance of	..	80,000
Less value of 15,000 lb. tea sold but not delivered, and 47,000 lb. tea bought, but not sold	..	26,000
		54,000

or £2,700. being balance of money imported by Hagenbeck & Co. in first nine months. In other words they have up to date put £4,000 into the business. They are strongly of opinion that they must go on with their advertising and think it would be unwise to stop. I have pointed out that all those other articles of consumption which are so extensively advertised give a large profit to the manufacturers probably over 100 per cent—and they can well afford to advertise, but that our funds are limited and that we do not profess to advertise to this extent. Herewith summary of their estimate for six months advertising to be undertaken now:—

		Marks
Advertising in six illustrated papers with a weekly issue	...	6,336
Eight ladies' papers appearing every fortnight ...	...	4,272
24 daily papers once a day	...	7,322
For special advertisements for grocers in their own provincial papers	...	9,000
Placarding towns ...	...	12,448
25,000 large posters ..	..	1,125
19,000 small do ..	...	1,140
12,000 inside do ..	..	1,800
12,000 transparencies ..	..	840
40,000 samples and postage	..	10,000
300,000 post cards ...	..	2,700
200,000 pamphlets (Bamber's)	...	6,000
	M.	62,983

or say £3,149. I have pointed out that we are quite ready to give one-third of this sum. They affirm that this is not sufficient and that they cannot risk more of their own capital. I have replied we cannot possibly devote such a large sum as this to him alone next year. I see from the Report of the Committee that a sum of £2,000 has been voted *this* year for Germany and that out of this Hagenbeck & Co. are to receive £1,500. I do not know, if this is in anticipation of more advertising on their part or in payment of part of the money M. 42,700 £2,135) already spent by them. If this be the case, I think, Hagenbeck should receive other £500 next year in 1900—making a grant of £2,000 to them on account of their expenditure for advertising in '98 and '99—which will amount to a total of £5,284. See my private letter which accompanies this for fuller information as to this firm. For we must reserve £500 at least next year, for the importing houses in Bremen and Hamburg if they want it. Hagenbeck & Co. are particularly anxious to have some sort of official appointment. They have tried to take advantage of the present of tea to the troops to obtain contracts with some regiments, but unless they can shew that they are special agents for the Planters' Association, or the Ceylon Government, they will be regarded as swindlers, they say—I know how much importance some official recognition gives in Germany, but we do not do

this sort of thing in England, or Ceylon, and I must confess I do not see how Hagenbeck's wishes are to be met.

CEYLON TEA AT THE PARIS EXHIBITION.

I have had a long interview with the manager of Messrs. Lipton, Limited, tea Department. He has agreed to sell and advertise a blend of pure Ceylon tea, to advertise *Ceylon* tea extensively at his tea house and all over Paris, and to appoint agents all over France for the sale of his teas and Ceylon teas. In addition to the Blends of Ceylon Tea, he is to sell a Blend of Ceylon and China, and he is to give a guarantee that this blend will contain 50 per cent of Ceylon tea. If he carries out these promises, I have agreed to give him a grant next year, for advertising purposes. We must never forget that Ceylon tea made its way at first in Great Britain by being mixed with China, and I think we must follow suit in France and Germany, but at the same time get men to advertise *pure* Ceylon tea and keep it asked for.—Yours very truly,

(Signed) J. H. RENTON.

F. G. A. LANE, Esq.

DUKWARI (CEYLON) TEA PLANTATION CEYLON.

The Directors have pleasure in submitting the accounts for the year ending June 30th :—

The balance of profit and loss account, after writing off ten per cent. Depreciation on value of machinery and buildings, is £2,914 8 4

which the Directors propose should be applied as follows :—

(1) In payment of seven per cent. Dividend on preference shares..	£840 0 0	
(2) In payment of seven per cent. Dividend on ordinary shares ..	560 0 0	
		1,400 0 0
Leaving		£1,514 8 4

to be carried forward to next year.

The returns of crop have been 277,408 lb. tea and 10,012 lb. Cardamoms. against 229,670 lb. tea and 12,655 lb. cardamoms last season. The large increase in tea is to be attributed to the free use of artificial and bulk manures.

The estimates for the coming season are 300,000 lb. Tea and 12,000 lb. Cardamoms.

The only Capital Expenditure during the year has been the purchase of a Roll Breaker and Sifter, costing £5 15s. 20d.

Mr. Spence retires from the Direction by rotation and. being eligible, offers himself for re-election.

The Auditors, Messrs. Brown, Fleming and Murray, also retire, and offer themselves for re-appointment.

CEYLON TEA IN MELBOURNE.

ALFRED HARVEY & CO.'S REPORT.

CEYLON.—Shipments from Colombo are 6,980,000 lb., as against 6,410,000 lb. at same time last year. Locally, arrivals have not been heavy, but have been painfully lacking in flavour and character, and in combination with high lay-down costs have been difficult to move. The want of careful manufacture has again been decidedly in evidence. The latest shipments, however, have contained a few breaks with good point, which indicate improved production. The market in Colombo is reported to have made a strong advance in sympathy with London buying and the increased demand from all parts of the world. Stocks in bond on the 16th instant were 449,986 lb. In Sydney during the month imports consisted principally of low to medium broken pekoes, ruling from 7½d to 9d; the few lines showing quality realised full rates from 11d to 1s 1d. Pekoe souchongs and pekoes were not in full supply, and were neglected by buyers in favour of Indian leaf, which showed better value in comparison.—Sept. 27.

PRODUCE AND PLANTING.

PLANTING IN CENTRAL AFRICA.—There are worse places for planters in some respects than British Central Africa. Of course capital is wanted, but the labour market is the cheapest in the world, the rate being about three shillings a month—paid in calico. Land is cheap, and will grow anything, and give enormous crops. On the other hand, it cannot be said to be a healthy country. There is a heavy, continuous rainfall for six months, the climate is malarious, and as black-water fever is prevalent, the death-rate is high. Whites fare well; Indian cooks, veritable chefs, are employed. There is no variety in the food, the staple is "chicken," but the game is excellent. Order is kept by a stand army of 300 Sikhs with white officers. The Deputy Commissoner commands the British Central Arican Rifles, which consist of two battalions of natives, one of which is at the depôt in Mauritius. The best coffee in the world comes from Nayasaland; it fetches the highest prices, and so does the tobacco. The planters are mostly Scotch. A good deal of rubber is also finding its way through the Protectorate from the Chartered Company's territory north of the Protectorate.

TEA RETAILING DODGERS.—The competition in tea retailing must be acute indeed, judging by the dodges resorted to for the purpose of inducing sale. "The Grocer" refers to a circular issued by a gentleman who announces that he has just returned to the home of his parents. His relatives were generous to places of worship, one of their gifts being an organ." Having come to reside in his native town he trusts his fellow-townsmen—especially Christians—will buy his "fine teas." It is his intention not to call for orders unless requested. In another instance somebody's brand of tea is referred to, to push the sale of which the "somebody" is "giving away" £300 in money prizes. The tea ranges from 1s 4d to 2s 8d per lb. and senders of the first forty orders opened each morning will have the amount sent returned with the goods, and two or three shillings to boot.

PLANTING TROUBLES IN BRAZIL.—Financial trouble in Brazil is having a serious effect on the coffee industry. The rise in the value of the milreis and the uncertainty of the power of the Government to maintain it paralyses trading in every direction.—*Home and Colonial Mail*, Sept. 29.

"ALL ABOUT RUBBER."—The further title of this handbook mentions that it deals with "all varieties in all countries, with harvesting and preparation, and gutta-percha." Therefore, Mr. J. Ferguson has launched out upon a large and important subject, with which, as editor of the *Ceylon Observer* and the *Tropical Agriculturist* he has proved himself qualified to deal. The volume is destined to be the India-rubber Planters' Manual, and it "includes the latest statistics and information, more particularly in regard to cultivation and scientific experiments in Trinidad and Ceylon." Having mentioned the scope of the book, and the fact that Mr. Ferguson may be trusted both as regards original writing and the sources from which he draws his quotations, it is merely necessary to add that all directly or indirectly interested in the India-rubber industry must acknowledge the convenience of obtaining so much valuable information in a handy form. Publishers—London: J Haddon & Co.; Luzac & Co.; Kegan Paul, Trench, Trubner & Co. Also issued from Colombo, Singapore, and Java.—*Gardeners' Chronicle*, Sept. 16.

INDIAN AND CEYLON TEAS.

The popularity of British-grown teas is ever increasing with almost phenomenal rapidity, ousting China teas from the position they have occupied for so many years. The planters of India and Ceylon are far-seeing men, and, recognising that unity is strength and dissension commercial suicide, they have coalesced to conquer the world, and seem in a fair way to success. They have imposed upon themselves an export tax which is devoted to fostering the trade in their teas in countries in which they have not yet established a firm footing, and where they are comparatively unknown. Thus, in North America, two Commissioners, representing India and Ceylon respectively, were appointed, and, working harmoniously together, they have done splendid service. The merits of British grown teas have been persistently kept before our American cousins and Canadian brethren by means of advertisements and subsidies to firms who have taken up the trade. Blends containing Indian tea mixed with the long-known China variety were found to sell well, and as the proportion of Indian increased, so did the demand. The result of this wisdom and push is that British teas (bounty-fed, by the way) have a firm held upon the North American markets, from which they are steadily driving China. The following table of imports gives some idea of the strides made in the use of Indian and Ceylon teas in North America of recent years :—

	1898. lb.	1897. lb.	1896. lb.
Indian ...	5,972,000	5,663,000	5,259,000
Ceylon ...	7,637,000	5,699,000	4,365,000
Total ...	13,609,000	11,362,000	9,624,000
	1895. lb.	1894. lb.	1893. lb.
Indian ..	4,072,000	2,428,000	2,111,000
Ceylon ...	3,745,000	2,295,000	1,871,000
Total ...	7,817,000	4,723,000	3,982,000

From this table it will be noticed firstly that the total exports of tea from India and Ceylon to North America have more than trebled in six years, and secondly that the produce of Ceylon meets with more favour than that of India.

We have taken North America to illustrate the pushfulness of the Indian and Ceylon exporters, because for the past few years special attention has been devoted to the trade there. Efforts are being made to develop the business in other countries, but not on such broad and liberal lines. The following table, however, shows very clearly that the tea exported from these countries is making rapid strides in Foreign and Colonial markets, exclusive of North America :—

	1898. lb.	1897. lb.	1896. lb.
Indian ..	20,058,000	16,536,000	13,947,000
Ceylon ...	28,763,000	23,250,000	19,101,000
Total ..	48,821,000	39,786,000	33,048,000
	1895. lb.	1894. lb.	1893. lb.
Indian ...	12,743,000	11,722,000	11,916,000
Ceylon ...	16,167,000	12,268,000	11,268,000
Total ..	28,910,000	23,990,000	23,184,000

Here again it will be noticed that the consumption of Ceylon teas is greater than that of Indian.

[Reference is then made to Russia but the information is scarcely up to date.—Ed. *C.O.*]

In the rest of Europe, in Australia, in fact all over the world, the same constant increase in the consumption of the tea grown in our great dependency, and its friendly rival Ceylon is found. It is even the case in China itself.

At home again we find the demand ever increasing, at the expense, to some extent, of China, although the total consumption of teas of all kinds is also growing. We append a comparative statement of deliveries in the United Kingdom for home consumption only.

	1894-5. lb.	1895-6. lb.	1896-7. lb.
Indian .	113,500,000	121,000,000	123,750,000
Ceylon .	71,500,000	76,000,000	83,500,000
Total .	185,000,000	197,000,000	207,250,000
China and other teas	30,000,000	26,000,000	24,000,000
Total .	215,000,000	223,000,000	231,250,000

	1897-8. lb.	1898-9. lb.
Indian .	127,500,000	128,605,197
Ceylon .	87,000,000	90,108,167
Total .	214,500,000	218,713,364
China and other teas .	20,500,000	21,569,953
Total .	235,000,000	240,283,317

The totals given above do not, of course, represent the imports into the United Kingdom; a large quantity in addition, which in 1894-5 was about 31 million pounds, and in 1898-9 was 33,400,398lbs., is re-exported every year.

A source of annoyance is the import duty, both in England and America. In this country the duty amounts to 4d per lb., and the Chancellor of the Exchequer derives from this source the comfortable sum of something over four millions per annum. Coffee, on the other hand, pays only about 1d per lb. in import duty, and the spirit of the tea-importer rebels against this "partiality," but in view of the fact that fourpence a pound is in itself a moderate duty, and that the impost on tea and tobacco are the only means of obtaining any sensible contribution from the temperate working man towards the expenses of the Empire, it seems unlikely and undesirable that any further decrease should be made. In America, also, coffee is more kindly dealt with than tea, and this was particular the case during the war with Spain, when a war tax of ten cents was charged upon every pound of tea imported. With the great reduction of the duty in recent years, there has been an immense impetus given to the cup which cheers and the hearts of good Imperialists especially rejoice at the knowledge that British gardens supply the great bulk of the tea tables of the world with fragrant leaf.—*Investors' Guardian*, Sept. 23.

Mr. Alex. Whyte and Uganda Clover.—The Uganda clover is an ally of the widely dispersed *trifolium repens*, which it closely resembles, and was originally discovered by Sir Harry Johnston of Kilima N'jaro at 10,000 ft. in 1885, and has been found to be common by Mr. Scott Elliott at Kikuya at 5,000 ft. to 6,000 ft. A supply of seed has now been sent to Kew by Mr. Alex. Whyte, F.L.S., curator of the botanical station, Uganda, [late of Ceylon. —Ed. *T.A.*] who writes that it is a splendid plant to introduce into the hill pastures of tropical countries, as the pastures of Kikuyr in which it flourishes are very rich. Seed has been distributed for trial in the colonies and elsewhere, and the results will be awaited with interest by all those interested in tropical pastures at high altitudes.—*Chronicle*, Sept. 15.

LONDON CHARGES OF TEA COMPANIES.

Under this head the "Investors' Review" is publishing a series of articles. We give the first of these, taken from the issue of September 16 :—

There is little doubt that the tea-grower is feeling the pinch of hard times rather severely. Under ordinary circumstances such a development as the rise in the Indian exchange from 1s 0½d to 1s 4d per rupee, with its concurrent advance in the cost of production in India and Ceylon, would have been accompanied by some improvement in the European price for tea that would have served as a mild offset to the increased expenditure of the planter. The mania, however, for extensions some years back has quite put this natural remedy out of the question, for the knowledge of the enormous area of tea plants coming to Maturity, combined with the larger quantity of tea sent to market, has the effect of preventing any recovery. Consequently the average price of 8¾d. per lb. for last season was no higher than the average price obtained when the rupee was at its lowest, although last season was favoured by a little "boom" in the spring as a result of the accidental circumstance that for two seasons in succession the Indian crop as a whole had been poor in quantity. Anyone acquainted with the real position of the industry feels that if only the average yield per acre returns to its normal figure, a further decline in the price of tea must be faced.

This may be taken as an axiom, admitted but not talked about, by tea growers, and profits having been seriously eaten into already by the course of events, there has been a great searching to find economies that would in some respects guard producers against a further decline in price. Expression of this quest was visible in the campaign against the "draft" which ended so disastrously to the producers, and, the wiseacres of that body having had their turn, some of the practical members amongst the tea-growing community are now beginning to raise their voices. As things stand, where the chief evil is over-production, economies must be looked for rather from within than from without, for the buyer knows he is in the stronger position, and he should therefore be cosseted and soothed rather than talked to with a club. But economies from within, in the shape of stopping leakages in profits, reducing extravagant charges, and rendering unnecessary too much manipulation of the article produced, are just those reforms that lie open to every tea grower, and the closer he studies the minutiæ of his business the more he will fend off the reduction in his profits. Every decimal point per pound saved in cost of production and charges relating to tea is so much in his pocket, which he is more likely to save than if he attempted to put up market prices against the buyer.

Regarding the outlay on the estates, we cannot speak with knowledge, for that expenditure is of such a special character that experts alone can give an opinion worth having. As a matter of fact, however, we believe it is admitted that as, generally speaking, this expenditure has been steadily reduced, if allowance be made for change having risen, salaries have been cut down, more economical forms of working have been adopted and in other ways prime cost of production has been lowered. Whilst this has been done of late years, there has been a growing discontent with the burden of London charges, which range from a little over 1d to 1⅝d per lb., and these charges upon an average price of 8¾d for Indian tea and 8d for Ceylon tea appear to constitute an excessive burden. They mean that the Indian planter has 7d per lb. left with which to pay all working charges close down to the arrival of the tea at Calcutta and evolve a profit for himself, which the Ceylon producer has even less of a margin. Before we go further, we ought to say that in many cases the burden of the London charges is rendered unnecessarily heavy by the management at the estates. If the tea is not properly bulked before leaving the estate so that a break of chests of one grade differs materially in quality, "bulking" has to be conducted in the warehouses in London, and although this charge is said to be unreasonably high, the process necessarily must be costly, for all the chests have to be opened, their contents spread out, and mixed one with the other, in order to produce a tea of equal quality throughout the break. And the warehouse responsible for this work, if it does not do it properly, and it is often not done well, takes care than the samples taken shall not be from the best part of the tea, for in that case the buyer has a remedy against the warehouse, and this bulking in London, therefore, tends to hinder the tea-grower from getting quite full credit for the quality of the tea he sends. Then, again, tea loses in value by being handled, and the weight suffers from the same cause.

Another fruitful source of loss arises to the planter if he does not make the weight of his tares equal, the bare weight, that is, of the packages in which the tea is sent. If this precaution be neglected, the tea has to be "tared" in the warehouse, which means that the chests, or a certain proportion of them, are taken, the tea turned out, and the empty packages then weighed. The charge for doing this is also high, and, again, the loss in weight and damage to the tea is considerable. A saving can also be effected by so packing the tea that it takes less space in the ship, and thus reduces the cost of freight.

To give a concrete example of what attention to these details means, and also in elucidation of remarks to be yet offered about warehouse charges, we give the following examples of two shipments of tea by small Ceylon concerns, and the London charges upon them. The first example is one where the cost was low, amounting as it did to under 96d per lb. The names of the estate and of the ship are quite fictitious, although every other detail is copied with strict accuracy

ROTALE ESTATE CROP, 1899.

Report on Outturn of 113 Packages Tea ex Oceana.

Averages :—	d.
10,524lb. sold, grossing £319 11s 1d =	7·29 per lb. gross.
10,640lb. shipped, netting £280 9s 9d =	6·33 per lb. net.
116 Loss in weight and charges =	·96 per lb. Equal to per lb. on Shippng weight.

	d.
Loss in Weight—	
Draft at 1lb. per package accounts for 113lb. and the actual shortage is therefore 3lb.	
Draft and actual shortage equal 1·09 per cent on shipping weight ...	·07
Freight—	
Rate, 25s Meast. 565. Amount £14 2s. 6d. Equal to 94lb per 50 cublic ft. on shipping weight	32
Dock and scale charges—	
Amount, £15 7s 1d.	·35
Brokerage 1 p.c., and commission 2 p.c.	
Amount, £9 11s 9d	22
Remarks—	
All grades passed on an average tare.	
Total charges and loss in weight per lb.	·96

In the above example all grades were passed on an average "tare," so that the tea did not have to be handled before it was sold. The result was that, allowing the 1 lb. per package for draft, the loss shown upon 10,524 lb. in the shipment was only 3lb., a mere nothing.

Turning to another shipment which passed throngh the hands of the same agent, but from another estate, wo find the result very different :—

BINGOLE ESTATE CROP, 1899.

Report on Ontturn of Packages Tea ex Wakera.

Aveages :—	d.
2,620 lb. sold, grossing £103 14s 2d	=9·50 per lb. gross.
2,728 lb. shipped, netting £91 13s 2d	=8·06 per lb. net.
108 Loss in weight and charges	=1·44 per lb.

	Eqnal to per lb. on shipping weight.
Loss in weight :—	*d.*
Draft at 1 lb. per package accounts for 44 lb., and the actnal shortage is therefore 64 lb.	
Draft and actnal shortage equal 3·96 per cent. on shipping weight	·38
Freight:—	
Rate, 25s. Meast., 124·8. Amount, £3 2s 4d. Equal to 1.091 lb. per 50 cubic ft. on shipping weight	·27
Dock and sale charges.—	
Amount, £6 6s. 7d.	·56
Brokerage and commission :—	
Amount, £2 12s 1d.	·23
Remarks :—	
Each package tared involving heavy dock charges (tares 14—18 lb). Loss in weight is probably due to the same causes.	
Total charges and loss in weight per lb.	1·44

In this shipment there were only forty-four pacakges and so the loss in weight from the draft was only 44 lb., but, as a matter of fact, 108 lb. was lost out of the total amonnt of 2,728 lb. shipped. Some little proportion of this was due to general causes, such as drying on journey and weeping, but the main reason was the fact that every package had to be tared at the warehouse. The shortage of tea on the shipment thus came to ·38d per lb., instead of ·07d per lb., as in the first example. Tariug also added to the warehouse charge materially, this representing ·56 per lb., as against ·35d per lb. in the first example. The only respect in which the Bingole shipment compared favourably with that from Rotale was in that it was so packed as to allow 1,091 lb. of tea to be got into 50 cubic ft. on board ship, as against only 941 lb. per cubic ft. of the Rotale tea, the difference representing .05d per lb. in the freight charge. The net result was that the London charges for the tea from the Bingole estate totalled 1.44d per lb., as compared with only .96d per lb. upon the tea from the Rotale estate. And probably the tea from Bingole was not in such good condition for selling at the end as that from Rotale. Whilst, therefore, we are not blind to the faults on the side of the planter and his assistants which contribute to keep the London charges heavy, we must confess to a strong opinion that he is in some respects nnjustly treated. Let us analyse those London expenses as set forth in the examples given above. The loss in weight, after deducting the "draft," is a matter, as we have shown, very much in the planter's own hands. Then comes ocean freight, which is a charge very much ontside his control. Freights vary at times from abont 20s to 40s per ton, and their rise and fall are governed by many conditions quite outside the tea trade and that trade cannot be expected to receive special consideration from the shipping firms. The examples we give show a frieght rate of 25s per ton, and we believe the present charge is 30s per ton. Next comes dock and sale charges. These are the warehouse charges about which there is so much complaint just now, and finally we have brokerage and commission. These latter embrace the usual one per cent to the broker who sells the tea and two per cent to the agents, the latter covering office expenses and secretary's salaray, if the concern is a company. The warehouse charge of 35d per pound does not look heavy to an outsider, and in the example we have given it is rather low, the average being nearer 40d per pound, when no special services have to be rendered. When, however, millions of pounds of tea have to be handled in a year, this apparently infitesimal charge amounts np to a considerable total, and we have good gronnds for stating that it is nnduly high. Space will not now permit us to enter npon our reasons for this opinion, bnt they shall be set forth in another article—*Home and Colonial Mail*, Sept. 29.

MR. CARRUTHERS' ARTICLE IN THE "CONTEMPORARY REVIEW."

In the October number of the "Contemporary Review," Mr. J. B. Carrnthers makes a brief, and closely reasoned, appeal for more Plant Doctors. By this term he does not mean herbalists or dealers in "simples," but doctors for plants, competent to prescribe for their ailments, like the physician or surgeon for man, or the veterinary practitioner for animals. This, as a science, is now ,belonging almost exclusively to the latter part of the century. In our own country it has little encouragement, and naturally but few followers, of whom not all have been trained in the right way. Yet botanical therapeutics is an important subject and one obviously difficult; in some ways more difficult than in the case of men or of animals. The former can tell the doctor what they feel, and the more careful among them often take note of early symptoms, and consult him before a disease has become formidable. In the latter case, shepherds and herdsmen, carters and farmers, note incipient ill-health in the animals under their charge, and are able to send for the doctor in good time. But the plant not only cannot say what is going wrong, but also is often more slow in showing the symptoms of disease. Greater, too, are the difficnlties of treatment. Snrgery, no doubt, is a simpler matter, and experiment has a free field in vegetable pethology. The most zealous antivivisectionist has not yet protected against operations on "poor dumb plants." But this is their doctor's only advantage. His subject cannot swallow medicines ; in it there is nothing analogous to the blood system of animals which helps him to convey remedies to all parts of the patient's body. External applications alone are possible, like salves, poultices, and embrocations. Besides this, many diseases of plants are dne to injurious organisms which have not very different life conditions, and the remedy which is fatal to the parasite may be eqnally so to the victim. To prove the accuracy of a diagnosis by means of a *post-mortem*—though a pupil once made this boast of his professor—would scarcely tend to increase a practice. Another drawback is that the doctor, as a rule, is not called in till the patient is dying or dead. Now, *post-mortems* are all very well in their way, but the subject is more often sent to the pathologist than he is called to the patient, and often arrives in such a state of decomposition as to be of little use. Doctors, as Mr. Carruthers remarks, wonld not find it easy to discover remedies for diseases if, when they were summoned, the patients were either *in extremis* or dead, and, perhaps, a good deal more than that. Even when the malady had been ascertained, and a remedy found, plants present many difficulties which living creatures do not. Thus,

for contagious or infectious disease the patient is isolated, but most cultivated plants are crowded together, often under unnatural conditions. Pot flowers in a hothouse may be sent to a hospital, but this is not easy in the case of those in a garden, and impossible with trees in a forest. Some progress has, undoubtedly, been made in vegetable therapeutics, but Great Britain, as is too often the case, is left behind in the race of investigation. Germany and America both spend money liberally on promoting the scientific study of plant diseases. In England the workers are few and their time often occupied by other duties. The officials at the Royal Gardens, as we learn from the "Kew Bulletin," do their best; and as much is true of the British Museum and some Universities, Colleges, and Societies. But much more is wanted, and as it seems hopeless to look to the State, the beneficent millionaire is needed to found a school of plant pathology. But, it may be asked, what is the good of it; *Cui bono*, except to the endowed investigator? Mr. Carruthers answers the question. The cure of phylloxera in vines, of canker in trees, of many diseases in field crops, all mean money. The Department of Agriculture in the United States estimates the annual loss by plant diseases at forty million pounds, and the gain to peach growers in California alone, due to the cure of a disease in that fruit tree, is worth one hundred thousand pounds a year.—*Standard*, Sept. 29.

THE PARIS EXHIBITION.

THE CEYLON SECTION.

A visit to the Agricultural School—and it is a very pleasant drive there in the early morning—will enable Colombo residents to gain an idea of what will be the character of the Ceylon Exhibits, although the specimens of tea are not yet sent in. We need not go into particulars of these, all the details will be published in due course, and the exhibits may (in advance) be described as thoroughly representing Ceylon tea, grown under all circumstances. No district has seriously refused to contribute, though some temporarily did in connection with the Dreyfus protest. Each box of tea will have on the outside the name of the estate, the grade and quantity, the name of the district, estate, exhibitor or agent, quantity and quality obtainable, and the price. The elevation of the estate is also to be given, and its rainfall. All exhibits are to be sent in by December 15th. Mr. Renton and Mr. Davidson are entrusted with the final duty of submitting tea samples to the Tea Jury.

At the

AGRICULTURAL SCHOOL

there are now arranged, though mostly kept under lock and key, a series of exhibits which will well illustrate the industries, the attractions and the resources of Ceylon. The series of photographs by Mr. H C P Bell, C.C.S., our well-known Archeological Commissioner, of the Ruined Cities, the excavations and their surroundings are familiar, having been on view before. They have been prepared for exhibition by Messrs. W L H Skeen & Co., and with them is associated a well-arranged series of views from the studio of the Colombo Apothecaries' Co. In close proximity we find the loan collection of

MALDIVIAN CURIOSITIES,

placed at the disposal of the Committee by Mr Haly, and, those who look into the articles exhibited, will be pleased by the excellent lacquer work. The Conservator of Forests, Mr. Broun, gives specimens of trees (hora, del, mango, kina, calamander, and others), cut from trunks in most cases, which show that the forests of Ceylon (when cheap transport facilities are devised) can vie with other countries in the production of timber suited for those in the branches of carpentry requiring high and careful polish, and the durability of a hard surface. In this connection specimens of carved work (all from the hands of Sinhalese men), exhibited by Messrs. Don Carolis & Sons, are especially interesting. A carved ebony flower stand, an ebony clock stand, a tamarind wood carved chair, porcupine quill chairs, &c. Here we also saw a collection of native woods (sixty-five in number) made at the request of the A.G.A. of Kegalla by Mr. Elapata, Ratemahatmaya. Mr. Kellow, of Nuwara Eliya, has kindly aided by sending specimens of the Acacia decurrens, and its bark, in several varieties, and close to, handed down from a date not given, are two Kandyan wood pillars, carved grotesquely, and skilfully. They are lent by the Museum authorities, and are amongst the most interesting features (from an archæological point of view) of the exhibits. Mr. Kellow again helps in regard to a collection of coffee sticks, which have been worked up into various articles carefully carved, and beautifully polished. By the side of these is placed, temporarily of course, the trunk of a kitul palm tree.

MINERALS.

This is no summary of what will be shown of the mineral wealth of the island and we enumerate only the specimens received at the present time. Mr. Kellow, of Nuwara Eliya, has contributed specimens of limestone and blue spinel. Other interesting blocks and fragments are sent from Kegalla, from which come specimens of crystalline rock stone, white stone and limestone.

With Ceylon the occupation of

FISHING

must always have a prominent place, and which it has retained up to the present day as a purely native industry. In this connection the collection of boats of the kind that float around our shores, and on our rivers, lakes and lagoons, is of great interest. Fourteen models are shown of boats, and specimens of nets and other fishing appliances are also given, which are well worthy of observation, though we fear that in the Ceylon Court at Paris they will escape observation, unless they are well-displayed. The fishing appliances sent by the gentlemen, who have had the 'Veddah' department in charge, are unique in their character. The nets, the spears, and other weapons used are very singular. The model of the pearl-fishery boat (built by the order of Capt. Donnan) has been already referred to, and in this connection we should note the specimen of pearl shells sent from the Eastern Coast. The large Tambalagam shells have been mounted so as to form the wings of a beetle.

OILS,

too, come in for a share of attention. Our readers will remember the specimens of oils exhibited at the Colombo Agricultural Show by Mr. Warr. These are to be sent, and with them are placed 'wild' oils sent by Mr. J. A. Nugawella, Ratamahatmeya of Kegalla, and beside these there are essential oils forwarded by Messrs. Coates & Co. of Galle, as well as Anatto seed oils, which

have been received from Mr. Van Starrex. In addition to these, oils have been forwarded by the G. A. of the North-Central Province. There are, too, cases of arecanuts illustrative of their uses, some of which probably come under this head, and show what can be done with this product. In connection with this and the other departments a case of oils (open to visitors) will be shown for testing purposes.

Resins are sent from Anuradhapura : para and ceara rubber from Heneratgoda gardens, though there is room for improvement in the latter, not so much in regard to quality, as to the form in which they are to be exhibited, for the specimens admit readily of attractive design and this is at absent present.

In drugs there is much to interest. The Government Agents and the Assistant Government Agents of the various provinces are still at work and are sending in collections illustrative of the medicinal resources of the island. To the uninitiated visitor these exhibits will be "mere rows of bottles," but to many, we hope, there will be light thrown on the resources of a colony like Ceylon. The Government Agent for the Western Province sends in four cabinets which will when complete contains 360 varieties of drugs, all prepared from native recipes, and for each of which in the native *pharmacopeia* (unpublished we believe) there is a distinct use stated.

A small case, sent in by Don Gregoris Kappura Bandara, contains specimens of 200 cases of medicinal oils, all the products of Ceylon plants, &c. Another feature, too, is Mr. Stouter's specimen of plaintain flour. The production of this flour in the West Indies is developing into an industry of some importance, and why should it not find permanent root in Ceylon, especially in connection with a food-consuming population like that Australia boasts of.

In regard to

AGRICULTURE

there is a very interesting collection, made in miniature at the instance of the Government Agent of the Western Province, of Sinhalese implements of agriculture, in reference to which a good deal might be written. There is here need again for effective arrangement, combined with judicious colouring, but in any case to the curio-hunter the collection will prove of more than passing value. The model of Peradeniya Tea Factory has been before described in these columns. It was exhibited at Chicago and has been thoroughly renovated so that it will show to our French neighbours the manner in which tea is manipulated in Ceylon at the present date.

Nor must we forget in the enumeration of the specimens the results of hunting and the specimens of

GAME IN CEYLON.

It is too early yet to speak of the big elephant, which is being taxidermically treated at Kurunegala : and of the many other specimens that we could refer to, which are hereafter to be received. We can only just name the horns and skins sent by the Government Agent of the Eastern Province of spotted and barking deer, elk, and also cheetah skins. From the Central Province have been received, not only specimens of the Veddah costume (if it can be so described), but also of their implements and weapons of hunting, fishing and otherwise gaining a living. Amongst the curious things shown are the bags of bark skilfully torn in their entirety from trees (*riti* generally), and gourd bottles.

Minor industries in Ceylon (though we do not make anything but a rough calculation as to what should be classed under such a heading) include : baskets and mats sent by Mr. J. A Weerasinghe, of Kalutara : carved coconut shells of fantastic design and with very interesting results : edible bird's nests (sent by Mr. Kellow): carved ivory handles for fans (well finished but too heavy for actual use); cloths from the Eastern Provinces, the work of hand-loom weavers : brass work from Negombo district (an industry that needs developing): double coconut shell lent by Mr. Plâté : fan, made of wood work with paddy interwoven in a very interesting manner.

THE MODELS

of Mr. Rost we have already referred to, and they are not amongst the exhibits at the Agricultural School, as they will be packed and despatched from the studio at De Soysa Buildings. There are, however, comprised in the latter complete costumes of natives, including a Tamil Chetty, and we may add that Mr. Andriesz, sculptor, will make models, taken from life, of Veddahs. Under instructions from the Government he has gone to the Veddah Country to prepare them.

But among the more interesting specimens of Ceylon industries, should be included the specimens, representing what may be fairly claimed to be amongst the

ART INDUSTRIES OF CEYLON

The calamander, ebony and tortoises-shell boxes shown, inlaid as they are with ivory, all admirable specimens of island workmanship. In one there are miniature representations of the conquest of Ceylon by Wijayo. At the instance of Mr. Lane, the mountings of the album presented by the Planters' Association to the Emperor of Austria, will be placed in a frame of velvet. The specimens of Kegalla workmanship in silver, including as they do models of a dagoba, and a jubilee amblam, as well as a salver, are very striking. A carved egg-shell (set in ivory) is also noticeable, while Meedeniya Ratemahatmaya of Kegalla has shown (in miniature in some cases) the silver apparatus used by a wealthy betel chewer,—a case of instruments that will repay a half-hour's scrutiny. Then there are specimens in silver, artistically engraved, including penholders, pencils and hair ornaments, &c.

ST. BENEDICTS' INSTITUTE.

Although not received we may state the fact that St. Benedict's is sending drawings—thirty in number—all representative of local life, the handwork of pupils of the Institution. There are representations in oils, water colours, pen-and-ink etchings, drawings of Sinhalese architecture, maps, etc. A striking bit of work is a picture three feet by two feet—a map of the Island, surrounded with drawings (from photographs) of the busts of all the Governors of Ceylon from the earliest to Sir Arthur Havelock. On the top is the British Court of Arms. At the bottom appears a view of Colombo Harbour. Another drawing is a map of the Island surrounded with water-colour paintings. The paintings represent many subjects: A Sinhalese chief and his wife ; the Moorish moonstone cutter ; the other subjects are a Mudaliyar and his wife ; An appuhami and his wife ; a Ceylon chetty and his wife; a Bombay merchant ; a Sinhalese Buddhist Priest ; a Veddah;

a Parsee; a Malay; a Devil Dancer; a Jaffna Tamil; and a Parawa. The paintings in oils consist of a Tamil woman; a Sinhalese Mudaliyar; a Sinhalese black-smith; a Veddah; a Sinhalese farmer; a Sinhalese mountaineer (an octogenarian). Included among the oil paintings are representations of estate scenery and mountain scenery. In water colours there are king-coconuts; Green coconuts; the Vanilla plant; a bunch of *lovi-lovi*; nutmegs; a Kandyan headman; and Ceylon frogs.

Many more things might be particularised, but we have, we trust, already shown the comprehensive character of the exhibits in the Ceylon Courts, of which only a small portion have been as yet received at the Agricultural School. The task the Committee has to face is to avoid sending duplicates. From almost every Kachcheri specimens of Ceylon industries have to be received and the work of selection will not be an easy one.

A NEW CEYLON COMPANY: UKUWELA (TEA) ESTATES.

This new Company, has for its directors, Messrs. F. G. Ambrose, of Ukuwela. H. L. Anley, of Mahatenne, W. B. Anley, and J. B. Anley. The solicitors are, in London, Messrs. Harward and Stephenson, of Lombard St., and Messrs. F. J. and R. F. de Saram, of Colombo; the National Bank of India being the bankers. Mr. T. W. Palmer, of 165, Fenchurch St., is the Secretary (*pro tem.*) The prospectus runs:—

Share Capital divided into 378 Six per cent. Preference Shares of £25 each	£9,450	
302 Ordinary Shares of £25 each ...	7,550	
		£17,000
Debenture Capital 270 Five per cent. First Mortgage Debentures of £50 each		13,500
		£30,500

PROSPECTUS.

This Company is formed to acquire, carry on, work, and develop the Ukuwela and Bowatte Tea Estates, in the District of Matale West, Ceylon, and to purchase other suitable properties as favourable opportunities may occur. Ukuwela is situate within 200 yards from the Ukuwela Railway Station, and Bowatte adjoins Ukuwela on the West. The Estate comprise about 558 acres, of which 313 acres are Tea in full bearing, 47 acres tea rising two years, 13 acres tea rising one year, 13 acres tea planted this year, 82 acres cocoa just coming into bearing, rising four years, six acres grass land, 84 acres reserve land, total 558 acres.

The yields for the seasons, 1st January, 1895, to 31st December, 1897, averaged 914 lb. manufactured tea per acre over all the 300 acres which were then in full bearing, and realised a net average of over 35½ cents. per lb., whilst the cost of production delivered at Ukuwela Station was under 16 cents. per lb. The yield of the 300 acres in 1896 was 1,037 lb. manufactured tea per acre. The estimate for the 313 acres now in full bearing for the year ending 30th June next, is 280,000 lb. of manufactured tea, and as 207,500 lb. were secured up to end of March last, the estimate may be considered quite safe. Future yields should be considerably increased by the crop on the 73 acres of young tea which is gradually coming into bearing. Cocoa and other credits should realize R2,500. Placing therefore the cost of production of the 280,000 lb. manufactured tea at 18½ cents. per lb. delivered F.O.B., and taking the net average price at 31 cents. per lb., the profit should be as follows:—

Tea, 280,000 lb. at 12½ cents.	...	R35,000·00
Cocoa and other credits	...	2,500·00
		R37 500·00

This, at the exchange of 1/4 per rupee, equals £2,500, which should, after paying the Debenture interest and Preference Dividends as well as the London expenses, leave a surplus sufficient to pay about 10 per cent. on the ordinary shares.

The Estates are in a good state of cultivation and are well equipped with a modern factory and machinery, three substantial bungalows, other buildings, and permanent Coolie lines.

The price to be paid by the Company for the purchase of the Estates, free from incumbrances, is £30,200 payable as to £11,500 in cash, as to £7,450 by the allotment of the 298 six per cent. Preference Shares, as to £3,050 by the allotment of 122 Ordinary Shares, and as to £8,200 by the allotment of 164 Debentures.

The only contract entered into is one, dated 4th May, 1899, between Frederick George Ambrose and this Company, being the contract for the acquisition by the Company of the above-mentioned properties. Nothing has been or will be paid in respect of promotion or underwriting.

THE DOOMOO TEA COMPANY OF CEYLON, LTD.

ANNUAL MEETING.

THE REPORT

of the directors was submitted by the chairman as follows:—

The Directors have the pleasure to submit their Report and Accounts for the season ending 30th June, 1899.

The quantity of Tea received from the two Estates was 196,585 lb. out of an estimated crop of 220,000 lb., against 205,902 lb. last year, and the price realized was cents 42·83 per lb. against cents 43·13 last year.

The expenditure on Verellapatna includes the upkeep of 120 acres young Tea which only yielded 80 lb. an acre.

After writing off R2,500 to Depreciation Account and R2,500 to Reserve Account there remains available a sum of R24,787 52 which your Directors recommend being disposed of as follows:—

That a dividend of 6% for the year be paid on the Capital of the Company, absorbing R24,000, and that a balance of R787·52 be carried forward.

The estimate for the current season is 220,000 lb. Tea on an expenditure of R72,440, which includes a sum of R5,700 for the removal and re-erection of the Doomoo Factory for use as a withering shed on Verellapatna.

The acreage of the two Estates now stands as follows:—

Doomoo ...	210 acres	Tea 5 years old and upwards.
	3 "	" 3 " "
	28 "	Timber. " "
	58 "	Grass land.
	299 acres.	
Verellapatna	310 acres	Tea 5 years old and upwards.
	35 "	" 4 " "
	120 "	" 3 " "
	35 "	" 2 " "
	24 "	Under 2 years. "
	10 "	Grass land.
	154 "	Waste and Patana.
	688 acres.	

During the year Mr. H. G. Bois having left the Island Mr. F. W. Bois was elected to the vacant seat on the Board.

In accordance with the Articles of Association Mr. W. B. Kingsbury retires from the Board, but being eligible offers himself for re-election.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees. R. N. Lyne, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price according to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Sterculia Acuminata.—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June. Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, Eucalyptus various varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"South Africa."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—Messrs. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address:
William, Veyangoda, Ceylon.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
Henaratgoda, Ceylon.

THE DARJILING TEA CROP.

RESULTS OF THE DISASTER.

There has been, we cannot but think, some misapprehension about the effects of the cyclone which recently swept over the Darjiling district, as regards the damage done to tea estates and the probable results on the Darjiling crop for the year. A tea garden in the hills is planted, as a rule, on a series of small spurs, that is, on the side of a hill which is divided up into separate sloping strips by a number of *jhoras* or ravines. Flats—even what are called flats in the hills—are rare and of small area, and are usually narrow strips along the banks of the main streams, flowing at a moderate gradient at the bottom of the big valleys ; these narrow strips being cut up into small sections by the minor *jhoras* or ravines joining the main stream. In any very heavy rain there is always the danger of bits along the edges of the *jhoras* being cut away by a big rush of water, or of being undermined and falling in ; but there is very little possibility of the main surface of the spurs being carried away. We may therefore take it for granted that no one slip of any really large area is at all probable.

That there may have been a great number of small slips is of course probable, but we do not think that the aggregate area of these is likely to be sufficient to seriously affect the outturn for the balance of the season. Of Messrs. Finlay Muir and Co. gardens, it is stated, Moondakoti lost three houses, the people lost their belongings, but no lives were lost, and evidently no tea. Dhajia was "scarred with landslips from end to end,"—evidently slips in the *jhoras ;* but "the tea, however, had not suffered." Phuguri reports considerable damage to buildings and forests, stable and tea house unroofed, factory and bungalow badly shaken (by the way—which is the tea house and which is the factory ? reporters on the dailies are not very well up in *technique ;*) roads were blocked and "about an acre of tea was damaged, but was being repaired." This latter remark was a touch of genius. We have no doubt many of our readers would very much like to know how damaged tea is repaired, and that a good deal more than an acre would be found, on most gardens, sadly in need of the "repairers" skill, without the excuse of a cyclone. Who does the tea repairs on a damaged garden ?

Darjiling gardens as a rule stop plucking early, and the bulk of the crop had been made before the storm. Estimating that perhaps 15 to 20 per cent of the total outturn for the year was still to come, the couple of hundred acres of tea lost or "damaged" (assuming the figures quoted above stand good), will not effect the amount still to come down to Calcutta to any really appreciable extent, and there will probably not be the boom in Darjiling prices, that some seemed to anticipate.—*The Planter*, Oct. 7.

COFFEE IN JAVA.

Mr. Frank Adam writing to us from "Glen Nevis" Estate, Banjœwangie, Java, under date, 22nd Sept. 1899. Says :—I enclose herewith the two tables of coffee statistics, which I have compiled from reliable Dutch sources, See page 331. Perhaps you may like to have them for the *Tropical Agriculturist.*

Prospects in Java for next years' coffee-crop, are exceedingly good. We are having excellent weather for the blossom, which, this year, has been very early. Already on the three estates, which are under my directorship ("Glen Nevis," "Glen Fallock" and "Glen Luss") a nice amount of blossom has opened and set, and there is still a lot of bud to open, I am hopefully looking forward to crop, over the three estates, of somewhere about 11 piculs per bouw equal to about eight cwts. per acre.

ALL ABOUT RUBBER.

BY J. FERGUSON.

About twenty years ago, when King Coffee was in his last dying struggles, and the Ceylon planters were turning their attention to other economic plants, in the hope of staving off the ruin which was staring them in the face, I, like many others, began to make enquiries about the cultivation of the rubber tree, only to find that the sum total of the information to be gathered, from all sources, was absolutely nothing. If, at that time, such a book had existed as the one I have just laid down,—"All About Rubber, by J. Ferguson," —I am sure that many a disconsolate coffee planter would have rushed into rubber, and by this time, I doubt not, would have been a prosperous grower of caoutchouc trees. Had I not this work, with all its facts and figures, before me, I would have been disinclined to believe that so much knowledge of this subject existed, when I recall the state of ignorance we all laboured under, only a short twenty years ago. From a book of 340 pages of closely printed matter one naturally expects to be able to extract a considerable amount of information, but I am surprised at the extraordinary results of Mr. Ferguson's research, and can only congratulate the rubber planters of the present day in having such a source of knowledge to turn to, as this book is. We are not only told of the planting experiences of rubber in Ceylon, but in many other countries, and, in addition, about experiments carried on in Trinidad and the exploiting of the industry in the French Soudan. Indeed, no country that has been blessed with an indigenous growth of caoutchouc, or has imported and acclimatized the tree, is omitted from the long list laid before the reader of this valuable work. I know of nothing, the demand for which is more likely to increase as time goes on, than Indian rubber. What with cycle and carriage tyres, horse shoes, diggers' boots and macintosh coats, the quantity required annually must be enormous, and there is every probability of many other uses, to which rubber can be applied, coming into existence. Therefore I am inclined to believe that no planting industry shadows forth a better prospect than that of rubber-growing, and no book can compare with "All About Rubber" in usefulness to the planter who intends, or has already commenced, to cultivate the caoutchouc tree.

COSMOPOLITE.

OPIUM-EATING IN ENGLAND.—A warning note, as to the extent to which the practice of opium-eating prevails in the provinces (as well as London), is sounded by one of our readers. He writes :—"I believe that in the Fen districts of Hunts and Cambridgeshire opium is consumed to a large extent by the working classes, and is purchased by them from the local chemists, as I am informed, in 'pieces as large as your two fingers,' and made into pills by themselves. I know an old washerwoman of eighty who constantly takes it, and not unfrequently is found falling asleep over her wash-tub of an afternoon as a result. I believe that if inquiries were made in villages bordering on the Fen district it would be found that quite a trade is done by chemists in the drug.—*Daily Chronicle*, Sept. 23.

BUYO, OR BETEL-NUT IN THE PHILIPPINES.

HOW IT IS CULTIVATED.

This plant is cultivated with much care in every province, as its leaf, when coated with lime made from oyster shells and folded up, is used to coil around the areca-nut, the whole forming the Buyo (betel), which the natives of these Islands as well as British India, are in the habit of chewing. A native can go a great number of hours without food if he has his betel ; it is said to be stomachical. After many years of habit in chewing this nut and leaf it becomes almost a necessity, as is with the case with opium, and its use, cannot with safety, be suddenly abandoned. To the newly-arrived European, it is very displeasing to have to converse with a native betel-eater, whose teeth and lips appear to be smeared with blood. The "buyo" plant is set out on raised beds and trained (like hops) straight up on sticks, on which it grows to the height of about six feet. The leaf is of bright green colour, and only slightly pointed. In all market places, including those of Manila, there is a great sale of this leaf, which is brought in fresh every day. —*Manila Times*, Oct. 4.

COFFEE IN JAVA.

PRICES SINCE 1827.

Table shewing Highest and Lowest Prices, respectively in each year, from 1827 to 1899 (to date) for "good ordinary" Java Government Coffee, (ordinary "East India" or dry preparation) at the Government auctions, held at Amsterdam. Prices quoted are in guilder cents, per half Kilo.

Year.	Prices. Highest.	Lowest.	Year.	Prices. Highest.	Lowest.	Year.	Prices. Highest.	Lowest.
1827	34	26½	1852	27½	24	1877	58½	50
1828	26½	21½	1853	33	26½	1878	54	40
1829	27½	23	1854	33½	28½	1879	50½	40
1830	23½	21	1855	34	29	1880	48	37
1831	34	23½	1856	33½	31½	1881	38½	33½
1832	41	32½	1857	43½	33	1882	36	25½
1833	40	34½	1858	34	27½	1883	35½	27½
1834	38½	26½	1859	38½	29½	1884	36	26½
1835	39	30	1860	40	38½	1885	28	24
1836	36	29½	1861	45	37½	1886	41½	26
1837	31	24	1862	46	44	1887	59	39½
1838	31½	26½	1863	46½	44	1888	51	35
1839	34	30½	1864	46½	40½	1889	54½	44
1840	32	25½	1865	45½	43½	1890	59½	52¾
1841	28	25½	1866	45	38	1891	61½	48
1842	25½	23	1867	42	38½	1892	56	51
1843	23	20	1868	33	30	1893	56½	50
1844	22½	20	1869	43	32½	1894	53½	51
1845	23½	21½	1870	35½	31½	1895	56½	51
1846	22	19½	1871	43	32½	1896	54	50
1847	21½	20	1872	50	40½	1897	51	36
1848	20	17	1873	65½	50	1898	38	33
1849	34	18	1874	72½	50	1899	33	25¾
1850	37½	24½	1875	61	52½			
1851	30½	23½	1876	57	50½			

[A guilder is equivalent to 1s 9d or R1·30 in Ceylon at current exchange ; and a Kilo is equal to 2·2046 lb. avoir., half of which is 1·1023 lb.]

Table of Prices &c., during 1880 to 1899 (to date) inclusive.

Years.	Prices in francs, per 50 kilos, of Santos Coffee, in Havre. Highest.	Lowest.	Brazil Crop in Bales.	Supplies in Europe & America in Tons.	Deliveries in Europe & America in Tons.
1880			3,983,000	547,050	522,940
1881			5,750,000	599,420	563,890
1882			5,650,000	603,308	599,C08
1883			6,700,000	683,083	638,057
1884			5,050,000	610,965	616,443
1885	54	45½	6,278,000	657,234	655,092
1886	76	46	5,531,000	593,469	672,783
1887	117	91½	6,129,000	535,692	540,332
1888	102	69	3,006,000	568,858	608,523
1889	105	87	6,733,000	604,000	598,558
1890	112½	103	4,198,000	570,661	595,745
1891	107	80½	5,308,000	610,950	621,786
1892	102	82	7,397,000	699,907	669,321
1893	106	86	6,316,000	646,349	650,337
1894	103½	87	4,325,000	644,650	649,872
1895	97	89½	6,704,000	701,707	661,201
1896	92	58½	5,489,000	703,540	703,512
1897	62	36	8,694,000	882,342	786,882
1898	41	35	10,461,000	897,044	842,694
1899	38½	34	8,772,000	—	—

FRANK ADAM.

"Glen Nevis," Banjoevangie.
22nd September, 1899

THE PARIS EXHIBITION.

THE INDIAN TEA ROOM.

Calcutta, Oct. 11.—The Lieutenant-Governor of Bengal has sanctioned a grant of £500 sterling, and the Chief Commissioner of Assam R10,000, towards the expenses to be incurred in connection with the exhibition of Indian tea at the Paris Exhibition. A grant equal to £4,000 sterling has also been made by the Government of India. The Committee of the Indian Tea Association in London was desirous of raising £10,000, but it is understood that it will be able to make a fairly adequate representation of Indian tea for £6,600. Of this sum the Imperial and Local Governments have given the largest share, leaving only a balance of £1,433 to be subscribed from the American Market Fund. This latter Fund has now reached R98,000, and it is hoped that the amount (namely R1,20,000) contributed last year will again be raised.—*Madras Mail.*

Agricultural Experiments continue to be conducted at the Dumraon farms, under the supervision of the Department of Agriculture. The results obtained there show that ashes of cowdung make the best manure for paddy, and cowdung itself for wheat, although apparently only on irrigated land. The experimental cultivation of varieties of paddy, wheat, potatoes, cotton, maize, and bajra was tried in the Dumraon farm during 1888-89. The results obtained showed that the bansmati variety of paddy gave the best yield.—*Friend of India*, Sept. 21.

RUBBER PRODUCTION IN THE AMAZON.

The principal rubber-bearing areas in the State of Para are the islands of the River Amazon near the city, the principal, Marago, having an area of 2,500 square miles; the banks of the river Tocantins; the banks of the rivers Zingu, Jary, and Tapajos. The upper and lower districts of the Amazon produce the same kind of rubber, but that coming from the upper river obtains a slightly higher price, being dryer by the time it reaches the port of shipment. The collecting season for rubber in the Lower Amazon begins when the waters have subsided—about July—and ends in January or February. Collecting is not undertaken, as a rule, in the wet season, because the quantity of water that accumulates in the forest impedes the movements of the Collectors, and the rain water that runs on the trunks of trees prevents the clay cups from adhering to the bark. The sap is also weaker in this season. The United States Consul at Para, in a recent report, says that the collectors employed are principally Brazilians, immigrants from the States bordering on Para, such as Ceara, Maravham, and Piauhy, also Portuguese and half-castes. The pure South American Indian is of very little use as a labourer. He has but few wants, lives by fishing and hunting, and is less dependent on labour than more civilised people. There are many thousands of collectors in the rubber field, yet the number does not supply the demand.

The last few years have shown a steady and rapid increase in the exports of rubber, and while labour has also gradually increased, it has failed to keep pace with the fast-growing demand. Among other articles used in the india-rubber industry is a clay funnel, in shape very much like an ordinary toilet water-jug without a bottom or handle. It is made of the clay that is found in most parts of the Amazon region. The fuel used in the funnel consists generally of the nuts of the following palms:—Native name—"Urucuri," "Tucuma," "Inaga;" botanical name—*Attalea*, *Astrocaryum*, and *Maximiliana regia*. It was at one time imagined that the excellence of Para rubber was greatly due to the kind of fuel used in curing it. The palms that furnish the fuel were accordingly transplanted to Africa, with a view to the production of Para rubber there. The experiment, however, has not met with success. The reason these nuts are selected in Brazil is because they emit a continuous dense smoke, and are more portable than other fuel obtainable. However, when none of the palms named are accessible, bark and twigs are used as fuel.

Every one engaged in the forest carries a knife. One of its uses is to cut down fuel for the preparation of rubber. The blade is about 26 inches long, and about 2 inches broad. Owing to the damp climate, the blades are electro-plated, thus preventing their becoming rusty before they are marked. The handles are made of wood, and are carved or inlaid with brass. The rubber collector's axe is a very small affair. It is required to chip a smooth surface on the bark preparatory to attaching a cup to the tree. The handling of the axe requires great skill, in order not to injure the bark. A smooth surface is made in order to prevent impurities from mixing with the sap. The cups are of clay or tin. The former are attached to the bark by means of a little clay. Their weight, however makes them inconvenient to carry when the trees to be tapped are separated by long intervals; the collector then prefers to carry tin cups, which are much lighter than the others. They easily penetrate into the bark by means of their sharp edges, and hold to the tree without the use of clay. The use of the tin cup, however, is to some extent injurious to the tree.

Part of the collector's outfit consists of a light gourd, large enough to carry the contents of from 500 to 700 cups. A clay bowl is next required in order to receive the contents of the gourd. It is of sufficient size to contain the product of several days' work before it is cured. The calabash tree provided calabashes which are employed to ladle the milk from the clay bowl into the mould. A broad-bladed wooden paddle is used as a mould, and is made locally. This completes the outfit for the rubber collector. All these articles are made locally, with the exception of the knives. The axes and the tin cups are manufactured in the towns and villages of the Amazon region. The collector has to use his knife to cut his way through the undergrowth, and also to cut down a sapling occasionally to bridge a rivulet. At times he is knee-deep in ooze or up to his waist in water. On arrival at a rubber tree, he chips away the rough parts of the bark, makes a more or less smooth surface, attaches a cup and makes a small gash above for the sap to fall into the cup, and repeats this process in a line round the tree untill he has attached six or seven cups. Then he proceeds to the next tree and does the same. He continues this process until he has tapped from 75 to 150 trees, which can be done in a day, if they are not too far apart. On the following days the gashes in the trees are made a trifle lower down than the first ones. Some collectors tap the trees in the morning, and return to collect the sap in the evening, whereas others tap in the evening, and collect in the morning. An expert gathers 7 pounds daily in the Lower Amazon; in the Upper Amazon three times this amount is collected. When the accumulated rubber is sufficient—usually in three or four days—a collector lights a fire in the hut he has erected, places the funnel over the fire, pours a thin coat of milk over the paddle, and holds it over the smoke to coagulate. The process is repeated until a large cake has been formed. To release the paddle from the cake it is necessary to make a slit on one side. The paddle mould makes a cake of uniform and even shape, and is in general use in the State of Para. In other parts, a spit is placed on two upright forked sticks, and given a rotary motion. By this means, the rubber is cured with greater ease. Paddle-smoked rubber is decidedly preferred, as it is dried and seemingly more carefully cured.

Many attempts have been made to introduce improved curing apparatus. Up to the present, however, the efforts have not been successful, because the common method, although very primitive, possesses the advantage of being simple and inexpensive. The process of curing rubber is found to be very injurious to the eyes. Many cases of total blindness result from it. There are three grades of Para rubber, viz., fine, medium, and coarse. If rubber is not uniform, and contains impurities, it is classified as medium. The coarse quality, or "Sernamby," consists of scraps that have not been cured. In sufficient labour is the most serious difficulty in the rubber industry. Consul Kenneday says that it would scarcely seem advisable to invest money in rubber estates unless the owner can first see his way clear to obtain sufficient labour with which to collect the rubber.—*Journal of the Society of Arts*, Sept. 22nd.

THE BURMA RUBY MINES, which have had such a bad time of it are now beginning to show signs of improvement. A dividend of five per cent is for the first time to be paid. Representations having been made to the Government the arrears —R4,00,000—have been wiped out, and, in addition; there has been a remission of R2,00,000 made in the rent for the two years ending October last. Since the account were closed, it is stated that there is for the five months a mining profit of £11,470, as compared with a loss of £360 for the corresponding period last year. The present dividend might have been greater, but for the fact that the richest mine possessed by the company was flooded for four months last year.—*Globe*, Sept. 16.

GUTTA AND RUBBER IN BRITISH NORTH BORNEO.

By Henry Walker, Commissioner of Lands.

Borneo Guttas and Rubbers are quoted in the price currents of the world and are well known to trade. They have been collected and are still being collected by Dyaks in the vast jungles of British North Borneo. There are many qualities of gutta, the price of which varies from $30 to $380 a picul, say 5½d. to 5s. 9d. a lb. Of Rubbers there are several kinds but the price is more constant, say about $60 to $80 a picul or 10d. to 1s. 2d. a lb. The railway to the interior, now constructed as far as Beaufort on the Padas river, promises to increase the export of gutta from the West Coast of British North Borneo as parties of Dyaks are already making their way up to the interior by the route in larger numbers than hitherto. In 1895, one Dyake Chief, Nakoda Balli, came down the Penotal George road with some Murnts from the far interior of North Borneo and sold his collection of gutta for $3,600 (that was the first time that any of the interior tribesmen had seen the sea), but the collections likely to be made by Dyaks in the near future will probably beat that record. The Dyak collector only fells gutta trees over six inches in diameter, because, as he says, trees of a smaller size have too thin a bark to yield any gutta. Consequently the gutta collector does not exterminate—he merely collects a ripe crop and leaves nature to furnish a further supply in years to come. In this respect he differs from the gutta leaf collector who fells every tree, small or great; and if leaf collecting is allowed, extermination must ensue—or so few trees will be overlooked that future collection will not pay. Another point against leaf collection is the weight of the leaf, if not dry—the trouble of drying it—and when dry the small percentage of gutta extracted.

Having felled a gutta tree, the collector rings the trunk at intervals of about seventeen inches—cutting through the bark to the wood—and, if available, places a piece of bamboo below each cut to receive the juice and keep it clean. A great deal of the variation in price is due to bad treatment and to adulteration with leaves, twigs and soil. There are many trees in British North Borneo yielding gutta, but I am not yet able to give any but native names. At Tenom at the junction of the Pagalan and Padas rivers, which is to be the terminus of the present railway, a fair is now held every fifty days and is attended by traders who carry up salt, cloth, matches and luxuries, such as Rimmel's scents in superior bottles, l and bring down gutta, rubber, dammer, rattans, bees-wax, skins, &c. At Tenom there are seven kinds of gutta with the following native names:—

Ilang, two kinds, red and white, price $100 a picul. At Kaningow thirty miles higher up the Pagalan; this is better prepared and fetches $120.

Gutta Durian, red, $100. Gutta Tagal, $80. Bajoorye, $80. Merrisa, $60. Menown, $30 to $40.

Of rubber two kinds are brought to the fair:—Kubal at $60 and Menungunor Gutta Lichakat $80.

The Menungun rubber creeper is cultivated by the natives dwelling on the Telicossan river, a very large stream—so large indeed that at times it causes a flood on the Padas. There are several large villages with long houses well raised above the ground containing sixty doors, *i.e.*, families. Some of the people have plots planted with the Menungun creeper which they tap after about the seventh year and only retap when the last wound has healed, which probably means once a year. I am told that this creeper attains a diameter of twenty inches. I have seen it fully six inches thick on the Segama River and it is known all through North Borneo by the same name. The fruit resembles a very large orange and is sweetly acid—a most delicious fruit to eat. So far as I know it ripens in October. It should be grown together with rotan, which assists the creeper in climbing upwards.

All the above guttas and rubbers grow in the Tenom district where the Government is now opening an experimental garden under the charge of Mr. Chas. Keasberry. That gentleman informs me that he can get all the labour he requires and frequently has to refuse work to parties of natives from the Upper Padas. A large block of Tobacco land was marked out on the upper Padas by the Borneo Tobacco Syndicate and since then the natives are constantly enquiring when the estate will be opened. From what I can gather I should say that several thousand coolies can be obtained from the Upper Padas when required for planting purposes. The women work as well as the men. Until the railway is opened to Tenom the bridle path on the right bank of the Padas must be availed of. When I used the road in July it was in good order and I could have ridden a pony along it except for one small landslip at Royoh and one fallen tree. Mr. Tower, the Railway Engineer, who was with me, remarked that it was as good a bridle path as the hill roads of Ceylon. The telegraph wire runs along this path which can be kept in order by the telegraph coolies at a small additional expenditure.

At present a party of Dyaks are seeking gutta on the lower Padas district which contains gutta trees in large quantities:—a very reassuring fact to the planter who may think of taking up land along the railway line. An application has just been made by the Eastern Extension Telegraph Co. for a huge block of land between Bukow and Beaufort, along the railway line, for rubber and gutta planting.

At Kaningow on the Pagalan the great southern tributary on the Padas, a better class of gutta is brought called Kayan, a red Gutta, which sells for $200 at Kimanis. It is of a superior quality, unbreakable when bent and comes from Menown on the south-east of Kaningow in the Daht country. This wealth of natural, indigenous, gutta extends across the territory to Sandakan, but at Sandakan a more valuable class of gutta is obtainable. The local name is Klapeii, a large and a small leaf, red underneath, growing on low hills the gutta from which sells for $140 to $380 a picul, say (at exchange 2/-) equal to 2/1 to 5/9 per lb.

I met parties of Dyaks on the Segama in 1885, who had been about 250 miles up that river gutta collecting, but the Kinabatangan and its great tributaries, which extend beyond the centre of our territory up to the Eastern slopes of the West Coast hills, afford the largest gutta collecting ground. The amounts collected must vary considerably, but as far as I can learn the gutta collectors earn about nine or ten dollars a month after paying their expenses. Their expenses are not great; a little rice, a little (a very little) clothing, matches, salt and tobacco, all of which they obtain on credit from a trader, who, of course, expects to buy the gutta on their return. He has to pay the current price and the Dyaks are quite able to take care of themselves in that respect. When in the jungle the Dyaks maintain themselves by fishing, snaring and hunting, in which they are assisted by their dogs. On the whole the gutta collector's life is a hard one—small profit and much loss of life—but their traditions and customs lead them into the jungle where they can indulge their taste for a wild, savage, life to the fullest extent except as regards head hunting which has been put down with so stern a hand by the European and the venture some Dyak now only rarely takes head.

Large collections of gutta are made on the head waters of the Padas by the local natives but these chiefly go to the independent territories and into Dutch Borneo and are sold to traders who supply repeating rifles and guns of sorts, the importation of which is not allowed in British North Borneo.

The exports of Gutta and Rubber from British North Borneo for the years 1897 and 1898 were as follows:—

	1897	1898
Gutta	$93,639	$125.280
India Rubber	$49,513	$ 79,600

—*British North Borneo Herald.*

NOTES FROM BRITISH CENTRAL AFRICA.

Mlangi, B.C.A., 18th Aug., 1899.

What fortunes might be made in

RUBBER

at present prices; but, as a man remarked to me the other day, his fortune would have been secured had his grand-father planted 100 acres of *ficus elastica*. We have the tree here at least a tree which answers the description I have read of it some where, most likely in your *T.A.* I have two enormous trees in my shade clearing and have just been tapping one and a man has just brought in 1 lb. 2 oz. of rubber for one day's work and I am quite sure there is a week's work before the tapping is finished, the rubber is a beautifully white sample. We have

ANOTHER RUBBER TREE

here *Kickxia Africana* which yields rather a sticky rubber that does not coagulate well—*Landolphia Kirki* and *Landolphia Petersiana* are the common vines of the country, but they are few and far between. The only rubber exported from East Africa seems to be the produce of these two vines, the natives don't know how to tap the rubber producing trees besides the above named, we have a very common vine of enormous dimensions, about a foot in diameter is a medium-sized one, in which I find a large quantity of rubber. It simply runs from the vines when cut like blood from a wound, but the natives cannot manage it either: it is so sticky they can do nothing with it. I took a couple of men with buckets and made them tap a vine holding the bucket under the wounds made and in one day the result was 2½ lb. of liquid rubber which I coagulated with acid. I don't know that this rubber vine has been identified, but think it must be the vine that I have read about being tapped in Madagascar.

THE NATIVES HERE

are very destructive in their method of collecting rubber. They cut down the vines, then cut them in handy pieces and slice pieces out of the bark here and there—of course only getting half the rubber they ought to get—and destroying the vines, which take many years to grow up again. Traders don't instruct natives how to tap rubber trees or vines. All they want is to secure the rubber at as cheap a rate as possible, with the result that there will be

NO RUBBER IN AFRICA

in the course of a few years. Government should take action in the matter.

Only the other day I arrested a party of men sent out by a European trader to collect rubber, and thus had any number of vines destroyed on my land, they got fined £3 each or six months hard labour for it. Of course the men did'nt know they were doing wrong, having been sent by a white man, who by the way paid the fine and returned the rubber collected to me, I shall make him pay for the destruction of the vines if possible.

This is a poor man's country.

LAND AND LABOUR ARE CHEAP,

and when we get a railway, perhaps the country will be opened up a bit, progress is slow principally owing to the country having got a bad name for B. W. fever. I don't think it is worse, if so bad, than your tropical typhoid. The Malaria Commissioners begin to think they have come to the wrong place as they cannot get cases.

Don't send any Ceylon men here like that gentleman Stephens, who turned in a funk from Chinde: they are not the stamp of men to pioneer in a country like this. I got a letter from that gentleman which I never answered. I am afraid the stamp of planters you have in Ceylon now-a-days, at least few of them are like the old pioneers of coffee planting who had to suffer many hardships as well as sickness R. B

DEPARTURE OF AN AMERICAN SCIENTIST.

Dr. Edwin Mead Wilcox, of Harvard University, Cambridge Mass., U.S.A., who has been spendiug a month in Ceylon, in order to gather information with respect to the cultivation of our chief products, left with Mrs. Wilcox last month by the P. and O. "Bengal" for Singapore. There he spends a week before proceedings to Java. Dr. Wilcox writes to us as follows:—"Thanks to many Ceylon planters and the great fund of information they all seem to have. I have secured much of value to me in my work in Cuba." Dr. Wilcox, we may remind our readers, is eventually to take charge of the Sub-Tropical Department of Harvard University that will be opened near Cienfuegos, in the South of Cuba. He will be studying tropical products in Java until May next year.

PLANTING NOTES.

Rubber Troubles in S. America.—Complaints are now made in Sao Paulo of the depredations of the mangabeira rubber gatherers. They do not trouble themselves to tap the trees, or shrubs, but they cut them down and even cut the roots. Of course they are rapidly destroying the sources of what might be a permanent and profitable industry.—*Rio News*, Aug. 22.

A Japanese Green Manure.—The U. S. A. Experiment station at San-in (Japan) has been cultivating a plant known locally as umakoyashi (*Medicago denticulâta*). This has been selected for experiment because its cultivation and utilization, as a green manure, is considered a matter of special importance locally. Analyses show the plant to contain 0.78 per cent of nitrogen.—*Planting Opinion*, Oct. 14.

Cinnamon for Influenza.—A correspondent writes:—"As this drug is being recommended as a remedy for the epidemic influenza, it may be well to caution the public against depending upon the culinary essence known by that name, and sold at low prices. This is made from cassia, a bark which, whilst it is quite destitute of the medical virtues of the genuine article, resembles it so nearly in taste and odour that those requiring the one may receive the other. Those desirous of trying the remedy should obtain it from their chemist, and ask for genuine tincture of cinnamon, or spirit of cinnamon 98, and in no case take essence of cinnamon. Cinnamon is much more expensive than cassia."—*South Australian Register.*

CACAO SOILS IN THE WEST INDIES.

Government Laboratory, Georgetown, Demerara, British Guiana, Aug. 31.

DEAR SIR,—My attention has been directed to an article in your issue of July 18th, 1899, in which Mr. Cochran has ascribed work done in this laboratory by myself and staff to Professor Carmody, of Trinidad. I shall be obliged to you if you will give to Mr. Cochran the two pamphlets I have sent under cover to you, the first entitled "The rocksand soils of Grenada" and "The agricultural chemistry of cacao" and the second an extract from a report on the agricultural work in the Botanic Gardens of this colony relating to cacao. I may remark that the Grenada soils were personally selected by myself from the plantations.

I have also a series of analyses of the very fertile cacao and coffee soils of Surinam, which I made for the purposes of comparison with the soils of the interior of the Colony, which, if they are of any interest to you or to Mr. Cochran, I shall be happy to place at your disposal.

Professor Carmody's analysis are not comparable with ours, as he uses a different method of attacking the soil with acid solvents. We have for the last 15 years used invariably the process described in one of the pamphlets.

I may say that my experience in the West Indies points to the great importance of the amount of potash in an available state present in the soil and to the lesser importance of phosphoric and nitrogen and this consideration is based on the analyses of sixty or seventy different soils.

Thanking you in anticipation for giving the pamphlets to Mr. Cochran.—I remain yours faithfully, J. B. HARRISON.
Government Analyst, British Guiana.

Having handed on the pamphlets, mentioned by Mr. J. B. Harrison, Government Analyst, British Guiana, in his interesting letter which appears above to Mr. Cochran, as requested, the latter has kindly favoured us with the following remarks:—

City Analyst's Office, Colombo, Oct. 21.

I have to thank you for a reading of the letter of Mr. J. B. Harrison, Government Analyst of British Guiana, on the subject of the cacao-soil analyses, with which I dealt in the article you published on 20th July of the present year. I am also much obliged for the two pamphlets he has sent to me, embodying the results of his analytical work of many years.

They represent an amount of original and careful analytical work, which only an analyst can fully appreciate. I should also very much wish to see his analyses of the very fertile cacao and coffee soils of Surinam, which Mr. Harrison offers to place at your disposal.

Of the two sets of cacao-soil-analyses which I compared last July, only the second set, viz., the analyses of soils, of average fertility, was conducted under the supervision of Professor Carmody, Government Analyst of Trinidad; while the first set, the analyses of fertile cacao soils, was the work of Mr. J. B. Harrison, and his staff at British Guiana. I am sorry I did not know that Mr. Harrison was the analyst till I received his letter which you have forwarded. The copy of the proceedings of the Agricultural Society, in which I first saw the analyses (published in 1897) was incomplete, some pages being a-wanting, and amongst them the first page of Mr. Harrison's report; but, even in the complete form which he now sends me, entitled "Extract from the Report on agricultural work in the Botanic Gardens relating to cacao" and printed by authority of the Government, neither Mr. Harrison's name nor that that of any other member of the staff of the Botanical Gardens occurs!

As the two sets of analyses were by different chemists, using different analytical methods, they are of course not so strictly comparable, as if the same analytical methods had been followed, but a comparison is still instructive.

As Mr. Harrison has had great experience in the Analyses of cacao soils, planters will be glad to have the latest word he has to say on the subject which is as follows:—"I may say that my experience in the West Indies points to the great importance of the amount of potash in an available state present in the soil, and to the lesser importance of phosphoric acid and nitrogen, and this consideration is based on the analyses of sixty or seventy different soils."

I find the same view as regards nitrogen more fully expressed in Mr. Harrison's work entitled: "The rocks and soils of Grenada and Carriacow and the agricultural chemistry of cacao *, where he remarks:—"Upon all the soils of Granada, light dressings of nitrate of soda or sulphate of ammonia will prove beneficial to plants and upon the soils which appear in the list marked 'nitrogen' such dressings are in my opinion essential to successful cultivation." (These last are soils in which the amount of nitrogen ranges from ·032 to ·137 per cent.) "Where such crops as cacao, coffee, and nutmegs are the staples, it is necessary to use great care with regard to nitrogenous manures. Heavy dressings of active nitrogenous meanures may easily cause excessive leaf formation, and result in the flowers produced dropping without the fruit setting, and the anticipations of full crops raised by the brilliancy of the heavy foliage, will not to fulfilled. In view of this, I recommend that nitrogenous manures should be supplied to these "crops as a rule in light dressings of not more than one cwt. of Nitrate of soda per acre at the outside, and applied only at the time when the main crops of fruits have just been picked. If the trees show a full leaf development with no signs of flagging, nitrogenous manures should not be applied as their use may result in more harm than good. For cacao, nutmegs and similar crops, I consider that nitrate of soda will probably be found a preferable source of nitrogen to sulphate of ammonia, whilst the latter will be found better for sugarcane."

There are several other very interesting points on Mr. Harrison's able reports, to which I should like to draw attention, if I had the time at present to go into the different subjects discussed; but the object of my present letter is simply to give Mr. Harrison credit for the analysis of the set of fertile cacao soils referred to in my communication published by you in July of the present year.

INDIAN TEA ASSOCIATION.

MEETING OF THE GENERAL COMMITTEE.

The following is an abstract of proceedings of a meeting of the General Committee of the India, Tea Association held on 3rd October, when there were present: Messrs. H. S. Ashton (Chairman), H. C. Begg (Vice-Chairman), W. Brown, R. Magor, G. A. Ormiston, M. R. Quin, A. Tocher, R. R. Toynbee, and T. Traill:—

1. Proceedings of the last meeting of the Committee, held on the 5th September, having been approved in circulation, were confirmed.

2. Proceedings of a meeting of the Darjiling and Duars Sub-Committee, held on the 19th September, were laid on the table.

3. Proceedings of the Assam Branch for the month of August were to be recorded.

4. Minutes of a meeting of the Cachar Branch, held on the 26th August, were to be recorded.

5. Letters of 25th August, and 8th and 15th September from Mr. Ernest Tye, Secretary, Indian Tea Association, London, came up for consideration and disposal after previous circulation. The principal subjects dealt with in these letters were:—

(*a*) Ocean Freights.—Mr. Tye stated in his letter of 15th September that this question had been considered by the London Committee, and that it had been decided to send a copy of the General Committee's letter of 19th July to the Secretary to the Calcutta Steam Conference, with an intimation that the views expressed therein were strongly supported by the Association. It was also stated that a special Sub-Committee had been formed to take charge of the question.

(*b*) Paris Exhibition.—In his letter of 15th September Mr. Tye stated that he had interviewed the Secretary of the Indian and Ceylon Committee of the Royal Commission with reference to the question of tea exhibits. It was suggested at this interview that the samples should be arranged as a trophy and placed in the centre of the Court, or that they might be arranged in cases and exhibited in the tea room. It was considered that about one hundred samples, representative of the various tea districts, would suffice to illustrate the different classes of tea grown. Mr. Tye also stated that he understood the Revenue and Agriculture Department of the Government of India were prepared to receive and forward all exhibits. Special labels numbered and marked for attaching to the exhibits in Calcutta would also be supplied by the Exhibition authorities through the India Office.

The Committee directed the Secretary to communicate with the Secretary to the Government of India in the Revenue and Agriculture Department asking for definite information in regard to the dates by which samples would be required: and also in reference to the special labels mentioned in the London Committee's letter.

The Secretary was also instructed to write to Mr. J Buckingham, C.I.E., Chairman of the Assam Branch, asking his assistance in procuring a collection of dried leaves of the various classes of tea. A collection of this description had been previously asked for by the London Committee as being likely to prove an interesting exhibit.

(*c*.) London Warehouse Charges.—Mr. Tye stated in his letter of 15th September that the Committee in London had under consideration the General Committee's letter of 17th August upon this question. After a full discussion they had decided again to address the Tea Clearing House Committee urging a reconsideration of the request put forward for a reduction of the charges.

As the General Committee's letter No. 561-O of 13th September in which the question was fully dealt with was not before the London Committe at the time Mr. Tye's letter was written, it was now agreed to await their views upon that letter of 11th September from the Acting Secretary, Planters' Association of Ceylon, in reply to hte General Committee's letter No. 463-O., of 17th August, on the question of the abolition of the English import duty; also letter of 14th Sept. from the Honorary Secretary, Dehra-Dun Plantres' Association, and letter No. 1,793 of 2nd Sept. from the Secretary, Darjiling Planters' Association, on the same subject.

In the letter from the Ceylon Planters' Association it was stated that the Committee of that Association were not convinced that the time was ripe for a movement in favour of the abolition or reduction of the duty; or that abolition would be in the best interests of the producers. They were, however, continuing to collect information, and asked upon what figures the General Committee had based their statement: "that it is admitted that reduction of duty in the past has tended to increase consumption as a whole, and that further reduction would have a similar effect."

The Honorary Secretary of the Dehra Dun Planters' Association stated that he would be unable to submit the views of the members of that Association until November, when the next General Meeting would be held. He considered, however, that abolition would enormously stimulate consumption, but it was, he thought, a question whether the effect on production would not mean a very large addition to the area under tea; an addition probably out of all proportion to the increased demand, and which might eventually place the industry in a worse position than would otherwise have existed.

It was stated in the letter from the Darjiling Planters' Association that that Association cordially supported the action taken by the General Committee.

The Committee regretted the attitude taken up by the Ceylon Planters' Association and directed the Secretary to give when replying the figures upon which the statement referred to was based. The following extract from a speech made by the Chairman of the Ceylon Planters' Association on the 17th February 1899 was also to be quoted viz., "They knew, and they felt undoubtedly, the reduction of duty in past years had tended to increase consumption. Fiugres that were before him were most encouraging. Going back to 1837, when the Queen came to the throne, only 30,000,000 lb. of tea were consumed in the United Kingdom, and the duty was 2s 1d; in 1897 the duty was 6d, and the consumption was 183,000,000; and in 1897, ten years later, the duty was 4d, and the consumption 232,000,000. He did not mean to say that was entirely due to the reduction of duty, because the increase in population had to be taken into account, but it was quite sufficient for his argument that the reduction of duty tended to increase consumption."

The letters from the Dehra-Dun Darjiling Planters' Associations were to be recorded and the further consideration of the question was to stand over pending the receipt of the views of the London Committee, and of the Assam Branch.—*Englishman*, Oct. 12.

THE IMPROVEMENT OF COFFEE.—I.

(By a Planter.)

It was recently shown that a comparison of the prices given in the Pnblic Sales List of the bulk of Costa Rica, Mocha, Santos and East India coffees, sold in London in the first half of this year did not support the contention that East India coffee has deteriorated as compared with its rivals. It has, however, been urged that snch a conclusion cannot be relied on, as, thought East India may prodnce a few very fancy sorts, yet brokers are of opinion that the bulk has dsteriorated, aud is being ousted by Central America coffee of a cheaper and bstter quality. Ths reply is obvious. The comparison was made on the prices realised for every class of coffee and not for fancy sorts only. The valne of an article is the price it will fetch at public sale, and its comparative value is determined by the ratio of that price to that of its rivals. No amount of private opinion can outweigh the judgment of the pnblic as shown by the price. Further, it was shown that brokers had just the same opinions as to deterioration of East India coffee, and the competition of Central America, in 1885 as now, yet by 1887, when prices had risen, these complanints had ceased. It was allowed that now, as in 1885, the sample may have been poorer than usual; but the point insisted on was that this is no proof of permanent deterioration. In 1885, eight samples of Wynaad A. coffee, selected by a Committee of the Association as representative of the varions kinds of coffee grown in the District, sold as follows:—50*s*, ; four samplcs 56*s*. to 57-6 61*s*. ; 64*s*. to 65*s*.; 69*s*. 6*d*. These prices are 10*s*; to 20*s*· below the prices ruling in the first half of this year, but are on about the level of present quotations. The sample which fetched 57*s*. 6*d*. sold in 1886 for 76*s*. to 79*s*. 6*d*. and in 1887 for 96*s*. to 106*s*. 6*d*. The improvement was mainly due to a better market, and possibly in some degree to more favourable seasons, or to greater care in cultivaticn and curing; but the fact remains that it took place, and there is no reasou why a similar improvement should not take place in the course of another two years. As to Central American competition, only this year compilers of coffe statistics have shown that, while the total crops of all other countries have not increased in the last 25 years, Brazil crops have increased 300 per cent. in that time, and over 50 per cent. in the last threo years. These compilers have drawn attention to what has been an axiom in the coffee trade for the last 40 years, that it is ths size of the Brazil crops which determines the price of all kinds of coffee throughout the world. In view of the fact that steps are being taksn to raise Brazilian exchange, while no very, efficacious steps are being taken in Central America, it is most important that we should keep clearly before us, that it is the over-production of Brazil which is the dominant factor in depressing prices. And we may take comfort from the reports in local papers that coffee is unremnnerative both in Brazil and Centcral America at present prices in spite of low exchange.

Still, as in 1885 East India planters spared no pains to improve their sample, so now it is no less incumbent on them to do all they can to that end and it is proposed to consider in the light of practical experience the numerous remedies which have been so freely offered. Most of these are suggestions for improving the appearance of the bean by the use of machinery adopted in Centeral America. This consists of improved pulpers, washing machines, drying machines and polishers. Some time ago letters appeared in the *Madras Mail* stating that planters in South India used out-of-date pulpers, and, when these got out of order, the only remedy applied was to set them closer and cut the beans. Thero may have been instances of such careless, curing, bnt the remedy is patent. In overy planting district there are men capable of pulping coffee with any pulper in vogue for the last 20 years, so that it is not possible on a careful inspection of the wet parchment to find a cut bean. Such men are quite capable, and constantly in the habit, of repairing their pulpers when they get out of order. Hull and Sabonnia diere, in their books on coffee planting mention that Ceylon planters allowod only one-half per cent. for the cnt beans. It is, to say the least doubtful, if Centeral American planters can bsat this more espeoially as their pulpers were introduced by manufacturers who had gained their experience in making for Ceylon and Indian planters. The idea that wooden pegs bruise and cut less than copper or brass shows a very feeble conception of the principles of pulping. For one of the best pulpers has sharpened steel edges to catch and remove the pnlp and yet will not show a cut or bruised bean. Once it is possible to bruise the bean, a wooden pen will do it as well as any other instrument. The washing machines require pnled parchment to be fermented, as in South India, before the mucilage can be removed, and it is difficult to see what advantage washing in a closed box with revoling paddles can have over washing in an open cistern. Still, any one who likes to try it can get a machine from Mesrs. John Gordon and Co. for £18 f. o. b. in London. The peouliar advantage of the Central American system of curing is said, however, to lie in the method of drying parchment in revoling oylinders throngh which hot air is driven. It is argued on the analogy of tea, the delicate colonr of which is destroyed by exposnre to the sun, that the colour of coffee is spoilt by this same agency.

A Ceylon planter has recently recomended that coffee, spread vsry thinly, should only be exposed to the snn for six honrs, and then be spread on a reapered floor in the store. If this plan is adopted, it would require enormous storage room, something on the principle of a tea withering house, but on a larger scale, as coffee wonld take longer to dry than tea to wither. But the principle seems to differ little from that of the experiment, tried iu Wynaad and Coorg in 1885-86, of drying on tables over which a pandal of arrowroot leaves, or coir matting, was stretched, at a height of some 5 feet, to keep off the direct rays of the sun. At first, it was thought this drying under shade improved tho colour very much; but the Wynaad Committee, after repeated experiments and reference to London experts, arrived at the conclusion that no improvement in colonr could be relied on from shade driving, and it was apt to produce a mottled sample, *i.e.*, mixed with faded or fading berries, probably due to uneven drying. It was found that the coffee of several estates so treated which fetched higher prices one year fetched lower the next, and lots dried in the shade and in the sun on the same estate and sold simultaneously, showed no diffecrence in price, or a difference in favour of the sun dried. In a couplo of years shade-drying was abandoned in both Wynaad and Coorg. The Central American system would of course avoid all danger of uneven drying, and, in view of the extreme importance of improving the sample, it would be well worth trying the experiment. A machine which will dry 500 lb. wet parchment in 24 hours, and can be worked by hand or power, can be obtained from Messrs. John Gordon & Co. for £56 f. o. b. London. This might be used on the estate or the coffee dried as littlo in the sun on the estate as possiblo and despatched to the coast for complete drying in the machine. It would be better to have a couple of machines, one on an estate and one on the coast, which wonld not cost over £130. It should be easy to arrange for any District to defray this cost. Bnt it wonld not be fair to call on Agents to go to any great expense in this matter, willing as they are to adopt new machines of approved efficacy, until it had been conclusively proved that the Central American system shows a very decided improvement in the appearance of the bean over sun-dried coffee. For we are met, at the outset, with the objection that all East India coffee, some of it fetching the highest price in the world, both this year and for the last 50 years, has been dried

in the sun. Polishers have been long in use on the coast, and are found to improve some coffees, but not others. The effect is said not to be very lasting.

The fact is, the best method of curing coffee, both on the coast and on the estate, is well known in South India. This consists in picking only ripe coffee and pulping it the day it is picked; carefully separating all inferior coffee from the best parchment; fermenting the parchment only as long as is sufficient to remove the mucilage, and washing out in one day all that is pulped in one day; spreading the coffee thinly on the tables, and turning it constantly to ensure even drying; putting it in store before the parchment cracks, and keeping it cool and dry in store by constant turning. The Wynaad Committee found coffee dried to 35 lb. a bushel in the sun gave the best results, but some planters prefer 40 lb., and good results have been obtained from coffee dried much less than this. It should be remembered that the great point to aim at is an even sample. For this purpose, perhaps, more care might be taken than is usually done to float off, not only "empty," but half-formed or imperfect beans. A Ceylon planter recommends that a piece of iron should be fixed in the spout of the pulper so as to separate, not only floaters, but all beans which are not of full weight; and that the latter should be classed as No. II Parchment, and tails and floaters kept separate from that. It is also of importance to pulp as clean as possible, so as to have little tails, and to wash these out daily, and not leave them to be washed up once a week. All but the very best parchment should be kept back, and sold separately at the end of the season, and coffee from "white cherry" should never be mixed with any other. This last sold very badly this year, and would have spoilt any sample with which it was mixed. Lastly, the whole of one despatch should be dried to the same weight, to facilitate the completion of the work on the coast and ensure even drying. If parts of one lot are drier than others, the whole must be kept exposed in the sun till the wettest parts are dry, and the drier may suffer from too long exposure.

A question has been raised as to whether it would not be wise to revert to the old method of packing in cases instead of double bags, as a means of preserving the appearance of the bean. This was also raised in 1885, and experts reported:—"As to packing, we have not hitherto (*i.e.* after an experience of some eight years,) found any disadvantage in double bags as compared with cases, and both have been tried separately and together, while our buyers prefer bags to cases as the bulk of our coffee goes to the Continent. We have no reason to suppose that coffee suffers in bags as we had plenty of good colour in bags." All planters of experience will agree with the Wynaad Committee that no method of estate curing (or coast curing either!) will put colour into coffee, but any great carelessness in curing will rob coffee of such colour as it may possess. This leads to the conclusion that there are many other things necessary to produce a good bean than good curing. But a consideration of these methods must be left for a future occasion.—*Madras Mail.*

A SUBSTITUTE FOR INDIARUBBER.

[TO THE EDITOR OF THE "SPECTATOR."

SIR,—In the *Spectator* of September 23rd you write in reference to the suggestions of Mr. Thornycroft that steam-roller traffic should be encouraged by Mr. Chaplin to carry loads of twelve tons at four miles an hour, that "a substitute ought to be found for indiarubber" as it is so expensive. The late Alfred Nobel invented this substitute, and he invited me to see specimens at his home at San Remo shortly before his unexpected death. He showed me samples of roofing for buildings, for tires of bicycles, for heavy carriages, tubes, rings, and tobacco-holders exactly the same as those which are sold all over England, and which turn inside out. Mr. Nobel asked me to tear his imitation gutterpercha, and also the real articles, which were side by side. I tried and found it impossible to even damage most of the articles he had made, and that even the tobacco-pouches and elastic rings were tougher than the articles made of indiarubber. I was very much astonished. Mr. Nobel said: "Mind, there is no indiarubber in these things. I have flavoured them with it, so that it will be supposed to be real." As a fact, the real and false melt much the same. My late friend said: "There is a larger fortune to be made out of this invention then I and my friends have made out of dynamite. If you have any money invested in guttapercha forests or manufactories get out your money. More certainly than beetroot sugar destroys cane-sugar will my invention gradually kill the guttapercha trade." Mr. Nobel added that "next" year he intended to put up works in Italy and to employ fifteen hundred men to make this substitute, which would be called "Nobel's guttapercha." It would seem as if Mr. Nobel carried his secret to the grave. Because I know nothing whatever about these matters, and my late friend knew, this might have been the reason why he showed me his inventions. I can never forget a thing that Mr. Nobel did that afternoon. He said: "I will show you an invention which I will never reveal because it might do much injury, though sooner or later some one will find out the same secret." He then took some grey stuff out of a tin box, added a few drops out of a small bottle and said: "Now, in one hour's time this towel and this old coat I slightly touch with the mixture will take fire and burn violently. Happy that the *pétroleuses* of the Paris Commune did not know my secret." My late friend put the towel and old coat on an old chair in the garden. I forgot the circumstances during his most interesting conversation, but at the expiration of an hour Mr. Noble said: "It is time; come and look," and within five minutes the coat and the towel blazed up furiously. I am satisfied that Alfred Nobel invented a perfect substitute for indiarubber, which could be produced at half the cost of the real article, and unless his brother knows the secret, it is as unfortunate that the invention is lost for the present as it is fortunate that the Greek-fire mixture will remain unused. As regards Mr. Thornycroft's suggestions, he must remember that to carry, say, sixteen tons dead weight, most country bridges and culverts would have to be inspected yearly, and very many rebuilt. And the number of carriage accidents would become too numerous for newspapers even to note them, in addition to the almost daily cyclists' mortuary list.—I am, Sir, &c., GANDOLFI (Duke).

Blackmore Park, Hanley Castle, Worcester, Sept. 25.

ASBESTOS IN CEYLON.—Some three months ago we reported the local discovery of asbestos, and now we see it mentioned that Messrs. S Peter Soysa and H Francis Fernando, two well-known merchants, have come across the material in one of their plumbago mines in the Galle District. Specimens have been submitted to an analyst who has given it as his opinion that this mineral exists in large quantities in the vicinity of Messrs. Soysa's and Fernando's mines.

THE CONSOLIDATED ESTATES COMPANY, LIMITED.

Our absent Editor writes :—I send you the Report of the Consolidated Estates Co., Ltd. (Messrs. Arbuthnot, Latham & Co., General Managers). It is, I think, a fairly satisfactory document: as one "City" man said to me the other day, "the time for eight per cent. dividends all round is past in Ceylon and a good thing, too, as preventing over-production." I will try and look in at the meeting of the 11th, and hear what is said :—

Authorised Capital £100,000, divided into 5,000 Preferred Shares of £10 each entitled to a Cumulative Preferential Dividend of 8 per cent £50,000, 5,000 Ordinary Shares of £10 each £50,000 Total £100,000.

Eighth annual Report of the General Managers, to be submitted to the Shareholders at the General Meeting, to be held at 34, Great St. Helens, E C, on Wednesday, the 11th October, 1899, at 11·30 a. m.

The General Managers have the pleasure to submit their Eight Annual Report and Balance Sheet, together with Statement of Accounts for the Crop Year ending 30th June, 1899.

The profit and loss account shows a balance (including £70 4s brought forward from last year) of £6,617 6s 6d after paying interest on the debentures, and a interim dividend of 4 per cent. on the preferred shares. Out of this sum the general managers propose to replace the £250 taken from reserve last year, leaving a balance of £5,367 6s 6d, and to appropriate this amount as follows, viz: To pay a balance dividend of 4 per cent. on the preferred shares, making 8 per cent. for the whole year, which will absorb £1,480; to pay a dividend of 5 per cent. on the ordinary shares, requiring £1,950; * to set aside for redemption of 5 per cent. of the debentures at 103, £2,266; carrying forward the balance, viz., £671 6s 6d. The following shows the result of the year's working, viz: Net proceeds of crop—1,368,986 lb tea at an average net price of about 6½d per lb realised £37,242 2s 1d; cocoa, cardamoms and cinchona bark, £1,167 15s 6d; surplus on estimated value of produce on hand 1897-98, £86 2s 7d; interest on account, £138 12s 11d. Expenditure on estates—Messrs. George Steuart and Co.'s drafts —R390,315 at an average of 1s 4 11-32d per rupee, £26,584 11s 3d; balance of coast advances, £237 11s 11d; bonus to superintendents—R7,500 at 1s 4 3-16d, £505 17s 2d. The weather during the past season, though somewhat better than that of the preceding year, has not been very favourable for producing leaf; and consequently the crop shows a slight short fall as compared with the estimates instead of an increase as was hoped when the last annual report was issued. Prices of tea have fluctuated considerably. At one time they showed a material rise, but aterwards fell away and touched the lowest on record, though they have since somewhat recovered with the result on the whole that the tea has realised a net average of 6½d per lb. against 6¼d per lb. last year. The following figures giving the actual results of crop and expenditure as compared with the estimates in the last annual report will be interesting to the shareholders and will serve to show with what accuracy the estimates are prepared under the careful supervision of the company's Ceylon agents, Messrs. George Steuart & Co., viz.: Crop expenditure—estimate R395,659; actual result, R393,803. Crop of tea—estimate 1,392,500; actual result, 1,368,986 lb. Capital expenditure—estimate £5,000 (about); actual result, £5,112 11s 2d. The estimates for the new season have again been prepared with caution, and are as follows: Wattegodde—expenditure, R101,690; crop, 340,000 lb. tea. Hoonoocotua—expenditure, R71,714; crop, 240,000 lb. tea. Ellagalla—expenditure, R28,441; crop, 92,000 lb. tea. Tallagalla—expenditure, R56,748; crop, 230,000 lb. tea. Warriagalla—expenditure, R56,521; crop, 180,000 tea. Rutland—expenditure, R49,288; crop, 167,000 tea. Sorana—expenditure, R49,374; crop, 177,000 lb. tea. Totals — expenditure, R513,776 at 1s 4¼d equals £28,016 1s 8d; crop, 1,426,000 lb. tea. Also 9,000 lb. cardamoms and 20 cwt. cocoa from Warriagalla and 20,000 lb. cinchona from Rutland. Exchange during the past season has been rather more unfavourable than for the previous year, the cost of the rupee having been 1s 4 11-32nd (for three months' bills) against 1s 4 1-16d in 1897-8. It is no doubt within the knowledge of shareholders that the Indian Government have adopted the recommendation of the Currency Committee and have made gold a legal tender at the exchange of 1s 4d per rupee, so they will no doubt do everything in their power to maintain this rate. No new properties have been acquired since the date of our last annual report, but 49 acres adjoining Sorana and eight acres adjoining Tallagalla have been added to those estates. The cost of the 49 acres of Sorana was provided out of the original purchase money of the estate, and the little plot of eight acres adjoining Tallagalla was paid for out of the factory and extension account.

The usual acreage statement of the Company's Estates is appended, viz :—

The usual Acreage Statement of the Company's Estates is appended, viz :—

Name of Estate.	Ceylon Dis-trict.	Full Bear-ing.	Partial Bearing.	Recently Planted.
Wattegodde	Dimbula	800	Nil	25
Hoonoocotua	Kotmale	560	25	15
Tallagalla	Kalutara	397	118	70
Ellagalla	Matale	217	6	8
Rutland	Hewaheta	419	30	70
Warriagalla	Nilambe	406	85	83
Sorona	Kalutara	263	32	205
	Totals	3,062	296	476

Name of Etate.	Ceylon Dis-trict.	Reserve Suitable for Tea.	Grass Waste, Water, &c.	Total Acre-age.
Wattegodde	Dimbula	Nil	70	895
Hoonoocotua	Kotmale	45	117	762
Tallagalla	Kalutara	92	23	700
Ellagalla	Matale	13	201	445
Rutland	Hewaheta	85	59	663
Warriagalla	Nilambe	63	624*	1,261
Sorana	Kalatura	176	94	770
	Totals	474	1,188	5,496

During the current season it is proposed to plant up 174 acres with tea, viz., 52 acres on Tallagalla,

* By the articles of Association it is provided that five per cent of the debentures must be redeemed before any Dividend can be paid on the Ordinary Shares.

* of which 192 acres are planted with Cardamoms and Cocoa.

68 acres on Rutland, 45 acres on Sorana, and nine acres on Ellagalla ; also 40 acres with cardamoms, viz., 20 acres each on Warriagalla and Ellagalla. The capital expenditure during the past season for the purposes indicated in the last annual report amounted to £5,112 11s 2d, being a slight excess over the estimate, owing partly to the purchase of the eight acre plot on Tallagalla, and partly to the cost of additional machinery on Sorana to provide for the increased intake of leaf. The greater part of this expenditure, together with the balance at debit of the factory and extension account last year, has been provided for by an issue of £7,000 in 5 per cent. debentures, all of which were sold at par. For next season the capital expenditure is estimated at about £3,000 which includes the cost of opening up the 174 acres tea and 40 acres cardamoms above referred to, as well as some expenditure for machinery, &c., rendered necessary by the expected increase of leaf. Some anxiety is being felt in regard to the blight which has attacked some Ceylon tea properties very severely. Happily very little damage has been done to the Company's estates, and the general managers hope that the preventive and remedial measures which they have authorised will be sufficient to ward off or eradicate the pest. The Company's Ceylon agents have specially recommended a more liberal application of manure to keep the bushes in good heart (as apparently the weakly bushes are chiefly attacked), and this may cause some expenditure in addition to the estimates, though it should also result in some increase of leaf, but the general managers have thought it prudent under the circumstances to carry forward rather a larger balance than usual.

NEW DIMBULA COMPANY, LIMITED.

A general meeting of the members of the above-named Company was to be held at 52, Gracechurch Street, London, on Wednesday the 18th inst., to receive the Liquidator's report showing how the winding up of the Company has been conducted and its property disposed of, to hear any explanation that might be given by the Liquidator, and to pass a resolution as to the disposal of the books, accounts and other documents of the Company.

The resolution to be submitted, was as follows :—

"That the accounts submitted to this meeting shewing the manner in which the winding up of the Company has been conducted and its property disposed of, be and are hereby approved ; that the Liquidator be and is hereby discharged from his office and that the books, accounts and other documents of the Company now in possession of the Liquidator, be handed to the Secretary of the new Company to be destroyed at his discretion after the expiration of one year."

52, Gracechurch Street, London, E.C., 7th October, 1899. A. Crabbe, Liquidator.

The following is the report, for season 1898-99.:—

The Directors have satisfaction in reporting that the re-organisation of the Company was completed in March last, and they now submit the accounts for the financial year ending June 30th, 1899.

The year under review has been exceptional in many ways, exceptional drought was experienced and culminated in a sharp frost on March 7th, which affected a considerable area of the lower fields ; the South-west monsoon broke early and was unusually severe, the effect being a very considerable shortage in yield, which, however, was more or less general throughout Ceylon.

In the face of the unfavourable climatic influences, the Directors are glad to learn that the Estate is in excellent order, and with ordinary weather there is good promise of the current year showing satisfactory results.

The accounts now presented show a surplus of £18,051 19s. 11d., made up of Dividend Fund, £12,878 8s, 9d., and Profit and Loss, £5,173 11s. 2d., after writing off the amount of Tea Extension, viz., £305 5s. 4d., and the amount of the Factory and Machinery Account, viz., £22 1s. 0d. The Directors propose a dividend of 20 per cent. per annum for the year ended June 30th last, 5 per cent of which was paid in March, and the placing of £1000 to form the nucleus of a Reserve Fund.

The Directors wish to record their appreciation of the care and attention paid to the Company's interests by Mr. Dick Lauder and the staff in Ceylon. Mr. Dick Lauder is at present in England, and the Directors have had the advantage of conferring with him on the management and prospects of the property. By order of the Board,

A. Crabbe, Secretary.

SOUTH TRAVANCORE TEA COMPANY, (LIMITED).

The third annual general meeting was held yesterday at the offices, Philpot-lane. Mr. T C Owen presided, and, in moving the adoption of the report, stated that for the year to June 30 last the outturn of tea had been 337,961 lb. (being 37,961 lb. above the original estimate), against 242,046 lb. last year. The average price realized had been 6.03d per lb. as against 5 55d last year and 5·85d the year before. The gross profits had been £3,339, against £1,304 last year and £1,672 the year before. After writing off the whole of the preliminary expenses and the cost the debenture issue, amounting to £521, and after providing £250 for the debenture sinking fund, the net profit had been £1,794, which with the amount brought forward left £1,980 out of which the directors proposed, after meeting the preference dividend for the year, to pay dividend at the rate of 5 per cent on the ordinary shares, leaving £468 to be carried forward. The motion was seconded by Mr. R F White, and adopted. The chairman afterwards proposed the payment of the dividend mentioned on the ordinary shares. For ordinary shareholders, he stated, had received no dividend since the first year after the company started, but their financial position certainly justified a dividend on the present occasion. The motion was seconded and adopted. The chairman expressed a hope that the board would be able to pay an increased dividend next year, the preliminary expenses and the cost of the debenture issue having been extinguished, and the amount carried forward representing half-a-year's dividend on the preference shares. The directors were proceeding carefully as regarded the question of extensions. During the past year they resold two outlying portions of land to the vendor for £1,985. The area under tea now amounted to 722 acres, of which 700 acres were in bearing, the remainder being the young tea. The present price of tea showed an average of ½d in excess of that of the corresponding period of 1898, and the quantity of tea which the company had was larger by between 8,000 lb. and 9,000 lb.—London *Times*, Oct, 3.

LONDON CHARGES OF TEA COMPANIES.—II.

(The *Investors' Review*, Sept. 23.)

THE TEA CLEARING HOUSE.

In this article we propose to deal exclusively with the warehouse and dock charge upon tea, about which there is so much complaint, and to start with cannot do better than quote the schedule of rates supposed to apply to every package of tea that goes through the Tea Clearing House. This is as follows:—

CHARGES ON TEA.

To apply to all parcels by ships reporting on and after July 1, 1888.

	Per package, weighing gross					
	130 lb. to 159 lb.		90 lb. to 129 lb.		80 lb. to 89 lb.	
	s	d	s	d	s	d
Landing and housing rate ..	1	10	1	6	1	4
Management rate ...	2	3	1	10	1	8
Bulking and taring ...	1	8	1	5	1	3
Bulking, taring, or weighing net separately ..	1	3	1	0	0	11
Rent per week ..	0	0¾	0	0½	0	0½

The above charges will be subject to a discount of 10 per cent to importers only.

For determining the class under which the break is chargeable, the average gross weight must be ascertained. When the fraction of the average weight is half a pound or more, the dock companies or warehouse-keepers take the benefit. Thus, the average of a break being 79½ lb gross, the whole break will be rated at 80-89 lb, but the average being less than 79½ lb, the whole break will be rated at 60-79 lb.

For the sake of bringing the table into manageable shape, we have deleted the rates upon certain exceptional sizes which are seldom used by importers. The general size of the packages is from 90 lb to 129 lb, and in all calculations made in these articles we have taken the rates upon these weights as our basis, allowing the usual deduction of 23 lb for the weight of the tare. The charges of most importance to the importer are "management rate"—i.e., the working of the tea—"bulking and taring," and "rent." The management rate includes the landing and housing rate, and a large importer has defined the services rendered for this charge in the following terms:—

"Landing, wharfage, conveyance to warehouse, housing, sampling for importer and broker, sorting to marks and descriptions, weighing, examining for damage, laying down for broker's inspection, and attendance on broker, laying out in showroom for public sale, attendance while on show and sampling, adjusting to weights after sale, coopering, nailing down, trucking and piling for delivery, reweighing and delivering to land conveyance. The rate also includes furnishing warrants and landing accounts."

SAMPLING AND SORTING.

Although this sounds formidable, an examination will prove that the greater portion of it represents work which is quite superficial. For instance, in "sampling for importer and broker" only one chest in a break is sampled, and when it is considered that a break consists more often of fifty chests than less, it is apparent that this entails no great amount of work. "Sorting to marks and descriptions" is for the convenience of the wharf in delivering. "Weighing" is only weighing the chest gross as it arrives. "Examining for damage, laying down for broker's inspection, and attendance on broker, laying out in showroom for public sale, attendance while on show and sampling," are quite small items in dealing with a large number of chests. "Coopering and nailing down" applies to the sampled chests only, and although the rate includes furnishing the warrants, it does not include the warrant stamp (3d per warrant).

BULKING AND TARING.

"Bulking and taring" are rates that do not apply to every package. Teas are not infrequently bulked on the estate, and when this is done they are very rarely rebulked. In regard to taring, according to the Customs regulations, a certain number of chests in every break must be tared from the gross weight of the package, in order to ascertain the amount of duty to be collected. Should there be a variation of more than a couple of pounds in the weight of the chest, nails, and lead—*i.e.*, the tare—each chest of the entire break must be tared, involving the heavy charge of 1s per package throughout. In regard to "rent," all teas are sold on a "three months prompt," and rent is charged for these thirteen weeks, less five weeks, the rent for which is included in the "management of rate." In most cases buyers take delivery of the tea within two or three weeks of the auction; but, however soon they may do this, the eight weeks' rent charged upon the tea, to make up the three months, has to be paid by the importer.

THE LONDON RING.

We have been at pains to explain the actual charges complained of by producers, and will now proceed to point out why they are considered onerous, but before doing so must first draw attention to the fact that the whole of the bonded tea warehouses in London are in a "ring." Treating the London and India Docks Joint Committee as one body, there are nineteen tea warehousing firms in the Tea Clearing House, which clearing house has a large number of subscribers, including all the principal buyers and brokers in the trade. According to the rules of the Clearing House, "No subscribers shall be entitled to warehouse or deposit tea with, or employ in connection with tea, any dock company or tea warehouse-keeper who is not a member of the Clearing House, or to purchase or sample any tea from the warehouse of any non-member." The "ring," therefore, is most complete, for should a dissatisfied body of importers attempt to start a co-operative warehouse of their own, they find that they have the whole of the tea trade banded against them under the rules and regulations of this clearing house. We shall have more to say about this matter later on.

THE MANAGEMENT RATE.

Returning to the subject of the charges, it is clear, both from internal and external evidence that they are excessively high as consideration for the services rendered. First we will deal with the internal reasons that lead us to this conclusion. There is a charge, not given in our table, but sometimes required, for "reshowing for public sale" of 1s 4d per package, and if this is added to the "landing and housing rate" of 1s 6d per package, we get a combined rate of 2s 10d per package for performing exactly the same services as those

covered by the "management rate," excepting that each package has to be handled a second time. For this second handling a charge of 1s per package is thus demanded, which is absurd when the small amount of labour and time involved is taken into account. Then "bulking and taring," if done together, are charged at 1s 5d per package, but if done separately the two operations cost 2s per package. Now the sole difference produced by dividing the operations into two is that each package of tea has to be opened and closed twice instead of once, and for this additional opening and closing of a chest of tea the charge of 7d is made. Just imagine what wages workmen with all the skill produced by handling thousands of these chests in a year would earn if they were enabled to charge the warehouse-keepers anything like this price for their time and labour!

THE WAREHOUSING OF TEA, PROFITABLE.

Secondly, we assume that the warehouse charges are exorbitant, from this external or public reason—there is the keenest competition amongst those engaged in the warehousing business to secure the handling of tea. However, much warehouse charges in other trades may be cut it is admitted on all sides that the warehousing of tea is the most profitable. Hence it affords a fine broad margin, and in spite of the most stringent regulations against the "cutting' of rates, or the granting of special privileges to individuals or companies, we believe that a great deal is done by warehouse-keepers in both directions in order to obtain new business. We know for a fact that discounts greatly in excess of the official 10 per cent have been allowed to certain companies, and this has sometimes been done in a fashion that verges on the dishonourable. However that may be, the questionable habit certainly flings the door open to fraud on the part of managing directors and other officials of tea companies. One case in particular is in our recollection. We have carefully altered the figures, but the actual results were proportionately as we state. Let us assume that the company in question handled 20,000 chests of tea in the year, the dock charges would have been nominally £4,392, upon which the fixed 10 per cent discount would have come to £439. As a matter of fact, £1,098 in discount was allowed, and the £661, or rather the proportionate actual figure, was paid over in sovereigns so as to avoid unpleasant documents in the nature of evidence that the bond of the "ring" had been ignored. The officials of the company that received this extra money were practically told, "We don't care what you do with this money; but do not let the fact that this extra discount has been granted leak out." Subsequently, complaint was made that the company's officials, acting in perfect honesty, had put down the true amount paid by the company for dock and warehouse charges, and not the amount allowed by the rules, in its accounts. This led to awkward questions being put to the warehouse-keeper by his brethren as to why the rates worked out so low. What his answer was we do not profess to know.

THE IRON BOUND "RING."

It follows that abuses of the most serious kind are fostered by this combination to enforce high charges on tea, and an iron-bound "ring" and the practices known to be adopted to dodge its exactions are calculated to cast a slur upon the whole body of gentlemen connected with the trade. So grievous have the complaints become that many of the warehouse-keepers would welcome a reduction in rates, or rather an increase in the discount allowed. We believe that a motion to this effect was proposed to the members of the Tea Clearing House not long ago, but the suggestion was rejected mainly owing to the energetic opposition of the representative of an important warehouse-keeping firm. Yet we are informed on very good authority that this very firm has granted a discount considerably higher than the official 10 per cent in order to obtain new business or retain some of its old. We, therefore, think that importers are fully justified in asking for a liberal revision of, or an increase in the discount upon, these charges to at least 25 per cent. The business would even then pay very well, and there would not be the sore and angry feeling prevalent that one tea company may be paying the official rate, while another is obtaining a secret and dishonest reduction, or, worse still, that some official may be personally benefitting by corrupt and corrupting discounts to the detriment of the company he represents. Energetic action on the part of the tea trade as a whole in regard to this matter is rendered difficult by the very nature of the ownership of tea warehouses; but this is a large matter in itself, and we will deal with that branch of the subject next week.—*Home and Colonial Mail.*

PLANTING NOTES.

COLONIAL GOVERNMENT GEOLOGISTS: CEYLON NEXT?—We read in the London *Times* of Oct. 6, that Mr. W. H. Twelvetrees, F.G.S., has recently been appointed to the position of Geologist to the Government of Tasmania. During recent years Mr. Twelvetrees has devoted considerable attention to the Geological formation of Tasmania, with special reference to mining operations. Can Ceylon boast no scientist who has been performing similar work here and one who may become a valuable member of the *coming* Geological Survey Department? Mr. Oldham's advice, that no special work with a view to mining operations should be undertaken by the servants of Government, will scarcely, it appears to us, be that followed in Tasmania.

CINCHONA PLANTERS will be interested to learn that a new species of cinchona has been discovered. Mr. Standen, the Director of the Government Cinchona Plantations in Madras, is declared to be the discoverer; but he will, no doubt at once deny the bold impeachment. However, we have the authority of the *Bombay Gazette* for the statement, in a leading article in its issue of the 17th instant, that Mr. Standen has reported that "further attempts should be made to cultivate sedgers from seeds obtained from Java," that "sedgers" should be grafted on succirubra, etc.; the "original sedgers" give the "phenomenal return of 741 pounds per acre per annum.' Verily, the wiles of the "printers' devils" and the troubles caused by illegible writing are legion. It is perhaps hardly necessary to state that our contemporary is really alluding to ledger seed through out its lengthy leader.—*Madras Mail*, Oct. 19.

Correspondence.

To the Editor.

THE 4-D IMPORT DUTY ON TEA.

Dear Sir,—As a regular reader of the Ceylon papers and being deeply interested in your island's chief industry, I feel compelled to notice some points wherein the local opinion differs materially, from that held by those residents in England.

First, I will take the 4d import duty upon tea into Great Britain, for it seems to be the opinion in Ceylon that by reducing or abolishing this, that the market will at once be flooded with common foreign teas, and there also appears to be an idea that the last reduction by Mr. Goschen's, tended to lower prices to the producer, in some unexplained manner. It is very difficult to understand how such opinions have been formed.

A country pronounces a decided preference for a certain class of teas and this has most decidedly shown itself in Britain for those of a British growth. Reduce the duty and I fail to see how the taste will be in any way altered. It is a distinctive choice between two classes of tea. The duty as above referred to came down 2d, yet the relative position of China, as against British grown, has in no way altered except to the further detriment of the former.

A family drinks either, tea, coffee or, cocoa; and it is reasonable to suppose that any reduction of the duty on tea would mean a falling off in the consumption of the other two articles. It is generally stated that during the past two years, cocoa has been much more extensively used, and that even coffee is obtaining more attention; attributable no doubt to their present cheapness. To my mind the position of these three articles will always be depended upon their relative cheapness, and according to this, they will either individually give way, or, supersede one another. It is entirely an economic question. When tea and coffee forty years ago more nearly equalled one another in price, their relative consumption was more equal; now tea is so much cheaper, it has outrun coffee. In like manner the coarsest plucked Ceylon and Indian would always undersell cheap China, from the fact that the latter needs more to make a cup; each pound of which will have to pay duty. In other words, to make a gallon of tea, China tea will have to pay fifty per cent more duty.

I have not the data to go fully into the question just now, but would it not be fairer to consider British-grown teas, as instead of being opposed only against China, as arranged against China tea, cocoa and coffee? You, Mr. Editor, have figures that could show the relative consumption of all these in the British isles, the subject could thus be considered in its wider light, for they are without doubt all convertible articles, according to economic value, I believe.

Political economists one and all tell us that reduction of price increases use; so without doubt the reason why consumption has doubled within the last 30 years is that the sale price has gone down to less than half, helped in a measure by lower duties. It is quite inconceivable to an economist, that any other result can ensue.

If there be a want in London, it is a greater unanimity of opinion among producers, as against distributers and consumers, notwithstanding what may be said to the contrary. It is nobody's business at present, so the individual and proverbial sticks are broken singly. For instance, last year a large quantity of inferior China tea was rejected from entry into America, *as unfit for human food* which promptly found its way into London, where it was sold, distributed and consumed, without molestation, there being no sufficiently authoritative machinery to interfere.

Then again,—the largest tea distributer in the world advertizes teas as follows:—1s, 1s 4d and 1s 7d per lb., the last being declared *the finest tea the world produces.* Now let us follow these prices. Collectively they work out to an average of less than 1s 4d per lb. Take off 4d duty; 3½d (a very low allowance) for retailing: 1½d for blending, packing, advertizing and distributing and 7d gross is left for the producer or 6d net. I doubt if Ceylon can *on an average* over some years put its tea in London under 5d net, if any reasonable provision is made for wear and tear of property. If these calculations are right 1d per lb., is left as profit for the grower; thus capitalizing all tea land coming within these limits, say at 10 years purchase and 400 lb., to the acre, at a value of under £17 the acre. No, the reasons for the fall in the price of teas, lies not to the blame of reduced import duty but, to far more direct causes, which I may enter upon later.

It was to support this *first appearance of unanimity* among producers in London, that I, much on the grounds and principles of a party government, supported the 1 lb. draft; although I considered a better proposal could easily have been found.

SUUM CUIQUE.

THE PROPOSED COFFEE ASSOCIATION.

A SCHEME FOR DIRECT SUPPLY.

9, New Broad Street, London, E.C.,
2nd Oct., 1899.

Sir,—As I find that many coffee planters in your district, as well as in the Federated Malay States and in the Dutch East Indies, are manifesting a great interest in the movement I initiated recently for the organisation of an association of producers of coffee, with the object of stimulating the consumption of the article and generally to protect the interests of those engaged in the industry, I beg that you will grant me space in your columns to reply to the numerous correspondents who have addressed me on the subject. I will thus be enabled to give fuller particulars with regard to the objects and progress of the association. I should explain that I was led to take up this matter, in the first instance, in view of the heavy losses which are being sustained by the producers in Brazil and Central America, with which countries my paper, the *South American Journal*, has been for so many years associated. Consequently the final programme of the Association have only been published in the prospectus in the Spanish and Portuguese languages. These are now being largely circulated in the countries mentioned. The Government of Brazil has manifested a great interest in the scheme and has asked me to supply a large number of pamphlets to be distributed officially. The Consuls of the coffee-producing countries of Central America and of Mexico have also sent out quantities of pamphlets to their Governments, and many merchants in London, Hamburg, Havre and elsewhere, have sent copies to their correspondents. I send you herewith specimen copies.

It is obvious, however, that the success of the proposed Association will be more assured if the coffee growers throughout the world should take part in it.

The Editor of the *Indische Mercuur*, of Amsterdam, has kindly offered his co-operation in bringing this matter before his countrymen in Java, Sumatra, etc., where about sixty of the leading planters have already intimated their approval of the scheme.

Probably this letter may lead to the planters in Ceylon, &c., taking some definite action in the matter.

As explained in the Spanish prospectus, the original idea was to form an Association principally for propaganda purposes, to impress upon the public the peculiar merits of coffee and to instruct them how to prepare it. It was suggested that this institution should be supported by a small levy, voluntarily, or legally, imposed upon each bag of coffee exported.

Upon going into the matter more closely, however, I soon perceived that this plan was encumbered by so many practical difficulties that to carry it out to a satisfactory issue would be almost impossible. These I have alluded to at length in my pamphlet. Amongst them I may mention the delay which would necessarily have to take place before all the coffee-producing countries of the world could be got to agree to the assessment; the impracticability of arriving at a general agreement as to its amount, the difficulty of its collection and of being able to estimate in advance the amount of revenue likely to be derived from it; the danger of official interference in the management, and many others, which will immediately occur to business men.

It became evident that the Association could only succeed if founded upon a commercial basis.

Fortunately it will be easy to do this under the conditions which now exist, and are likely to prevail for some long time to come in the coffee markets of the world. It is well known that the retail prices have not yet fallen in any degree proportionate to those which rule in wholesale quotations; also that coffee is sold largely adulterated in most European countries. From these circumstances it results that there is a spendid profit to be made by any Association, or Company, which will take up the business of coffee-roasting on scientific principles upon a large scale, whilst by the issue of coffee, guaranteed pure, at moderate prices, all adulterations could be driven from the market, whereby consumption of coffee will be greatly increased. I have gone carefully into this matter, and have made elaborate calculations as to the profits, which are most alluring. My estimates have been verified by people who have had great experience, and it is probable that, whether the planters give their support or not, there will soon be several large roasting factories established in England, using the machinery which I have discovered to be the best, as by it a great saving is made in the process.

It will be much better, however, if these factories are owned and controlled by an Association of producers. If started by commercial speculators, the interest of the proprietors will be to keep the wholesale prices of coffee as low as possible, whereas the producers, having a wider view, could devote some of the profits to propaganda, which would ultimately lead to a more general consumption of coffee.

If I find that there is a real interest taken in this business I shall have much pleasure in publishing the full detailed prospectus in English. The plan at present is to form a Company with a capital of £60,000 in shares of £1. each.

There is another important function which an association of coffee-producers could perform, to the great advantage of its shareholders, namely that of acting as their commercial agent; as the consignee of their coffee and the supplier of their stores, I have perceived this ever since I arrived at the conclusion as to the best plan of organising the company; but I have not sought to emphasise the point as I hoped and desired that I would have the support of merchants on this side in my efforts for its promotion. As, however, these gentlemen have now shown themselves to be either apathetic or covertly hostile to the scheme, there is now no object in keeping it dark, especially in a letter addressed to planters. Many of your readers must know from experience that their European correspondents do not always take the pains they ought in order to secure the best prices for produce consigned to them. In too many cases it is simply handed over to a broker to be "slaughtered," at any price it will fetch. A co-operative association of planters however, formed upon the lines I have set forth, would have its own large body of consumers which it would reach directly and many intermediate commissions and expense would be saved. Besides this, all the profits now derived by merchants from sale commissions or purchase of supplies would come into the treasury of the association and back into the pockets of the planters themselves in the shape of dividends. I hope the considerations I have mentioned will be sufficient to lead the planters of your district to take an active interest in the scheme.—I am, yours &c.,

JOHN SAMSON,

Joint Editor and Director, *South American Journal.*

MOSQUITOS—SPECIES ANOPHELES AND CULEX.

London, Oct. 3.

Sir,—The readers of your paper may like to make search for mosquitos, and they will have no difficulty in finding a good selection and so be able to ascertain if there are any of the Anopheles species among them or if they are all of the Culex species.

The detail of work performed on the West Coast of Africa is now published and the reports sent home are so simple and practical that I make free to quote a few remarks from them.

When the mosquito is found on the wall you have to note if his body, with the tail, is parallel with the wall; if so this species is the Culex and does not carry the germ of malaria; whereas if a mosquito can be found with the head pointing into the wall and the legs sustaining the body in this position and vertical to the wall, that is to say the body projecting at right angles from the place on which the insect is resting, then it belongs to the Anopheles variety and it should be carefully destroyed and a note taken of its existence.

The report gives particulars as to where the Anopheles variety is to be found. The Anopheles is a puddle-breeding mosquito: it requires puddles to breed in, but puddles of a certain kind; hence the importance of the subject. They were found in shallow roadside puddles containing water weed in the middle of the town; then some in a tub. The principal sources yet discovered consist of little pools lying in small flat areas in the towns: here the larvæ are in large numbers and are evidently in presence of the conditions most suitable to their existence. Although search has been made, as yet very few puddles have been discovered to yield this larvæ.

The whole report is most interesting reading and no doubt it will soon be in the hands of the public.—I remain, Yours truly,

THOS. CHRISTY, F.L.S.

TANNING BARK.

Oct. 20.

Dear Sir,—In your comments on "Our Import and Export trade" in the *Observer* of 14th inst., you refer to the bark supplied by me to Colombo tanners as that of acacia *dealbata*; and as the same note appears in the 1898-99 Directory, I write to put you right on the subject. Acacia *decurrens* is the variety I cultivate for bark (and fuel). The bark of acacia dealbata is very poor in tannic acid as reference to your copy of Maidan's "Wattles and Wattle Barks" will show you. In a few years' time "acacia bark" should appear in a list of Ceylon exports as I sell large quantities of seed every year. Southern India is also taking it up.—Yours faithfuly,

A. J. KELLOW.

THE CEYLON TEA INDUSTRY.

(*Pioneer*, Oct. 21.)

From an address by the Lieut.-Governor of Ceylou to the Legislative Council of that island, in opening the winter session, it appears that, in spite of the ruinous influences of a one and fourpenny rupee, the tea industry in Ceylon is in a sounder and better position financially than ever: and the limit of development is not yet reached. Big as is the present area under tea, large tracts of new tea-land have still to come into bearing. Hitherto the energy of those interested in increasing the consumption of Ceylon tea in foreign lands has always availed to keep the demand well abreast of the supply; hence no anxiety is felt regarding the disposal of the increased production of the future. Not every garden of course is doing well: some estates indeed are now working at so fine a profit margin that any appreciable fall in price must throw them out of cultivation. But unstable concerns of this sort are few in number and form the exception to the general rule. The Lieut.-Governor did not pause in his jubilations to inquire why tea planting pays so much better in Ceylon than in India, but he may have realised that the answer to the question does not lie on the surface. One thing however is patent to anybody,—that whereas Ceylon planters command an abundance of cheap labour, Indian planters are always crying out for coolies. In every productive enterprise the labour supply must be the dominating factor, and so long as the teaming millions of Bengal remain loath to leave their village homes for distant tea gardens, Indian planters will continue to be handicapped.

OTTERY TEA COMPANY OF CEYLON.

REPORT OF DIRECTORS.

The Report of the Directors was submitted as follows:—

The Directors have now the pleasure to submit to the shareholders their Report and Accounts for the year ended September 30th, 1899.

The Crop secured was 141,555 lb. against an Estimate of 160,000 lb., the shortage being due in great measure to unfavourable weather.

After deducting R1,000 from Reserve Account, as arranged last year, to pay for part of the amount spent on Manure, viz., R2,827·60, the Tea has cost laid town in Colombo cts. 27·31 per lb., or without Manure dcs. 26·02 as against cts. 25·05 last year.

The nett average price realised was cts. 46·91 as against cts. 42·40 last season, which may be considered very satisfactory.

After making provision for the Interest on Mortgage, &c., the balance of profit available amounts to R24,466·52. Of this amount R8,940 was absorbed by the payment of an interim dividend of three per cent to 31st March last, and the Directors now recommend that a final dividend of five per cent be paid, absorbing R14,900, that a Bonus of R500 be paid to the Superintendent, and that the balance of R126·56 be carried forward to the next Account.

In the terms of the Articles of Association Mr. W. Kingsbury resigns his seat on the Board, but, being eligible, offers himself for re-election.

An Auditor will also have to be appointed for season 1899-1900.

PRODUCE AND PLANTING.

Tea and Coffee in the United States.—Statistics issued by the New York Coffee Exchange show the remarkable increase in the consumption of coffee in the United States. Formerly a 10 per cent gain in consumption from one year to another was regarded a maximum increase, and even this was the exception and not the rule. But the New York correspondent of the "Grocer" properly points out if Americans would use Ceylon and Indian tea instead of China and Japan growths, then they would have a cheaper beverage than when using coffee, for one pound of good British-grown tea will make sixteen gallons of beverage at a cost of about 1¾d per gallon. Slowly, but, it seems, surely the people begin to learn how to make a right use of Ceylon and Indian tea, but there is an aversion to using them alone, and so the majority of such tea is used for blending. The imports of tea for three years, ending June 30, were as follows: 1899, 74,088,153lb; 1898, 71,957,715; 1897, 113,347,175lb. The imposition of a duty of 10 cents per lb. and the Tea Exclusion Act have also hurt the tea industry, a point disputed by those who favoured the tea law establishing standards. The imports of coffee were as follows: 1899, 831,820,341lb.; 1898, 870,514,455lb.; 1897, 737,645,670lb. Coffee is relatively the cheaper beverage, which accounts for the fact that it is growing in popularity, while tea is 25 to 50 per cent higher than it was three years ago.

Australia and the Pound Draft Question.—Trade opinion in Sydney are elsewhere was, as a rule, in sympathy with the effort of tea producers in their recent struggle to secure the abolition of the one pound draft. The impression in Australia seems to be that Indian and Ceylon producers should not only have been in thorough and complete harmony on the subject, but careful preparatory measures should have been taken both in London and India and Ceylon before the move was made.

They will have Tea.—It will interest tea producers to learn that tea is so popular with the public that any attempt to restrict its supply in the cup by those who prefer to push the sale of intoxicants is met with an outcry. Cyclists have complained loudly of the difficulty they experience in some parts of the country in inducing rural Boniface to supply tea. Numerous letters have appeared in cycling and other journals on this subject. It is suggested that the Cyclists' Touring Club should "take up the cudgels and fight this matter out."—*H. and C. Mail*, Oct. 6.

INDIARUBBER IN QUEENSLAND.

The following from the *Brisbane Courier* will be of interest to those on the Northern Rivers who may contemplate taking up an industry that if carefully attended to may lead to an increase in the articles of production from this colony (New South Wales):—"The news from Cairns that a number of local men are arranging to begin operations in the manufacture of indiarubber is important. The raw article can be obtained from indigenous trees in the shrub, and is said to be of first-class quality. What is perhaps more important, the supply is inexhaustible. One of the chief values attaching to the recent New Guinea concession was the practically unlimited quantity of rubber there obtainable. To find, therefore, that a similar condition of affairs exists within easy distance of a port like Cairns is to say the least encouraging. Then, as regards the industry itself, its outlook is as bright as it possibly could be. The marvellous demand for bicycles of late years has given an immense impetus to the rubber trade. Indiarubber being also a highly perishable article is another important factor in the question of supply and demand. The demand will always exist, so the supply must be kept going. There is one consideration, however, which these Cairns men will find obtruding on their notice sooner or later. That is the question of chief labour in collecting the article. This must be considered when it comes to competing with others. In New Guinea, for instance, labour is cheap and on the spot. Here in Australia we have practically none of this native labour. The nearness to a port

for shipment may counterbalance this advantage which New Guinea rubber traders would derive from a handy labour supply. Our Department of Agriculture has during the year been trying by a series of articles to direct attention to this industry. Its progress will be watched with much interest. It will also place another string on the Cairns bow in raising that town into a place of much importance in the future."—*Sydney Mail*, Oct. 7.

THE INDIAN TEA INDUSTRY.

In his remarks regarding the position and prospects of the Indian tea trade, Mr. O'Conor, in his Annual Report, concerns himself chiefly with the question, whether the demand for China tea in the British market is likely to undergo a further reduction ; but he also touches, incidentally, on the effect of the closing of the Mints on the trade. In connection with the question of the effect of the closing of the Mints, he appeals to the fact of its not having brought about even a momentary pause in the substitution of Indian for Ceylon tea as "another proof, if one were wanted, that a bad currency system does not promote trade, and that a good currency system cannot injure it." Here, however, he seems to us to miss the real point at issue. No one imagines that a bad currency system promotes trade or a good one injures it. Most of those who complain that the closing of the Mints has injured the Indian tea industry would probably maintain that the currency system if introduced was not a good, but a bad one. But, admitting for the sake of argument that it was as good a system as that which it replaced, there still remains the question whether the transition from one the system to the other was not calculated to injure the industry, at least temporarily. Regarded as a permanent fact, one rate of exchange is, doubtless, as good for trade as another. But it can hardly be doubted that a rise in exchange must have an injurious effect on the profits of the producers of a commodity like tea for export to a gold standard country, pending adjustment, which, whether it is brought about through contraction of production, or through a reduction of the cost of production, is a more or less tardy process. The fact, moreover, that the closing of the Mints brought about no pause in the decadence of the China tea trade, is no proof that the Indian industry was not injured by it. All that it necessarily shows is that the injury, if any, was not great enough to produce that particular result. On the whole, it may be regarded as morally certain that, if the rupees were suddenly to be depreciated to such an extent as to enable India to undersell China, she would have a much better chance of obtaining an entry for her tea into foreign markets than she has at present.—*Statesman.*

COCONUTS IN THE PHILIPPINES.

There are several species of cocoa palms growing in the Archipelago, but the ordinary coconut tree (*Cocos nucifera*) is the most important. The Indians make use of it in a good many ways, but only the principal ones need be enumerated. The kernel of the nut they use for food, while the liquid the shell contains makes a refreshing drink. If allowed to stand for some time, this liquid forms a very agreeable milky juice that is realised not only by the natives, but by Europeans as well. After this juice has coagulated, it is mixed with sugar and made into bonbons, known as cocoa sugar, and also into various other delicacies. According to a recent report of the United States Department of Agriculture, by tapping the central bud that crowns the coconut, a kind of wine, called *tuba*, of an agreeable pungent taste, is produced. This *tuba*, when allowed to ferment, produces vinegar, and when distilled, a kind of brandy, that is highly relished by the natives. From the husk of the coconut the Tagals make ropes and cords, and a material for calking their boats. From the woody shell they carve spoons, cups, beads for rosaries, and many other articles. The leaves they use to cover the roofs of their houses. Roofs made in this manner are thick and tight, but they have the disadvantage of burning readily, so that in the towns and villages where the houses are thus covered, conflagrations spread with great rapidity. The veins and smaller ribs of the leaves are used to make brooms, the mid-ribs serve as fuel, and the ashes are utilised in making soap. The trunk of the palm is made to serve as a pillar to support the houses that its leaves overshadow. Oil barrels, *tuba* casks, and water-pipes are fashioned from hollow sections of the trunk. From the roots the natives extract a red dyeing material, that they chew in place of the areca palm nuts or *bonga* when the latter cannot be procured. Large quantities of coconut oil are manufactured in the Philippines. This oil is much prized by the natives. The men and women both use it to anoint the thick growth of hair that adorns their heads, and it thus finds a ready sale at remunerative prices. It is also used in the lamps that take the place of gas-burners in the streets, and in those used by the natives and Chinese in their houses. Manila exports annually about 150,000 pesos (£25,000) worth of coconuts to China and British India, and about 30,000 pesos (£5,000) worth of coconut oil to China.—*Journal of the Society of Arts.*, Oct. 6.

CACAO IN THE PHILIPINES.

"Theobrama Cacao" (Food of the Gods) as Linnaeus called it, a native of Central America flourishes in these islands in the hot damp regions.

It is said to have been imported into the Philippines towards the end of the 17th Century from Mexico, where it has been in very ancient use. Outside the tropics, the tree will grow in some places, but gives no fruit. The Philippine quality is very good, and compares favourably with that of other countries, the best being produced between latitudes 11 and 12 N.

The cultivation of Cacao is an extremely risky and delicate business as, often when the planter's hopes are about to be realized, a slight storm will throw down the almost ripened fruit in a day. A disease sometimes attacks the roots and spreads through the plantation. It is natural therefore, that no one should dedicate his time exclusively to the cultivation of this product at the risk of almost instantaneous ruin. Usually, the Philippine agriculturist rightly regards cacao as a useful adjunct to his other crops. Small quantities of it are sent to Spain, but the consumption in the colony, when made into chocolate by adding sugar, vanilla, cinnamon, etc., to counteract the natural bitterness of the bean is considerable. To make chocolate-paste, a large quantity of sugar is added varying to one third of its weight to equal parts, whilst one pod of vanilla is sufficient for 1½ lb. of Cacao. As a beverage it is in great favour with the Spaniards and half-castes and the better class of natives.

The cacao beans or kernels lie in a fruit something like a gherkin about five inches long and three inches in diameter, and are of a dark reddish colour when ripe. The fruit contains from 15 to 25 beans, in regular rows, with pulpy divisions between them, like a water-melon. The kernels are about the size, shape and colour of almonds, obtuse at the end, and contain a fatty or oily matter to the extent of one-half their weight. In order to make "soluble cacao" as sold in Europe, this fatty substance is extracted.

The beans are planted out at short distances in orchards, or in the garden surrounding the owners dwelling. The tree, in this colony, does not attain a great height—usually up to ten feet --whereas in its natural soil it grows up to 30 feet at least. Like coffee it bears a fruit in the fourth year, and reaches maturity in the sixth year. The fair annual yield of tree, if not damaged by storms or insects, would be about three pint measures of beans, which always find a ready sale.

If all went well, and present prices, more or less, were maintained, large profits might accrue to the planter, but it rarely happens (perhaps never) during the six months of fruit ripening that losses are not sustained by hurricanes, diseases in the tree, the depredations of rats and other vermin etc. Practically speaking, cacao-planting should only be undertaken in this colony by agriculturists who have spare capital, and can afford to lose a crop one year to make up for in it the next, of planting to be taken up by hand-to-mouth colonists who must seek immediate returns.

In the aspect of a cacao plantation there is nothing especially attractive. The tree itself is not pretty. The natives who grow the fruit, usually make their own chocolate at home by roasting the beans over a slow fire, and after separating them from the hulls (like almond skins, they pound them with wet sugar etc. into a paste, using a kind of rolling-pin on a concave block of wood. The roasted beans should be made into chocolate at once, as by exposure to the air they lose flavour. Chocolate is often adulterated with roasted rice and vily nuts. The roasted Pili nut alone has a very agreeable almon taste ; the cacao bean itself, in its pure state, is extremely bitter and unpalatable.

In Manila there is a steam power manufactury which partly supplies the capital with good chocolate, and which will receive our 'attention in a subsequent article.—*Manila Times*, Oct. 4.

SELANGOR PLANTERS' ASSOCIATION.

The following are parts of minutes of a General Meeting held in the Selangor Club, Kuala Lumpur, on Saturday 30th September. Present :—Messrs. W. W. Bailey, (Chairman) J. D. Toynbee, C. Meikle, E. V. Carey, L. Dougal, E. B. Prior, (members of Committee). H. Huttenbach, H. M. Darby, E. F. King, F. B. Hicks, E. B. Skinner, W. Brooke, W. Irvine, A. Barnwell, F. Newman, A. Cathcart, H. C. Rendle, J. H. Power, T. S. Dumbreck, W. McD. Mitchell and Tom Gibson, Hon. Secretary.

QUIT RENTS ON COFFEE ESTATES.

Mr. Dougal proposed and Mr. C. Meikle seconded the following resolution, *viz* :—

"That in view of the distressed condition of coffee planting in the State, the Government be asked to remit the quit-rent on all blocks of 200 acres and upwards until such time as prices improve." Mr. Dougal said that the present depressed condition of the planting community was only too evident, and although it might appear that the question of quit-rent was a small matter, still every little helped. In approaching Government now and asking for this help we do not forget what Government has already done for us, such as help rendered to fight the caterpillar pest, remission of export duty and Hospital fees etc., but all the same he felt confident that this assistance would also be granted us if asked for.

Mr. Meikle reiterated what Mr. Dougal had said as to the present depressed state of planting and assistance already rendered by Government to the planters, and also thought our request would be granted.

Mr. Huttenbach said he would be only too glad if Government could be induced to let us off the quit-rent altogether, but was afraid they would not do so, and he would suggest that we ask Government to let the quit-rent remain in arrears, making the debt a first charge on the Estate, and when times improve the amount due could be paid up without inconvenience.

Mr. Dougal said he thought it would be most objectionable to have a debt such as this hanging on our heads.

Mr. Hicks suggested as an amendment that Government be asked to remit the quit-rent on the unopened portions of Estates until better times.

The Chairman said he was glad to see that the general feeling was that we should not ask too much ; he was also certain that Government would not care to keep a debt hanging over us, but the amendment seemed to meet the case admirably.

Mr. Meikle proposed and Mr. Nicholas seconded the following resolution, viz. :—"That the attention of Government be again drawn to the unsatisfactory condition of the coconut trees in the Kuala Lumpur and other districts where the ravages of beetels are still very marked—where insufficient steps are being taken to keep this pest in check and that Government be asked to see that the Coconut Trees Preservation Ordinance be more rigorously enforced." Mr. Meikle said that for the present coffee had gone to the bad and coconuts were looked upon by many as a safe investment, and a good deal of capital was being sunk in planting coconnts in Selangor

Mr. Nicholas said he had much pleasure in seconding Mr. Meikle's resolution and agreed with all he had said as to the unsatisfactory way in which the Ordinance had been carried out.

THE COOLIES QUESTION.

The next point to be considered was a resolution proposed by Mr. Hutterbach as follow. "To cancel the agreement which prohibits members of the S.P.A. from engaging Tamil coolies locally without the goodwill and permission of their former employers" and the Chairman asked Mr. Huttenbach to name his seconder.

Mr. Hicks said he would second it. Mr. Huttenbach said the object of the agreement he proposed should be cancelled was to protect planters who get their coolies from India and to throw obstacles in the way of coolies who apply for employment in the country and of planters who engage their labour locally. Now he had always engaged his coolies locally and never had any difficulty in getting all the labour he wanted. It had been suggested that the reason of this was because he was so favourably situated when on the Selangor Estate, but even now they come and offer themselves at Batu Tiga which is out of the way, unhealthy and expensive.

Mr. Prior said he was surprised to hear any member make such a proposal as Mr. Huttenbach had done. The agreement, which had been unanimously passed by a general meeting only a few months ago, was calculated to do a great deal of good and had done good and to ask us to cancel it now was asking us to make fools of ourselves.

Mr. Darby agreed with Mr. Prior that the agreement was much needed and had done good.

Mr. Dougal said they had all heard Mr. Huttenbach say that he got all his labour locally and could always get more than he required and under the circumstances he thought Mr. Huttenbach was very lucky, but in his opinion instead of Mr. Huttenbach making a boast of this, he thought it was a thing he need not be proud of. When coolies know that they will be taken on by an employer if they offer their services

they are only too ready to give in their names, with or without any reasonable excuse and leave the estate.

Mr. CAREY said he thought we were inclined to take Mr. Huttenbach too seriously, as he could hardly imagine that Mr. Huttenbach really meant all he had said.

The motion on being put to the meeting was lost, no one voting for it but the proposer.

TELEPHONES.

Mr. HUTTENBACH proposed and Mr. PRIOR seconded the following resolution :—"That Government be asked to connect the outstations and various estates in the districts by telephone with Kuala Lumpur."

Carried unanimously.

The next business before the meeting was to elect a member of Committee in place of Mr. Dougal who is shortly leaving the State for the old country.

On a ballot being taken for a representative of the S. P. A. in the U. P. A. Committee, in place of Mr Dougal, Mr. G Shepherd was elected.

AN AUSTRALIAN TEA BUSINESS.

(Special to the Ceylon Observer.)

SYDNEY, OCT. 1.

Griffiths Brothers are a house hold name in Sydney and district, being one of the largest tea firms in a city, which is conspicuous for stores, selling that popular article of consumption. They have erected handsome premises opposite the Town-hall in George-street, at the top of which is a railway signal, and the trade mark of this firm is seen half-way down the street. The firm believe in advertising and in all parts of Sydney and suburbs placards announcing Griffith's teas and coffees meet the eye, while they have adopted a rather novel method of bringing their name before the public. Near every station on all the railway lines for a good distance from Sydney are placed finger-posts telling the traveller how many miles he has to go before reaching their well-known firm. Their store is a very handsome one, and is made attractive by a number of China and Japan curios, while on the walls are several handsome paintings, giving a very good impression of Ceylon tea estates in the hill districts. The other afternoon a representative of this journal called at Messrs. Griffiths Brothers; and made the acquaintance of Mr. Greenhill, the buyer and taster of the firm, who readily consented to say a little about the tea trade, in which his firm are engaged, which is chiefly to the public, without passing through the hands of agents. They blend Ceylon, China and Indias together, but sell each country's teas separately as well.

Ceylon tea, said Mr. Greenhill, plays a very important part in our business. I suppose on the whole Ceylon takes up a third of the output of our trade. I do not think we exceed that. Some of the finest grades come into this market.

Asked what estates were the favourites he replied hastily, Agra Ouvah and Middleton. St. John's were seldom met with on this market, but "Tynmawr" is frequently met with.

Mr. Greenhill complained of the advance in price in the lower grades of Ceylon tea, and said that during the last six months there had been an advance of fully 20 per cent. On the other hand he endorsed what the representative of another firm in this city had said about Ceylon not getting up to the quality it used to. India tea would do very well for blending purposes, and this could be obtained at lower rates. Of course what Tea was used depended on the man, who manipulated the blends.

What is the prospect of Ceylon tea here?—Ceylon tea will go ahead if brought back to the average quality it was three to five years ago, but if not it will go on the wane. China is coming ahead. The average price of Ceylon tea is higher, the quality is lower.

Messrs. Griffith Bros. have branches in Melbourne, Adelaide, Perth and Freemantle as well as the capital of New South Wales. Melbourne, which also supplies Tasmania, is the headquarters of the firm, but Sydney has the largest output.

Our representative had seen in a western paper an advertisement announcing the distribution of tea-seed among farmers, etc., and he asked for a few particulars about it.

Mr. Greenhill said it was a kind of a hobby. Mr. Griffith had got tea to grow pretty well in his garden at Bayswater, just outside Melbourne, and they had sent seeds to some of their clients. They had about 300 applications, but they had had barely time to judge of results. He thought it would never pay to grow tea here on account of labour difficulties. If they had coolie labour they might; but, owing to the objections of the working classes, the various Governments in the colonies refuse to allow alien labour to be introduced. The development of tea takes a number of years, but if the labour difficulty was overcome, and they looked ahead a quarter of a century the chances were a certain amount of tea might be produced in the colony for commercial purposes.

MR. E. E. GREEN "COCCIDAE OF CEYLON."

We have already published several notices of this book, and are glad to find it is still receiving at the hands of the reviewers at home and elsewhere the attention it deserves. The following *critiques* are from two papers of recognised value in scientists' circles :—

(Natural Science, October.)

The Coccidae constitute an aberrant group of the Hemiptera, contradicting all ordinary definitions of the order and class to which they belong. Hemipterous hexapods, yet in the female sex wingless, and in many genera legless as well. The very methods by which they must be studied are peculiar, and as such distasteful to the ordinary entomologist.

So it has happened that these creatures, though numerous and peculiar, have been greatly neglected. But in recent years, as though outraged by such persistent scorn, they have risen in their might and played havoc with our fruit trees and other crops, not to mention ornamental plants; wherefore we have been obliged to recognise their existence.

Studies usually begun with economic ends in view have led us far afield. It becomes plainer every day that the Coccidae are not only extremely numerous in species, but offer an extraordinary series of peculiar forms, whose organisation, as related to their environment and habits, is of the greatest interest from a purely biological standpoint. The opportunity to advance both economic entomology and pure science is too good to be neglected once perceived; and so we find a new body of students arising, calling themselves coccidologists, and dignifying their study by the name of coccidology.

Of these latter-day students assuredly E. Ernest Green is second to none. Beginning his researches during the previous decade he at first proceeded slowly. The literature of the subject was difficult

to obtain, and when obtained threw little light on the almost unknown coccid fauna of Ceylon. But Mr. Green, not discouraged, resolved to study every species *de novo*, whether described or not; acquiring his knowledge first-hand from nature, as though he might be Adam in the Garden of Eden. This method, in the hands of an intelligent worker, is sure to be successful, and it was eminently so in the case of Mr. Green. He not only prepared descriptions, but also elaborate drawings of every species in all its stages, so far as they could be obtained. This done, a thorough examination of the various publications on Coccidae had to be made before the apparently new forms could be reported as such; but this revealed comparatively few identities. In Part I. there are thirty species described, of which seventeen were new; in Part II. are twenty-nine species, all but three discovered by the author. It often happens, on receiving a paper describing so many new species, that one can immediately detect some synonymy; but I do not know of any "bad species" among the forty-three above mentioned, and doubt if there are any. The descriptions are good, and the plates most beautiful. There is an introductory portion on the general principles of coccidology, including a new classification of the sub-families and full directions for collecting and preserving material. There is also a chapter on the insecticides and other means for destroying Coccidae which injure cultivated plants. In the last-mentioned chapter the interesting fact is brought out that practically all the injurious coccids in Ceylon are those described from elsewhere and presumably introduced into the island. The truly native species, almost without exception, have proved to possess no economic importance; though of course these very species, *carried somewhere else*, may yet become notorious.

An unfortunate conservation, as it seems to the present writer, is shown in regard to genera. The species assigned to *Aspidiotus* represent at least five very distinct groups, which are at least of subgeneric value. *Aonidia* is made to include very diverse forms, including three distinct generic types. Similarly the twenty-six species assigned to *Chionaspis* are by no means truly congeneric; for instance the first six, *aspidistrae, theae, albizziae, mussaendae, rhododendri*, and *scrobicularum*, belong properly to *Hemichionaspis*. The generic classification of the Coccidae, however, is at present in a transitional state, and an author cannot be blamed if he hesitates to propose changes while yet uncertain what those changes should be.

Simply as an illustration of good methods this work ought to be examined by zoologists who do not expect to study Coccidae; while for the coccidologist it is of course essential. Under these circumstances it is to be regretted that the manner of publication is such as to make it extremely costly. The only edition has coloured plates, which of course are expensive, while the colouring does not greatly add to their value for scientific purposes. It would have been excellent to have a coloured edition of small size, if there could have been an uncoloured one at a more moderate price. But the chief trouble is that the publishers insist upon receiving the full subscription (£5) for the work in advance, though it must take at least several years to complete it. The work, of course, is intrinsically worth all that is asked for it, and more; but the fact remains that zoologists are not commonly blessed with superabundant means, and are reluctant to part with a five-pound note under the circumstances just mentioned. Surely if the conditions of sale were rendered easier the subscriptions would become so much more numerous that the amount received would be considerably greater than at present. T. D. A. COCKERELL.

(*Entomologist's Monthly Magazine*, October.)

THE COCCIDÆ OF CEYLON: by E. ERNEST GREEN, F.E.S. Part i, pp. i—xii and 1—103, with 33 plates (1896); Part ii, pp. xiii—xli and 104—169, with 30 plates (1896). London: Dulau and Co.

It is now somewhat over thirty years since Signoret commenced his "Essai sur les Cochenilles," in which de demonstrated by pen and pencil that these to many easy very unattractive insects, the females of most of which live under a sort of fixed carapace (the "scale") for most of their lives, possessed, when examined microscopically, beautiful structure, and that the outline of the pygidium, with its curious denticulations (together with the spinnerets, &c.), furnished valuable generic and specific characters. For many years Signoret found few disciples, and died before the full effects of his work manifested themselves. We think we may fairly claim that to our venerable colleague Mr. Douglas (now in his 85th year) by his papers in this Magazine, was due the initial movement that has since spread over the whole world by leaps and bounds, and has in several instances (such as *Icerya Purchasi* and *Aspidiotus perniciosus*) occasioned government solicitude, and the establishment of paid official entomologists, whose duty largely it is to look after these apparently insignificant scale-bugs. There are at the present time many workers in this field, and their publications are distributed over nearly every medium, and must number thousands of pages annually, whereas about thirty years ago there was nothing. Prominent amongst the workers at the present day is Mr. Ernest Green, the author of the book now under notice. Members of Mr. Green's family have long been associated with Ceylon, and have also been known as entomologists: they saw the ruin of the coffee-trade in the island (by a fungus), and the substitution of tea-planting; it was but natural that our author, as an entomologist, and with a knowledge of the disastrous results of the ravages of *Coccidæ* in other parts of the world, should have watched with much care their effects on the tea-plants, and in so doing his attention has been directed to the group as a whole. Mr. Green, at the solicitation of the Planters' Association, while retaining his interest in his former occupation, consented to devote himself entirely to watching the insect enemies of the planter, and to devising and testing remedies. In addition to his acquirements as an entomologist, Mr. Green possesses the art of delineating (mostly from microscopical specimens) insects and dissections of insects in an exquisitely delicate manner, and one need only glance over the numerous plates in the book before us to see that the work is that of a master hand, incapable, we might venture to say, of being surpassed, and the figures have been faithfully reproduced by chromo-lithography (most unfortunately the paper for the plates is of a smaller size than the text). The letterpress is of the fullest possible nature, with (in Part i) a concise summary of the general habits and structure of the group. The generic and specific details are complete, and the tables of genera are made to include those not yet found in the island. Mr. Green estimates that about 200 species inhabit Ceylon, many are apparently endemic, others again are cosmopolitan or introduced. Much interesting detail is given on the natural insect enemies of *Coccidæ*, and it was news to us that the larvæ of one of the *Lycænidæ* (*Spalgis Epius*, Westw.) feed entirely on "mealy bug."

To Part ii is appended a long chapter on remedial measures and insecticides. It is acknowledged that this is largely drawn from American sources, and the author hopes that amongst the remedies some may be found suitable for application in Ceylon should occasion require. Much stress is laid upon the necessity for quarantine, and in this connection it is stated that all the species that have proved noxious in the island have either been certainly imported or are of general distribution. No undoubtedly endemic species has caused any anxiety. Did space permit we would touch upon some curiosities of *Coccid* life in the work before us. Without doubt it is the most important work that has yet appeared on the subject; it is not often one finds scientific attainments and iconographic skill of the highest

order so happily combined. Putting on one side the matters of labour and time, the cost of producing such a work is great. It is not too much to ask that naturalists who can afford to subscribe to it will do so, and public libraries should possess it.—R. McL.

THE FUTURE OF THE CEYLON TEA INDUSTRY.

London, Oct. 6.

I have had the opportunity of discussing this all-important question during the present week with several representative authorities, all more or less interested in the welfare of our staple industry and the important trade based upon it. I will mention no names, because I have not yet completed my circle of enquiry and observation. But I may at once give you a resumé of the information so far placed at my disposal and of the conclusions I have attempted to deduce. And first, it is cheering to remark on the general confidence maintained in the future of Ceylon and its "tea." The check given to over-production by the enhanced rupee, and the recent fair supply of labour have undoubtedly strengthened the position; while the disastrous experiences in Darjiling, affecting not a few well-known "gardens," has once more attracted attention to the wonderful exemption of the planting districts of Ceylon from earthquake, cyclone or hurricane and so far tended to enhance the estimation of

PLANTATION PROPERTY IN OUR ISLAND.

On the other hand, I find myself always asked "What about these

BLIGHTS,

of which we hear so much in the papers and in correspondence of late?" Now my reply has been uniformly and honestly reassuring; for I firmly believe that, while there was occasion at first to rouse the attention of planters in certain districts to the need of "watching and working" towards checking the evil, and while I felt strongly that both Mr. Willis and Mr. Carruthers took too light-hearted a view in what was no doubt a preliminary (as well as inadequate) Report; yet, during the present year, planters, it seems to me, have rushed to the other extreme and are making too much of the "blight" enemies with which tea has to cope at certain times and in certain districts. I have had placed before me reliable evidence that not a few are inclined to attribute to "blight," injuries or discoloration of their tea-bush leaves, due to the puncturing of insects, to climatic, local and temporary causes. Just as some men at the outset refused to recognise the presence of the grey blight, even when pointed out to them,—so, of late, the other extreme is seen in many superintendents discovering blight in every trivial attack of minor enemies from which no product is free. I do not for a moment say that there are not, in some parts of Ceylon, attacks—and serious attacks—of what Dr. Watt points out to be the worst enemy of our brethren in Assam; but I do maintain that they are far less widespread than has been recently supposed; that they are often very temporary and due to causes (such as too long delay in pruning) easily overcome; and that the time has come now for planters to be very careful in their observations and cautiots in reporting "blight", before they are fully convinced that the real "Simon Pure" is amongst them. Even then, of course, the fight, which can be made in defending and clearing so hardy a bush as tea, is very satisfactory as compared with any other sub-tropical product with which we are acquainted.

All this, however, only shows the importance of

A CRYPTOGAMIST OR MYCOLOGIST

being at work among the Ceylon planting districts; and it is satisfactory to know that the authorities are fully alive to this fact. Negatively, in showing where there is no blight, his work may be nearly as important as positively in experimenting where blights exist and in writing out the life-history and practical remedies for such evils. With, in addition, the presence of an Entomologist, in the person of one so specially qualified as

MR. E. E. GREEN

—himself a practical planter—and the prolonged engagement of

MR. KELWAY BAMBER

as Chemical Analyst and general adviser, surely the Ceylon tea planter may look the whole world in the face, and more especially the commercial (capitalist) world of London, and maintain that everything possible is being done to maintain the industry and the value of properties in the Colony itself—a colony, moreover, where there are the greatest possible conveniences for thorough examination and careful experiments—Ceylon in this respect beating both Java and Northern India with their far more scattered and diverse planting interests.

The next division of my subject for the present, should be the continued progress made in opening

NEW MARKETS

and in this connection I am pleased to read Mr. Renton's encouraging *ad interim* report; and no less to remark on the important fact brought out by your Hewaheta correspondent, that coffee, even at its present unprecedentedly low price, is by no means so economic a drink as tea, if the test be the quantity of enjoyable, or average beverage got from the same weight of each product. Discussing this point with a tea merchant in the City interested in the American market, he pointed out that good coffee could be sold in the United States at one-fourth to one-fifth the price of good tea (in view of the duty on the latter and other causes); but I at once replied that, even taking this somewhat extreme comparison, tea gave *eight* times the return that, coffee did, in a reliable refreshing beverage! This fact must be pressed home on practical Americans as well as on all careful housekeepers on the Continent of Europe (where their name is legion,) and I am sorry I did not embody it in my little French slip of instructions printed at Vichy, in addition to the note I gave on the greater economy of using Ceylon, rather than China,

tea. This latter fact arrested the attention at once, of quite a number to whom the circular was given at Vichy and in Paris; and no less during the late B. A. Excursion in Northern France and Belgium. I am convinced that by means of useful literature, popularly distributed, and judicious advertising, great progress can be rapidly made in winning the Continent of Europe for Ceylon tea, the proximity of the Colombo market to Odessa, Trieste, Genoa, Marseilles as well as Antwerp and Hamburg being another great advantage, when once a direct trade is fully developed.

But now I come to another phase of my subject and one which is, perhaps, of more immediate interest in tea circles in London at present. I refer to the arrangements connected with the receipt, handling and selling of our staple product in this,

THE GREATEST TEA MART IN THE WORLD.

The agitation over the one-pound draft, although it may be thought by many to have ended abortively, and even disastrously, for the time, has undoubtedly resulted in one great good, by bringing a full light of enquiry and criticism to bear on all the arrangements connected with the importation and selling of tea, and some of the details, I find, were quite unknown to men of not a little experience in the trade. I have not yet seen my friend, Mr. Brooke, the well-known, experienced, practical head of Messrs. J. A Hadden & Co.; but I am assured that the system which he induced the Customs to sanction (and which he brought out so fully in his letter of protest) was quite unknown to most of his brethren, or some of them would not have proposed a change equivalent to, perhaps, four-pence a chest, in the weighing, at the risk of incurring a charge of five-pence for taring the same chest! The whole question of warehouse arrangements is now under the careful consideration of the joint Committee of Indian and Ceylon Tea representatives (they held a meeting yesterday) and not a little novel information is likely to be obtained as to the process attending "overtakers,"—surplus tea not put back in chests—*not*, as always supposed, because of careless repacking preventing its admission, but under a regularly adopted system which must have been worked to the great advantage of some unknown parties, neither planters nor merchants. Then, again, the strange fact is likely to be brought out that certain Indian Tea Companies, having protested, and insisted on a strict account of all their tea, have not suffered, like the bulk of their brethren, from this "overtaking" arrangement! Clearly there is great room for reform and for putting all the warehousing, weighing gross and tare, bulking and repacking arrangements, on a consistent, equitable and economic footing, and I trust this may be the final outcome of the present inquiry.

But now I come to an aspect of my subject which has been discussed freely in my presence, *pro et con*, by brokers and merchants during the present week and regarding which I may send you more information by another mail. Every change and reform has the object of "economy" more or less in need, and it may be permitted here to offer a few general remarks on this aspect of the question. The position of the tea-growing industry has, during the past two or three years, necessitated the exercise of strict "economy" in all matters of expenditure, but the equally important question of

"MARKETING THE PRODUCE"

to the best possible advantage, has received but little, if any, general attention. The very considerable decline in values, as compared with, say, ten years ago, is doubtless mainly due to increased production. This increase was induced by the steady fall in the sterling value of the rupee; and so long as the fall continued, it compensated growers for the lower range of values established. But it would be well for producers to consider what other influences may have contributed to this lowering of values. The practice of putting up to public auction all Indian and Ceylon teas as fast as they arrive, regardless of the immediate requirements of the trade, has undoubtedly (in the opinion of good authorities) had, very frequently, a depressing effect on prices from which recovery has been extremely slow. This it is now sought to overcome by the formation of a Committee to regulate the offerings of Indian teas, which certainly is a step in the right direction; but unless the members of the Regulating Committee are able to gauge fairly closely the extent of the current consumption of the article, and unless the whole of the Indian importers consistently back up the Regulating Committee, it is to be feared that the movement may not prove as full and complete a remedy as is desirable. It is pointed out to me that, during the past ten or twenty years, very important changes have occurred in the methods of the

HOME DISTRIBUTING TRADE.

Formerly, I am told, when the China leaf held the market, the dealer was practically the only purchaser for the home trade, the "Blender to the Trade" being unknown. And it is of importance to bear in mind that nearly the whole of the China tea sold in the London market passed by "*private contract*"—very little, and that only to close up shipments, etc., being offered at auction. The dealers in those days carried very considerable stocks; and as they were able to obtain reasonable profits on the basis of Mincing Lane quotations, they had no inducement to lower market values. With the present-day wholesale blender and packet man the case is quite different. He has his standard blends, with fixed prices so far as his customers are concerned; and inasmuch as his purchases at auction cannot be followed, as can those of the dealer by his grocer clients, his profit is the greater the more he can knock down Mincing Lane values. We have also, apparently, to accept the fact that the blender and packet man have been eminently successful in cutting into the trade of the old-time dealer and family grocer, for whom the grower may be excused for having as great a reverence as has the modern buyer for the old-established "pound draft!" It must not be imagined that, to start as a "blender to the trade" or as proprietor of a "packet," is necessarily equivalent to banking a fortune. Many have

failed where few have succeeded, and the latter doubtless owe their success to exceptional business capacity and enterprise, for which all credit is due to them. The fact, however, remains that the London Tea Market is dominated by a few,—a comparatively very few,—large wholesale blenders. There are, of course, numerous other buyers, for the trade of the dealer has not yet been completely wiped out; but the possible operations of these few very large buyers is an additional and hampering element which all others have to take into consideration. The great influence on the market of the large buyers is also felt by sellers of Calcutta or Colombo-bought teas, as also, it is asserted in nine cases out of ten, by growers who do not accept the best bid at auction, and who "take out" any break. The general policy, it is alleged, is, as far as possible, to render the character of the auctions "without reserve" sales, and to discourage all teas not put up on growers' account, presumably because a grower is more squeezable than an importer who has a merchant's cost to cover and profit to fight for. The essence of public auction, of course, is that there should be free and unrestricted competition for the article exposed for sale; and anyone with any knowledge of the subject, I am assured in some quarters, can hardly contend that these conditions apply to the tea auctions in Mincing Lane, except on the rare occasions when any particular grade of tea may be in very short supply.

That the conditions obtaining in the London market are felt to be unsatisfactory seems to be proved by the suggestions which have from time to time been put forward by producers. It has been proposed many times that growers should combine to distribute the produce themselves; but presumably such proposals have been made without consideration as to the enormous extent of the trade, and of the very large capital and personal which would be necessary. The first desideratum, however, would be a complete combination of growers, which would practically amount to a "pooling" of the produce. If this could be secured, there would be no object in going much further, for the existing distributing companies and firms would be available as a means of distribution, and that on very reasonable terms, even on the basis of their present profits, taking them all round.

Another suggestion is that in place of sending all teas to London several other centres should be fixed on, such as Manchester, Glasgow, Leeds, etc. Assuming, however, that the initial difficulty could be overcome of sending to each centre exactly the class of tea required for the districts it would serve, the competition would be less than it is at present; for, although all the very large buyers might be represented, only a proportion of the smaller ones could be expected to attend the sales at each centre.

The great obstacle in the way of reverting to the system of "private contract" is the large number of breaks now put on the market. To some extent this might be improved upon without much trouble on the estates, but not to the extent necessary to admit of the change indicated, unless the whole system of packing teas for the London market be revised. Breaks of *at least* 200 to 300 chests, *i.e.* of each *grade* of tea, would have to be the *general rule*, and the larger the break the better—especially of the principal grades which might run up to 500 or 600 chests. Such breaks could only be secured by bulking together teas of the same character from different estates, and this could only be undertaken by large companies or combinations of proprietors. Such a change would be very difficult of arrangement, except perhaps gradually.

So long as sales by public auction cannot be avoided, it is undoubtedly to the seller's advantage to place his teas on the market where they are most likely to meet with the greatest competition, and the Calcutta and Colombo markets would seem to answer this requirement. Several of the large London buyers have representatives on these markets, and in addition there are buyers for direct shipment to Australia, America, Russia and other parts of the world; while there are also merchants operating for the Mincing Lane market. But it is pointed out these latter are at present at considerable disadvantage owing to the action of the large buyers in London. It is, however, not going too far to say that, if the whole of the Indian and Ceylon crops were respectively sold in Calcutta and Colombo, the competition of merchants prepared to take merchants' risks would be a most important factor in counteracting the overweighting influence of the large London buyers, and that the London stocks of tea, not in grower's hands, would be very much more generally held, which could not fail to have an advantageous effect on prices.

As a means, therefore, of improving the grower's position in the matter of marketing their produce, it is now suggested for consideration:—(1) that a more extended use be made of the Calcutta and Colombo markets, especially by gardens unable to pack large breaks; and (2) that for London very large breaks should be made up wherever possible, and be placed on the market for sale by *private contract*. The excessive cost of working teas in the London warehouses is now (as I have already said) engaging the attention of importers, and doubtless this matter will be dealt with earnestly at an early date, when the charge for bulking will receive attention. With an appreciable reduction under this head, it would be easier, both for the large plantation companies and for import merchants, to bulk together teas from different gardens, and so appreciably diminish the number of breaks. The grower is, of course, entirely free to select his own market; but there are two parties to a contract of sale, whether it be public sale or private contract. It is hinted, however, that certain of the buyers would probably prefer to see private contract the customary condition; but in any case that it would not be introducing a radical change, as the bulk of China teas are still sold privately and private contracts of Indian and Ceylon are not unknown.

With an overstocked market the seller is at a disadvantage in endeavouring to make his voice heard. There are indications that the demand for British-grown teas is approaching the supply more nearly than has been the case for some years, and, therefore,

I am told, it would be well for producers to endeavour at such a time to put matters on a sound footing even though there may be less immediate necessity for doing so than has lately been the case. On the other hand, I have had grave doubts expressed to me as to the principle and practice of "private contracts" being advantageous to the producers. It is asserted by not a few, that there is nothing like open competition to determine values and secure fair prices; that private offers and contracts induce suspicion and jealousy; and that prices must always in the long run be governed by the laws of supply and demand. Still it is admitted, even by the strongest opponents of a change, that private contracts are useful and feasible even now in certain cases; that is, when a dealer, having bought an invoice, is offered and agrees to take two or three more invoices of the same tea—not as yet put in auction—at the same prices as the invoice offered in sale. With this exposition of both sides of the question, I must now leave the matter for the consideration of the tea planters and merchants of Ceylon, assured that, if a change is desirable, it will find advocates amongst their number, ready to do what they can to improve the present condition of affairs.

THE IMPROVEMENT OF COFFEE—II.

(*By a Planter.*)

There can be little doubt that the quality of coffee must be put into the bean on the tree, before it can be developed by the very best method of curing. The most important quality is the flavour when roasted, and coffee bought for the Home trade is always tested by roasting. For the Continent, coffee is chiefly bought on its appearance, it being presumed that boldness and evenness combined with colour ensure a good flavour. As regrads East India coffee, it is certainly the case that no coffee that does not combine all these qualities can be expected to realise a high price, either for the Home, or export trades. The flavour of coffee depends entirely on soil, climate, and species. All East Indian Arabica, Mecha, and most Central American coffees rank as mild coffees, while all Brazilian and Liberian coffees rank as rough coffees English Companies have recently introduced Indian methods of pulping and washing into Santos, and claim to have increased the price some 4s a cwt. This leaves it, however, at 30s a cwt. agiust 52s. for middling East India, in the first half of this year. We may conclude, therefore, that something in the climate of, or in the variety of plant cultivated in, Brazil produces a distinct flavour which, fortunately for us, is considered decidedly inferior to the coffee we produce. Further, within India itself, as is the case with wine in France and Germany, the produce of certain Districts and Estates is decidedly superior to that of others. As regards the Disrict, this superiority is probably due to the dryness of the climate and the elevation above sea level, while in the case of the Estate it must be due to soil. In both cases, probably, some of the superiority is due to the variety of plant cultivated. Admitting that the improvement of the produce of any particular Estate or District is limited by the above conditons, it remains to be seen what can be done to obtain the greatest improvement possible in the produce of any given Estate or District.

It will be generally allowed that the quality of the bean in a crop of any size depends on the vigour of the tree, and that careful handling and pruning to keep the tree open, and thorough cultivation to keep the soil sweet, are essential conditions of such vigour. For the latter purpose drains,

1 feet deep by 1 foot wide and 10 feet aprt are preferable to digging the soil, as it is found that too frequent digging interferes with the roots too much. The Wynaad Committee of 1885 found that shade improved the colour of coffee, and shade is now almost universal, though it was introduced chifly to ward off attacks of borer and leaf disease Lastly, the use of manure is also almost universal now; but, when we come to consider the effect of manure on the quality of the bean, we enter on a very difficult question. For there are two very disturbing factors in calculating the effect of manures: firstly, the law that the larger the crop the worse as a rule is the quality of the bean; and secondly the variation of the season, which may cause a detrioration in the bean in spite of every care bestowed on the cultivation of the tree. The following results obtained by the Wynaad Committee in 1885 seem to show that the price depends entirely on the size of the crop, and not on the manure used:—

Sample.	How manure.	Crop cwts. per acre.	Leaf disease	Price per cwt. for A. coffee	
				s.	*s.*
No. 1	Young coffee never manured	4	Little or none	61/	
No. 2	Cattle manure once in 2 years	$5\frac{1}{4}$	Severe in parts	50	
No. 3	Bones and poonac once in 3 Years	$5\frac{3}{4}$	Severe	56/	
No. 4	Manure yearly $\frac{1}{2}$ cattle; $\frac{1}{2}$ bones and poonac	$3\frac{1}{4}$	Severe	69/6	
No. 5	Once in 2 year best cattle; best artificial	$3\frac{1}{2}$	Slight	56/	
No. 6	Small part cattle manure yearly	$2\frac{1}{4}$	Very mild	64/	65/
No. 7	Once in 3 years chiefly artificial	3	Mild	56/6	
No. 8	Highly with cattle and artificial	7	S	57/6	

An Agent wrote to the Committee:—"I have already got prices for a good number of Estates, and it is very curious how they vary, and still more curious how the coffee from well cultivated Estates has fetched a much lower price than crops from poor semi-abandoned ones." The explanation of this also is, probably, that the crop from the semi-abandoned was much smaller than from the well cultivated Estates. Recently complaints have been made as to the poor quality of crops from Estates on the Nilgiris and Shevaroys, heavily manured with chemical manures. The deterioration is more probably due to the heaviness of the crops, and to excessive drought, than to the use of chemical manures. A dry climate favours a good bean, but there must be enough moisture during the formation of the berry to develop it properly. Possibly the application of too much nitrogen, and of phosphates in a form which the tree cannot readily assimilate may have had something to do with the deterioration—for the former manure might force a heavy crop unsupported by the letter. The writer's experience is that a steady application of steamed bone-dust, combined with the proper proportion of nitrogen in poonac or cattle manure, does undoubtedly improve both the quantity and quality of the crop over a series of years; and that purely chemical manures do not support the tree under a heavy crop as manures of organic origin do. Some of the most successful Estates in Mysore and Coorg rely chiefly on manures of organic origin. The main point to attend to is to promote the vigour of the tree by the use of suitable phosphates with the proper proportion of nitrogen to make the phosphates most efficacious, and not to force on the tree a heavier crop than it can mature properly. The Wynaad Committee concluded that, though it cannot be said that maunres affect the colour of the bean directly, there can be no doubt that high cultivation improves the boldness and weight of the bean, These agian are intimately connected with colour, and in

this way manures seem essential to obtaining and maintaining colour in the bean. The Committee admitted, however, that colour depends in a great measure on climatic influences, which vary from year to year, and on the lightness of the crop. Another 13 years of leaf disease have convinced most planters of the necessity of regular manuring, and also of following Mr. Elliot's advice of concentrating high cultivation on the best fields. That policy has, however, been in full swing ever since the crisis of 1882-85, and has been supplemented by planters putting their inferior lands under cinchona, pepper, and tea. These, though not exactly methods of improving coffee, are very efficient methods of improving the coffee planter's finances when one of the crises, to which coffee is periodically liable, occur.

There is yet another way in which planters may try to prromote the vigour of the coffee tree, on which the quality of the bean so largely depends. This is by the introduction of new varieties of coffee, either by importation from other countries, or by the selection of pedigree seed, or by hybridisation. The first has been freely tried without any benefit, except in one instauce, that of Nalknaad coffee seed. Attention has been drawn to the marvellous results obtained in wheat and cotton by the cultivation of pedigree seed, *i. e.*, sowing seed only from exceptionally vigorous and heavy cropping plants, and again taking seed only from the most vigorous progeny, till after several generations an entirely new, hardy and heavy cropping variety is established. But sufficient attention has not been paid to the fact that, though it is easy in the case of annuals to grow rapidly enormous numbers of successive generations from which to make the necessary selections to establish new varieties, it would entail a very heavy expense over a long series of years to do this in the case of a plant like coffee, which takes three years to come into bearing and seven years to reach maturity, and requires virgin land if it is to be grown successfully on a large scale. In America, or in the British or Dutch Colonies, large or small, this would be done by State officials; but the Government of India has not yet learnt the importance of liberal scientific aid to agriculture, although India is more dependent than almost any other country on that industry for its revenues. The same is true of hybridisation, but fortunately it has chanced that individuals have already obtained results in this line, though more by good luck than anything else. It will, of course, take some time to establish by careful selection a fixed variety; but the following results, reported at the Conference of hybridisation experts held at Chiswick in July last, are full of encouragement for planters in dealing with hybrid coffee. It was stated that varities are perpetuated in crossing, and not as a matter of fact obliterated; that, although in the first or second generation nothing new may be seen in some cases, yet often in the third and fourth generation 58 and 75 to 80 per cent. of the variety desired may be obtained that hybrids are not as a rule infertile and, when they are, it is due to some special circumstance.

In this connection it would be well if coffee planters followed the example of their tea brethren, and tested the results of their experiments in the cup. For, though the grocer buys largely by appearance and even values his coffee by the even appearance of the roasted bean, yet there are not wanting men who aro pointing out that the surest way to promote their business is to buy entirely on the flavour of the roasted bean, and who are urging grocers to disregard appearance when the flavour of the roast is good. If this method of valuing coffee becomes universal—and it is said to be the coming revolution in the coffee trade—we shall hear less of the superior appearance and evenness of Central American coffee, and, provided our coffees hold their own for flavour, we need not fear a little unevenness or even lack of colour—such, for instance, as is common in Mocha coffee.—*Madras Mail.*

INDIAN AND CEYLON TEAS.

SECOND ARTICLE.

A fortnight ago we published an article dealing with the progress made by British-grown teas in the regard of the tea-drinkers of the world; we now turn out attention to the working of tea companies in the year 1898-9.

First, we will briefly survey the Indian Companies. Last year the lot of tea growers in India was not a happy one. Exchange remained consistently high, 1s 3½d to 1s 4d being the average figure. Freight was also an expensive item, of which the chairmen of tea companies, with one accord, have complained to the sympathetic shareholders at the meetings held during the past few months. Then, again, the crop in India did not realise the anticipations of planters, who had computed the yield at about 158 million pounds. As time went on it was seen that this figure would not be reached. Unpropitious weather was experienced in some districts, and, as a matter of fact, the actual crop was 153 million pounds, of which about 135 millions came to this country. The Cachar and Sylhet gardens suffered severely from drought, and their tea was poor, realising not more than 6d per lb. on an average. Assam, Darjeeling, and Dooars teas, on the other hand, were of pretty good quality, and realised satisfactory prices.

The total paid-up capital of 31 companies is £4,487,308, and the total profit £281,589, an average of 6,275 per cent., which is a sufficiently satisfactory result, all things considered. The average profit per acre of mature plant works out at close upon £2 18s.

Turning now to Ceylon, we give a table showing the dividends paid in 1898 by fifteen representative Companies, as compared with the dividends for 1897.

Company.	Paid up Capital. Preference.		Ord.	Dividends on ordinary Shares. 1897	1898
	£	%	£	%	%
Alliance ..			65,260	6	7
Burnside ..			17,600	7	2
Ceylon Proprietary ..	26,127	5	78,380	5	4
Ceylou Tea Plantation	81,080	7	167,380	15	15
Eastern Produce & Est.	753	5	299,135	7	7
Galaha ..	60,000	6	50,000	2	4
Imperial ..			90,000	4	4
Kelani Valley ..			18,765	10	5
Nuwara Eliya ..			200.000	6	6
Penawal ..	5,300	7	17,000	2	4
Portmore ..			40,000	12	12
Scottish Ceylon ..	9,000	7	41,000	10	10
Standard ..			59,500	15	15
Sunnygama ..	15,000	6	50,000	6	3
Yatiyantota ..	45,000	6	90,000	2	4

The dividends paid on ordinary shares, it will be noticed, were lower in 1898 than in 1897, for the most part. In Ceylon, as in India, the effects of high exchange were felt, and freights to the home market were rather high, although in this respect competition at Colombo places Ceylon in a better position than Calcutta. The crop was below estimates, and the quality was only fair. There was not much development work done by British tea companies. In Ceylon, there is not much room for the extension of plantations; most of the land has been planted, and the Government has practically ceased to lease out land. Some of the existing companies have a little land not yet under tea, but the acreage is small and we may take it that the rapid increase in production which has taken place during the last decade will almost cease. The output of Ceylon tea is about at high water mark. In India there is, of course, abundance of land ready for planting; the great difficulty there is the supply of labour, which, it may be said *en passant*, is the reason why tea-planting in Fiji, where has climate and soil are specially favourable, the never been successful,

The prospects for the current season in both India and Ceylon are very promising. As regards crop, quality, and price they are better than the last two years. In fact, 1898 may be set up as an example of a bad year, when adverse circumstances reached a climax—over-production, lack of labour, and low prices combined against the planter. It may be safely anticipated, therefore, that an improvement will be manifest in the immediate future, although he would be a rash man who would prophesy that never will such another season as that of 1898 be known. Too much importance must not be attached to the earthquake which has been reported from India. First impressions of a disaster of this kind are generally exaggerated. The earthquake had only affected a very limited area—a few gardens in Darjeeling—and the effect upon the total Indian crop will be exceedingly slight.

The tea industry is in a healthier condition at this moment than it has been for several years—healthier, indeed, than it was three years ago, investors were rushing at every tea share they could get. Tea companies have gone through the refining fire of adversity, and have learned much from the experience. Profits are more carefully dealt with; development and extension are not undertaken lightly, but with caution and prudence. The fear of over production has no solid foundation, for on the Continent of Europe, in America, in Australia, and in South Africa, there are markets for practically limitless quantities of British tea, requiring only energetic and untiring work. In tea companies, we are convinced, may be found safe and profitable investments, but investors must, in these, as in all securities, exercise much caution. Entirely new gardens should be shunned, for five or six years must elapse, under the best circumstances, before paying returns can be made. But to well-established going concerns, with reserve estates, attention may, with advantage, be turned.—*Investors' Guardian*, Oct. 7.

CEYLON TEA.

The following advertisement appears in the New York *Evening Post* of Sept. 28:—

THANKS TO HEALTH AND ENERGY RESTORED BY THE USE OF

CEYLON TEA

PRESENTED TO THE SHIP AT COLOMBO, OUR GREAT ADMIRAL ARRIVED TWO DAYS AHEAD OF TIME. IF YOU FEEL SLOW, TRY A CUP OF THIS

PURE, MACHINE-MADE TEA.

PRODUCE AND PLANTING.

The Geographical Distribution of the Tea Plant.—At the International Geographical Congress recently held at Berlin, Mr. J. M'Ewan read a paper on the geographical distribution of the tea plant. The subject should be popular among tea-drinkers in all countries, and the paper will doubtless be read with interest when it makes its appearance in three languages in the official report of the Congress. It is a curious and interesting fact that almost the entire production of tea is raised within an area confined by 40 degrees of latitude and 50 degrees of longitude, and it is no less remarkable that the consumption shows itself to have strictly geographical limitations. Outside of the domestic consumption of China and Japan, regarding which no reliable statistics can be obtained, the principal tea-drinkers, according to Mr. M'Ewan's researches, are the people of Great Britain, Ireland, and of the British colonies, the people of the United States and those of Russia.

Russia and Chinese Tea.—It is a difficult matter to change the taste of a nation even in regard to tea. Although Indian and Ceylon growers have made strenuous efforts to gain a market in Russia, prejudice in favour of Chinese tea is their strongest enemy. The Russian scoffs at innovation, and believes firmly in the tea which comes from China overland. Although in recent years much of the tea consumed in Russia has made the sea voyage from Chinese ports to Odessa on the Black Sea, Russians maintain that tea transported by sea loses much in flavour and quality. In consequence of this the largest tea merchants still continue to receive the bulk of their stock by the overland route. Early in January the caravans arrive in Tomsk. Between the first and the twentieth of the month 19,000 sledges full of tea are expected, each sledge containing five packages of about 130 lb. each. The tea is packed not in cases but in stiffened oxhides. Five sledges are tied together and drawn by one horse. The last sledge of each group contains hay and barley, which the horse of the next group quietly munches as he travels. In consequence of this arrangement the caravans lose no time. From the Chinese tea-growing districts to Tomsk is a year's journey by caravan.

Planting in Fiji.—The Fiji Blue-Book for the past year is a record of great prosperity. The revenue was £94,164, or nearly £20,000 more than that of the previous year—on account mainly of a large increase in the Customs revenue—while the expenditure was £72,574, or, including extraordinary public works and a sum put aside for public works during the current year, £87,594. The great increase in the Customs revenue is largely due to a new tariff which came into force during last year, but also in part to an increase in trade. The tariff, which was 10 per cent. *ad valorem* on certain articles, is now 12½, and certain duty-free articles have become dutiable. The imports consist mainly of food-stuffs, clothing, hardware, and machinery, while the exports are sugar (about two-thirds of the whole), copra, and green fruit. The two latter will probably increase in the future, as large areas have been planted by the natives with fruit and coconuts. The population at the end of the year was estimated at 121,738, of which 3,927 were Europeans, 12,320 natives of India, and over 98,000 Fijians. The death-rate amongst Europeans is exceptionally low, the colony possessing "probably the most healthy tropical climate in the world." Beyond the municipal boundaries of Suva and Levuka there are few roads fit for wheeled traffic, though there are bridle paths everywhere. A properly metalled road from Suva to Rewa, thirteen miles, has been commenced, but communication almost everywhere is by water, and this has lately been much increased and improved. There is room for considerable extension in the cultivation of such products as coffee, cocoa, vanilla, limes, ginger, &c., a market for all these existing in Australia, and the Assistant-Colonial Secretary says there is an opening in this direction in the colony for persons with the necessary experience in tropical agriculture and a certain amount of capital.

Planting on the Gold Coast.—Planting operations on the Gold Coast receive useful encouragement from the Government. In the agricultural district, says a newly issued colonial report, the planters take the cocoa and coffee to the Government botanical station, where the Government pays them half the supposed market value of the products, less a small sum to cover freight and other charges. The cocoa and coffee are then sent home, and when sold the balance of the money is paid to the producers. In this way not only do the planters receive full value for their articles, but they get enough money on the first sale to Government to enable them to continue their work, and they are therefore not compelled to sell to shippers on the coast at a low price or await the return of their money from the bankers in England. This is a plan that might be imitated elsewhere.—*Home and Colonial Mail*, Oct. 13.

CHINA TEA.

EXPORT OF TEA FROM CHINA TO UNITED KINGDOM AND CONTINENT.

1899-1900.	1898-99.
lb.	lb.
24,313,161	24,299,525

EXPORT OF TEA FROM CHINA TO UNITED STATES AND CANADA.

1899-1900.	1898-99.
lb.	lb.
12,317,295	11,512,564

EXPORT OF TEA FROM CHINA TO ODESSA.

	1899-1900.	1898-99,
	lb.	lb.
Shanghai and Hankow	25,363,948	22,676,902

EXPORT OF TEA FROM JAPAN TO UNITED STATES AND CANADA.

1899-1900.	1898-99.
lb.	lb.
31,351,095	29,456,836

—*Hongkong Weekly Press*, Oct. 14.

KORALE TEA ESTATES, LTD.

The following is from the report of the directors, to be submitted at the third annual ordinary general meeting of shareholders, to be held at the office of the company on Thursday, Oct. 19th.

The directors now submit the report and accounts for the year ending June 30th, 1898, which have been duly audited. The net amount at credit of profit and loss account after providing for general expense is £2,494 15s 1d. To which should be added the balance brought forward from June 30th, 1898, £218 16s 10d; to dispose of which it is proposed to pay a dividend of five per cent, which will absorb £2,394 5s; directors' fees, £150; and to carry forward a balance of £169 6s 11d. In presenting the third annual report, the directors have pleasure in pointing out to the shareholders that though the expectations held out on the formation of the company have not yet been fully realised, the position of the company has improved, the net profit from the estates this year being £870 in excess of last year. Though the rates of freight and exchange have ruled higher than in the previous year there has been no loss on rice, and partly owing to improvement in manufacture and partly to the healthier state of the tea market, better average prices have been secured for the tea from all the estates than in the previous year. Mr. R C Haldane having retired from business and ceased to live near London, Mr. H C Dowling has been appointed secretary. Mr. W S Bennet retires from the board in accordance with the Articles of Association, and being eligible, offers himself for re-election. The directors continue to adopt the policy of working the estates as economically as is consistent with good cultivation, and to increase the value of their properties by planting up more of their reserve land, and when the 300 acres not yet in bearing reach maturity they confidently expect that the position of the shareholders will be much improved. The directors express their satisfaction with the work of the agents and staff in Ceylon, and look forward to being able to declare the full dividend next year.—*H. & C. Mail*, October 13.

PLANTING NOTES.

A FINE RUBY.—The Ruby Mines Company, Limited, of Mogok, have been fortunate enough to discover a very fine ruby, which gives promise of being a very valuable stone. It weighs 75 carats and looked at in the rough state is perfectly flawless and clear. It is valued now at over twenty-five thousand pounds sterling.—*Burma Times*, October 21st.

CHLORIDE OF LIME AND INSECT PESTS.—The *Indian Planters' Gazette* states that if chloride of lime is spread on the soil or near plants, insects and vermin will not be found near them. By its means plants are easily protected from insect plagues, by simply sprinkling upon, or brushing over, their stems with a solution of it. The solution should be ¼ lb. of chloride to a pail of water, and the mixture one ounce of chloride to eight ounces of lards.

THE GARDENERS' MAGAZINE.—The object of this magazine is to represent gardening, agriculture, Horticulture and the allied sciences in all their branches. At present "The Gardener's Magazine, will be issued once a month. Any amount paid as subscription will be thankfully received by the Publisher: and those who will pay anything for its support will receive ornamental and flowering plants from the Agricultural and Horticultural Nursery at their option.—Its address is 8 Gopal Nagor Road, Calcutta.

RUBBER EXPORT FROM BRAZIL.—During the first six months of 1899 the total amount of rubber exported from Brazil was 9,441,988 kilogrammes, of which 3,103,452 kilogrammes were sent to Europe, and 6,338,536 kilogrammes to the United States. According to quality there were 5,271,167 kilogrammes of fine rubber; 733,288 kilogrammes of demi-fine; 2,599,759 kilogrammes of sernamby; and 897,774 of caucho.—*South American Journal*, Sept. 30th. [A kilogramme is slightly over 2 lb.—ED. *T.A.*]

A NEW FORAGE PLANT—the Sacalina (Polygonum Sachalinense), is being tried in the Provinces of Buenos Ayres and Entre Rios. It is a native of Siberia and is credited with possessing a number of desirable qualities, being said to grow on any soil and in any climate, to be unaffected by extremes of temperature and to resist a prolonged drought. Cattle eat it greedily, green or dry, and it is highly nutritious, owing to the amount of nitrogen it contains. Such a list of virtues ought to insure for it a pretty extensive cultivation.—*South American Journal*, Sept. 30.

COFFEE AND COCONUT PLANTING IN SELANGOR.—Coffee and coconut planters will be interested in the extracts, which we publish on page 347, from the minutes of a meeting of the Selangor Planters' Association. Coffee planting seems to be in a bad way in that part of the world and help is sought from the Government in the way of remitting the quit-rent. An appeal is also made to Government to take steps to preserve coconut plantations from the ravages of beetle pests. The labour question is also a prominent one there as elsewhere, and the Selangor planters should take a leaf out of the Ceylon book with regard to co-operation and federation.

Ceylon Rainfall.

The P. W. D. Meteorological Observations for Sept 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Padupola in the Central Province, 28·04 inches, and the lowest at Naulla, in the Eastern Province, 0·10 inches.

Western Province.

Negombo, Mr. Bucknall (6) ... 0·71
Kalutara Mr. Gregson (36) 3·33
Labugama, Mr. Bond (369) .. 7·07
Henaratgoda, Mr. Silva (33) ... 3·57

Central Province.

Katugastota, Mr. Morgan (1,500) .. 5·04
New Valley, (Dikoya) Mr. Ward (3,708) .. 12·34
Helboda, (Pussellawa) Not received (3,300) ... —
Yarrow Estate, Mr. Peto (3,400)... 18·57
Peradeniya Mr. Perera (1,540) ... 7·47
Duckwari, Mr. Spence (3,300) ... 8·71
Caledonia, Mr Goork .. (4,273) ... 6·28
Pussellawa, Mr. Powell (3,000) .. 10·68
Hakgala, Mr. MackMillan (5,581) .. 5·68
S. Wanarajah Estate, Mr. Tatham (3,700) ... 11·70
St. Andrew's (Maskeliya,) Not received (4,200)... —
Padupola, Mr. Ward ... (1,636) ... 28·04
Mylapitiya, Mr. Fletcher (1,707) ... 0·90

Northern Province.

Mullaittivu, Mr. Sanmukam (12) . 2·91
Jaffna Mr. Kretser (8) 1·91
Mankulam, (N. Road) Mr. Walker (167) .. 3·59
Elephant Pass, Mr. .. Silva (7) .. 0·20
Vangalachettykulam, Mr. Oorloff (179) ... 3·80
Point Pedro, Mr. Pararacha-singhe (24) .. 1·24
Jaffna College, Mr. Cooke (9) ... 1·95
Kayts, Mr. Kretser ... (8) .. 1·37
Kankesanturai, Mr. ... Adams (10) . 3·07
Pallai, Mr. Silva (24) .. 0·88
Murikandy, (North-Central Road) Not received — --
Nedunkeni, Mr. Sanmukam (122) ... 4·77
Chavakachcheri, Mr. Silva (16) ... 2·78
Udupiddi, Mr. Hastings (35) ... 1·58
Marichchukaddi, (14) Mr. Thamotharampillay Nil
Murungan, Mr. Blechingberg (52) 0·13
Vavuniya Mr. Walker (318) 2·09

Southern Province.

Ella Vella (262) Mr. Smith 2·24
Kekanadura, (150) do 1·55
Denagama, (286) do 2·95
Uaukiriwila Mr. Lourensz (235) ... Nil
Kirama, Mr. Ismail (260) 0·39
Hali-ela (200) Mr. Smith 2·65
Tissamaharama, Not received (75) ... —
Matara (15) Mr. Smith 2·77
Dandeniya, (157) do 3·67

Urubokka, Mr. Vanderstraaten (890) ... 5·16
Elagala, Not received (120) —
Tangalla, (94) Mr. Barttlett ... 0·34
Mamadola, Mr. Cade — (56) ... 0·34

Eastern Province.

Irrakkamam, (42) Mr. Bower ... 1·21
Devilana, Mr. Vanderstraaten (136) Nil
Sagamata, Mr Bower (40) ... 0·60
Ambare, do (65) 0·20
Kanthalai, Mr. Carte (150) 1·61
Allai, Mr. Carte (95) 5·65
Rukam, Mr. Vanderstraaten (120) .. 2·80
Periyakulam, Mr. Carte (20) ... 6·35
Chadaiyantalawa, Mr. Edge (57) ... 0·21
Kalmunai, do (12) 1·06
Rotewewa, do (30) 1·07
Lahugala, do (70) 1·10
Naulla, do (30) 0·10
Andankulam, Mr. Carte (41) ... 3·75
Manalpuddy, Mr. Vanderstraaten (21) 0·90
Maha-Oya-Tank, Mr. Vanderstraaten (190) 4·44

N.-W. Province.

Magalawewa, Mr. Dasanaike (176) .. 0·35
Maha Uswewa tank, Mr. Crabb (160) ... 0·26
Tenepitiya, Mr. Churchill (8) ... 1·45
Batalagoda, Mr. Fonseka — 2·51

N.-C. Province.

Kalawewa, (268) Mr. Carson Nil
Maradankadawala, Mr. Carson (443) ... 2·09
Mihintale, Mr MacBride (354) ... 4·43
Horowapotana, Mr. MacBride (217) ... 4·00
Madawachchiya, Mr. MacBride (285) ... 2·96
Topare, (200) Mr. Jayawardane ... 0·40
Miuneriya — Mr. Eves 1·56

Uva Province.

Bandarawela, Mr. Tocke (4,000) ... 1·93
Haldummulla, Mr. Viramuttu (3,160) ... 1·70
Kumbukan, (446) Mr. Emerson ... 1·40
Koslanda, (2,258) Mr. Emerson ... 0·83
Tanamalwila, Not received (550) ... —
Bible, Mr. Silva (680) 2·62
Taldena, Mr. Fernaudo (1,100) ... 0·96

Sabaragamuwa.

Amhanpitiya, Mr. Caldicott (729) 4·71
Pelmadulla, Mr. Clarke (408) 1·37
Kolonna Korale (Hulanda-oya) (203) Not received —
Avisawella, Mr. Jeffery (105) ·45

Ceylon Rainfall.

S. G. O. Meteorological Observations for April, 1899.

We append the total fall of rain from which it will be seen that the highest fall was at Kobonella Estate, Rangala, 40·61 inches, and the lowest at Batticaloa, 2·32 inches.

Colombo (40) 6·66
Ratnapura (84) 14·97
Puttalam (27) 7·93
Anuradhapura (295) 10·49
Mannar (12) 8·25
Jaffna .. 5·65
Trincomalee (12) 3·29
Batticaloa (26) 2·32
Hambantota (40) 2·93
Galle (48) 8·03
Kandy (1,654) 16·56
Nuwara Eliya (6,188) 11·02
Hakgala, Nuwara Eliya (5,581) 11·97
Badulla (2,226) 10·36
Vavuniya (317) instruments removed
Kurunegala (381) 17·06
Maligakanda, Colombo Mr. Johnson (70) 9·61
Agricultural School —
Colombo, Mr. Rodrigo 9·99
Wilhelmina Puttalam, Mr. Ratnayeke (131) 8·15
Horakele Estate, Chilaw, Mr. Beven (50) 8·63
Chilaw Kachcheri
Chilaw, Mr Koch (10) 4·10
Franklands Estate —
Veyangoda, Mr. Beven 4·13
Orange Hill, Ragama Mr. Bury (50) 13·32
Henaratgoda Gardens, Henaratgoda, Mr. de Silva (33) 10·43
Kotua Godella, Rambuk'a Mr. Windus (550) 11·50
Eadella or Liberia Estate Polgahawela Mr. Kynaston (425) 19·27
Geekianakanda, Neboda — Mr. Towgood (200) 7·23
Polgahakanda, Neboda Mr. Wight (500) 11·54
Labugama, Hanwella. Mr. Samarakone (369) 19·54
Rayigam, Horana, Mr. Hanan, (0) 15·40
Kanangma, Avissawella Mr. Cooke (200) 21·64
Dunedin Estate, Avissawella, Mr. Bayley, (400) 20·57
Digalla Avisawella, Mr. Tottenham, (400) 22·63
Pambagama, Avisawella, Mr. Bridgman (600)
Avisawella Estate Avisawella Mr. Byrde (250) 17·54
Yatideriya, Kegalla, Mr. Fairweather — 26·14
Mahawalatenna, Balangoda Mahawalatenna R.M. — 10·81
Agarsland Estate Balangoda Mr. Boyd (2,215)
Maduwanwala, Rakwana, Maduwanwela R.M. (750) 11·39
Anninkanda, Morawaka, Mr. Woodhouse (1,400) 12·34
Panilkanda, Morawaka, Mr Davidson. (2,000) 14·13
St. John Del Rey, Bogawantalawa Mr. Glanville (4,300) 14·32
Friedland, Bogawantalawa Mr. Rammell (5,200) 17·36
Campion, Bogawantalawa, Mr. Saunders (4,810) 14·04
BlairAthol, Dikoya, Mr. Lane (3,641) 15·98
Annfield, Dikoya, Mr. Knight (4,350) 11·47
Maskeliya Hospital, Maskeliya Mr. Oorloff (4,200) 17·75

Hope Estate, Hewaheta, Mr. Bagot (5,400) 16·81
Coldstream Estate, Watawala Mr. Speeding (3,800) 9·66
Holmwood Est., Agrapatana Mr. Gray (5,240) 11·56
Sandringham, Agrapatana Mr. Orchard (5,200) 11·56
Gingran-oya, Kotmale, Mr. Cox (3,800) 10·27
Labookelle, Ramboda, Mr. Stone (5,000) 15·16
Dunsinane, Pundalu-oya, Mr. Metcalfe 4,800 9·14
Sogama, Pussellawa, Mr. Eustace (3,500) 15·21
Kurundu-oya, Maturata, Mr. Owen (5,150) 16·70
Kabaragalla, Maturata, Mr. Maclean (4,200) 13·55
Maragalla Estate, Moopana, Mr. Betts (2,200) 14·43
Moopana, Hospital, Moopana (Mr. Thomasz) (500) 13·56
Madulsima Hospital Lunugala Dr. Vethecan (4,400) 19·02
Meeriabedda, Haputale, Mr. Dupuis (3,600) 27·52
Udahena Estate, Haputale, Mr. Coombe (4,500) 30·54
Post Office, Bandarawela, Mr. Rodrigo (4,033) 8·59
Callander, Ohiya Mr. Green (5,125) 25·35
Mariawatte, Gampola Mr. Salmond (1,600) 16·98
Orwell Estate, Gampola Mr. Taylor (1,800) 16·85
New Forest, Deltota, Mr. Wardrop (3,500) 21·38
Rajawella, Estate, Teldeniya Mr. Murray (1,500) 13·96
Lower Spring Valley, Badulla Mr. Rettie (3,650) 18·13
Gourakele Estate, Badulla Mr. Hope (1,200)
Mousagala Estate, Badulla Mr. Deaker (4,500) 24·85
Ledgerwatte, Badulla Mr. Rettie (4,000) 10·36
Dea Ella Estate, M'walateuua Mr. Vandersloot (800)
Sembawatte Estate, N'pitiya Mr. Roe (1,600) 15·59
Gammaduwa, Estate, Rattota Mr. Westland (2,400) 16·02
Kobonella Estate, Rangala, Mr. Pole (3,300) 40·61
St. Martins, Rangala, Mr. Wyllie (3,600) 27·97
Crystal Hill, Matale, Mr. Van S'rex (1,400) 13·23
Vicarton Estate, Matale Mr. Carrie (3,250) 17·12
Matale Mr. Tisseverasinghe (1,208) 12·14
Wariapolla, Matale, Mr. Dickenson (1,200) 14·52
Dambulla, Mr. Sinnetamby (400) 14·59
Kotta Estate, Pallai, Mr. Todd (13) 7·14
Mantota Hospital, Mannar, Mr. Adams (17) 7·22
Buttala Hospital, Buttala, Mr. Bulner — 14·39
Police Station, Hatton Police Constable Miskin (4,141) 10·90
Medway Estate Nilaveli, Mr. Abraham, ... 3·79
Delwita, Kurunegala, Mr. Neame (400) 15·03
Woodside, Uragalla Mr. MacMahon (3,000) 20·34
Gillardstown, Wattegama Mr. Hardy (2,500) 22·37

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers.
Agra Ouvah Estates Co., Ltd.	500	900	—
Ceylon Tea and Coconut Estates	500	—	500 n'l
Castlereagh Tea Co., Ltd.	100	90*	95
Ceylon Hills Estates Co., Ltd.	100	—	30
Ceylon Provincial Estates Co.	500	485	500
Claremont Estates Co., Ltd.	100	—	20
Clunes Tea Co., Ltd.	100	—	90
Clyde Estates Co., Ltd.	100	—	80
Delgolla Estates Co., Ltd.	400	--	140
Doomoo Tea Co., of Ceylon, Ltd.	100	60	—
Drayton Estate Co., Ltd.	100	150	—
Ella Tea Co., of Ceylon, Ltd.	100	60*	65
Estates Co., of Uva, Ltd.	500	—	350
Gangawatta	500	—	—
Glasgow Estate Co., Ltd.	500	—	900
Great Western Tea Co., of Ceylon, Ltd.	500	640*	—
Hapugahalande Tea Estate Co Ltd	200	—	250
High Forests Estates Co Ltd	500	550	—
Do part paid	350	390	400
Horekelly Estates Co., Ltd.	100	80	—
Kalutara Co., Ltd.	500	—	390
Kandyan Hills Co Ltd.	100	—	30*
Kanapediwatte Ltd.	100	—	87·50*
Kelani Tea Garden Co., Ltd.	100	—	65
Kirklees Estates Co., Ltd.	100	—	140
Knavesmire Estates Co., Ltd.	100	—	75
Malia Uva Estates Co., Ltd	500	—	575
Mocha Tea Co., of Ceylon, Ltd.	500	625	650
Nahavilla Estate Co., Ltd.	500	—	500
Neboda	500	500	—
Nyassaland Coffee Co. Ltd.	100	—	90
Ottery Estate Co., Ltd.	100	110	150
Palmerston Tea Co., Ltd.	500	—	415
Penrhos Estates Co., Ltd.	100	95	100
Pine Hill Estate Co., Ltd.	60	—	50
Pitakanda Tea Company	500	1,000	—
Putupaula Tea Co., Ltd.	100	—	100
Ratwatte Cocoa Co., Ltd.	500	—	500 n'l
Rayigam Tea Co., Ltd.	100	—	67·50
Roeberry Tea Co., Ltd.	100	45	50
Ruanwella Tea Co., Ltd.	100	—	75
St. Hellers Tea Co., Ltd.	5 0	500	—
Talgaswela Tea Co., Ltd.	100	—	35 n'l
Do 7 per cent. Prefs.	100	80	..
Tonacombe Estate Co., Ltd.	500	—	450
Udabage Estate Co., Ltd.	100	..	40 n'l
Udugama Tea & Timber Co., Ltd.	50	..	10 n
Union Estate Co., Ltd.	500	—	300
Upper Maskeliya Estate Co., Ltd.	500	..	500
Uvakellie Tea Co., of Ceylon, Ltd.	100	65	70
Vogan Tea Co., Ltd.	100	—	85
Wanarajah Tea Co., Ltd.	500	—	1145
Yataderiya Tea Co., Ltd.	100	—	350*

CEYLON COMMERCIAL COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers.
Adam's Peak Hotel Co., Ltd.	100	..	60
Bristol Hotel Co., Ltd.	100	85	90*
Do 7 per cent Debts	100	102·50	—
Ceylon Gen. Steam Navgt. Co., Ltd.	100	—	210*
Colombo Apothecaries Co., Ltd	100	140	142·50*
Colombo Assembly Rooms Co., Ltd.	20	..	12·50
Do prefs.	20	..	17
Colombo Fort Land and Building Co., Ltd.	100	..	90*
Colombo Hotels Company	100	—	300
Galle FaceHotel Co., Ltd.	100	150	—
Kandy Hotels Co., Ltd.	100	100	—
Kandy Stations Hotels Co.	100	..	35
Mount Lavinia Hotels Co., Ltd.	500	—	350
New Colombo Ice Co., Ltd.	100	—	178*
Nuwara Eliya Hotels Co., Ltd.	100	20	25
Public Hall Co., Ltd.	20	15*	—
Petroleum Storage Co.	100	—	—
Do 10 % prefs.	100	—	40

* Transactions.

LONDON COMPANIES.

Name of Company.	Amount paid per share.	Buyers.	Sellers.
Alliance Tea Co., of Ceylon, Ltd.	10	8½—9	—
Associated Estates Co., of Ceylon Ltd.	10	..	6—7
Do. 6 per cent prefs.	10	..	9—9½
Ceylon Proprietary Co.	1	..	12·6—17·6
Ceylon Tea Plantation Co., Ltd.	10	..	26½—27
Dimbula Valley Co., Ltd.	5	—	5½—6
Do prefs.	5	—	5½—6
Eastern Produce and Estates Co., Ltd.	5	..	6¼
Ederapolla Tea Co., Ltd.	10	.	8—9
Imperial Tea Estates Ltd.	10	..	5—6
Kelani Valley Tea Asson., Ltd.	5	..	5—6
Kintyre Estates Co., Ltd.	10	..	8—9
Lanka Plantation Co., Ltd.	10	4½	5—6
Nahalma Estates Co., Ltd.	1	.	½—1
New Dimbula Co., Ltd.	1	—	2½—2¾
Nuwara Eliya Tea Est. Co., Ltd	10	..	9¾
Ouvah Coffee Co.,Ltd.	10	7	7
Ragalla Tea Estates Co., Ltd.	10	...	9½*
Scottish Ceylon Tea Co., Ltd.	10	..	14—16
Spring Valley Tea Co., Ltd	10	..	5—6
Standard Tea Co., Ltd	10	..	12—13
The Shell Transport and Trading Company, Ltd.	100	—	200
Yatiyantota Ceylon Tea Co., Ltd.	10	...	8—9
Yatiyantota pref. 6 o/o	10	..	10—10¼

BY ORDER OF THE COMMITTEE.

Colombo 27th October, 1899.

RAINFALL RETURN FOR COLOMBO

(Supplied by the Surveyor-General.)

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897	1898	Av of 29yrs.	1899
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch	Inch	Inch	Inch.	Inch.
January ..	0·81	1·45	7·39	5·42	0·62	5·00	2·92	3·81	2·32	3·09	6·98
February ..	4·36	2·81	5·32	2·36	0·52	0·81	0·35	1·68	1·98	1·90	2·78
March ..	5·34	9·43	1·52	5·15	7·44	1·84	5·64	3·66	4·21	4·92	0·88
April ..	14·27	5.93	13·92	20·39	12·51	9·34	5·93	10·97	22·81	11·47	6·66
May ..	6·48	17·65	3·00	10·32	3·00	10·09	9·31	8·30	5·80	11·89	17·73
June ..	1·87	9.79	6·62	11·01	11·32	13·99	8·37	10·14	10·94	8·34	9·23
July ..	3·32	4·59	1·10	2·20	1·72	0·52	2·85	5·24	6·15	4·49	1·11
August ..	0·73	1·65	1·86	1·01	0·86	0·92	6·35	9·09	0·97	3·77	0·62
September ..	1·50	4·42	1·14	1·99	0·78	4·09	10·99	4·58	6·90	5·13	1·48
October ..	18·33	35·28	12·24	5·59	20·81	30·36	16·78	4·71	20·60	14·57	12·99*
November..	12·32	18·37	5·86	18·10	14·63	5·83	19.81	11·66	17·38	12·80	
December..	8·47	7·66	0·86	6·13	3·25	9·44	11·76	8·89	3·05	6·45	
Total..	72·80	119·03	60·83	89·67	77·46	92·23	101·06	82·73	103·11	88·82	60·46

* From 1st to 31st Oct. 12·99 inch, that is up to 9·30 a.m. 1st Nov.—Ed. C.O.

A SUBSTITUTE FOR INDIARUBBER.—We give in full the letter (see page 338) in the last *Spectator* from a retired Italian Duke, about a possible substitute for "Indiarubber." Our absent Editor writes respecting it:—"I have little fear of the raw product being superseded. Quinine, even when £1 an ounce, was never superseded, much as we heard of laboratory work." It will, however, be interesting to note if the surviving brother of the late Mr. Alfred Nobel, the inventor of the substitute, makes any use of his valuable fraternal legacy, the fruit of an ingenious mind.

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo 31st Oct. 1899.

EXCHANGE ON LONDON :—Closing Rates: *Bank Selling Rates*:—On demand 1/4 3-32 to ⅛; 4 months' sight 1/4 ⅛ to 3-16; 6 months' sight 1/4 5-32 to 3-16.

Bank Buying Rates:—Credits 3 months' sight 1/4 ⅜ to 13-32; 6 months' sight 1/4 9-16; Docts 3 months' sight 1/4 7-16 to 15-32; 6 months' sight 1/4 ⅜.

Indian Bank Minimum Rates 7 o/o

Local Rates: 1 % Higher.

COFFEE:—

Plantation Estate Parchment on the spot per bus—R10·00

Plantation Estate Coffee, f.o.b on the spot per cwt R70.00

Liberian Parchment on the spot per bus—None.

Native Coffee f.o.b per cwt. R36.00 Nominal.

TEA:—Average Prices ruling during the week—Broken Pekoe per lb. 43c. Pekoe per lb. 36c. Pekoe Souchong per lb. 32c. Broken Mixed and Dust per lb. 28c.—Averages of Week's sale.

CINCHONA BARK:—Per unit of Sulphate of Quinine per lb 7c. 1 o/o 4 o/o.

CARDAMOMS:—Per lb R1.80

COCONUT OIL:—Mill oil per cwt. None. Dealers' oil per cwt. R14.00; Coconut oil in ordinary packages f.o.b. per ton R312.50

COPRA:—Per candy of 560 lb. R41.00

COCONUT CAKE:—(Poonac) f.o.b. per ton, R85.00

Cocoa unpicked & undried, per cwt. R43.25

Picked & Dried f. o. b. per cwt. R45.50

COIR YARN.—Nos. 1 to 8 { Kogalla per cwt. R17 25 / Colombo „ R16.00

CINNAMON:—Nos. 1 & 2 only f o.b. 67c. Do Ordinary Assortment. per lb 56½c. { The attention of the trade is called to the fact that considerable quantities of wild Cinnamon have been shipped from Colombo for some time back, and that the same is included in the returns of Cinnamon shipped.

EBONY.—Per ton Govt. sales 15th November.

PLUMBAGO:—Large Lumps per ton, R1,100

Ordinary Lumps per ton, R1,050

Chips per ton, R700, Dust per ton, R600; Dust Flying R200.

RICE.—Soolai per bag, { R8.50 to 9.00

„ per bushel, R3.20 to 3.37

Pegu & Calcutta Calunda per bushel. R3.40 to 3.50

Coast Calunda per bushel, R3.50 to R3.75

Mutusamba per bushel R3.75 to 4.00

Kadapa and Kuruwe, per bushel } None.
Rangoon, raw 3 bushel bag. }

Soolai Kara per bushel R3.17 to 3 30

Coast Kara per bushel R3.44 to 3.60

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, Oct. 31st, 1899.

COFFEE:—

Estate Parchment :—per bushel	Nil
Chetty do do	Nil
Native Coffee do F. O. B } per cwt.	R33·00 to 36·00 Nominal
Liberian coffee:—per bushel	Nil
do cleaned coffee:—per cwt	Nil
Cocoa unpicked:—per cwt	R35·00 to 41·00
do cleaned do	R41·00 to 47·50
Cardamoms Malabar per lb	R00·95 to 1·00
do Mysore do	R1·65 to 1·90

RICE:—

Soolai per bag of 164 lb. nett	R8·50 to 9·00
Slate or 1st quality:—per bushel	R3·30 to 3·35
Soolai 2 & 3rd. do do do	R3·20 to 3·30
Coast Calunda	R3·50 to 3·75
Coast Kara	R3·44 to 3·60
Kazala	R3·17 to 3·20
Muttusamba Ordinary	R3·75 to 4·00
Cinnamon. per lb No 1 to 4	R00·56½
do do 1 to 2	R00·62
do Chips per candy	R85 00 to 87·50
Coconuts Ordinary per thousand	R35·00 to 37 50
do Selected do	R36·00 to 38·50
Coconut Oil per cwt	R14·00
do do F. O. B. per ton	R280·00

POONAC:—

Gingelly per ton	R95·00 to 97·50
Coconut Chekku do	R72·50 to 75·00
do Mill (retail) do	R75·00 to 80·00
Cotton Seed per ton	R70·00

Copra per candy	
Kalpitiya do	R41·00 to 41·50
Marawila do	R40·00 to 41 00
Cart Copra do	R36·50 to 40 00
Satinwood per cubic feet.	R2 00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R30·00
Palmyra do do	R4·50 to 17·50
Jaffna Black Clean per cwt	R14·00
do mixed do	R12·50 to 13·00
Indian do	R8·00 to 13·50
do Cleaned do	R12·00 to 17·50
Sapanwood per ton	R50·00 to 55·00
Kerosine oil American per case	R6·25 to 6·50
do bulk Russian per tin	R2·90 to 2·95
do Russian per case	R5·95 to 6·00
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R30·00
Kapok cleaned f o b do cwt	R25·00
do uncleaned do	R6·00
Plumbago per ton, according to grade — Large lumps	R700·00 to 1,000·00
do	R550·00 to 950·00
Chips	R300·00 to 650·00
Dust	R100·00 to 500·00

CEYLON EXPORTS AND DISTRIBUTION 1899.

COUNTRIES.	Tea. 1899 lbs.	Tea. 1898 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cinchona Branch & Trunk lb. 1899. lbs.	Cinchona Branch & Trunk lb. 1898. lbs.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.	Coconut Oil. 1899 cwts.	Coconut Oil. 1898 cwts.
To U. K. ..	83857219	80627849	13606	..	13606	430906	538939	32354	266281	983382	663466	136128	101867
„ Austria ..	7491	13398	1	..	1	..	..	..	..	..	105966	6173	9474
„ Belgium ..	13099	10540	95	..	95	..	4421	357	380	71060	95760	1602	903
„ France ..	80470	63694	165	..	165	3	22471	34	..	70854	1750	..	4209
„ Germany ..	304126	273825	125	..	125	1630	..	22	25271	462489	507298	6542	9303
„ Holland ..	30211	22631	..	..	..	..	..	..	..	..	..	..	..
„ Italy ..	12471	6260	..	..	..	..	..	..	20	97000	117120	404	603
„ Russia ..	2719244	2149125	24	..	24	..	..	..	923	..	..	..	..
„ Spain ..	14300	36150	..	..	..	..	..	..	..	22[illegible]900	37800	..	..
„ Sweden ..	57362	33230	..	..	..	..	..	..	4036	5500	..	206	..
„ Turkey ..	15674	64434	1	..	1	..	..	..	636	..	..	..	..
„ India ..	442995	889408	132	..	132	..	..	1	45981	..	..	53896	107542
„ Australia ..	13210163	12662760	2923	..	2923	..	..	235	..	6450	24192	720	465
„ America ..	2657330	190950	442	..	442	94005	186819	514	6240	130600	28000	81696	52761
„ Africa ..	236775	317000	9	..	9	..	724	..	2206	400	1240	..	19
„ China ..	1174743	977643	64	..	64	26015	11034	..	5951	45000	..	3184	2633
„ Singapore ..	57946	51113	79	..	79	..	..	..	480	..	..	22333	88692
„ Mauritius ..	80566	14759	..	..	..	..	..	..	..	..	..	..	..
„ Malta ..	226767	172794	..	..	..	..	..	..	..	..	..	..	..
Total export from 1st Jan. to 31st Oct. 1899	105198952	100285557	17666	..	17666	552589	764408	33517	358405	2093635	1582592	312884	378162

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From Lewis & Peat's Fortnightly Prices Current, London, September 20th, 1899.

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ...	44s a 100s
Zanzibar & Hepatic ,,	Common to good ..	11s a 75s
BEES' WAX, ,,		
Zanzibar & Bombay { White ,,	Good to fine	£6 a £7 10s
{ Yellow ,,	Fair ,,	£5 10s a £6 10s
Madagascar ,,	Dark to good palish	£5 15s a £6 7s 6d
CAMPHOR, China ,,	Fair, average quality	125s
Japan ,,	,, ,, ,,	132s
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 7d a 2s
Ceylon.—Mysore ,,	Fair to fine plump ..	3s 8d a 3s 10d
	Seeds .	1s 9d a 2s 5d
,, Tellicherry ,,	Good to fine ..	2s 11d a 3s
	Brownish ..	2s 6d
,, Long ,,	Shelly to good ..	2s 6d a 3s 6d
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4¼d
Madras ,,	..	3½d a 3¾d
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	2?s 6d a 40s 6d
CINCHONA BARK.—		
Ceylon lb.	Crown, Renewed	5d a 7d
	Org. Stem	8⅞d
	Red Org. Stem	2¼d a 5¼d
	Renewed	3⅜d
	Root	2¼d
CINNAMON, Ceylon 1sts	Ordinary to fine quill	1s a 1s 7d
per lb. 2nds	,, ,,	9½d a 1s 7d
3rds	,, ,,	9d a 1s 5d
4ths	,, ,,	8½d a 1s 1d
Chips	,, ,,	½d a 8d
CLOVES, Penang lb.	Dull to fine bright bold	4¼d a 1s
Amboyna ..	Dull to fine	4d a 5¼d
Zanzibar and Pemba }	Good and fine bright	3¼d a 4½d
	Common dull to fair	3d a 3⅛d
Stems ..	Fair	2d
COCCULUS INDICUS cwt.	Fair	8s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	101s a 115s
	Middling to fine mid .	93s a 102s
	Low mid. and low grown	81s a 92s 6d
	Smalls	35s a 75s
Native	Good ordinary	30s a 70s
Liberian ,,	Small to bold	25s a 35s
COCOA, Ceylon ,,	Bold to fine bold	80s a 92s
	Medium and fair	65s a 77s 6d
	Triage to ordinary	4?s 6d a 62s 6d
COLOMBO ROOT ,,	Ordinary to good	13s 6d a 21s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair	£14 a £23
FIBRE, Brush ,,	Ord. to fine long straight	£10 a £21
Cochin ,,	Ordinary to good clean	£18 a £22
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	,, ,, very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	40s a 55s
CUTCH ,, ,,	Fair to fine dry	28s a 35s
GINGER, Bengal, rough ,,	Fair	21s
Calicut, Cut A ,,	Good to fine bold	69s 6d a 77s
B & C ,,	Small and medium	27s 6d a 50s
Cochin Rough ,,	Common to fine bold	22s
	Small and D's	17s a 20s
Japan ,,	Unsplit	20s 6d
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £20
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 2/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ..	£4 8s a £8
	,, ,, red ..	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 55s
Turkey sorts ,,		67s 6d a 85s
Ghatti ,,	Pickings to fine pale ...	12s 6d a 35s
Kurrachee ,,	Good and fine pale ...	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras	Dark to fine pale ...	23s a 35s
ASSAFŒTIDA ,,	Clean fr. to gd. almonds	40s a 85s
	Ord. stony and blocky	12s 6d a 35s
KINO ,,	Fine bright	2s a 3s
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	17s a 20s
siftings ,,	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 2¼d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 2d
	Common to fine	1s a 2s 4d

	QUALITY	QUOTATIONS
INDIARUBBER, (Contd).		
Java, Sing. & Penang lb.	Foul to good clean ..	8d a 3s 3½d
Mozambique ,,	Good to fine Ball ..	2s 8d a 3s 5¼d
	Ordinary to fair Ball..	2s a 2s 10d
	Low sandy Ball ..	1s 3d a 1s 6d
	Sausage fair to good	3s 2d a 3s 6d
	Liver and livery Ball	2s 4d a 3s 2d
Madagascar ,,	Fr to fine pinky & white	3s a 3s 4½d
	Fair to good black .	2s a 2s 3d
	Niggers, low to fine ..	1s a 2s 6d
INDIGO, E.I. ,,	Bengal--	
	Shipping mid to gd violet	2s 10d a 4s
	Consuming mid. to gd.	2s 6d a 2s 9d
	Ordinary to mid.	2s 2d a 2s 5d
	Mid. to good Kurpah	1s 11d a 2s 5d
	Low to ordinary	1s 8d a 1s 10d
	Mid. to good Madras	1s 4d a 2s 2d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 5d a 1s 11d
	Pickings	1s 1d a 1s 3½d
MYRABOLANES, Madras } cwt	Dark to fine pale UG	[illegible] a 6s
	Fair Coast	5s 6d a 6s
Bombay ,,	Jubblepore	4s 3d a 7s
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	34's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	1s 1d a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 21s
NUX VOMICA, Bombay	Ordinary to middling	4s a 5s 6d
per cwt. Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	5s 11d
CASSIA ,,	According to analysis	3s 11d a 5s 6d
LEMONGRASS ,,	Good flavour & colour	2¾d a 2⅞d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3¼d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1s 0½d
ORCHELLA WEED—cwt.		
Ceylon ,,	Mid. to fine not woody .	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf ..	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	5½d a 5⅝d
Singapore	Fair	5 9/16d a 5⅝d
Acheen & W. C. Penang	Dull to fine ...	4¾d a 5¼d
PLUMBAGO, lump cwt.	Fair to fine bright bold	64s a 72s
	Middling to good small	25s a 50s
chips ,,	Dull to fine bright ..	53s a 57s 6d
dust ,,	Ordinary to fine bright	12s a 35s
SAFFLOWER ,,	Good to fine pinky .	60s a 65s
	Inferior and pickings	40s a 57s 6d
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £35
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £[illegible]
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay ,,	Lean to good ..	£4 a £5
Madras ,,	Good average	£4 a £5 nom.
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth .	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	55s a 60s
SENNA, Tinnevelly lb	Good to fine bold green	5d a 6¾d
	Fair middling medium	3¼d a 4¾d
	Common dark and small	2¼d a 2¾d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's	£4 a £6 2s 6d
	D's and B's	
	Small ...	
Mussel ,,	Small to bold ..	£1 a £2 17/6
TAMARINDS, Calcutta	Mid. to fine bl'k not stony	15s a 16s
per cwt. Madras	Stony and inferior ..	7s 6d a 8s 6d
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	18s 6d a 23s
TURMERIC, Bengal cwt.	Fair ..	22s
Madras ,,	Finger fair to fine bold bright	26s a 27s
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger .	21s
	Bulbs ..	9s a 9s 6d
VANILLOES— lb.		
Mauritius and Bourbon } 1sts	Gd. crysallized 3½ a 9 in	20s a 29s 6d
2nds	Foxy & reddish 4½ a 8 ,,	21s a 25s
Seychelles 3rds	Lean and inferior ...	10s a 14s
VERMILION lb.	Fine, pure, bright ...	2s 3d a 2s 4d
WAX, Japan, squares cwt.	Good white hard ...	30s a 31s

THE

AGRICULTURAL MAGAZINE,

COLOMBO

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for November :—

Vol. XI.] NOVEMBER, 1899. [No. 5.

VETERINARY NOTES.

A case of cancer in a dog was brought to me for treatment about the 15th of June, with the history that the animal was landed only a couple of days or so ago. The animal was twice before operated on in England.

I noticed the sheath enormously swollen, with a bloody discharge of the characteristic symptom of cancer in penis, was noticeable. The case was taken in hand, and operated on by me, and the cancerous portion entirely removed. I informed the client that this operation would not readily effect a cure, if the animal was not castrated; for when the growth was cut away, the cancer would have more room to spread, and so the necessity of an operation for castration was brought home to my client, who agreed with great hesitation, thinking that the animal being old, might not be able to stand the operation; besides, the owner of the dog (Col. Webster) was away.

The dog underwent the operation, and being a pet animal the effects of the operation were very much felt, but with difficulty he came round. Soon after the wounds of castration were healed. I examined the sheath and found another crop of cancer which had to be removed, but with less difficulty than in the former instance. I did not see the animal after this till he was brought to me on the 13th September, when I noticed just a bit of growth at the root of and inside the sheath; this too I removed. Finally, the animal was brought to me on the 16th October, when I hardly noticed any growth or bloody discharge. The operation of castration not only prevented the spread of this baneful disease, but helped a great deal in the cure.

Though the method of firing and blistering of the out-of-date farrier has now given way to the more rational treatment of the modern Veterinary Surgeon, branding or the use of the actual cautery is still admitted to be indispensable under certain circumstances. It is therefore not fair to put it down as being a relict of a barbarous age, but it should be recognised that though at one time it was practised indiscriminately it is now adopted in extreme cases under expert veterinary advice. This is how matters stand in advanced countries where the necessity for veterinary control over the treatment of animals is recognised, but in Ceylon it is found that laymen are the censors when questions of "cruelty" in the form of branding are to be decided, and this leaves matters in as unsatisfactory a state as under the old system, so that it becomes a question with us whether the native empiric cattle doctor who is allowed to practise his "profession" without let or hindrance is a better judge of the necessity of branding or the inexperienced laymen who generally sit in judgment on him. The only equitable way of settling the question of cruelty or otherwise in cases of branding, when there is reason to suspect cruelty, is by referring the matter to an expert.

"MANGO LODGE," CINNAMON GARDENS,

DEAR SIR,—I herewith send you a copy of a letter received from George Murray, Esq., of Pallekelle. I would like to add that the material used in this case was not pure but glycerinated

bile, and the animals had, as a matter of necessity, to be worked in an infected area, after inoculation, and before the usual 10 days were elapsed. From Mr. Murray's report, the mortality in this case of inoculation was only 20 per cent. Let me quote a para. that previously appeared in the *Ceylon Independent*:—

"Mr. Hoole, Government Veterinary Surgeon, who returned a few days ago from Kandy, reports that active steps are being taken by the Government and Municipal authorities there to check the spread of murrain. It appears that the inoculations at Pallekelle Estate have unfortunately failed, judging from the percentage of inoculated animals that got the disease and succumbed to it. The Superintendent, Mr. Murray, is however, unremitting in his efforts at combatting the outbreak, and it is to be hoped that the system of isolation and disinfection, which is energetically carried on on this estate will have its desired effect."

It will thus be seen that it was hardly fair to characterise inoculation at Pallekelle as a *failure*.

Yours faithfully,

(Signed) A. CHINNIAH, *Vet. Surgeon.*

(*Copy of letter referred to.*)

PALLEKELLE, KANDY,
12th October, 1899.

DR. CHINNIAH,
Alston Lodge, Cinnamon Gardens, Colombo.

DEAR SIR,—I regret the delay in replying your letter, owing to my cattle conductor having left me, and I could not have found out earlier how many of the cattle you inoculated died. Two bulls died out of the ten you inoculated.

Yours faithfully,

(Signed) G. MURRAY.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF AUGUST, 1899.

1	Tuesday ..	Nil	17	Thursday ..	Nil
2	Wednesday ..	Nil	18	Friday ..	Nil
3	Thursday ..	Nil	19	Saturday ..	Nil
4	Friday ..	Nil	20	Sunday ..	Nil
5	Saturday ..	Nil	21	Monday ..	Nil
6	Sunday ..	Nil	22	Tuesday ..	Nil
7	Monday ..	Nil	23	Wednesday	Nil
8	Tuesday ..	·01	24	Thursday ..	·55
9	Wednesday...	Nil	25	Friday ..	·1
10	Thursday ...	Nil	26	Saturday ...	Nil
11	Friday ...	Nil	27	Sunday ...	Nil
12	Saturday ...	Nil	28	Monday ...	Nil
13	Sunday ..	Nil	29	Tuesday ..	Nil
14	Monday ...	·15	30	Wednesday	Nil
15	Tuesday ..	Nil	31	Thursday ..	Nil
16	Wednesday	Nil	1	Friday ..	·2
				Total...	1·01

Greatest amount of rainfall in any 24 hours on the 24th inst. was ·55 inches.

Mean rainfall for the month ·3 in.

Recorded by Mr. J. A. G. RODRIGO.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF SEPTEMBER, 1899.

1	Friday ...	·2	17	Sunday ..	·29
2	Saturday ...	Nil	18	Monday ..	Nil
3	Sunday ...	Nil	19	Tuesday ...	Nil
4	Monday ..	Nil	20	Wednesday	Nil
5	Tuesday ..	·2	21	Thursday ...	Nil
6	Wednesday...	Nil	22	Friday ...	Nil
7	Thursday ...	Nil	23	Saturday ...	Nil
8	Friday ...	Nil	24	Sunday ...	Nil
9	Saturday ...	·11	25	Monday ...	Nil
10	Sunday ...	Nil	26	Tuesday ...	Nil
11	Monday ...	Nil	27	Wednesday	Nil
12	Tuesday ...	·46	28	Thursday ...	Nil
13	Wednesday	Nil	29	Friday ...	Nil
14	Thursday ...	Nil	30	Saturday ...	Nil
15	Friday ...	Nil	1	Sunday ...	Nil
16	Saturday ...	Nil			
				Total...	1·06

Greatest amount of rainfall in any 24 hours on the 12th inst. was ·46 inches.

Mean rainfall for the month ·3 in.

Recorded by Mr. J. A. G. RODRIGO.

ORIGIN AND FORMATION OF ORGANIC MATTER IN PLANTS.

(*Continued*).

By the term respiration we understand the phenomena of the absorption of oxygen and the evolution of carbon dioxide. Respiration occurs in all plant organs, and is a function of such importance that when interfered with by the exclusion of oxygen the death of the plant results. If the roots, buds, moistened seeds, and branches of a plant be placed in a flask, and a current of air free from carbon dioxide be passed over them and then led through a solution of barium hydrate, the latter will become milky, due to the formation of barium carbonate, thus showing that the vegetable matter has evolved carbon dioxide The leaves throw off carbon dioxide except when they are exposed to the light and respiration is masked by assimilation. During the night or in dense shade they throw off carbon dioxide. When the relation between the oxygen absorbed and the carbon dioxide evolved is carefully determined, it is found that this relation is considerably modified by the temperature to which the leaves are exposed. In a low temperatnre the oxygen absorbed is usually greater than the carbon dioxide evolved, while in a high temperature the reverse is true, that is, there is more carbon dioxide evolved than oxygen absorbed. Since one volume of carbon dioxide contains exactly one volume of oxygen, it is evident that when the volume of carbon dioxide evolved is greater than the oxygen absorbed the plant is losing oxygen. This explains how the glucoses which are found in the pods of colza are transformed into the fatty substances of the seed, and how inosite and its derivatives formed by cholorophyll action in caoutchouc trees give a resin which is devoid of oxygen. The nature of this transformation has not yet been

explained, but the above observations indicate that these substances, like starch, cellulose, and sugar, are derived from forenic aldehyde, which as already explained, is assumed to be the primary substance from which all plant substances are built up. The formation of acids in plant tissues is explained more easily than that of fatty substances and resins. When starch or sugars are subjected to the action, of dilute nitiric acid, oxalic acid is produced. Similar treatment of other saccharine bodies results in the production of tartaric acids. Plant acids are due to a partial oxidation of neutral substances. When the carbohydrates oxide at a low temperature, or the penetration of oxygen into the tissues of the plant is interfered with by the structure of the organs, combustion of the neutral substances is not complete, *i.e.*, they are not reduced to carbon dioxide and water. In this case, the oxygen combines with the substances to produce acids. For example, considerable amounts of oxalic acids and oxalates are found in the juice of the cactus, especially the prickly pear, which is but slightly permeable to air. When, therefore, the volume of oxygen absorbed is greater than of carbon oxide evolved, it may be assumed that oxygen has been fixed by organic compounds in the plant to produce acids. These acids, then, are derived from neutral substances by oxidation, and, consequently, trace their ultimate origin to the decomposition of the carbon dioxide in the chlorophyll cells. In the experiment to which attention was called at the beginning of this article it would have been impossible to grow peas without adding a few cubic centimetres of an infusion of fertile soil to the sand. If this precaution were not observed with the peas, or if the seed of some non-leguminous plant were used, the experiment would be a failure. The seed would produce a sickly plant which would soon die of starvation due to the absence of one of the elements—nitrogen—necessary to its development. Although the leaves of plants grow in an atmosphere four-fifths of which is nitrogen, they are entirely incapable of directly utilising this element.

The process by which the free nitrogen of the atmosphere is utilised by plants has only been explained in comparatively recent years. Hellriegel and Wilfarth in 1886 reported experiments which demonstrated the ability of Leguminosae to attain normal development in soil absolutely deprived of organic matter, the only precaution necessary being the addition of a small account of an infusion of fertile soil. A few weeks after the addition of the infusion the roots of the leguminous plants were covered with tubercles, which microscopic examination showed to be filled with micro-organisms.

Breal has shown that inoculations may readily be made with these organisms by pricking a tubercle with a needle and then inserting it into a growing root.

The tubercle bacteria have been cultivated and their products have recently been brought into commerce under the name of "Nitragin," which is used for supplying these organisms to soils which are deficient in them. The growth of leguminous plants in sterile sand depends upon the presence on their roots of tubercles filled with these organisms. Through their agency the plant is supplied with nitrogen for the production of nitrogenous matter, so that if the mineral elements are present in sufficient quantity the plant makes normal growth. The plant profits by the nitrogen furnished by the bacteria, while the latter utilise the carbonaceous matter supplied by the plant, thus establishing a symbiosis. Although the process of fixation of nitrogen by the organisms and its utilisation by the plant has not yet been clearly explained, we can understand how that, notwithstanding the great quantities of nitrogen carried away from the soil with every cutting of lucerne or clover, the amount of nitrogen in the soil increases rather than decreases.

MEMS. ABOUT FRUITS.

The proper manipulation of trees in transplanting is a subject about which most people know very little. It is not uncommon to see trees furnished with masses of roots and planted with the utmost care, prove failures. Those who have had the greatest experience in this matter advice that fruit trees with the roots pruned back are more successful than trees with the ordinary supply. We generally find severe pruning of roots practised in transplanting coconut palms, but the same practice is avoided when fruit trees have to be dealt with. Why this difference in the treatment of transplanted trees?

It is well known to gardeners that an injured root is a source of decay in a transplanted tree, and that the best thing to be done under the circumstances is to remove the injured portion by means of a clean cut. A clean cut wound is easily healed over but not so a jagged one. Now in transplanting it is idle to expect that the roots—however carefully they may be treated—will escape injury. After transplanting, it is not until the roots throw out new white fibres that they are of any use to the tree, and it is well known that these fibres are sooner developed from pruned than from unpruned roots.

The selling price of plantains in the London market does not appear in the usual price lists of tropical produce. It is, therefore, interesting to find in an Exchange, a note to the effect that in July last though the arrival of bananas in London was heavy, the demand was equal to the supply, and the price ranged from 7 to 10 shillings per bunch.

It is astonishing with what pertinacity a name, no matter how enormous and absurd, will stick to a thing after once it has come into general use. Professor Van Denan, the well-known pomologist, referring the name "grapefruit" as applied to the pumelo, expresses the hope that intelligent fruit growers would abandon the absurd and inappropriate name "grapefruit" and use in its stead the proper name "pumelo." "What relation," he asks, "can there be in that large citrus fruit to the grape? Every one that knows anything of pomelo, except it be the most ignorant tyro in pomology, knows there is none. Then why perpetuate such nonsense? The fruit is called pomelo or pumelo in its native East Indian home; and it is called the same in the books on pomology; yet,

because some ignoramus in Florida once started the outlandish name "grapefruit," many persons stick to it in the face of the known facts to the contrary. Pomelo is short, euphonic, plain, historic and sensible. "Grapefruit" has none of these facts in its favour. In the name of common sense and intelligent pomological usage, I beg of everyone—growers, shippers, dealers, consumers and rural editors—to talk, speak, write and print the true name pomelo in referring to this one of our luscious fruits."

The following details of the sale of a small shipment of pine apples received from the West Indies by Messrs. John Haddon & Co., of London, will be of interest to fruit growers :—

	s.	d.		£	s.	d.			
40 pines @	1	1	=	2	3	4			
40 " @	0	10	=	1	13	4			
41 " @	0	8	=	1	7	4			
40 " @	0	6	=	1	0	0			
34 " @	0	5	=	0	14	2			
195 "			=	£6	18	2			
Dock charges, brokerage, &c.				0	11	6			
Agents' commission, post, &c.				0	5	0			
							0	16	6
Home charges :									
Barrels			=	0	4	0			
Carting			=	0	1	6			
Freight			=	1	6	0			
Cutting and Packing			=	0	3	0			
							1	14	6
							2	11	0
Profit							4	7	2
							£6	18	2

It is very desirable that there should be a reform in the nomenclature of fruits and trees, and that loosely applied names should be altogether dropped and correct names adhered to. Dr. Watt gives the following synonyms for *Citrus decumana*, pumelo, shaddock, pompelmos (or pampelmouse), forbidden fruit and paradise apple besides grape fruit. The Sinhalese name (which is commonly used in Ceylon) is *Jambola*, which has to be distinguished from Jamobalan, the Indian name for *Eugenia jambolana* also known as *Masan*. We cannot, however, fully agree with Professor Van Denan as to the pumelo being particularly "luscious" and (as he calls it in another place) "delicious."

It is the experience of many that nitrogenous manures encourage a rank sappy growth of wood in orange trees, and in young trees actually retard fruit bearing. What the tree mainly needs is potash, and if fruiting some phosphate also. This will furnish material for producing a moderate amount of wood and plenty of fruit. The point in orange growing is not to encourage too much annual growth, which if moderate and if plenty of potash and phosphate be supplied will keep the tree much healthier than if over supplied with nitrogenous fertilizers. Too free use of animal manure for oranges is therefore to be avoided.

In Jamaica the planting out of oranges and pumeloes in regular groves, budded from the best varieties, is being extensively done, and some of the groves of young budded trees are now beginning to bear. The export of oranges and pumeloes for the year ending 31st March, 1898, amounted to, oranges 88,013,091, value £134,673, against 99,691,900, value £123,715 this year, and pumeloes 8,989 barrels and 5,620 boxes, value £7,983 15*s.* 9*d.* against a value of £7,649 this year.

"If chloride of lime be spread on the soil or near plants, insects and vermin would not be found near them." By its means plants will easily be protected from insect plagues, by simply brushing over their stems with a solution of it, or sprinkling upon. It has often been noticed that a patch of land which has been treated in this way remains religiously respected by "grubs," while the unprotected beds around are literally devastated. Fruit trees may be guarded from the attacks of "grubs" by attaching to their trunks pieces of tow smeared with a mixture of hog's lard and chloride of lime, and ants and grubs already in possession will rapidly vacate their position. Butterflies again will avoid all plants whose leaves have been sprinkled over with this chloride of lime. Directions :—1 ounce of chloride to 8 of lard, $\frac{1}{8}$ lb. of chloride to a pail of water.

Citrus trees require very little pruning. The first year should see them take proper shape, and if well cared for they will expand and develop symmetrically without much subsequent pruning. A little pinching back here and there as the tree starts off the first year is ordinarily sufficient. Make the trees head low and compactly. Don't put any ignoramus who professes to know it all, to butchering your trees as I have seen done recently, where a man went through a healthy, flourishing young grove, and left only skeletons behind, setting the trees back more than a year's growth and fruiting. If you do not know how to do it yourself, or cannot get a man of experience to advise you, you had better not prune at all, concentrate your energies on thorough cultivation and fertilizing, and the tree will do the rest.

MILK AND MILKING.

That the milk last obtained in the ordinary milking of a cow is much richer than that first drawn, is well known to all observant dairymen. We have in the Australian *Farm* a report of a Danish experiment, with judicious remarks about milking generally.

The experiment was made with milk drawn from a number of cows, and collecting the quantities of the different qualities as given below —

"1. Milk from the first streams, 172 lb., gave 1 lb. of butter.
2. Milk from the middle streams, 38 lb., gave 1 lb. of butter.
3. Milk from the last streams, 27 lb., gave 1 lb. of butter.
4. Milk from the last drops, 12 lb., gave 1 lb. of butter.

This shows that the after-milk is very rich in butter elements, and therefore very valuable.

Straining the cow's milking capacity to its utmost will develop the udder toward rendering as perfect service as possible.

The milking hours should be regularly kept and the cows milked in a fixed succession—if possible by the same hands. If the milking starts too early the animals are not prepared for it; if too late, they grow impatient, and may even suffer considerable pain. In either case the animals are sure to yield less milk than ordinarily.

Any inconvenience suffered by the milch cow will result in a loss of milk.

Any unusual condition of the udders and teats calls for immediate attention. Soreness of any portion, sores of a peculiar character, and obstruction of the milk ducts should be promptly treated.

Cows with diseased udders are likely to be affected with some contagious sickness, and should therefore be placed apart from the remainder of the herd. Their milk cannot be gathered in the same buckets and pails as are used with the other cows until health is restored.

Whenever a "hard milking" cow is found the narrowness of her milk canals may be obviated by rolling the teats between two hands. The passing of a straw into the milk canal is disastrous to the animal, and may cause inflammation of the udder. On being milked after the first calf, many cows are very sensitive to the milker's touch. Nothing but patience and gentle treatment will avail in such cases.

A dirty udder should be cleaned with warm water before milking and rubbed dry with a clean cloth.

Inflamed udders have been successfully treated with water as hot as can be borne by the hand, and applied frequently."—*Cape Agricultural Journal.*

AGRICULTURAL EDUCATION.

It has been the experience in all countries that Agricultural Educational establishments have serious difficulties to contend with at the outset. Practical agriculturists, and especially those who have been more or less successful cultivators, are always ready to serve at schools of agriculture; while the difficulty of securing a good attendance at classes, where no prospects of employment are held out to students, is another drawback.

The Principal of the Poona College of Science in a letter to the Director of Public Instruction, Bombay, says regarding the agricultural classes:—

I regret to have to report a very unsatisfactory state of affairs. While our new Engineering and Forest classes are so crowded this year, that I have some difficulty in providing room for them all, there is only one student in the new Agricultural class, *viz.*, a man who has been sent from the Central Provinces with a scholarship of Rs. 20 per mensem, and one extra or private student, a Parsee, in the Diploma class. In order to induce fresh men to join, I offered this year three scholarships of fifteen rupees, ten rupees, and six rupees, respectively, to men attending the junior Engineering class, if they would take up Agriculture instead; but only one man applied for the exchange, on the condition that he be given the first scholarship, so I did not accept the offer

The reason for the failure of these classes is, without doubt, the definiteness of their future prospect. The L. C. E. graduates never fail to get fairly remunerative posts, and the Forest Rangers can look forward to success, seeing a number of past students already employed in the Forest Department. But there have not been many instances of similar success among the Agricultural diplomates up to date. He also suggests that Government should annually publish in March or April the number and nature of appointments which will be gauranteed to students who obtain the diploma in Agriculture, and that the scholarships be reduced in number and raised in value.

A Government Resolution has been issued, stating: His Excellency the Governor in Council regrets that the Agricultural classes in the College of Science, Poona, are languishing for want of students. The state of things is the more deplorable, as by Government Resolution, Revenue Department, No. 2178, dated the 26th March, 1898, it was directed that holders of the diploma in Agriculture granted by the Bombay University under the revised Regulation shall rank with graduates of the University, and shall be allowed all the special privileges enjoyed by the latter in the matter of the admission to, and promotion in, the Revenue Department. Government understand that these advantages are not generally known. The Principal of the College of Science should, therefore, be requested to give as wide publicity as he can to such information as he considers likely to attract students to the Agricultural course. The proposed revision of the number and value of the scholarships attached to the agricultural classes is approved, and the Director of Public Instruction should be requested to notify the change to all Head Masters of High Schools, and call their attention to the chances of employment offered to men holding the diploma in Agriculture. The necessary action as regards suggestion (*c*) made by the Principal will be taken in the Revenue Department, which should be requested to forward a copy of the orders that may be issued to the Political Department for similar action as regards Native States in this Presidency.

After reading of this state of things in India, we consider the Colombo School of Agriculture has done well in keeping up its classes under the very trying circumstances in which it has been placed, with no incentives to students in the way of scholarships, no adequate funds for satisfactorily carrying on its work, and with the worst possible soil at its disposal for practical operations. And yet the Ceylon Government has not yet thought fit to adopt the initiative set by the Indian Government and offer suitable employment to students who have had an agricultural training.

NOTES ON EXHIBITS FOR PARIS.

1. Edible Birds' Nests.

Among the Exhibits being collected for the Paris Exhibition are some about which many persons know little, particularly as regards the origin of certain products which may be familiar enough in the commercial form. It has therefore

been suggested that a series of notes giving information with reference to these articles might prove of interest to our readers, though it will no doubt be found that a number of them are familiar enough to some persons though but little known to others and *vice versa.*

At present the collection received for transmission to Paris is not a very large one, but still there are a few exhibits which appear to be more or less unfamiliar to visitors, and about which the following notes will give them some information:—

The birds which construct the edible nests are found chiefly on the Pigeon Islands (North Canara), Vingorla Rock, and Sacrific Rocks, on the coast of Malwan (Ratnagiri District), at Tavoy and Mergui, and in the Andaman and Nicobar Islands. *C. nidifica* is known also to occasionally visit Darjeeling, Assam, and the Nilgiri Hills, and to breed on most of the islands on the coast of the Malabar and the Concan round the Bay of Bengal to the Burmese Coast and the Malay Peninsula. *C. linchi* is the principal species of Java, known locally as tintye. In most of the regions where these birds are found, there are caves which afford shelter and protection. These caves occur chiefly in limestone formations, and are often several miles from the coast; at other times they have to be entered by boats.

Mr. Portman, in his report of the Andaman Island Edible Birds' Nests, says:—"I have observed two kinds of swallows, both of which build in the caves. The larger bird has more white in his plumage, and builds a nest of twigs and grass, &c., glued together, and attached to the rock by a peculiar mucilaginous matter. The smaller bird builds a nest of white mucilaginous matter entirely, and it is this nest which is so much sought after. The nest is built in the form of a small bracket attached to the side or end of the cave, of a semi-circular form, with a radius of about 1½ inches, and regarding the matter of which it is composed opinions differ."

"In Borneo, from which country China obtains the majority of her birds' nests, the better qualities of nests are found in caves in the interior in crystalline limestone rock, only an inferior quality of nests being found on the seashore. These remarks apply equally to the Andamans; and I have no doubt that when the interior of the islands is explored, many more nest-yielding caves will be found. All our present knowledge is derived from the Malays, who, through fear of the Andamanese, did not dare to search the interior. The explorations should be confined to hilly country, where the crystalline limestone formation predominates.

The greatest difference of opinion prevails regarding the nature of the material of which the nests are formed. Early writers used to contend that they were made of a sea-weed which the bird collected for the purpose and chemically changed in some mysterious way. Ure (Arts, Manufactures, and Mines) says: "The nests are made of a particular species of sea-weed which the bird macerates and bruises before it employs the material in layers so as to form the whitish gelatinous cup-shaped nests so much prized as restoratives and delicacies by the Chinese. On the other hand, many recent writers discredit this theory and believe that the gelatinous material is either the natural saliva of the bird or a substance brought up from the stomach for the purpose and derived from the natural food of the nest, viz., insects. In support of this opinion they point out that the better qualities of the nests are found in caves far removed from the sea. Some of the nesting caves of Borneo are 140 miles from the sea. Mr. de Roepstorff points out that there are no edible nests in the Nicobar Settlement, but a few miles off in a richer tract of country where insect life abounds they are plentiful. "It is thus," he says, "in places where the food of the swallow is plentiful, that they exist under the most favourable circumstances, and where the nests are best." In the Ratnagiri District *Gazetteer* it is stated "the swiftlets breed in March and April, in caverns of the rocks, the nests being made of inspissated saliva, in the form of white gelatine, pure white when fresh, but when old brownish and mixed with extraneous substances." Mr. Portman remarks: "The swallow is supposed by some to make this matter, which resembles isinglass, from a species of sea-weed (fucus) resembling Carragen, an Iceland moss. I have often seen this sea-weed, but have never seen the birds on the sea-shore gathering it. Another theory is that the bird excretes this matter from his own throat during the breeding season." I am unable to give any decided opinion in the matter, but the natives have a theory that the birds bring it down from the sun."

(*To be continued.*)

PRINCIPAL FIBRES USED COMMERCIALLY.

By Dr. Chs. Richard Dodge.

Of the two dozen species of commercial fibres used in the United States, twenty figure in the list of imported raw products. Taking into account, also, the imported manufactures from fibrous substances and some of the rougher manufactures from fibres or fibrous substances produced at home, the complete list of American commercial fibres may be swelled to thirty species, many of these being unimportant. There are six bast fibres, as follows:—Flax, *Linum usitalissimum*, China Grass, *Boehmeria nivea* (including Rhea, *B. tenacissima*); hemp, *Cannabis sativa*; jute, *Corchorus capsularis* and *C. olitorius*; Sunn hemp, *Crotalaria juncea*, and Cuba bast, *Hibiscus teliaceus*; all excepting the last being spinning fibres, the Cuba bast finding employment in millinery. There are two surface fibres: Cotton, *Gossypium spp.*, and Raffia, *Raphia ruffia*. The list of structural fibres numbers 15, representing Agaves, palms, and grasses, as follows: Sisal hemp, *Agave rigida* (varieties); Manila hemp, *Musa textilis*; Mauritius, *Furcroya gigantea*, and New Zealand flax, *Phormium tenax*, cordage fibres; Tampico, or Istle, *Agave hetera cantha*; Bahia piassaba, *Attalea funifera*; Para piassaba, *Leopoldinia piass-aba*, Mexican whisk, or Brown root, *Epicampes macronra*, and Cabbage palmetto, *Sabal palmetto*, brush fibres; Crin végetal, *Chamae, rops humilis*; Spanish moss, *Tillandsia usneoides*, Saw palmetto, *Serenoa serrulata*; Coconut fibre, *Cocos nucifera*, upholstery and matting fibres;

Esparto grass, *Stipa tenacissima*, for paper manufacture and vegetable sponge. Luffa aegyptica, as substitute for bath sponges. The two species of palmetto and the Spanish moss for vegetable hair are wholly produced in this country. As to the sources of supply of these fibres, flax is imported chiefly from Belgium, Russia, Holland, Italy, the United Kingdom of Great Britain and Ireland, and from Canada. China grass or ramie comes from China (in small quantities). Hemp is derived from Russia, France, Belgium, Germany, Austria-Hungary, Italy, the Netherlands, and British East Indies (the latter in trifling quantity); jute from India, and Cuba bast from the West Indies. The imports of cotton are chiefly produced in Egypt and Peru, though small quantities may be derived from other countries. Raffia, used as agricultural tie bands, comes from Africa.

The sisal hemp supply is produced in Yucatan, small quantities being produced in Cuba and the Bahamas. Manila hemp is a product of the Philippine Islands, Cuba hemp being a trade variety. Mauritius or aloe fibre comes from Africa, and the source of supply of New Zealand flax is indicated by its name. Tampico, or Istle, is a Mexican product, and the Bahia and Para piassabas, or "bass" fibres, are collected from Brazilian palms. There are other species of bass (see Bass in Catalogue) derived from African palms, which formerly never came to the United States, and now, if at all, only in trifling quantities. Broom root is a Mexican product, the root of a tall, wiry glass. The two palmetto fibres are produced from uncultivated species of Florida palms, while the Crin végetal is derived from an allied palm growing in Algeria. The vegetable hair from Spanish moss is prepared in South Carolina and other Gulf States, while coconut fibre comes from the East Indies. Esparto grass is produced in Algeria, Spain, and Portugal, and vegetable sponge comes largely from Japan. Other commercial species that might be enumerated are imported in a partially prepared state or as manufactures. Such fibrous substances appear in the form of straw plait from Italy, Japan, and China chiefly, the eastern floor mattings and basketry from various substances. In this account, however, only the raw fibres are noted. The fibres produced in this country in commercial quantity are cotton, hemp, flax, palmetto fibre, and vegetable hair from Spanish moss. Hemp and flax production should be largely extended; jute production and the growth of sisal hemp, pineapple, and bowstring hemp are possible. Cane fibre can be produced in large quantities, and there are doubtless other kinds that might form the basis of local fibre industries. The paper materials other than Esparto are not considered in this category. The native fibrous substances that might be employed in lieu of cellulose from our forest trees, for paper pulp, would make a long list, at the head of which might be placed the waste fibre from a million acres of flax produced only for seed. A day is surely coming when the question of securing new pulp materials will present itself, and it is to be hoped that from the long list of native species of fibrous plants enumerated in this work something will be found that will supply at low cost a better paper material for common use than wood pulp, which has nothing to recommend it but availability of raw material and cheapness.

THE PROGRESS OF AGRICULTURAL CHEMISTRY.

The following is taken from an account of Prof. Maercker's address before the German Chemical Society, and gives his views with reference to Plant Food, Soils, and Manures, subjects of so much importance to agriculturists:—

In supplying nourishment to plants we must know what substances are necessary, and in what form and quantity they should be provided. Little progress was made in our knowledge of the subject till the quite recent introduction of the method of water-cultures of Sachs, Knoop, and Nobbe and the method of sand-cultures of Hellriegel permitted of the conduct of experiments in pure media, and thus rendered it possible to ascertain not only what substances are essential for plant life, but also the part played by each substance in the plant cell. Thus we know now that phosphoric acid is essential for the formation of nitrogenous substances in the plants, because the albumens, which are of fundamental importance in the transformations of substances in plants, result from an intermediate phosphoric acid compound, as is indicated by the regular occurrence of lecythin in protoplasm. Again, iron is an essential constituent of chlorophyll and sulphur of albumen, and hence must be supplied to plants. The true function of calcium was for long doubtful; its action is now known to be of a medicinal character, since it serves to neutralize the poisonous oxalic acid, which is always an intermediate product of the oxidation of the carbohydrates. It was formerly thought that calcium fulfilled some important function in the leaves, being chiefly found in the foliage of plants. Since, however, the leaves are also the chief seat of the oxalic acid, this distribution of the calcium is easily explained.

The part played by potassium has only within the last three years been explained by Hellriegel, who, by exact experiments with beet-root, showed that the amount of sugar in the beet stands in close relation to the amount of potassium provided for the plant. P. Wagner has made the interesting observation that the potassium may be partly replaced by sodium.

The exact value of magnesium to plants is not yet well understood, but it appears to be of importance in the formation of the nitrogenous substances of seeds, as in these considerable quantities of magnesium phosphate occur,

Nitrogen is an indispensable plant-food, for it is an essential constituent of albumen.

In addition to the quantities of mineral substances required by plants to enable them to exhibit a healthy growth, further quantities are found to be essential to satisfy what has been termed, though not very aptly, the "mineral-hunger" of the plant. This is best explained by an example. E. Wolf found that for the production of 100 parts of oat-plant (dried), ·5 parts of phosphoric acid was necessary, when the remaining mineral substances were supplied in excess to

the plant. By other similar experiments he showed that the following quantities of mineral substances were necessary for the production of 100 parts of oat-plant :—

Phosphoric acid ...	...	·50 parts
Potash ...	...	·80 „
Lime ...	...	·25 „
Magnesia ...	...	·20 „
Sulphuric ...	...	·20 „
		1·95 parts

A total of 1·95 parts of mineral substances is therefore necessary in the case of the oat-plant. However, there is no oat-plant in nature which contains so little as 1·95 per cent. The minimum is 3 per cent. The difference, 1·05 per cent, is the measure of the "mineral-hunger" of the plant, and represents the mineral substances which does not perform any special function. This excess of mineral substance may be supplied in the form of some indifferent substance, such as silica. The observation is of considerable interest to the farmer, for it shows that it is not economical to manure crops with pure substances.

Having ascertained in general what substances are necessary as plant-food, the agricultural chemist has next to apply this general information to the manuring of soils which are more or less deficient in certain ingredients. It has been found, unfortunately, that the chemical analysis of a soil is of little use as a guide unless accompanied by what may be termed a "mechanical analysis," by which he meant chiefly a determination of the amount of finely-divided constituents present in the soil. It is only the finally divided earth which presents a sufficiently large surface for the exercise of the solvent action of the water and its dissolved carbonic acid. There is one case, however, in which chemical analysis alone is of the greatest importance, *viz*, when only traces of some necessary element are present in a soil. Here there is no qustion of the need for a manure containing this substance.

If, on the other hand, large quantities of an element are present, it does not follow that there is a sufficiency in the soil even when the latter is in a satisfactory state of division, for the substance in question may be present in an insoluble or refractory form. This is commonly the case with nitrogen, which exists in the soil chiefly in the form of a mixture of indefinite nitrogenous substances known as humus or mould. These substances sometimes easily give up their nitrogen to plants, but in other cases are very refractory. The uncertainty as to their action is indeed so great that certain peaty soils are known which consist almost entirely of humus, but contain, nevertheless, an insufficiency of available nitrogen.

Phosphoric acid affords another illustration. The soluble phosphoric acid of the manure is absorbed by the soil as dicalcic phosphate, which is comparatively easily soluble in the soil-water. With time, however, it may change in the soil to the insoluble tricalcium phosphate, or even to iron or aluminium phosphates, which are still less soluble.

In the case of calcium, chemical analysis has been found to be of considerable service in determining what manuring is required, since calcium is chiefly valuable in the form of carbonate or humate, and these are easily estimated in the soil.

Since then the direct method of soil-analysis is an insufficient guide to manuring, it is fortunate that chemists have been able to develop successfully an indirect method. This is the cultivation method, by which plants are allowed to grow in the soil under examination, after taking care to provide a sufficiency of all plant-food stuffs except the one, *e.g.*, phosphoric acid, whose presence in available form is being tested. The plants are then analysed, and the results compared with the analyses of the same plants grown on soils provided with all the necessary plant-food stuffs. As an inportant result of the method it has been found that different plants take up very different quantities of the same mineral substances. On this is largely based the system of rotation of crops, where the second crop is so chosen that it chiefly removes the ingredients of the soil which have been left by the preceding crop.

With the aid of the cultivation method it has also been possible to draw up the following table which represents the relative values of the different nitrogen compounds for plant food.

Nitrogen of Saltpetre	... ...	100
„ „ Ammonia	... ...	85-90
„ „ Albumen	... ...	60

This table may be made use of in determining the nitrogen value of a manure.

The cultivation method may be used for testing the value of manures of all kinds. Thus it was by a few cultivation experiments that Wagner in Darmstadt first showed the very great value for agricultural purposes of the "Thomas" Slag, produced as a bye-product in the manufacture of iron by the basic process of Thomas Gilchrist. The million tons of phosphate meal annually produced in Germany is now wholly utilised by the agriculturist, and its preparation for the farmer has become an important offshoot of the industry.

Similarly the demonstration by the cultivation method of the value of potash salts in manures has given an enormous impetus to the potash industry.

Speaking generally, the method gives us complete control over the fertility of a soil in so far as this depends on manuring. One consequence of this has been that our views as to the value of agricultural land have completely changed, for whereas formerly sandy soils were generally considered poor, they are now by means of a system of intelligently directed manuring, made to give yields which are scarcely inferior to those of the best soils. The beet-sugar industry, which formerly could only be conducted in the best soils, has now been extended with marked success to sandy soils.

AGRICULTURAL EDUCATION IN FRANCE.

The system of agricultural education in France is reported to be most perfect, and just at this time when a Commission is sitting with reference to the question of establishing a Department or Board of Agriculture for the island, an account of the French system of agricultural education should prove both interesting and instructive reading.

We have just received, through the courtesy of a high official, a copy of a Report (only the series of Diplomatic and Consular Reports) on this very subject, written by Mr. H. Austin Lee, Commercial Attaché to Her Majesty's Embassy at Paris. From it we learn that though various efforts in the direction of agricultural education were made in France during the latter half of the eighteenth century, it was not until 1822 that the first agricultural school was founded by Matthieu de Dombastle, at Boville, near Nancy. This school was quickly followed by others: in 1829 by that of Bella at Grignon, one of the most flourishing institutions of the preseut day, and in 1830 by that of Riffel at Grandjonan. The introduction of the present system of agricultural education, however, dates from 1875-76. When Minister of Agriculture, Monsieur Meline, in his official report published in May, 1898, advocated the institution of a "Superior Council of Agricultural Education," which was organised by the decree of May 27th, 1898. It is charged with the supervision of all institutions, &c., affording agricultural education, founded or subsidised by the Ministry of Agriculture, and has a voice in all matters relating thereto. It meets at least once a year and forwards a report to the Minister of Agriculture, comprising its views respecting improvements to be introduced into the system as a whole. Of this Council of thirty, fourteen officials, including the officers in control of the various sections of the Agricultural Department, heads of the Veterinary, Forestry, Irrigation Departments, Directors of Forestry and Agricultural State Schools and Presidents of Agricultural Societies, are ex-officio members. The rest of the members are nominated from amongst the agricultural and scientific notabilities of the country and others. They are appointed for four years, one-half of their number being renewed every second year. Fifteen members of the Council form a permanent Commission which meets to consider urgent matters whenever summoned by the Minister of Agriculture.

The inspection of agricultural education has also been lately organised. There are now officers known as Inspectors-General and one inspector for each of the eight districts into which the country has been divided.

The Inspectors-General are charged with the organization of the general agricultural show at Paris, the supervision of district agricultural shows, and the inspection of the "Institute Agronimique" and the National Agricultural Schools.

The Inspectors are charged with the supervision of the establishments affording agricultural education in the general districts other than the abovementioned, with that of the departmental and special professors. They also organise and preside over the district shows. They are subordinate to the Inspectors-General.

The corps of inspectors are recruited from qualified professors of various agricultural institutions.

The State expenditure on agricutural education, under this system, is, as may be expected, considerable. The votes for National Institutions aggregate £77,434, and for institutions subsidised by the State £75,026, or a total, for the year 1899, of £152,460. The receipts from fees and sale of produce in general establishments, giving as the figures for 1897, are between £12,000 and £13,000

Agricultural education as it exists in France may be divided into four sections, viz., Elementary, secondary, higher and general.

Under elementary agricultural establishments are classed (*a*) the Farm Schools, and (*b*) the Practical Agricultural Schools.

Of Farm Schools there are fourteen at present, though at one time there were about five times this number. The decrease is attributable, firstly, to the increase of "practical schools," and secondly, to the growth of private establishments taking paid apprentices. But though their present importance is comparatively small, it would appear that these Farm Schools still supply a distinct want. These institutions can scarcely be called schools. The farm is a private speculation. The Government pays the salaries of the staff of teachers, 7½d. per day towards the upkeep of each apprentice, and gives usually a bonus of £12 on leaving to those who gain their diploma, and £8 to those who do not. The teaching is gratuitous, the apprentices are boarders, and the course varies from 2 to 3 years. The age of admission varies from 14 to 16, and the average number of apprentices is about 20.

The staff usually consists of a Director, a teacher, superintendent (who is also accountant), a gardener, nurseryman, overseer of practical work and Veterinary Surgeon and drill master; besides special instructors for any special local cultivation. The teaching is mainly practical, and the Director makes use of the services of the apprentices as he deems advisable.

The theoretical studies, which occupy about one-third of the time, are of a very elementary character. They include the revision of subjects taught in the elementary schools, horticulture, arboriculture, and general notions respecting surveying and levelling, agriculture in its widest sense, "first aid" to sick animals, and book-keeping.

Admission is obtained by examination in primary subjects, but those holding the primary education certificate are exempted from examination.

The objection that has been brought against these schools is that the Directors (who are the owners or lessees of the farm) are often apt to look upon the apprentices somewhat in the light of labourers placed at their disposal by the State, and to make them work merely with a view to their own ends, the question of teaching taking only a secondary place. A shepherd's school on the same principle exists at Rambouillet.

The practical agricultural schools may be said to fill a gap between the national schools, intended to give a secondary practical and theoretical education to the sons of larger landed proprietors, and the farm schools intended to give almost entirely practical teaching to the sons of labourers, They were established with a view to catering to the important peasant proprietors and small farmer classes.

These schools may be defined as farms of the better class, carried on with a view to profit, taking paying pupils who are taught the theory and practice of the special types of agriculture in the district of each school. The plan would appear to be successful for the number of these institutions existing, viz., over 40.

The object of these schools is stated to be "to take the child as he leaves the primary or superior primary school, to give him thorough practical and theoretical training, and then to send him back to the agricultural family, which he will not again leave." The practical school does not pretend to make finished agriculturists, but furnishes them with the means of becoming so by giving them a solid foundation of essential agricultural knowledge. The scheme devised for these schools has the merit both of simplicity and of economy to the State. The Director is either proprietor, tenant, or manager for some company department, or commerce. In the two latter cases he usually undertakes the farming at his own risk against an almost nominal rent. The initial cost of adapting the farm for the purposes of a school is borne—except in rare instances—by the proprietor or lessee alone or in conjunction with the department. The owner, however, often provides the whole of his cost, being repaid by the department by annuities. The State is in no way concerned with such matters, nor participates in the management or the agricultural venture. When the school is founded with the sanction of the Minister of Agriculture, the Government undertakes to provide the salaries of the Director and staff, a small sum for general expenses, and usually from £100 to £200 for Scholarships, some of which are, as a rule, also offered by individual departments.

The average course of study is 2 years, the average number of students 30 to 40.

The average fees are £20 for boarders, £10 for half boarders, £2 for day scholars. The scale of charges is fixed by the Minister of Agriculture. If qualifying and where needed a competitive examination precedes admission; a certificate of elementry education exempting from examination. The direct supervision of each school is in the hands of a committee of officials and unofficials. The staff usually includes a director, three professors, a teacher-superintendent, Veterinary Surgeon, overseers for Agricultural, and horticultural work, and Military superintendent.

The pupils receive theoretical and perform manual labour alternately morning and afternoon; the practical portion of the tuition being supplemented by numerous excursions, which give occasion for object lessons in agricultural matters.

Whilst there is much diversity in the practical training, the theoretical tuition is of a fairly uniform type, including:

1. Agriculture, zootechnics (the study of the habits and characteristics of the different kinds of live-stocks, and then classified according to age, race, &c.) rural legislation and economy, and rural engineering.
2. Physics, chemistry, technology, and meteorology.
3. Botany, zoology, geology, horticulture, entomology, and the study of useful and harmless insects.
4. Superior primary instruction, civil law. mathematics, surveying, levelling, and book-keeping.
5. Hygiene and "first aid" to animals.

A weekly examination is held in each subject, and pupils are practised in laboratory and the work of the microscope.

We are then given a short sketch of two typical practical schools, viz., those at Berthonval in the North, and Ondes in Southern France.

The average cost to the State of Practical Agricultural Schools would appear to be between £800 and £1,000. A certain number of schools afford instruction of a special character, such as the manufacture of cheese and butter. Poultry Farming and Horticulture, *e.g.* the Practical School of Poultry Farming at Sanvic, near Havre, and the Milk Industrial School at Poligny.

Here we close our review of this interesting report, reserving our notice of secondary, higher and general agricultural education in France for future issues.

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"EUCOMIA ULMOIDES" OLIVER: A NEW GUTTA-PERCHA PLANT.

By M. M. J. Dybowski and G. Fron.

(Specially trranslated, from the "Revue des Cultures Coloniales," for the Tropical Agriculturist.)

GUTTA-PERCHA is, as is known, produced principally from trees belonging to the Sapotaceæ and growing in sub-tropical regions. It is therefore interesting to kuow that a plant, belonging to quite a different botanical group and growing in regions with a temperate climate, can also yield gutta-percha. We refer to a species studied by M M. Oliver and Weiss and described in the bulletin of the Linnæan Society of London in 1892, under the name of the *Eucomia Ulmoides Oliver*. Having only incomplete specimens at his disposal that botanist was unable to make an exact study of the plant. However, he ranks the Eucomia among the Euphorbiaceæ, near the crotonoids, and notes, in the different organs of the plants, the presence of lactiferous vessels, the contents of which become particularly visible when, having broken a portion of the stalk or the leaf, one carefully separates the two parts. M. Weiss undertook the anatomical study of the stalk and leaves, more particularly the development of the lactifers. He affirmed their presence in great abundance in the "parenchyme cortical"* of the stalk and their resemblance to the vessels holding the latex of the *Euphorbiaceæ*. Having measured the proportion of elements soluble in chloroform in the cortical region, he obtained a yield of 3 per cent.

Having noticed the analogy that exists between the leaves of palaquium and those of the Eucomia, when on carefully breaking the leaves, one exposes the contents of the lactifers, we have been led to try to apply to the different organs of the plant, the procedure recommended by M. Jungfleisch for extracting gutta-percha from the leaves of palaquium. We experimented first on some fresh leaves of a single plant of the Eucomia in the *Jardin Colonial*. The leaves are 8 to 9 centimetres long and 4 to 5 wide. They are oval, pointed at the end, finely dentate, have short stalks, and in length resemble those of our common elm. Operating upon 20 grammes of dried leaves, we obtained 0 gr. 45 of products soluble in "toluene"* which corresponds to a return of 2 gr. 21 per cent. This return is poor, if one considers that the fresh leaves contain 70 per cent. of water. The bark seems to contain a notable proportion of matter produced by the lactifers. But the plant which we possess being still very young, we have not been able to take any branches away for examination. A second series of observations was made upon the fruits. The fruit is a samare, the length of it being from 3 to 3½ centimetres, and the width about 1 centimetre. 200 fruits weigh about 13 to 14 grammes. The extract of matter soluble in toluène has given us the following results:—1st attempt, 15 grammes soluble in toluène 4 gr. 09; 2nd 15 gr. gave 4 gr. 12. That is a proportion of 8 gr., 20 to 30 gr. of matter. This corresponds to a yield equal to 27·34 per cent. We operated on fruits not dried. The fruit contains a small proportion of water, equal to 7·4 per cent. The product obtained is of a brown colour with metallic reflections on the surface. Plunged in hot water, it becomes soft again, stretches out in thin flakes like gold beater's skin, aud under pressure will take the impress of metal. In cooling it loses its suppleness and becomes quite hard.

We have submitted the samples to M. Lèaute, an authority on the subject, and he authorizes us to say that he considers them of good quality.....Experiments are being made in the Jardin Colonial as to the methods of propagating the plant, which is at present only known in the North of China. Seeds are uncertain and often slow of growth but cuttings seem to give the best results. Cuttings will strike root in any season, but spring seems to be the most favourable for budding... The plants has lived in the open air in Paris through the winter. Further experiments on the plant are being made which will determine if it would be worth while to extract gutta from the branches or the bark.

* [That is, the soft spongy cellular web which fills the spaces between the different fibres and tissues in the leaves, young stalks and fruit.—Ed. *T.A.*]

* ["Toluène" is a colourless liquid obtained by the dry distillation of Tolu's balm, a balm produced by a tree of the *myrosperme* genus.—Ed. *T.A.*]

COFFEE IN QUEENSLAND.

THE LATEST REPORTS.

Experiments with coffee growing have been made from time to time—often at long intervals—ever since the foundation of the colony. Thirty years ago the then Government tried to galvanise the industry into life by offering growers special concessions, but though small plantations were laid at Buderim, near Maryborough and other places, no one seems to have persisted in the cultivation either earnestly or extensively. One gentleman, near Mackay, has continuously grown a few acres of it for over 20 years, at time with very handsome results. During the past few years a wider interest has been taken in coffee culture. On the Russell River, near Cairns, Mr. W. R. Lewis has established the Mount Graham plantation. Some 16 years ago he visited Mackay and was much impressed with what he saw on the plantation of Mr. Costello (the gentleman first referred to); he decided to give coffee growing in his own district a thorough test. The result has been a complete success. He has now 15 acres under crop, and the Mount Graham coffee is to-day a well-established commercial commodity, finding a ready sale locally at a remunerative price. In the Cairns district there are now 400 acres planted as against 159 of the previous year, and 50 of the year before. At Kamerunga, a few miles from Cairns, at the foot of the coast range, there is a State nursery where may varieties of the tree have been carefully cultivated for years. To show how the industry is spreading, it may be mentioned that from the nursery during the year 1894, 110 lb. of coffee seed were distributed among 72 intending growers, while in 1896, 116 farmers received 1,300 lb. Besides this the nursery in the same time sent out 2,250 coffee plants, all the samples of coffee grown from them being of excellent quality. The progress of Cairns is best illustrated by the coffee output, which rose from 16,962 lb. in 1897 to 40,678 lb. in 1898, the majority of the trees bearing then for the first time. Three years ago planting at Mackay was, begun on the largest scale yet attempted in Queensland. The Mackay coffee Estate Company commenced operations, and has now some 100,000 trees planted. Altogether at Mackay there are now 115 acres under crop, which will begin to show returns this year. The old trees which had been bearing for years have been replaced with young plants. That coffee of a very superior quality can be grown at Mackay has been abundantly proved, as, apart from Mr. Costello's experience, for years past coffee trees at the Mackay State Nursery have borne crops which old and experienced planters, who have spent years in Ceylon, India, the West Indies, and Brazil, have publicly declared they never saw excelled considering the age of the trees. Another feature of the trees grown in North Queensland, which is maintained by experts to prove beyond all doubt the super excellence of the local conditions—temperature, soil, rainfall, &c.—is that they will bear full crops in their fourth year, whereas in other coffee-growing countries a full crop rarely appears until the tree matures, and that is, attains its full growth in its sixth or seventh year. It is affirmed that its early fecundity is neither detrimental to the quality of the coffee nor the subsequent life of the tree. North of the tropic line is generally considered the natural home of the coffee plant, but experience has shown that it can be cultivated much further south with almost equal success. In the neighbourhood of Maryborough, there are now about 300 acres planted; and the success which has attended its cultivation at Buderim Mountain has induced selectors on the Blackall Range to put in some trees.

Experiments there have shown that the climate and soil at certain altitudes are very favourable to their propagation. Recognising the importance of this growing industry, and the great scope the northern portions of the colony afford for its expansion, the department has procured the services of Mr. Howard Newport to instruct the planters new to the industry in the best method of planting, curing, &c. Mr. Newport has had 11 years' experience in India, where he managed a large plantation at Melrose, Yercand, in the presidency of Madras. He has also had considerable experience of coffee-planting in Ceylon Mr. Newport corroborates the testimony of Indian and Ceylon planters as to the eminently favourable climatic conditions of North Queensland for coffee culture, and he brings Queenslanders the cheering news that, though the industry is yet only a very small affair in the colony, the most flattering reports have gone abroad respecting the quality of the coffee and the big field there is in North Queensland for the expansion of the industry. He says that planters in India have begun to look upon Queensland as a dangerous rival in the production of the finest-grade coffee, of which they at present are the largest producers in the world, and practically have the monopoly of that class of trade.

"Will coffee-growing pay?" is a question frequently asked. It is answered always in the affirmative by practical growers. What it will pay depends, as in all other industries, upon how economically it is worked, the quality of the article produced, and the market prices. It is only to be expected that where there have been so many isolated amateur efforts under so many different conditions there should be considerable diversity of opinion on a good many points. On one point all are, however, unanimous—that good coffee can be grown in Queensland, and that good yields can be confidently anticipated. What it will cost to grow is a matter that has not been settled definitely in such a way as to be capable of general application. It is generally admitted that it can be grown in a small way more profitably than on a large scale, where the question of labour enters largely into the consideration when the crop is ready for harvesting. So far, the areas harvested have been small, and the labour employed of different kinds. Whilst one man employed aboriginal labour, which is naturally cheap, others got through the whole of the berry picking with the help of their families. A child of about 12 years, it is said, can pick 25 per cent. more in a day than a man. But all men have not large families of young children, nor can aboriginal labour everywhere be found, and it is asserted that white adult labour would be too expensive for the work performed. In Inda, Brazil, Ceylon, and other coffee-growing countries there is abundance of cheap native labour. It is contended that if Queensland is to compete successfully with them the labour employed must also be cheap, so that it would seem that the labour of the Queensland coffee plantions of the future will have to be obtained, as in the case of the sugar plantations, from the Polynesian Islands. The experience of the Mackay Coffee Company during the next and following seasons should furnsih a good guide as to whether the coloured labourer is as useful and essential among the coffee trees as he is among the sugarcane. But whatever may be the profit in operations on a large scale, there is no doubt of coffee being "a poor man's crop." It is an easy one to grow. Mr. Newport and other experienced planters state that any man of ordinary intelligence can easily and quickly learn all that is necessary to plant and tend the trees, pick the crop, and cure it ready for the market. It requires no heavy labour, nor any very expensive mills and machinery. It keeps indefinitely, and to a certain extent improves with age. In one of a series of letters contributed to the "Queensland Agricultural Journal" on coffee cultivation, the manager of the Mackay Coffee Estate, an ex-Indian planter of very considerable experience, wrote as follows:—"The requisites necessary for the preparation of the product of the mill are so simple

and so unexpensive that they are within the reach of all." It must have occured to those who have followed these articles from the beginning that it is not necessary for every grower to erect a mill for the own crop. One mill in each district is ample for all purposes, as coffee in the parchment state will stand holding for an indefinite period, provided it has been sufficiently dried nor need the farmer apprehend that such delay will cause depreciation in its value, for the contrary is the case. The farmer in Queensland can choose his own time for sending his parchment to the mill, where could either sell for cash, or have the article cured, packed, and shipped for him. The same principle is carried out in most of the coffee-growing countries, and should answer equally well here." Of the great profits to the small grower there seems to be no room for two opinions. If, as before observed, he has a family of active children, he needs but little paid labour in the berry-picking season. On this point, Mr. T. A. Bromley, Pialba, in a paper read before an agricultural conference held at Rockhampton last year, said:—"I have five acres under coffee, and the reason I have not more is that I am testing coffee-growing experimentally on approved lines. . . . Now, about labour, and that is a great point. My quiver is full, and I have a big little family. When it comes to picking with the assistance of a few children from round about, I can slip through the job very well. Children are by far the best pickers." In giving an estimate of the money return that might be expected from coffee-growing, he continued:—"By taking the price mentioned as a basis (10d. per lb) the net return per acre would be over £50. Of course, it would not do to consider that a state estimate, as in practice you might get a long way below it. However, I am satisfied there is no other crop will pay so well, not even sugar." Dr. Thomatis, of Caravonica Park, Cairns, who has been growing coffee for years, and who, eight months ago, was awarded a special prize for his coffee at the Marseilles Exhibition, is very emphatic on the subject of profits. In a paper he read at the agricultural conference held in June last at Mackay he said:—"A small farmer with a growing family can grow a few acres of coffee with the certainty of realising from £30 to £40 per acre, without the necessary of employing labour outside his own family."

As very little is generally known about coffee growing, I will here give an idea of what amount of capital a man would require arriving in Queensland prepared to embark in the industry for the purpose of making a living out of it. The cost of securing the land would very considerably, according to the conditions under which it was taken up—as a homestead selection, agricultural farm, or freehold land purchased outright. There is land coast open for selection all along the Queensland coast. The Brisbane Land Commissioner informed me a short time ago that there were 50,000 acres of scrub land on the Blackall Range, within 50 miles of Brisbane, suitable for coffee or fruit growing, and open to selection at 2s 6d an acre as homestead leases to the first persons that came along. A few miles back from the coast at Mackay, Cairns, and other northern ports, freehold land may be purchased from £2 an acre upwards. Excellent sites sheltered from the strong winds which prevail at certain periods of the year can be chosen on the slopes of the coast hills which, from their irregular conformation, are unsuitable for general agriculture, but which are all that could be deoided for coffee culture. Taking the case of the site chosen, being freehold land, it may be put down as a general average that £3 an acre would be the cost of purchase. The cost of cutting and burning off the scrub would not exceed £4 an acre. To grub out the heaviest stumps might take £3 or £4 more an acre, but this operation, to a man of limited means, is o a certain extent unnecessary, as the stumps may e allowed to rot away, as they will do in time. ne of the illustrations shows the dead timber still anding in the plantation. Digging holes for the ants would increase the outlay by an other £4. The whole cost of preparing the plantation would be about £12 an acre. Taking for instance a plantation of 30 acres the expenditure would be something like the following:—

Cost of land, about	£90 0 0
Clearing (if heavily timbered) and planting, about	360 0 0
Farming appliances, say	30 0 0
Fencing, say	60 0 0
Total cost of planting 30 acres	540 0 0

There would be other contingent expenses; a dwelling-house, &c, a couple of horses, and other items the cost of which would depend largely on the settler's taste and disposition; and the expense of living, keeping down weeds, and tending the young trees for three years until they began to bear would also have to be taken into consideration. Of course if he has been accustomed to mannal labour much of the above outlay would be avoidable with the help of one or two kanakas or a couple of sons fit for field work. Opinions differ as to how many trees should be planted to the acre; the estimates range from 700 to 1,100. Experienced planters state that 1,000 are not too many where the soil is rich, the land well cleared, and economy of space has to be cousidered. At the end of three years the first berries appear, yielding approximately one-fourth of a full crop. In the fourth season abont a half-crop may be expected, and in the fifth year the trees are in full bearing. Eeach three will yield 2 lb. of parchment coffee, which means for 1,000 trees 2,000 lb. of parchment. Taking the mean between the various estimated costs it may be set down that the cost of picking will amount to ½d per lb. of berry from the tree, or to 3d. per lb. of parchment coffee. During the past few years the selling price of the coffee locally has ranged from 7½d to 12d. per lb; as importers pay 9d per lb. on the average for inferior coffee from Fiji, it seems a fair average to estimate 9d as the ruling price of the local product, and at that figure European merchants have offered to buy Cairns and Mackay coffee in unlimited quantity. This would leave balance of 6d per lb. to the producer, which, at a yield of 2,000 lb per acre is £50. Out of this return all incidental expensies would have to be deducted. Discounting all the estimates, disregarding the fact that growers in North Queensland have netted from £40 to £60 per acre, fallowing for an increase in the expenditure, a fall in the price of coffee, and setting the net gain as low as £20 per acre, then the owner of a 30-acre plantation would find himself at the end of five years in receipt of an income of £600 a year. One ceases to wonder at the enormous fortunes Indian and Brazalian planters have made.

Last year Queensland grew only about one-fifth of the coffee consumed in the colony, so that the intending planter has not only the balance of the home consumption to supply, but he has open to him the whole Australasian market. There is a big future ahead of the indnstry in Queensland. The local conditions cannot be snrpassed anywhere, and there is plenty of available cheap land. The trees bear earlier and heavier crops than in other coffee-growing conntries; the foreign planter opens his eyes in astonishment—it is not in his experience: and the plant so far has been free from the dreaded leaf disease which has played havoc with the plantations in India, Brazil, Arabia, Ceylon, and other countries. The growth of the plant in Australia gives new experience owing to its adaptability to soils and climates to which in the previous history of the tree no parallel can be shown. Finally, the olimate is healthy; yellow fever and other epidemics common in other countries are unknown; and the planter lives in the midst of British civilisation surrounded by his own countrymen.—*Cydney Mail.*

RHODESIA AS AN AGRICULTURAL COUNTRY.

By Mr. M. A. Lingard, Secretary For Agriculture.

Anyone who has travelled through Rhodesia, and regarded it from the point of view of a practical farmer, cannot fail to recognise that whatever attractions it may possess in the shape of its minerals, it has undoubtedly vast possibilities in the way of agricultural industries. Too many observers have been content to base their opinion upon a hasty journey through the country by stage coach, and have come to the conclusion that because so little land is actually under cultivation, it is not as a whole fitted for farming. It must not be forgotten, however, that Rhodesia had had its full share, if not more than its share, of actual difficulties and obstacles to progress; and the scarcity of stock suited to arable cultivation has been kneely felt. The locust disease fungus will, it is hoped, do much towards abating the locust pest; the native troubles are a thing of the past, and rinderpest is rapidly disappearing from our stock. Now that the country is in a more settled state, and the conditions of existence are becoming day by day more easy, alike to the farmer and the artisan, there is good reason for the belief that a steady and increasing demand will be created for the produce of the soil, which will stimulate the agricultural industry of the country. Another result of the unsettled condition of the country, and the drawbacks which have had to be encountered, has been that farming, so far as it was carried on, was regarded more or less as a speculation, and the prices realised at times for forage, etc., have been so high that the money that would otherwise have been re-invested in agricultural wants have been diverted to other channels.

In making a general review of the agricultural outlook of Rhodesia, the most important feature to be considered is of course the nature and formation of the soil. Generally speaking, the country may be described as both fertile and well watered, and admirably adapted, not only for breeding stock of all kinds, but also for raising cereals and other produce of the tropical and sub-tropical climate. That this is no mere theory, is amply proved by the results attained by the natives, whether Mashonas or Matables. These tribes were the possessors of vast heards of cattle, which roamed about on the abundant pastures; and though their equipments for tilling the ground were necessarily of the rudest kind, they had no difficulty in raising mealies, sweet potatoes, rice, beans, tobacco, and in fact all kinds of produce. How much more than can be done by skilled agriculturists with all the latest farming appliances, a requisite amount of capital, and a sufficiency of native labour? With a comparatively small capital an energetic farmer should have no difficulty in earning a comfortable livelihood for himself and his family, and making provision for the future; that is if the farmer is prepared to put his own hand to the plough. Unfortunately in the past our farmers have shown a tendency to rely too much upon native labour, and have not always given the requisite amount of superintendence, and the natural result is that the crops were neglected or improperly handled.

It has been asserted by some critics that owing to tho long duration of the dry season in this country the effects of drought would be certain to discourage any serious attempt at farming. But on examination, this argument falls to the ground. With a soil which contains so much lime, and is formed on a granite bed the effects of drought are not so keenly felt as might be anticipated, and the decay of the rank vegetation which grows so abundantly forms an excellent manure for the soil, and leaves the ground ready for cropping without the aid of artificial dressing. With such natural advantages as are possessed by Rhodesia, as regards both soil and climate, a thorough system of agricultre, assisted where necessary by irrigation, should yield good results, equal to those attained in other countries, such as Canada or Australia. Little has yet been done in the way of cereal growing as the demand has necessarily been limited. Most of the oats and barley grown here have been used for forage, which at present yields a handsome return. The only kind of agricultural pursuit that has been gone into on any considerable scale is market gardening, and here the results have been very gratifying. If other colonists were to pay a visit to the markets of Bulawayo and Salisbury, they would probably be surprised to note the extent and variety of the crops raised, and their general excellence in quality. At present the market gardens are principally carried on by Indians in the neighbourhood of our large towns but with the near development of the mining resources of the country there is still scope for a further development of this remunerative resource, with which poultry and dairy-farming can be carried on at the same time. More attention might also be paid to fruit growing in a region the climate of which is so admirably adapted to almost all kinds of sub-tropical and tropical fruits. This is a want that is very much felt throughout the country.

It is somewhat difficult to present a sketch of what kind of cereals and other crops would thrive best in any particular locality, but after paying a visit to Mr. Rhodes's estate at Inyanga, in the Umtali district, one is left in no doubt that with a plentiful supply of water, farming on a systematic basis can be successfully carried on, both as regards cereals, vegetables, and fruits. As regards the pastoral industries, it must be admitted that since the conquest of the country many serious obstacles have had to be overcome. The various diseases and troubles to which stock is subject in this country have quickly developed and spread throughout the teriritory, but with the measures that have been adopted by the Government to stamp out rinderpest and pleuropneumonia, together with the able advice of the Veterinary Department of the Cape Government, which is always at our disposal, there is every reason to hope for better things in the near future. It is not easy to pronounce more definitely on this important subject, as qualified men find it difficult to arrive at any definite conclusion as to why stock in this country should be so susceptible to so many diseases. However, it is to be hoped that with the introduction of a stronger and purer breed of stock the cattle will be able to throw off many of the minor ailments. There seems to be no question that the cattle reared by the natives are much more liable to many of these troubles than stock bred in the south or elsewhere, and doubtless this is due largely to the in-breeding practised by the Kaffir tribes. Indeed, it is not unlikely that this has proved a source of weakness in the past, and that to it may be ascribed the rapid transmission of the fatal scourges which have carried off so many cattle and horses. The remedy appears to lie in the importation of a better and hardier class of stock, which I hope will be undertaken at no distant date.—*Cape Times.*

THE ALKALOIDAL CONTENTS OF CINCHONA.

According to an article appearing in the *Journal de Pharmacie et de Chimie*, the following are the usual limits of alkaloidal content in various groups of bark:—1. Succirubra from Java, 6 to 8 per cent. of total alkaloid; quinine sulphate, 2 to 3 pea cent. 2. Loxa, from St. Thomas, 5 to 6 per cent. of tota alkaloid; quinine sulphate, 2 to 2½ per cent. 3 Loxa, from Nilgiris, 4 per cent. of total alkaloids 1 to 1½ per cent of quinine sulphate. 4. Calisaya from Bolivia, 5 to 6 per cent. of total alkaloids; 3 to 4½ per cent. of quinine sulphate. There is room for Nilgiri bark to improve, and it is to be hoped that one effect of Mr. Standen's recent visit to Java will be an increase in the alkaloidal content of Indian grown cinchona.

REMEDIAL MEASURES AND INSECTICIDES.

By E. E. Green, Government Entomologist.

(*Concluded from page 300.*)

Kerosene Emulsion.—Soap is often combined with other ingredients. Of these kerosene emulsion is the best known and most widely used. As its efficacy and its effect upon plant life very greatly depend upon the preparation of the mixture, great care should be taken to accurately follow the directions. The formula in general use is:—

Soap	½ lb.
Kerosene	2 gals.
Soft water..	1 gal.

'Dissolve the soap in the water heated to boiling, then add the kerosene (to the hot mixture), and churn it until a creamy fluid results, which thickens on cooling, and adheres to glass without separating into oily particles.'

Whale-oil soaps are preferable, but any kind may be used. I have personally made a very successful emulsion, employing the common country soap, which seems to be particularly well adapted to retaining the oil in an intimate mixture, and which, in this combination, loses its own objectionable properties. The most important part of the process is the *churning*. This must be most thoroughly carried out. It can be satisfactorily managed by repeatedly drawing up and expelling the mixture through an ordinary garden syringe or a force-pump. A more lengthy method is to stir the mixture vigorously with a whisk of twigs. The liquid should be boiling hot during emulsification, and then, if kept in a cool place, it is said to last for a year or more without separating. If insufficiently churned, the mixture will afterwards become separated, and the oil collect at the top. A properly compounded emulsion will mix with water in any proportions.

For use against scale insects a strength of one part emulsion to ten of water is found to be effective. As in all preparations of which petroleum is an ingredient, it can be more safely used on cloudy days. When used in hot sunshine, it is liable to burn the foliage and injure the tender shoots of the plant, but the danger of injuring is much less with a properly prepared emulsion than with mechanical mixtures of kerosene and water. Mr. Marlatt, in some 'Notes on Insectides,'* gives the following particulars of experiments which show that kerosene emulsion can be used of considerable strength without causing appreciable injury to the plants. But it cannot be recommended for general use at a greater strength than mentioned above. Mr. Marlatt writes: 'About the 1st May, when the foliage was in the vigour of its early growth, a number of plants—peach, Japan quince, elm, pine, and strawberry—were treated with the following strengths of kerosene and whale-oil soap emulsions, made after the standard formula: Diluted (1) with 2 parts of water, (2) 4 parts of water, (3) 9 parts of water, and (4) 14 parts of water, or the emulsion at ⅓, 1-5, 1-10, and 1-15 strength. The application was very thorough, and the limbs and twigs were thoroughly wetted by immersion in the insecticide. The treatment was made on a very bright, warm day, in the early afternoon. No rain occurred for four days, after which there were heavy rains. No injury whatever developed in the case of the pine, strawberry, and elm with any of the strengths used. With peach the injury was trifling, a very small percentage, perhaps one or two per cent, of the leaves turned yellow and fell to the ground, but I am inclined to believe that this was merely the normal spring shedding of the leaves, which is seen in nearly all plants. In the case of the Japan quince, however, with the two stronger mixtures, namely, those with one-third and one-fifth kerosene emulsion, a few yellow spots apear on the leaves, and later, upon handling the limbs treated with the strongest mixture, about one-fourth of the leaves were found to fall off readily. These leaves, while looking comparatively healthy and green, had evidently been injured more than their surface appearance indicated. With No. 2 this peculiarity was almost unnoticeable, and with Nos. 3 and 4 no injury whatever was shown, nor did any further injury manifest itself throughout the season in the case of any of the plans treated. These experiments would indicate that the kerosene emulsion can be applied in much stronger dilution to tender foliage of growing plants than has hitherto been supposed.'

On the other hand, there are well-authenticated reports of plants seriously injured, or even killed, by the use of too strong a mixture, and the application during sunny weather is attended with danger. In my own experience I have found the tender shoots on a recently pruned tea bush to be completely killed back by a comparatively weak mixture applied during sunny weather.

When the foliage of a plant is attacked, the applications should be made by means of a spraying machine. In the case of pruned trees, when the pest affects the bark only, the liquid can be applied with a brush or a piece of rag to the stems and branches. Care must be taken that the liquid is not used in sufficient quantities to run down and saturate the roots of the plant, or grave injury may result. When employed with proper precautions, there is no doubt that we have in kerosene emulsion a very valuable remedy against scale and other insect pests.

Milk may be substituted for the soap in the manufacture of kerosene emulsion. The formula given by Hubbard is:—'One part milk (sour milk is said to be as suitable as fresh for the purpose), to two parts kerosene. Heat the milk nearly to boiling and mix with the kerosene. Churn the mixture violently until a thick creamy fluid is obtained. For use against scale insects dilute with nine or ten times the quantity of water.' I have been unable to find any definite statements as to the comparative effectiveness of the milk and soap emulsions. It is possibly a question of cost. In some countries a gallon of milk may be cheaper than half a pound of soap; but in most places it is probable that the balance of advantage will be on the other side. The active insecticidal properties of soap itself must surely be an additional advantage.

Kerosene.—Much diversity of opinion exists as to the use of pure kerosene or a mechanical mixture of kerosene and water. It is undoubtedly effective as an insecticide.

But in to many cases it is equally fatal to plant life. Reports are very conflicting. In some cases spraying with the undiluted oil has been unattended by any injury to the tree, while particularly successful in killing the scale. In other cases even large trees have succumbed under the treatment. One cause of injury is said to be the collection of oil at the base of the tree, the roots being apparently much more sensitive to injury than the exposed parts. As a precaution, earth should be banked up round the base of the tree, and only sufficient oil should be used to moisten the surface of the foliage and bark without any surplus to run down the stem.

Mixtures of kerosene and water have been largely mployed in America, and elaborate machines devised for ensuring the proper mixture of the two ingredients. But under any circumstances their effectiveness does not compare favourably with a properly compounded emulsion.

Referring again to one of Mr. Marlatt's reports,* I find it stated that 'kerosene mixed with water is not nearly so powerful an insecticide as the kerosene soap emulsion. It does not remain nearly so long on the plant, and is not nearly so effective an insecticide at the same strength of oil. The heavier soap or milk emulsions kill more effectively, which is, perhaps, explained by the heavier liquid actually

* *Insect Life*, vol. vii. p. 116.

* *Bulletin*, No. 9 (New Series), U.S. Department of Agriculture (Division of Entomology).

bringing more oil in contact with the insect, and also by its greater permanency.' Taking everything into consideration, neither kerosene, nor mixtures of the oil and water, can be recommended for general use—at any rate in the Tropics.

Resin washes.—These are used extensively in California to remove scale insects from fruit trees. The formula (taken from *Bulletin*, No. 9 of the U.S. Department of Ariculture) is as follows:—' The summer wash usually contains twenty pounds of resin, five pounds of crude caustic soda (seventy-eight per cent.), or three and a half pounds of the ninety-eight per cent., and two and a half pints of fish oil. The winter wash cantains thirty pounds of resin, nine pounds of crude soda, and four and a half pints of oil. The ingredients are boiled in about twenty gallons of water for two or three hours, hot water being occasionally added until fifty gallons of solution are made. This, for both formulæ, is diluted to one hundred gallons before application to trees. Greater efficiency is believed to come from long boiling of the mixture, and it is preferably applied hot. It is used on deciduous trees for the black and San José scales, and on citrus trees for the red and black scales; but the dense foliage of the latter renders thorough spraying difficult except for young trees, and fumigation is much preferred. An improperly made resin wash is also apt to spot the fruit of the orange.' I have no personal experieuce of either this or the following insecticide.

Lime Salt and Sulphur Wash.—This has been employed against the San José scale in America. Though undoubtedly effective in some parts of the country, it appears to have completely failed in others. Mr. Marlatt writes :—' Our experience with this wash in the East (Eastern States) had thrown doubt on its real efficiency as an insecticide, and it has been clearly demonstrated that under the climate conditions east of the Alleghanies it is almost valueless. In California, however, after a careful study of the facts in the field, I am compelled to admit that the demonstration of its usefulness against the San José scale is complete, and the benefit of its application to orchards is most manifest. In the vicinity of Pomona, California, unsprayed orchards were badly infested with San José scale, while in adjoining sprayed orchards the scale was entirely killed, and the trees were rapidly recovering and showing vigorous and healthy new growth. In contiguous orchards also of the same kinds of trees, similarly treated so far as cultivation is concerned, the trees which had been subjected to yearly spraying were at least one-third larger than untreated trees. This wash is of value also as a fungicide, protecting stone fruits from leaf fungi, and is also a protection against birds, the Common California linnet doing great damage to buds in January and February. The wash is almost invariably made and applied by contractors, and costs about five cents per gallon applied to the trees. It is a winter application, being applied in January and February.

'Along the coast region and in Northern California, where moisture conditions prevail, this wash is very much less successful, bearing out somewhat the experienced of the East, and doubtless explained by the similarity of climate in the districsts mentioned with that of the Atlantic seaboard.

'In making this wash the chief consideration seems to be prolonged boiling. The wash itself is practically a sulphide of lime, with much free lime and salt carried with it. Prolonged boiling will result in taking up temporarily additional sulphur, and will perhaps add to its caustic properties if it is applied very hot; on cooling, however, it reverts to the simpler tri-or bi-sulphite of lime. The proportions of the ingredients and the method of combining them vary slightly in different sections. The following is the ordinary formula: Unslaked lime. 40 pounds; sulphur, 20 pounds; salt, 15 pounds. One-fourth of the lime is first slaked and boiled with sulphur in 20 gallons of water for two or three hours; the remainder of the lime is slaked, and together with the salt, is added to the hot mixture, aud the whole boiled for half an hour or an hour longer. Water is then added to make 60 gallons of wash. This wash is applied practically every year, or as often as the San José scale manifests itself in any numbers.'

Carbolic Acid.—Crude carbolic, phenol, Jeyes' fluid, and similar compounds, all have insecticidal properties. Carbolic acid itself has been found inefficient except when applied in such strength as to seriously damage the plants. I find that phenol and Jayes' fluid (which appears to be much the same thing) are effective against *Orthezia*, 'mealy bugs,' and most species of *Lecanium*. A mixture containing 1 part of Jeyes' fluid to 20 of water, applied to a Thunbergia bush attacked by *Orthezia*, was fatal to more than 90 per cent. of the insects, but resulted in the death of the terminal buds of the plant. It had no bad effect upon the more mature leaves and shoots. The application did not, however, prevent the subsequent hatching of the eggs in the ovisacs of the dead insects. Weaker solutions were proportionately less effective.

In a 'Report on the Green Scale Bug, *Lecanium viride*,' published in 1886, I have mentioned that phenol applied to the ground around the roots of the coffee tree appeared to cause the disappearance of the scale. But subsequent experiments have not corroborated this result, and I must suppose that the apparent benefit in the earlier experiment was due to some other cause. Single experiments are practically useless. They are liable to be vitiated by adventitious circumstances. Until similar results have been obtained from repeated experiments, no confidence can be placed in any treatment.

Tobacco Water.—'Steep 5 lb. of refuse tobacco (stems, *&c.*) in 3 gallons of water for three hours. Strain the decoction and add sufficient water to make 7 gallons.' The mixture will kill soft-bodied species that are unprotected by a covering scale, such as *Lecanium viride*, *Pulvinaria psidii*, and *Dactylopius citri*. It has little or no effect against the *Diaspidinæ*.

Lime Water.—In the early days of the 'green coffee bug' I used a very thin wash of quick-lime and water. The mixture is inconvenient or difficult to apply as a spray, as it quickly clogs the nozzles and valves of the machine. I applied it with large brushes to the affected coffee foliage, and it was certainly fatal to every insect with which it came in contact. The bugs turned from green to a bright orange colour within five minutes of the application. But many individuals necessarily escaped, and the benefit was only temporary. No damage to the trees was observed, but the lime had such a caustic effect upon the hands and arms of the coolies employed in the work that it had to be discontinued.

Strawson's Mixtures.—I have recently had the opportunity of experimenting with a mixture supplied by the Strawson Company for use against the Tea-mite, and have found it very effective against scale insects of all kinds. It is one of the few insecticides that I have found of real value against *Orthezia.* Applied as a spray in the strength of 1½ lb. to 4 gallons of water, it not only kills this insect, but prevents the hatching of the eggs also. This is apparently effected by the blocking of the aperture of the ovisac, and so preventing the emergence of the young insects. The mixture (as supplied) is of a soapy nature, and it is the soap that is probably the active agent in the destruction of the scale insects. The ingredients are naturally kept secret by the manufactures, for which reason I am unable to recommend its use as a spray for tea during the plucking season, but for the removal of scale insects upon other trees it will be found of value, and I have frequently used it advantageously to clean the stems of *Pruned* tea. It is particularly effective also against the ants (*Cremastogaster Dohrni*) that give such trouble by building their nests in the tea bushes. These nests always enclose a colony of scale insects (usually *Lecanium formicarii*), and to prevent the recurrence of the ants it is most necessary to get rid of the bugs that attract them. For application to

the stems of trees a large paint brush can be used in place of the spraying machine.

McDougal's Insecticide Wash.—This is another very useful patent insecticide, also of a soapy natuie. As the ingredients are kept secret, the same objection applies to its extensive employment upon tea plants. It is eqnally effective against scale insects. The two mixtnres (Strawson's and McDougall's) were tested upon *Orthezia* with similar benefical results. It is used as a spray.

The above two insecticides may be safely employed 'against green bug' 'or mealy bug' on coffee, and would be fonnd very benefical in cbecking these pests *where they are confined to a small area.* The treatment wonld be too expensive over a large acreage, and would be useless unless applied very thoroughly.

Adhatoda.—A decoction made by steeping the leaves of *Adhatoda vasica* (an Indian plant) in water is said to have proved benefical against varions insect pests in India, but I can find no record of its effect npon scale insects. Dr. Watt (Reporter on Economic Prodncts to the Indian Government), who first brought into notice the properties of the plant as an insecticide, states that it has a distinctly paralysing effect upon many insects. But he appears to have found it unsatisfactory and uncertain in general use. The plant grows in Ceylon. In Trimen's *Handbook of the Flora of Ceylon* it is said to occur in tbe 'low country, common in hedges and waste places, especially in dry regions, but usually planted, and scarcely a native.' I obtained a few leaves and made a strong decoction from them, The amount of material was insufficient for extensive experiment, but leaves affected by various insect pests were dipped into the mixtnre. I was surprised to find it absolutely ineffectual. Even such soft-bodied insects as aphides, when thorongbly wetted with the mixture, were as lively as ever tbe next morning. Possibly the Ceylon-grown plant does not acquire the insecticidal properties noticable in the Indian plant.

It may here be as well to mention a few other supposed remedies for the cure of scale bug, that are really quite valueless for the purpose. Tbe benefical results that have been attributed to tbem are probably due to some fortuitous circumstance, such as the treament having been applied at a time when the pest was declining from natural causes. Such errors of observation bave led to much waste of time and money.

The application of 'Mana grass' *(Andropogon nardus)*, was at one time considered a cure for the coffee bug *(Lec. coffeæ).* Nietner, in his *Enemies of the Coffee tree*, mentions that it was customary to bind the grass ronnd the stems of the trees. I have repeatedly tried this plan, at various times of the year: I have tied the grass round the stems as directed, have spread it on the ground, and strewn it over the foliage. But in no case have I been able to observe the very slightest benefit from its nse.

Soot is another article that has been greatly overrated as an insecticide; and wood ashes may fall under the same category. These substances are, doubtless, useful in dealing with slugs and snails, their astringent and absorptive properties acting upon tbe mucous surface of such animals; but when applied to dry insects, such as caterpillars and scale bugs, they fail to adhere, or, when adhering to act in any way prejudicial to the insect.

Lime, when applied dry, has little or no effect, unless there happen to be moisture upon the insects. Even then its action will be very partial and unsatisfactory.

Powdered sulphur is also quite useless against scale insets.

Many other substances have been made the subjects of experiment; but, as they are either far too costly or otherwise impracticable it is useless to enumerate them.

In tbe foregoing notes I have endeavoured to gather together tbe most reliable information on tbe subject of insecticides applicable to the treatment of Coccid pests. I present it to my subscribers, hoping that from amongst the various processes some treatment may be found to suit any case that may come under their notice.

INDIGO—A THREATENED INDUSTRY.

TO THE EDITOR OF THE "TIMES."

Sir,—My attention has been drawn to your special article on the above subject in your issue of the 4th inst., and to a letter in your issue of the 7th inst. from Messrs, Mewburn and Ellis, wbo give some details and comparative statements which require correction.

The indigo industry in India has up to the last few years occupied an almost anomalous position in this century of scientific progress an invention. Cultivation and manufactnre have remained practically tbe same as they were at the end of tbe last century.

The industry has, on the whole, been a paying one nntil this recent competition of an artificial product, and planters as well as agents were content to let things remain as they were. Tbere bave been chemists of an inventing bend of mind who have of late years occupied themselves with indigo manufacture and endeavoured to improve the same and increase the yield of dye from the raw material. But the encouragement they received has been too limited and was confined to a few individual planters. The industry generally, as well as the financing agency houses and the buying trade discouraged all improved methods of manufactnring processes necessitating the use of chemicals, and indigo known to have been made by any such improved methods was prejudiced at tbe indigo sales, if not altogether boycotted, so that enterprising planters lost courage and dropped all improvements in manufacture, even those of established merits.

The buying trade had also, np to lately, rested npon a most primitive basis of buying, dating also from the last century; valuations were and are still being made on comparison with standard samples of certain supposed values, and the buying trade was therefore suspicious of any alterations in the methods of mannfacture which might produce an equally good looking article bnt of perhaps less dyeing value.

All this is now rapidly changing. The indigo industry is ripening, and is now more prepared than it was a few years ago to benefit from the scientific progress of our century.

Tbe buying trade is more and more abandoning the buying on comparison with standard samples, and buys now to a great extent on analysis, paying a certain amount per unit of indigotine, which varies sligbtly according to the mechanical conditions of the paste.

Indigo planters have rallied together in face of tbis threatening competition, are now amploying distinguished chemists, and are taking practical steps to improve their methods of cultivation and manufacture.

The financial agency houses are realizing the seriousness of the situation, and are taking the lead to help their constituents in tbe only way in which they can be helped—viz., to establish experimental factories where improvements in manufacture and cultivation can be worked out and tested.

It is not generally known that only about one-tbird of the dye in the plant is obtained by the ordinary methods of manufacture, and that, moreover, waste to the extent of 20 per cent. of the ultimate outturn occurs therein.

There is, tberefore, an ample margin for improvement in the manufacture alone, besides the progress which can be made by improved methods of cultivation and drainage and the use of new and selected seed.

The cbemistry of indigo manufactnre is till somewhat obscure; the dye in the plant is not present in a merely extractable state, like theine in tea leaves, but has to be developed from certain basio products, wbich is most profitably done by a prolonged fermentation of the plant, the agency being then microscopic life. This has made improvements in manufacture difficult, for chemists are rare who are conversant with and thorougbly understand the conditions of low microscopic animal and vegetable life, and who in addition possess the necessary perseverance, the necessary inventive power and gift, to devise experiments, to carry tbem out, and to interpret correctly the results. But such chemists will doubtless be found, and the benefits which the industry will derive from their work will be more

important and wide-reaching than even the most sanguine of planters hope for at present. One of the leading agency houses is already fitting out one of their factories in Behar to test next season a new process for which an outturn or more than double the quantity of dye is claimed, and, in my opinion, improvements will not even stop at this.

Messrs. Mewbourn and Ellis are therefore wrong in thinking that the cost of making indigo in India will not decrease in the same proportion as they expect the cost of the artificial indigo to decrease. The cost will, on the contrary, decrease to an extent which will enable the natural indigo industry to meet the competition successfully, and come out of it victoriously.—Yours obdient servant,

EUGENE C. SCHROTTKY.

Wiesbaden Villa, Sonneck. October.

PLANTING IN THE GOLD COAST.

The annual report for 1898 from the Gold Coast Colony puts in some very strong pleas for railways. With improved transport we are assured the output of rubber could be trebled, money would be saved, and better employment could be found for human beings than using them as beasts of burden—for at present the rubber has to be carried to the coast on men's shoulders. The export of timber is further handicapped by the lack of transport facilities, and that with such facilities more trade might be done is evidenced by the increase in the timber business in those districts which have water communication. Moreover, the mines in the Colony can never be properly developed so long as all the materials and machinery have to be transported on the heads of natives. Happily, one Government railway is already under construction, and surveys for six others have been made. Five of these lines will tap the mining districts.

In the nine months there were 621,116 tons of foreign refined beet sugar imported into the United Kingdom, and 311,237 tons of raw or unrefined beet, making together a total quantity of 932,353. The total quantity of sugar from all parts was 1,084,711 tons. Another proof is thus afforded of the almost entire possession by beet root sugar of the English market. The British public is providing work and wages for vast populations in Germany and France. Java and the Philippines show a great falling-off, and practically nothing comes from Cuba and Porto Rico. Peru and Brazil also show a large decrease, proving that all cane countries are suffering, so far as the English market is concerned, from the bounty competition. On the other hand, Mauritius and the East Indies have sent more than they did last year, but their actual totals are very small. The British West Indies have sent less, viz., 35,000 tons or rather more than ten per cent. of their total crop, probably in the from of Demerara and Trinidad crystals. During three months we only received 4,000 tons of West India sugar. The raw cocoa imported amounted to 38 million pounds, the home consumption for the nine months being 26 millions. The imports of prepared cocoa were 3,700,000lb, or not much more than half of last year's imports for the same months. The home consumption, too, has fallen off, being under four millions of pounds against more than four and a half millions in 1898. This looks as if the home manufacturers were using more of the raw cocoa, and we were becoming less dependent upon the Continent for our prepared cocoa supplies. The quantity of raw cocoa in bond is 19 millions of pounds, much about the same as last year, but the prepared cocca in bond is only 468,000lb, against 1,451,000 last year. This may partly account for the recent strong market, and be a reason for the continuance of favourable prices. The shipping of war stores to South Africa should also be regarded as supporting the cocoa market. It should, however, be noted that a large uantity of raw cocoa is re exported, viz.: nearly nine million pounds. The prepared cocoa exported is mall, only reaching 572,000 lb, which was, however, considerably, in excess of the two preceding years. The amount of new cocoa consumed per head of the population was 0·80 in 1898, showing a gradual increase since 1884, when it was 0·39. Prepared cocoa, too has increased in consumption from 0·03 in 1884 to 0.16 in 1898. The 0·20 of 1897 was evidently a record year, and due to special causes. On the whole, with an increased consumption, however slow and steady the prospects of cocoa are fairly good, and there may come a boom some day when the true virtues of this food will be more popularly recognised.—*Planter*.

A FAMOUS LADY ORCHID GROWER.

Mrs. George B. Wilson, of Philadelphia, according to the "Boston Traveller," (Sept). owns the largest collection of orchids in America, but she has unfortunately lost quite recently several fine specimens. The writer says that for the past ten years this gorgeous orchid flower has been Mr. Wilson's hobby. Always and admirer of orchids, about 1894 she decided to go into orchids thoroughly, and began a study of this millionaire's emblem, sending all over the world for specimens of it myriad varieties. Europe, Asia, North and South America, and the isles of the sea were explored, each for its particular production. At important orchid centres agencies for Mrs. Wilson were established which from time to time have furnished her with rare and valuable plants together with information regarding their cultivation. In this way more than 10,000 orchids have been brought together at the Wilson mansion in Philadelphia. In its line this asemblage is one of the most famous and most extensive in existence. A few years ago the collection as it, then stood, was greatly improved by the addition of that belonging to the Erastus Corning estate of Albany, which it had taken 40 years together. All of the great florist firms have professional orchid collectors. They brave the fastnesses of the forest of the Amazon and Orinoco rivers and are exposed to the deadly fevers and maismas of swamps where the anacondas and boa-constrictors are the least of the evils to be enconuntered.

Mrs. Wilson's collection is assembled in seven great glasshouses that were erected in the rear of the Wilson mansion at the cost of thousands of dollars. Upon entering the main conservatory, in the centre of which is a grove of the palms, the East India house is found to the left. Passing from this house the next is that of crypripediums, containing over 300 specimens. Beyond is the Mexican house, which is literally a mass of bloom. Many of the plants carry from two to six spikes of brilliantly coloured blossoms. Conspicuous among them is the rare Laelia dawsoni, bearing several flowers of a most exquisite type. Another prominent one is the Laelia anceps alba, measuring over four feet square. The Cattleya house has a fine showing of blossoms, and provides a distinctive charm in its superb specimens. Taken in its entirety, the collection fills seven houses, and it is conceeded to be one of the most valuable in America. Many of the smaller plants cost from 300 to 500 dollars each, and others of the unique varieties would fetch thousands even at forced sale. Perhaps the most interesting feature of Mrs. Wilson's collection is the assemblage of varities that come from the Phillippine Islands. The Spaniards made the collectors pay a licence for hunting orchids there, but despite that method of coaxing ducats from American pocket many unique plants came from the group. Under the new regime, when Aguinaldo and his followers shall have ceased to struggle, the Influx of plants from Uncle Sam's new domain will without doubt be greatly increased. Mrs. Wilson is now in Mexico, directly overseeing the work of her agents there who are searching for Mexican orchid wonders. Her superintendence is not a sinecure, nor is it the work of an amatenr. The owner of this giant orchid collection is fully conversant with the habits of pet plant and of the laws which govern them. She has made a scholarly study of the flower, and believes in putting the knowledge she has acquired into practical application. When at home, everything is under her own personal supervision.

RHEA:
HISTORICALLY AND PRACTICALLY CONSIDERED.

I think it highly probable that there is no plant in the vegetable kingdom to-day around which centres such a wealth of failure, historical and abiding interest as that commonly termed rhea. Probaply many are not aware of its hoary-headed antiquity as disclosed by Chinese classics.

It should, however, be understood at the outset, there is probably no more difference between so-called China grass and rhea than there is between the China form of the tea-plant and that of Assam.

The so-called China grass is of itself a singularly unfortunate and misleading term, as the *Chu Ma* of the Chinese, or *Boehmeria nivea* of the botanist, has no more to do with a grass plant than has the apple with the pear for example. Those acquainted with origiual tea literature will remember how even so distinguished a botanist as Sir William Hooker pronounced in favour of a *rhea viridis*, that it to say a plant exclusively used for green tea as distinct from black.

And to-day we have a past president of the Society of Engineers setting out the misleading distinction of terming *Boehmeria nivea* a species of nettle indigenous to China and India, and *Boehmeria tenacissima* as a valuable textile plant. As though both were not texile plants, both *Bhehmeria's* both very closely allied so much so in fact as to probably constitute no other difference than the temperate and tropical form of one and the same thing.

The distinction, however, between the tropical and temperate form, otherwise China grass so-called, and ramie or rhea, is a material one practically, and demands the careful consideration of the planter. Dr. Watt has endeavoured to show that the hot plains of India are no place for the temperate China type. And this may be, and probably is quite true, although it by no means always follows. For instance, a mountain home was supposed to be necessary for tea originally obtained from the China mountain districts, but subsequent history has abundantly proved the tea-plant will thrive in all elevations from 7,000 feet down to sea level. *Phœnix dactylifera* otherwise the date palm is another case in point of a plant that will thrive abundantly in tropical and subtropical regions, even up to some frost and snow. Very few plants, however, will do this, for instance, the Assam so-called hybrid tea-plant is a sorry thing at high elevations, and there is not wanting evidence that *Boehmeria nivea* demands its own climate. From a persual of the literature of the subject and the undoubted fact that in years gone by direct imports have been made from China and elsewhere, there can bo little doubt the China and tropical forms of rhea have got confused until many mix up the two indiscriminately, and this will be a source of disappointment and failure to experimenters if not understood, and a clear distiuction drawn between the tropical and temperate form or type.

It is a fair inference in nine cases out of ten that a plant that has grown for untold centuries in temperate China with its comparative dry climate will be certain to fail in many places in India and conversely the tropical form under oppsite conditions; the practical man and planter should therefore ascertain for certain which form he is dealing with—the China type or the tropical type termed *Bohemeria tenacissma*. In 1848 a reference was made to Dr. MacGowan, then resident at Ningpo, as to the identity of the Rungpore plant with the China kind, whereupon Dr. MacGowan provisionally named the China plant *Canabis sinensis*. This however was entirely wrong, and shows how easily a learned man like Dr. MacGowan may go astray in putting down *Boehmeria nivea* as a *Cannabis*. We are less concerned, however with the doctor's mistake than his exceedingly interesting and comprehensive note on the plant in general.

In this note the doctor goes on to say the "*Chu Ma* is found from Cochin China to the yellow River, and from Chusan to the farthest west that researches can at present go, it is cultivated in many places, visited by the author, and grows even on the walls of Ningpo; it is mentioned in the Chinese classics and was undoubtedly cultivated a thousand years before our era; it is mentioned in the Shu King as an article of tribute from the central part of China in the time of Yu, B. C. 2205."

Here then we come face to face with a plant with a mighty record in time, but as if 2205 B. C. were nothing, Dr. MacGowan goes on to say: "—Doubtless it came into use in far more remote times,"—the *Chinese Herbal* says its origin is unknown.

Henco it will be seen in rhea we have a plant with one of the oldest records extent.

Leaving classical China on the subject, we come to India and Roxburgh—that Farther of Indian Botany as Dr. Watt very fittingly terms the learned and withal very practical Roxburg. In 1809 we find Roxburgh writing to the Secretary to the Board of Trade:—"From the receipt of the first sample sent to me by Mr. Ewer of Beucoolen, I saw its quality was uncommonly interesting, and promised to be superior to every other vegetable fibre I had seen. I was therefore, more than usually solicitous to obtain the plant, and in 1803 four plants were received into this garden, since which period a thousand plants have been raised."

Then the doctor adds this significant remark:—"But to this day I have not discovered a ready way to clean the fibres." Here in a nutshell, after 96 years, is still the central difficulty—an expeditious, cheap, effective and satisfactory cleaning machine. We imagine the century cannot produce the eqnal of so long and deplorable a failure of mechanical genius than is illustrated in the failure of at least thirty years of intermittent effort to produce a satisfactory decorticating and cleaning machine for rhea.

Roxburgh strongly recomended cultivation to the fullest extent, but remarked that this would be limited for a long time, as no good seed has yet been produced in India.

In 1833 Major Jenkins sent samples of the fibre from Cachar to Calcutta and subsequently from Assam.

Colonel Burney sent samples from the Shan Provinces of Pevela and Youkzouk, while Resident at Ava. Major Macfarquhar sent samples from Tavoy on the Tenasserim Coast. In 1836 Colonel Burney remarked it was cultivated by the Shans, the Siamese, and Chinese all of whom were loud in its praise for its fine texture and durability both as cloth and cordage. Mr. Landers, travelling amongst the Shans, also observed the same thing.

In 1847 we find Dr. Campbell, superintendent of Darjeeling, lighting on the plant at Rungpore in Bengal. "Here" says Dr. Campbell "it was cultivated with much care along the banks of the Teeshta River under the name of *kunkhura*." He goes on to say, "I never saw the plant before and as winter crops are rare in that part of the country, it was an object of additional interest."

Subsequently samples were sent to Calcutta, and a Mr. Henley visited Rungpore and endeavoured to purchase a quantity, but could only get a small bale, for sending home for sample, and Dr. Campbell says "The natives would not sell, and cultivated it for the manufacture of towing lines and fishing nets: on account of its proved superiority for fishing nets and for enduring water without injury longer than any known substance.

Mr. Henley expressed the opinion that machinery could be produced for the separation and cleaning of the fibre with great facility and economy; until then it was hopeless to expect the fibre to be produced at a low price. It is a curious commentary, after practically half a century, that the same opinion holds good to-day. Here briefly stated is the first half-century of rhea under European observation.

There was a unanimous verdict of its great strength durability, and find texture and sutability to withstand water longer without injury than any other known substance during this period. Samples were

sent to England, and its merits instantly recognised by British manufacturers.

And so the subject went on gathering interest and enquiry until the Government of India—recognising the great obstacle to expeditious cleaning in their notification of January 1870—offered a prize of 5,000 for the production of a machine that should clean the fibre at a cost of £15 per ton, including all process of cleaning, wear and tear of machinery, and provided the cleaned prepared fibre fetched £50 per ton in the London market. Notwithstanding this liberal prize, which was again renewed in 1877 in the shape of R50,000, both trials were a failure, and no machine came up to Government conditions.

Since then two or three score of patent have been taken, and more than a dozen distinct processes invented, all claiming to have solved difficulty. Among the most recent, is the Ferguson process—the Macdonald-Boile—the Eyssen—and, lastly, Mr. Dear has turnee up with yet another machine of Automatic pretensions. According to the *Financial News*. Mr. Ferguson has spent £30,C0) on his process, and now merely wants £500,000 to place it on a commercial footing: it is possible Mr. Ferguson will be found wanting that some of money for some time to come yet.

Some time ago Mr. J.R. Boyle wrote from the Imperial Institute saying one firm would purchase to one thousand tons at £12 per ton in London with the fibre in its own integument. Mr. Boyle may rest assured that "one firm" is by no means alone in desiring 1,000 tons of rhea fibro at £12 a ton in London; seeing the eminently handsome difference between £12 and the price of the finished article and taking full note of the fact that at least half the cleaning has to be done in India.

Notwithstanding the many failures, it may be confidently predicted the time is not far distant when all difficulties of manufacture will be a than of the past. The subject is now become one of very keen interest to a greatly increasing number in widely divided places, and without a doubt it is understood a splendid fortune awaits the first inventor of a really effective and reasonably priced process for dealing with rhea. A fibre acknowledged on all hands to be one of the finest if not in the language of Roxburgh, the finest of vegetable fibres, must come to the front, and assert, its merits and if this should be so—and there is not the shadow of a doubt about it—India should not be behind in the matter. When all difficulties of manufacture have passed away, it will be solely a question of quantity, production, in short a planter's question.

PRACTICAL CULTURE OF RHEA.

At the every outset I must revert to the types and emphasise the paramount importance of clearly understanding which is which. Manifold errors and failures will be avoided in India by understanding clearly there are two types, which for cultural purposes are widely distinct in their climatic demands.

I note rhea seed figures in the admirable catalogue of the Himalayan seed stores: it is Italian-grown, and the "true rhea" so stated. But I must take leave to point out this Italian-grown seed is undoubtedly the produce of *Boehmerianivea*, which is the true temperate China plant, from which so-called China grass is made, and for cultural purposes wholly distinct from Roxburgh's type, named *Boehmeria tenacinsima* and which is the Samatra plant, and no doubt identical with the tropical form subsequently found at Rungpore in Bengal and Assam; and doubtless the rhea being extensively grown in the Island of Ceylon, is the tropical type, and therefore not *Boehmeria nivea*, but Roxburgh's *Boehmeria tenacissima*, which is the vigorous, rapid growing, very long fibre type, in short the tropical type as distinguished from the temperate or at all events sub-tropical type.

When this point is understood an enormous amount of confusion and prospective failure will disappear. To, plant this the truo China type in such places as Assam for instance, is the best way to fail; in point of fact it is on record that a number of Assam planters have tried rhea culture and failed; at all events abandoned the culture. I have not seen it stated which type was used or exactly why the culture was abandoned, but if *Boehmeria nivea* was used, then we need seek no further for the why of the failure.

This is a case in which there is not much in a name but a very great deal in clearly distinguishing between the tropical and temperate type of practically the same thing, whether it be *Boehmeria nivea* or *Boehemeria tenacissima*; they are both first class, identical, fibre-yielding plants, but amenable to totally differing climatic conditions.

There is very little doubt that *Boehmeria nivea* would flourish well in sub-montane tracts along the foot of the Himalayas and up to 3,000 feet elevation in these places there is no possiblity of swamping, drainage is good, and it would be an inexpensive matter to lay on irrigation if desirable from some of the many water ravines desending from higher elevations. There is this additional advantage, *Boehmeria nivea* is an abundant seeder, and could be so produced in any quantity for those trying *Boehmeria nivea*. Dr. MacGowan, on the Chines- method, dating from time immemorial, may be briefly stated with advantage. Dr. MacGown says: "The seed is sown in May." [This would be a bad month in India; I would suggest the beginning of the mousoon or March as better for this country.] "Loose dry soil is to be selected, the ground to be well ploughed, manured, and broken up finely. Then divided into beds, eight yards by one yard wide; then raked levelled and watered down and left for the night. On the morrow the beds are to be loosened up, raked and firmed down again; then two or three tea-spoonfuls of seed is mixed in a bowl of earth and sown broadcast over the beds and raked in subsequently a frame work is made, and as soon as the seed commences to germinate, and come through the soil, the young plants are protected from the hot sun—of June and July —by mats. The matting must be kept moist by day and taken off at night for the young plants to receive the dew of heaven." [A consideration of the Indian climate in the submontane districts during May, and up to the burst of the monsoon suggests a different time for sowing to that of China namely, just before the burst of the monsoon when the soil is hot and the ensuing rains create a rapid germinating medium otherwise February should be selected.] "The beds must be constantly weeded. When plants are three inches high they should be taken up and transplanted four inches apart. In the following May they are to be taken up and planted half a yard apart." [This will never do for India, the transplanting in May; it would be better to do this in March, and possibly February would be still better.] Then follows instructions to water every few days for the first decade and at ten days intervals; subsequently in the second year, the plants will be mature for cutting. Regarding manures the doctor says:—"Never use swine's dung as it is 'saltish' and hurtful to the *Ma*.'

Further:—"In many cases fresh earth, pulverised bricks, ashes, etc., are used as manures." He also mentions a heavy mulch to protect the young plants from the cold of winter—this however would be of less moment in India than China.

Ten years is given as the age of unprofitableness, but even at that age it is remarked the plants may be taken up aud planted forty inches apart in will prepared and heavily manured land.

Elsewhere Dr. Macgowan remarks the plant "is found at the base of hills and dry places."

The first cutting takes place in June and the last and of September or October. The stems grow seven or eight feet high and give three crops a year. "It not unfrequently happens that the crop is in some places remarkably small, and some other times the produce is very great without assignable cause." This remark should be duly noted; we can scarcely suppose in the case of China it would be climate, but more probably some peculiarity of soil; however this may be, it is to be noted the rhea plant is amen-

able in an eminent degree to suitability of soil and climatic conditions.

From the last cutting the finest cloth is made; after each cutting, it is mentioned, the plants are watered and manured: obviously this is a detail of considerable importance in the production of subsequent crop, probably the wartering would not in consequence of the monsoon season be needfull in India, but the manuring could not fail to be of considerable service.

From this it will be seen the Chinese pay great attention to cultivation, preparing the ground well manuing it, and manuring at every cutting or three times a year; great pains are taken with the seedlings too; all this tends to show in an nunistakable manner that rhea for commercial purpose must have a thorough culture, and disposes of the stupid somewhat prevalent notion that rhea will grow anywhere and anyhow; the fact moreover that the plant is cut down three times a year inducing a three-fold demand on the soil in the one year will ever constitute the rhea plant a rapid soil exhauster, and the Chineso have recognised that fact very well by manuring at ever cutting. This is an important fact to remenber. Commercial rhea will always mean a thorough and systematic culture, and this fact should be forced home with the manufactures from the planters' standpoint and low prices stoutly resisted.

Mr. Henley, who made a special visit to Runpore in 1847 in order to obtain a quantity of the fibre from the Rungpore fishermen states:—"It however requires a rich free soil and plenty of manure." No doubt the Rungpore plant was identical with Roxburgh's *Boehmeria tenacissima*, and it is so called by Mr. Henley, and in the matter of soil and manure it would reasonably appear to differ nothing from the sub-tropical China type. But in all other respects, as regards requisit climatic conditions, we must again accentuate the great difference between the two forms. I may venture to sum up what we believe will be found satisfactory conditions for *Boehmeria nivea*—the China type only:—

Planting localities.—All suitable spots as regards soil from the base of the Himalayas up to three thousand feet elevation; or any other parts in India giving from 1,000 to 3,000 feet elevation.

Soils.—There is an absolutely unanimous consensus of opinion that rhea requires a free, easily worked, friable soil, and this is quite comprehensible when we have in mind the fact that the rhea plant is a herbaceous perennial plant of rapid growth, and therefore requires a soil in which the roots can move about freely and rapidly. Within the areas noted there are numerous places giving a considerable depth of rich porous vegetable soil admirably suited for this class of plant.

Drainage.—This should be beyond all possible doubt good. Lands liable to be submerged or swamped, or even to lay wet for any length of time, should be studiously avoided. There is ample evidence in the shape of the wild forms taking no exception to great rainfalls where the drainage is perfect; rhea land should be such as to allow of heavy monsoon rains draining rapidly away. Here again the Himalayan slopes offers a drainage not by any means always available on the plains.

Given approximately these conditions, I am confident *Boehmeria nivea* would for the most part thrive abundantly.

In support of this view I may briefly note *Boehmeria frutescens*. Of this kind Dr. Campbell wrote in 1847—"It grows wild and abundantly in the valleys through the mountains of Eastern Nepal and Sikhim, at the foot of the hills skirting the Terai; to the elevation of 1,000 or 1,200 feet, and within the mountains up to 3,000 feet elevation." This is the *Pooah* of Darjeeling and Sikhim, and the *Poee* of Kumaon and Gurhwal, and *Boehmeria frutescens* of botanists indigenous to the sub-montane Himalayas from Gurhwall to Sikhim Hills. And also of Japan; but I may remark I have seen this plant in many places in Kumaon growing luxuriantly at between four and something over five thousand feet elevation. Dr. Campbell states that it grows to seven or eight feet high with stems the size of a pencil to that of the thumb, but he could no where find it on the plains and the hill-men considered it a hill plant.

Samples of the fibre of this kind were sent to the Flax and Hemp Committee, and pronounced by Captain Thomson equal to the finest flax and the best thing he had seen in India for sail cloths. I regard this as the wild form of the sub-tropical type, and no doubt the bon-rhea that grew wild all over Assam is approximately the wild form of the tropical type.

Dr. MacGowan also says of the China plant:—"Foot of hills and dry places: the fatal error is and has been the distribution of this type over the scorching plains of India. Those who intend rhea on the plains should undoubtedly confine their attention solely to the acclimatised tropical form such as the Rungpore. Assam and Malay plant."

Provided the soil is rich and drainage perfect, this is the type of rampant rapid growth, great size and length, such for example that grows so well in certain parts of Ceylon with its mean annual temperature of 78 degrees.

CONCLUSION.

Here then is the *Chu Ma* of the Chinese, the rhea of the Assamese, the *ran* of the Shans, *kunkhura* of Rungpore, Bengal, ramie of the Straits Settlement, *calooe* of Sumatra. For all practical purposes this is one and the same thing under greatly differing climatic conditions. It has been shown that the China plant is of enormous antiquity, probably quite five thousand years: in all probability the Bengal and Assam type has been indigenous for many centuries, and likewise the Sumatra stock. As for the wild forms it would be rash to speculate on their age.

During these lengthened periods each stock has become acclimatised to its respective environments, so that to-day they are amenable to advantage to a sub-tropical and tropical clime only; and the great mistake is to make these terms convertible, and mix the climatically wholly different forms together, and assume either one or the other is interchangeable for any parts of India. A misapprehension of this essential point cannot fail to be a source of failure in rhea culture. HIMALAYENSIS.

—*Pioneer* Nov. 8.

VANILLA.

BOTANICAL OBSERVATIONS.

Vanilla is the generic name of epiphytical orchids indigenous to tropical America and Asia.

During their first stage of development they strike root and obtain nourishment from the ground, then they creep up trees to a height of 30 or 40 feet by sending out thread-like roots from knotty stems. The stem is from 2 to 3 centimeters thick; the leaves grow in to long rows and are long, green and fleshy. Clusters of blossoms grow out at the angle between stem and leaf they are large and fleshy, and of a whitish yellow colour and pleasant odour. Following the blossoms come cylindrical pods, 8 or 10 inches long, which split on one side and are filled with a number of small black seeds. The latter suggest sand, they are imbedded in similarly coloured pulp. The fruit is yellow when ripe. On drying, it turns black, and forms the well known spice. The number of members of this family is not yet established; indeed some difference of opinion exists whether theso are species or only varieties. It has not yet been exactly determined which kinds of fruit are utilized either in the trade or at the place of production. In Mexico 4 useful kinds are known:—*Vanilla, V. sylvestris, V planifolia and V. pompona.*

In Guiana:—Vanilla guianensis, with large yellow blossoms and long fruit. In the province of Bahia:—*Vanilla palmarum.* In Brazil and peru:—*Vanilla pompona* and *aromatica*; the latter notwithstanding its name, having the least pleasant odour.

The search for useful varieties is still progressing. The director of the Botanical Gardens in British Gniana is just making the experiment of planting all the varicties indigenous to the whole of Guiana on his trellises (? misprint for Gelangestretch of land) in order to determine which can be recomeuded for planting and generally how to graduate their values.

If there are still mauy questious to be solved abont the Vanilla family, we do at least know definitely that the earlier theory, that most of the Vanilla of Commerce comes from the *V. aromatica* is a mistake. *V. planifolia* should take its place.

This kind furnishes the most valuable fruit, and is therefore brought into cultivatiou wherever Europeans are concerned in the Vanilla culture. What part the other kinds play in the production of the article of commerce it is impossible to say, even approximately.*

The *V. pompona* seems to be rather important, for their short, thick pods, easily recognised, are always on the market (though in small parcels), indeed they have received the distinctive name, Vanillon.

Its value is considerably less than that of *V. planifolia* fruit, frequently only one quarter.

Apart from the useful varieties, the Vanilla family has only a purcly botanical interest, for the blossoms do not possess the wonderful colour which distinguishes most orchids aud ensures their high rank in horticulture.

GENERAL SURVEY OF THE PRODUCTION.

Vanilla was introduoed into Europe in the 16th Century from Mexico, which was the chief place of production at that time, as it is at the present day.

The total crop of this state was given as 108,500 half kiols, in the last published Statistics for 1880. One cannot take this as literally true, for the official machinery does not allow of an exact estimate being taken. The output of Vanilla is still very considerable and is not exceeded by that of any other country. The chief seat of the industry is in the State Vera Cruz, the next iu Oajaca. The village Zentilla in the latter State is said to produce the finest Mexican Vanilla.

The Vanilla culture is also mroe or less developed in the States of Tabasco, Yucatan, Chiapas, on the Isthmus of Tehuantepec and in a few places on the West Coast as well as in the hinter land of Acapilco and Mazatlan.

As a rule. 5 kiuds of Mexican Vanilla are recognised:—

(1) Vanilla *fina* or *primira*, the pods are at least 24 c. m long.
(2.) *Chica prima* is shorter and thinner.
(3.) *Zacate*
(4.) *Rezacate* and finally
(5.) *Basura*, mark degrees in size.

The last named is not only the smallest, but is spotted, and often damaged. These varieties differ not only in size, but often in the contents of the pods.

In Guatemala, the Vanilla is not cultivated for purposes of commerce; the Indiaus, however, collect the wild fruit in the forests of the North West Coast, and bring them on the market at the Capital *(and as far South as Panama, J. H. H.)*

A few hundred pounds are exported from thence in some years, iu others no pods are exported. In the rest of Central America nothing is known of the culture of Vanilla, or of collecting the wild fruit. *(This is incorrect as I have seen it otherwise in Veragua, J. H. H.)* It is little better in the West Indies, where deficient experiments in planting have been made, but soon abandoned. Here and there a few hundred shrubs are cultivated, the out-put is used for home consumption. Guadeloupe alone exports small quantities to France, the annual amount varying extraordinarily. The exports amount in one year to 150 kilos, in the next to 1,500 kilos. In the year 1880 it amounted to 2,656 kiolos.

Although wild Vanilla grows luxuriantly and abundantly in the forests of Venezuela aud Guiana, its culture is completely neglected. Attempts have recently been made in British Guiana to revive it. The Braziliau Vanilla does not enjoy a good reputation; this is a consequence of the nelegect it preparing the crop. A considerable part of the fru t is collected from wild shrubs, and is consequently of little value. What I have previously said about this country's Cocoa applies accurately to its Vanilla. The Vanillon, alluded to above, comes for the most part from Brazil. It is almost all used in France. During the "fifties," a series of bad harvests seriously damaged the sugar industry in Reunion, and caused the planters to turn to Coffee aud Vanilla cultivation, with such results that this island has become, after Mexico, tho chief source of this spiece.

Not only that, the methods of cultivation have been brought to the highest degree of protection in Reunion and we must turn there to learn how the industry has advanced. The exemplary French statistics afford us also a dependable insight into the advanco and present position of Vanilla culture—an example which awaits imitators in this special branch.

The Statistical Tables show that in 1866, 223 hectares were planted with Vauilla shrubs, furnishing a total crop of 15,494 kilos. In 1871, the area covered was 593 hectares, and the harvest 25,547 kilos. In 1874, area 1,563 hectares, and harvest 43,959 kilos. At the beginning of the "eighties," the average harvest amounted to 5 ·000, kilos, and the area of cultivation about 1,800 hectares. The latter cannot be sharply defined because it is increaingly the custom on this island to plant the shrubs in suitable places scattered over the ground. This is especially the case with the small landed proprictors who are mainly attracted to this industry. That is readily comprehensible, for the cultivation of Vanilla is suited to the "small people" owing to the great value of the product, rendering the possible maintenance of a family of modest wants on a bit of land too small to allow of Sugar or Coffee cultivation. A further advantage is, that is uot requisite to employ machine power or labour beyond that of the family, if working on a small scale. The French have likewise introduced the cultivation to Tahite, but according to the latest intelligence, only 30 hectares were planted, of which 2,000 kilos, of fruit formed the average crop. The example of Reunion was soon imitated by the neighbouring island of Mauritius, but with less energy, for both before and since, sugar has been regarded as the staple article of the island. Statistical estimaions of the export are available, not of the production. From 1865 to 1873, the export amounted on an average to 5,000 English pounds (equal to 4,500 half kilos), from that time the export increased to an average of 12,000 pounds per annum. Mauritius possesses a few other orchid species, the leaves of which may replace Vanilla for the perfumer. *Angræcum fragrans*, which when crushed emits an odour which powerfully reminds one of Vanilla—some profess to recognise an admixture of the odour of Tonquin (?) beans. The leaves of Faham orchids should be mentioned, yielding an aromatic tea which is so much valued that this plant has been introduced into St. Helena and Madeira and the leaves into France. The leaves of *Orchids fusca* emit a similar aroma. About 1840, the cultivation of Vanilla was introduced into Java, but it has only engaged attention in recent times. Planting has been energetically taken in hand in Ceylon. It is still a question, however, whether the enthusiasm will prove lasting, and whether this Island will form an importsnt source of Vanilla. Vanilla thrives well in Madagascar, and is even cultivated on a small scale. The output is trifling, and, since the war with France, has completely ceased. The refreshing action of Vanilla is due to an alkaloid named Vanillin, so closely allied to benzoic acid that it was

* Vanilla pompona produces a pod almost identical with that of the *Vanilla grandfolia*, a native of Trinidad and the mainland, and the species producing the kind known as West Indian Vanillons in the markets. (J. H. H.)

previously considered identical with it. Vanillin often crystallises out on the pods in the form of fine needle-shaped crystals—sometimes only years after picking. The crystals notoriously influence the value of the article; they are regarded as a measure of quality. This measure is occasionally misleading, as is demonstrated by the fact that the finest Mexican Vanilla contains only 1·70 per cent.; Vanillin. Mauritius Vanilla, 2·45 per cent.; Java Vanilla, 2·75 per cent. and yet the first is by far the most valued. The explanation lies in the volatile oil which gives the special aroma, the products of Java and Bourbon being accompanied by another oil of pleasant odour. The percentage of Vanillin varies from 1 to 2.75, with but few exceptions.

Vanilla is usually packed in air-tight tin boxes in which it will retain its aroma for years. The quality may be estimated from the following points of view:—The longer and darker the pod, and the greater the quantity of crystals formed, so much the better are the goods. They should feel oily, and should emit a fresh, strong and pleasant odour. The pods in a box should be equal in length, not broken or in any way damaged. It must be preserved in air-tight vessels, as the aroma rapidly volatilises. These conditions are not always compiled with in the retail trade; one result thereof is a regretably frequent adulteration of old odourless Vanilla with benzoic oil, which is said to restore the odour and oil of almonds to give the the suppleness. The most hardened deceivers go so far as to strew Vanilla with salt to imitate the Vanillin crystals.

A product of the plant, unknown in Europe, but prized in South America, is a juice which trickles from the fully ripe fruit, and is caught in vessels hung beneath.

MANURING OF TROPICAL PLANTS—RICE.

The two varieties of this plant—viz., water rice and upland rice—require different soils and different climates. The first variety is more generally cultivated, and requires a moist, clay, soil, that can stand the necessary watering. Lighter soils should at least have a loamy, impermeable subsoil. Upland rice, on the other hand, can be grown on a soil not quite so rich; it stands dryness much better, and thrives also in less warm climates.

The following quantities of plant-food ingredients are removed from one acre*:—

By an average crop of	Potash.	Phosphoric Acid.	Nitrogen
2,676 lb. grains .. 2,676 ,, straw .. 446 ,, chaff ..	28·1 lb.	16·3 lb.	26·2 lb.
By a good crop of			
4,014 lb. grains .. 4,460 ,, straw .. 624 ,, chaff ..	45·7 lb.	21·9 lb.	39·2 lb.

Very thorough investigations have been conducted by Prof. Kellner† and others in Japan, as the fertiliser requirements of water rice. In order to determine the exhaustion of nitrogen, phosporic acid, and potash in the soil, a fertiliser trial was inaugurated, in which each plot received the following quantities of fertilisers to the acre.—

Plot 1	No fertiliser.			
,, 2	89 lb. phosphoric acid	89 lb. potash	— lb. nit.
,, 3	— ,, ,,	89 ,, ,,	89 ,, ,,
,, 4	89 ,, ,,	— ,, ,,	89 ,, ,,
,, 5	89 ,, ,,	89 ,, ,,	89 ,, ,,

Nitrogen was applied in the form of sulphate of ammonia, phosphoric acid in the form of double superphosphate, and potash in the form of carbonate. The development of the plants corresponded to that of the previous years; the plants which had received a complete fertiliser grew best of all, showing a normal green colour; next came the plants to which no potash had been applied. The plants to which no nitrogen had been given were of a light-green colour. Phosphoric acid seems to have a very beneficial effect upon the growth of the plant, for the plants which had not received phosphoric acid differed but little form the unfertilised plants; they were of a dark green colour, but very small. The average yields from three check plots (the size of the plots is unfortunately not given) were as follows*:—

(Yields given in ounces.)

	Straw.	Full grns.	Empty grns.	Total.
No fertiliser ...	10·2	7·5	0·1	17·8
Without nitrogen	16·8	12·0	0 2	29·0
Without phosphoric acid ...	13·1	9·5	0·2	22·8
Without potash	22·2	14·6	0·4	37·2
Complete fertiliser	27·5	20·3	0·3	48·1

Investigations were also conducted, to determine the quantity of nitrogen available by the rice-plant when green manuring with a lagume (*Astragalus lotoides*, Lam.) is resorted to.† Astragalus was sown in the autumn, and fertilised with different quantities of lime. In the beginning of May, when the plant was in full bloom, it was cut, weighed, and then turned under. The yield of green material was as follows:—

Quantity of lime applied per acre	0lb.	89lb.	178lb.	356lb.
Yield of astragalus per acre	8,991lb.	16,573lb.	16,341lb.	13,451lb.

The conclusion can thus safely be drawn, that astragalus responds well to lime fertilisation, though 89 lb. per acre were sufficient for the soil in question. The leguminous plants analysed 12·23 per cent. dry matter and 0·369 per cent. nitrogen; the plants from the plots fertilised with lime contained 2,266 lb. dry matter and 69 lb. nitrogen per acre. In addition to the green manuring, 98 lb. of phosphoric acid in the form of phosphate of soda and 89 lb. of potash in the form of carbonate were applied. The yields from the separate plots were as follows:—

Fertilisers Applied per Acre.	Yields per Acre in lb.			
	Straw.	Full Grains.	Empty. Grains.	Total. Yield.
Potash and phosphoric acid without nitrogen	0·478	3·681	0·029	0·849
Potash and phosphoric acid, green manuring without lime ...	0·556	5·141	0·037	0·973
Potash and phosphoric acid, green manuring with 89 lb. lime ...	0·747	5·653	0·047	1·315
Potash and phosphoric acid, green manuring with 178 lb. lime ...	0·736	5·497	0·049	1·291
Potash and phosphoric acid, green manuring with 356 lb. lime ...	0·767	5·764	0·041	1·348
Potash and phosphoric acid, complete fertiliser with 473 lb. sulphate of ammonia ...	0·870	5·692	0·068	1·446

Green manuring increased the yield considerably especially on the plots that had received lime. The complete mixture of artificial fertilisers produced just as good yields as the green manuring; as in green manuring the nitrogen in the atmosphere can be utilised, this method is naturally less expensive and hence more profitable.

A similar experiment with green manuring was conducted with another nitrogen-gatherer—viz., indigo (*Indigofera tinctoria*)—in the botanical garden at Büitenzorg, Java.‡

* Lierke, praktische Düngetafeln, Berlin, Parey.

† Imp. University of Agriculture Komaba, Tokio, Japan, Bull. II, &c.

* "Jahresbericht für Agriculturchemie," 1892, p. 250.

† "Jahresbericht für Agriculturchemie," 1891, p. 172.

‡ "Verslag omtrent den Staat von "Slands plantentuin" te Buitenzorg ofer het Jaar 1894, Batavia 1895, page 42.

The indigo was grown during the East-monsoon, and as much as possible ploughed under during the rainy season. For the sake of comparison, two fields were manured with 205 and 410 lb. of lime per acre respectively, while a fourth was left unfertilised. The yields were as follows:—

	From 1 Bouw=1·7 acre.	From 1 acre.
Green manuring...	58·4 picul	4,596 lb.
410 lb. lime ...	56·0 ,,	4,407 ,,
205 ,, ,, ...	52·8 ,,	4,156 ,,
No Fertiliser ...	48·0 ,,	3,778 ,,

Field experiments on a more extensive scale have been conducted in Italy, the results of which are given in the following table:—

Fertilising Experiment with Rice.

By Professor Tito Poggi* on the Vendramin Farm (Po Valley).

No. of Plot.	Fertilisers applied per Acre. Plaster.	Acid Phosphate.	Sulphate of Ammonia.	Nitrate of Soda.	Muriate of Potash.	Cost of Fertiliser.	Yields per Acre in the first year. Rice Grains.	Chaff and Straw.	Value of Increase of Yield.	Yields per Acre in the 2nd year. Rice Grains.	Chaff and Straw.	Value of Increase of Yield.	Profit or Loss from yields of both years after deducting cost of fertilisers.
	lb.	lb.	lb.	lb.	lb.	M.	lb.	lb.	M.	lb.	lb.	M.	M.
1	..	...	...	...	...	...	1046·3	1608·5	...	1338·0	945·5	...	...
2	...	...	178	...	...	23·96	954·4	1824·1	...	1641·3	999·0	22.02	— 8·61
3	..	356	...	...	...	18·13	1632·4	1792·9	42·54	1677·0	1186·4	24·61	+49·02
4	356	356	...	...	89	28·49	1427·2	1766·2	27·65	1685·9	1213·1	25·25	+24·41
5	356	..	178	...	...	34·32	1159·6	1205.1	8·22	1471·8	892·0	9·71	—16·39
6	356	356	178	...	89	44·68	1659.1	1953-5	44·48	1632·4	1141·8	21·37	+21·17
7	..	356	178	...	89	49·86	1748·3	2354·9	50·96	1694·8	1141·8	25·90	+27·00
8	356	356	178	...	89	52·45	2123·0	2198·8	78·16	1726·0	1645·7	28·17	+53·88
9	356	356	...	245	89	53·42	1547·6	2114·0	36·39	1605·6	1110·5	19·43	+ 2·40

* Jahrbücher der "Cattedra ambulante" von Professor Tito Poggi, Rovigo.

The highest yield was obtained where all three of the plant-food ingredients had been applied, and on these plots a very good after effect was produced in the second year. Phosphoric acid proved very beneficial, especially upon the yield of grain.

Professor Poggi, Rovigo, makes the following recommendations for the quantities of fertilising materials to be applied per acre:—

	For New Fields.	For Exhausted Fields.
Sulphate of ammonia ..	89·0 lb.	178 lb.
Acid phosphate (16 per cent.)	222·5 ,,	356 ,,
Muriate of potash ..	44·5 ,,	89 ,,

267 to 356 lb. plaster or slaked lime should be applied to soils deficient in lime. In case of light soils the quantity of murate of potash applied per annum should not be less than 89 lb.

However, too much potash should not be applied to water rice, as this ingredient produces a luxurions formation of straw at the expense of the yield of grain. American rice-planters always recommend large quantities of potash for upland rice, holding that this is necessary to obtain a heavy yield of grain.

Mr. C. K. McQuarrie, of De Funiak Springs, Florida, holds that the presence of empty husks of upland rice is due to a deficiency of potash. He makes the following suggestions in regard to the planting of upland rice on the rather light soils of Florida:—

If a crop is going to be made on new land, it should be well ploughed during the previous winter, and harrowed over and over again, until all the sod is broken up. At the last harrowing 400 lb. of kainit per acre should be scattered broadcast. When ready to begin planting, furrows should be run with a bull-tongue plough, about 3 feet apart. In these furrows scatter about 300 lb. fertiliser per acre, containing phosphoric acid and potash, not less than 8 per cent. of each. This fertiliser must be well mixed with the soil by dragging a chain in the furrow. The seed must be sown liberally, as at least 25 per cent. of the rice generally grown is nothing but empty husks. After the plants are up, treat the crop to a little top-dressing of nitrate of soda. If the crop is planted in March or beginning of April, we can always depend on getting a second crop from the stubble of the first crop. This second crop is generally not so good as the first, but if fertilised when the first crop is cut it will repay us for onr trouble.

Rice must not follow itself on the same land, as it greatly impoverishes the soil, but if we want to continue it on the same land green manuring and a liberal application of potash are absolutely essential. The leguminous plant should be sown early in the spring, and can be ploughed under in time for the first planting.—*Queensland Agricultural Journal.*

WOOD-PULP.

The utilization of the waste products of our Indian forest is a most important problem, but in many cases even where the uses such material can be put to are known, there are serious difficulties to be overcome. In the case of wood-pulp, however, it is indeed to be wondered at that no enterprising capitalists come forward to develop the industry in this country.

In Europe the manufacture of wood-pulp has been going on steadily for many years, but so great is the demand for timber there, the manufactures are able to obtain only a comparatively small supply of the raw material required. The consequence is that although new uses of wood-pulp are discovered every day, the industry has not expanded very considerably.

It is in America, both in the United States and Canada, that wood-pulp is creating a veritable revolution in the mercantile and manufacturing world. So much so is this the case that "*The Times*" says:—

"The extraordinary development of the single manufacture of 'wood-pulp' which only a few years ago was practically unknown and is now used not only for making paper but for clothing and an immense diversity of other articles, is a sufficient indication of the practically limitless extension of the already widely 'varied use of timber.'" "Cotton," it is said on the other side of the Atlantic "was once called king; but king Cotton is a lesser potentate than king Timber must soon become."

All the American papers are full of acconnts of the wonderful development of the industry in that country, and of the constantly increasing uses to which wood-pulp is now put. It is in fact this industry that has brought home at last to the people of America the urgency of making State reserves, protecting them from fire and managing them systematically; for, as long as lumber only was exported

from the forests the younger and smaller trees were left, but now that the wood-pulp man has appeared no trees escape, as he utilizes all the trees left by the lumber man.

The New York Tribune, referring to the numberless uses of wood-pulp and the inroads caused on the United States' Forests say:

"Printing paper alone eats an enormous hole in our national forests yearly, and the future extent of that requirement can only be conjectured. The huge procession of railway cars all over the country run, to some extent, on paper wheels; carpenters are begining to use boards of paper handsomely veined requiring no planing, twice as durable as the wooden variety, and costing only half the money. The builder is introducing paper bricks, showily enameled, which will not burn, and possess many advantages over those of burnt clay. The ship-builder introduces masts and spars of the same substance, which is likewise used for telegraph and telephone poles and flagstaffs. These are not fanciful experiments but serious business procedures, justified by the superior durability of the articles so produced. The same quality is claimed for the paper horseshoe recently invented and now extensively used. An enumeration of the purposes for which this surprising protoplasm has come to be employed would stretch into a catalogue and new ones seem to be discovered every day."

Verily we are approaching the day referred to in the chorus of the old song.

'Paper hats, paper coats, paper boots and shoes.
Patent paper, sailing ships and patent paper crews.
On the paper market there'll be a paper strain,
And every one, both young and old, will have paper on the brain.'

The chief wood used for pulp is spruce but silver fir is used in the Vosges mountains. Poplars, which have a short fibre, are also used but more especially for mixing with spruce pulps to give the paper a more even surface. Of spruce there is an unlimited supply in the N.-W. Himalayas, from the Bhagirati to Afghanistan, also in Sikkim and Bhutun. It grows chiefly on Northern and Western slopes between 7,000 and 11,000 feet. The species is of course *Abies Smithiana*, very closely allied to the common European spruce, *A. excelsa*. It attains a maximum height of some 225 feet, and a girth up to 16 feet. The wood is white like that of *A. excelsa* and weighs about the same *viz*, 32 lb. per cubic ft. on the average.

In the Jaunsar Division alone there is a huge stock of magnificent trees, which is unsaleable at present as there is no demand for it. So much so is this the case that wherever it happens to be found growing near deodar, it is ruthlessly killed by girdling and allowed to rot, so as to favour the valuable deodar. I roughly estimate that from this Division, were the spruce put under systematic management, an annual outturn of 1,50,00,000 cubic feet, or about 5,70,000 maunds, equal to about 21,000 tons by weight, could be obtained. If a large quantity like this were exported it is probable that it would pay the Forest Department to sell the wood at Dagpathar on the Jumna for about eleven annas a maund.

Wood ground mechanically yields, I believe, one-third of its weight in pulp (dry) and this the paper mills would, it is supposed, willingly purchase for at least R3 per maund delivered on the railway, as their agents in the bazaars are now scouring the country for old pieces of paper of all kinds which have to be sorted, washed and bleached before being of any use. For this the agents give R2 per maund and they must get a good commission for all their trouble.

Fifty-seven thousand maunds of spruce would yield some 1,90,000 maunds per annum, or 633 maunds per diem (taking 300 working days=one year) of mechanically-ground pulp and this should sell for R5,70,000.

There is not likely to be any difficulty in disposing of this quantity as the demand for paper in this country is steadily on the increase, more or less in proportion to the spread of education and trade. Moreover, if good raw material were readily obtainable by the paper mills they would not be so keen on making arrangements, throughout India, to collect all the waste paper, however inferior its quality may be.

The probable annual receipts and expenditure for such an outturn would be as follows:—

Receipts.

	R.
By sale of 1,90,000 maunds of pulp, delivered at Dehra Dun Railway Station @ R3 per maund	5,70,000

Expenditure.

	R.
Purchase of 5,70,000 mds. of spruce @ 11 annas per maund	3,91,875
Wear and tear of machinery and buildings @ 10 % on R1,50,000	15,000
Manager's pay @ R800 per month ...	9,600
Mechanical Engineer's @ R450 per month...	5,400
3 Foremen @ R50 each per month ...	1,800
3 Do @ R30 each per month	1,080
60 Workmen @ R6 each per month ...	4,320
Carting 1,90,000 maunds of pulp to Railway at 3 Annas per maund per 26 miles ...	35,625
Miscellaneous charges	5,300
Pofit on capital of R5,00,000, *i.e.* 20 % per annum	1,00,000
R. ..	5,70,000

The Capital required would be as follows:—

Cost of Machinery ...	R. 80,000	R. 1,50,000
Setting up, leading water and erection of buildings	R. 70,000	
Working Capital		R. 3,50,000
Total ...		R. 5,00,000

This is the prospect which seems to await any capitalist enterprising enough to take up the business; and, if mechanically-ground pulp is able to give such a profit, what would the profit be on chemically-prepared wood fibre for paper and cloth? For, although it is somewhat more expensive to manufacture, the yield is as much as 60 to 66 per cent. of the weight of the wood against 33 per cent. of mechanically-ground pulp. Doubtless Government would be prepared to meet any capitalist willing to start the business, with an agreement to give him the first refusal *via* Dagpathar, at a certain rate for a certain numbers of years, as well as to lend him a plot of land for his factory with a right to lead water from the river to propel the machinery, so that he could make his own calculation as to whether it would pay him or not. Government at the same time would benefit by the opening out of a market for spruce, for which there is now no demand.

There should be no difficulty in getting water power sufficient to drive all the machinery required for the factory as, I belive, the fall of the Tons river at the foot of the hills is about 45 feet per mile. Should a market for spruce be in this way developed, it would most probably pay the Forest Department to grow spruce on a rotation of 30 or 40 years.

The Canadian pulp factories have bought up large areas of forest land which I am informed they are treating on a 20 year rotation, but then the growth of American spruces, especially the Douglas spruce, is very rapid; *vide* the table published in "*The Indian Forester*" for May 1899.

The trees in the plantation of spruce near Deoban in the Jaunsar Division made in 1874, when the plants were put out at one year old, now average 20 feet in height and 4·6 inches in diameter; but the plantation is not densely stocked and the locality is one with an Eastern aspect, while spruce does not apparently grow thereabouts naturally. So it

is expected that with a rotation of 30 or 40 years, in places suited to the species, it would give a suitable sized tree for pulp purposes. When once a regular young forest was formed, the age at which the mean annual increment per acre culminated would be determined, and that age fixed for future rotations. It is very possible that, if experiments were made at the factory, it would be found that silver fir could also be utilized, in which case it would be advantageous to grow a mixed forest of spruce and silver fir.

It is, indeed, to be hoped that a market will soon be developed for spruce, as it is too heart-rending a sight to see all the grand trees now growing being absolutely wasted; and, as mentioned before, being girdled and allowed to rot wherever they interfere with deodar, even though the latter be seedlings, a few years old.

P. H. CLUTTERBUCK.

Jaunsar, May 1899.

THE NILGIRIS.

[FROM OUR OWN CORRESPONDENT.]

Since the Madras Government abandoned the commercial aspect of its cinchona experiment and adopted the philanthropic, it has ceased to give the public any information regading the manner of working its cinchona plantations on the Nilgiris, which is to be regretted. But notwithstanding this circumstance occasional reports fall into the hands of members of the Press, and we learn what is being done. It is from such a stray copy for 1898-99 that I am in a position to give you the following account, wich I hope will interest your planting readers.

This is the second year of the experiment of Government purchasing bark from private planters for working up in its Nedduvottun quinine factory, and it is one of larger transactions. In 1897-98 only 108,934 pounds were bought for this purpose, but in the year under review no less than 405,074 pounds were purchased at R83,120-4-8. From the Government plantations 101,307 pounds of dry bark were taken, but from the combined sources only 461,941 pounds were used up in the factory to produce the 12,603 pounds of sulphate of quinine and the 7,238 pounds of febrifuge turned out by it, costing at the rate of R7-11-7 including, and R2-4-6 excluding, the value of the bark per pound of alkaloid; or taking quinine alone, it cost R9,9-6 to produce a pound, that in sale transactions is valued at R18. Though this is not the price at which quinine is issued to public institutions, charged at the rate of R15 per pond. The quantity of quinine issued by the Cinchona Department during the year to all buyers was only 4,629¾ pounds, or something more than a third of what was manufactured. A fact attributed to the falling off in the demand for quinine from Bombay and from the Punjab during the year, having been supplied by the Bengal plantations instead of by the Madras, as heretofore.

Mr. Standen says that the Nedduvuttun Factory as at present equipped, can work up to 450,000 pounds of bark per annum. The actual expenditure on the Department 1898-99 was R1,94,603-14-1 and the actual recipts for the same period amounted to only R91,039-2-8 the balance having been provided out of a special grant by the Government of India of R1,02,000 made for the purchase of private bark.

The year was also marked by the resumption, after a long period, I think of 20 years, of extension of cultivation on the Government plantations so much condemned by the planters as a breach of faith on the part of Government with them. The extension at Pykara, on the Hooker Estate, measures 80 acres and is completed, but there is a further extension being made in the same locality or another 80 acres which will be noticed in the report for 1899-1900. Referring to the raising of nursery plants for this purpose and for replanting failures, Mr. Standen notices a disaster that was dealt with successfully by his superintendent at Dadabett. It was found that a number of small thread worms girdled the roots of the seedlings and caused their death. The insects were found in the baskets in which they are established before planting out, and the damage done by them was revealed by the microscope. To destroy the worms the baskets, plant and all were immersed in a strong solution of salt and placed in beds covered with saw dust that had been sprinked with kerosine oil. The result was that no worms were to be found in the soil in the baskets afterwards, but lest the soil itself might be thus affected it was used, after being burned, for subsequent nursery purposes.

Dadabett is the Government cinchona plantation of the greatest age, and it is satisfactory to note here that the oldest trees are the healthiest, the most vigorous, and the most ready to respond to cultivation and manuring. Speaking of the wont of success in planting operations in previous years, Mr. Standen attributes it to soil exhaustion, for such operations are quite satisfactory when carried out on new land; and this led him to recommend that land with cinchona, on being cleared after uprootal, should be replanted with fuel trees.

Similar appearances were observed at Nedduvuttun, the oldest parts of that plantation being the best and here the replanted land growing the only sickly trees.

From the statistics attached to the report I gather that the entire number of trees on the Government plantations on the Nilgiris aggregate 1,675,103; that between stripping and coppicing since the commencement of this enterprise by Government as many as 3,402,634½ pounds of bark have been taken and either sold or worked up into quinine and febrifuge. That the plantations, as they stand, represent a surplus of receipts over expenditure of R13,80,403; that in 1875,76 expenditure exceeded receipts by R11,22,117, which has been overtake by the present surplus. This, I suppose, means that since 1875, the plantations have been working at a profit, the aggregate to date being R25,02,500, a highly satisfactory result, if it does not only exist on paper.

For the year under review, Mr. Standen says that a profit was realized of R35,377-3-3.

Mr. Standen early in the current year visited Java by order of Government, and concludes a lengthy, interesting and suggestive report with the following five practical suggestions, which will commend themselves to growers of cinchona who wish to be abreast of the times in the details of their industry. The suggestions are—*(1)* That further attempts should be made to cultivate ledgers from seed obtained from Java. They should be grown at an elevation of from four to five thousand feet, in rich, well drained soil, and the richest trees only should be propagated from. *(2)* The grafting of ledger on succirubras at low elevation and of officinalis on succirubras at higher elevations should be tried. (3) Officinalis seed should be taken only from trees showing a high percentage of quinine. (4) Succirubra bark should be shipped in the from of quills; and *(5)* high cultivation should be adopted and where the lay of land and nature of the soil are suitable the ground should be terraced before planting.—*Planter.*

UNITED STATES EXPERIMENTAL TEA GARDEN. The only tea plantation in the United states, at Summerville, S.C. The estate, known as Pinehurst, covers 700 acres, of which fifty are devoted to the cultivation of tea. The first "Rose Garden" was planted in 1890. In 1894, 151 pounds of tea leaves were harvested; in 1895, 333 pounds; in 1896, 600 pounds; in 1897, 648 pounds; in 1898, 1,200 pounds. On the basis of 900 plants, the production per bush is almost five ounces of tea. This tea has a distinctive character, and retails in the local market at $1 per pound. It compares favourably with tea bringing 25 cents at pound in lines in the New York Market—*Planting Opinion*, Nov. 11.

TEA AND OTHER PRODUCTS—SPECIALLY CACAO IN THE WEST INDIES.

LONDON, Oct. 13.

My enquiries, I am bound to say, do not in their results, give much encouragement to the proposal to substitute "private contracts," to some extent, for public sales. The very large number of lots to be dealt with is offered as a strong objection by a broker with long experience in the China and Indian tea trade; but that might be obviated, to some extent, by larger breaks, as indicated in my last, if the big Companies and proprietors so arranged. A more forcible objection is the difficulty of getting at the chief buyers and of disgusting the smaller men who would in a manner be shut out from "private contract" business; while they participate in all that goes on in the public auction room. There is, however, another side; and I have been favoured with opinions worth quoting—thus one merchant writes:—

There is, I believe, a very general impression that huge profits are made by the London buyers. I don't think this is the case to an undue extent; but, on the other hand, I think that the public are getting too good value for their money in many cases. I enclose the advertisements of three of the big blenders in the *Grocer* of 2nd inst. all offering a blend at 9½d per lb. *duty paid* (4d) and carriage paid. There can be no profit on this, even if the commonest stuff of any sort that can be picked up be supplied. This is only a "method" of the trade to enable these people to get at the higher priced trade out of which they can make a profit. Besides these three, there were on 2nd Sept., about six or seven other firms with a 9½d blend. In this week's *Grocer* Brooke Bond's advertisement does not appear; but both Kearley and Tonge and Lipton's are still offering their 9½d mixture, although there is hardly a leaf of Indian or Ceylon tea to be had at less than 6½d as it lies in bond. The profits earned by these big concerns represent in most cases a return on years of energy expended in building up the business. The enclosed advertisement from a recent *Standard* throws some light on the ins and outs of tea distribution, and the cutting from s of a *Time* few weeks ago, *re* John Rees, shows that everyone does not succeed in the business! These points may be useful to you in dealing with the question of a Growers' Distributing Co., to manage which successfully a "genius" would have to be discovered. If a few of the big Companies—C. T. P. Eastern Produce, Anglo Ceylon, &c.—were to give the "private contract" system—with large breaks—a trial, I think they would not find it as difficult as would at first sight appear.

Again, it is quite realised that a change, even though partial to sale by private contracts," involves very big interests, and is a big question altogether, requiring careful consideration at the hands of the leading importers and agents, as well as by the planting and mercantile community of Ceylon. I may have some more opinions to give from this end later on.

Meantime as we are congratulating ourselves on the check to further extension of tea-planting, with the risk of over-production, I find the following advertisement in *The Times* of 12th Oct.:—

Ceylon Tea Land, 4,000 to 5,000 acres in one block, elevation 2,000 to 3,000 feet. Good water power and rainfall. Exceptional chance. Little land now available at this elevation.—A. F. S., Z.442, The Times Office, E.C.

The initials "A.F.S." would seem to point to a well-known retired planter, and I should guess that the block referred to must be situated in Yakdessa or the upper end of the Kelani Valley.

Turning from Ceylon, to the

WEST INDIES,

one may ask, can any good thing be found in that much-tried part of the world? Well it seems an enterprising Scot who knew little or nothing of the Tropics, until he happened to read "Tropical Lands" by A. Sinclair (copies to be had at your office), sought an interview with the author who advised him to go with his capital to the island of

TOBAGO

and there it seems he (Mr. W. Archibald) is in a fair way to make a fortune! Here is an extract from a letter which has been placed at my disposal:—

I did not return home till the end of June this year from the West Indies and I am glad to say all the time I have been away I have enjoyed very good health. I am very well satisfied with all my investments in Trinidad and Tobago. One of my cacao estates gave me a return of nearly 30 per cent. I bought another cacao estate in January in Upper Caroni for a little over £4,000 and I expect this will pay me even better than the other. We had a very severe drought after the crop and this property did not suffer nearly so much as the others. I have had my hands full in Tobago. I have built a pretty large house there, which will be finished by the end of next month. The house is exactly 400 feet above sea level, with splendid view of the hills at the back and sea in front. Water is laid on all over the house, and I am putting in acetylene gas; so when all is finished, it should be fairly comfortable, and I hope you will come out and pay me a visit, and see Tobago. As to planting, I have got about 50 acres in cacao, about 10 acres of coffee, [The coffee grown in Tobago (Arabian small bean) fetches the highest price in the New York market.] 5,000 nutmeg trees and before the end of the year will have over 5,000 rubber trees planted. The difficulty is getting steady labour to keep the young cultivation clean. I am getting over coolies from Trinidad and hope to get a larger area planted next year. Since I bought my estate in Tobago last year, things are booming, a number of estates have changed owners at higher values. A Mr. Thornton from Ceylon has bought an estate "Alma" for £1,600. This property, I believe, could have been bought last year for £800. He purposes, besides planting, of erecting a large bungalow for a sanatorium and run a coach from Scarborough to Alma. Messrs. Howard and Ord bought the adjoining estate to mine shortly after I bought mine last year. They are acting for an English Rubber Syndicate: they have already planted, I believe, about 50,000 rubber trees. Those trees planted under shade are doing well, but in the open growing very slowly. There are still many *good estates* to be had in Tobago. I have the offer of one now—500 acres—for about £700 called "Caledonia" with 1,000 cacao trees bearing and 5,000 non-bearing, 200 young nutmeg trees, and I understand the soil is very rich. So if you know of any one who wants a cheap estate, I will be glad to get and give all information. I am thankful to say we have escaped so far all the hurricanes. We are in a measure out of the latitude of them, although, I think, in 1845 they had a slight one in the northern side of Tobago.

I suppose Mr. Thornton is our old friend of the Kelani Valley and Dikoya, who has travelled a good deal in his day. It is certainly surprising, in the face of such an ex-

perience, that West Indian sugar planters should sit still and whine to Mr. Chamberlain; while inexperienced newcomers like Mr. Archibald should walk in and win—and most deservedly, in view of the enterprise displayed,

KNAVESMIRE ESTATES CO., LIMITED

REPORT ON THE KNAVESMIRE PLUMBAGO PROSPECTS.

Messrs. George Steuart & Co., Colombo.

Gentlemen,—Acting on your instructions I proceeded to Kegalla and thence to Knavesmire on the 25th April last to inspect the last named for plumbago. Mr. Daniel met me and shewed me every attention and kindness, and with him I went over the estate next day. The first point examined was a shaft sunk on a vein of plumbago some 60 feet vertically, above the stream marking the Northern or North-West boundary of the estate. Before proceeding further I may say that the shaft in question is altogether too large for the requirements of prospecting or even for fairly extensive working above water level, and this is an important matter when working mines in cultivated land.

This shaft is some 15 feet deep and I noticed with satisfaction that the vein had improved consideraby even in this short distance. In the present bottom of the shaft the vein is some 6′ to 8′ wide, not all mineral, but the larger portion is plumbago and of very good quality, and as depth is attained, there is little doubt the vein will improve, will become more compact and less impregnated with foreign matter, but even in its present condition it is a vein of plumbago not to be dispised, as it would pay for extracting even now, if properly worked either by shaft or tunnel. For the better development of this vein and others that will be mentioned later on, I should recommend a tunnel being put in at right angles to the strike of the veins, from some convenient point below the before-mentioned shaft; and while on the ground I pointed out to Mr. Daniel a site that I think would answer the purpose admirably. A tunnel at the point indicated would intercept the vein some *40* feet below the top of the shaft, and the distance to drive to the first vein would not exceed 75 feet, and this through most favorable ground for working. Beyond the vein sunk upon in the shaft traced three other distinct plumbago veins running parallel with the first named, and all showing more or less good indications and one in particular shews excellent prospects.

All these veins can be tapped by the tunnel I recommend and the distance would not exceed *150* feet further driving.

As each vein is intersected, drivages on their course would be put in hand to prove the vein in lengths, and to open up the ground for stoping, and to do this the main tunnel need not be stopped more than a day or two for the starting of each drivinage on the veins. Ventilating shafts will necessarily have to be sunk at various points as the main tunnel proceeds, but these need not be large nor would they be of an expansive character, and as they would all be sunk on the veins they would probably pay for the labour spent upon them, and possibly leave a profit. Such shafts as I have mentioned are also required for laying the veins open for convenience of removing the mineral; so there are two objects in sinking them. The veins here strike S.-E. and N.-W. and the dip S.-W. varying from 20 to 40 degrees about. To the North-West the strike of the veins soon take them out of the limits of the estate, but to the S.E. there is a clear 400 yards. I should judge that these veins can be worked upon within the Knavesmire boundary and before the limits of the estate are reached in that direction there will be quite 120 feet vertical of mineral veins above the tunnel, which with four veins to work upon, means a large area of mineral ground.

In conclusion I may say that I have a high opinion of the prospects of opening up a payable plumbago industry at Knavesmire, and I can with confidence recommend the further exploration of the property.—I am, Gentlemen, your obedient servant

(Signed) LEONARD TREGAY.

Morankande,
3rd May, 1899.

CHINA TEA.

EXPORT OF TEA FROM CHINA TO UNITED KINGDOM AND CONTINENT.

	1899-1900.	1898-99.
	lb.	lb.
Hankow and Shanghai	9,544,030	10,608,322
Amoy ...	221,484	390,250
Foochow ..	11,193,226	10,577,774
Canton ...	4,042,645	3,770,406
	21,001,411	25,302,652

EXPORT OF TEA FROM CHINA TO UNITED STATES AND CANADA.

	1899-1900.	1898 99.
	lb.	lb.
Shanghai ...	1,222,849	1,132,577
Amoy ...	8,339,928	7,253,022
Foochow ...	4.414,770	4,969,051
	13,977,546	13,354,650

EXPORT OF TEA FROM CHINA TO ODESSA.

	1899-1900.	1898-99.
	lb.	lb.
Shanghai and Hankow	25,363,948	22,676,902

EXPORT OF TEA FROM JAPAN TO UNITED STATES AND CANADA.

	1899-1900.	1898-99.
	lb.	lb.
Yokohama ...	20,558 065	19,156,167
Kobe ...	11,782,517	11,235,261
	32,337,582	30,391,428

—*Hongkong Weekly Press*, Oct. 21.

NORTH MYSORE PLANTERS' ASSOCIATION.

A REDUCTION OF WAGES.

At an extraordinary general meeting of the Association held at the Balehonur Club on Monday, the 23rd inst., the following members were present:—Messrs. O Scott Skirving, president, F Clifford, H Edington, C Danvers, E Lund, D MacMillan, H Morthey, C Wood, L Kingchurch, H G Bonner, N Seton, D Allardice and T J Parton, Hon. Secretary, proxies from Messrs. C Harvey, C H Browne, C P Reed and H Bidie. The proposal "That coolies pay be reduced to three annas and six pies to men, and two annas for women" was carried. An amendment to the following effect, proposed by Mr. H Edington and seconded by Mr. F Clifford, "That advances be abolished, that men be paid three annas and six pies, and women two annas and six pies, and that the commission to maistries should not exceed 10 per cent" was rejected. It

was further decided that as only 50 per cent of subscribing estates was represented at the meeting, all members of the Association should be supplied with voting papers on the proposition and the amendment, in order that they might have the opportunity of ratifying or rejecting the above proceedings.—*Madras Mail*, Oct. 28.

A SHADE IN CRAZE.

(Communicated.)

With reference to the remark of "Finem Respice" in the *Ceylon Observer* regarding shade for tea, it should be generally known that when tea was first planted in Cachar and Sylhet, shade was deemed requisite; this false impression prevailing down to the autumn of 1860 and among some planters even to ten years later. Even Dr. Jamieson of the N.-W. Botanical Gardens in his remarks on Fortune's report, shews an inclination to adhere to the fallacy. In 1860, a Kew man, who had had subsequent Indian experience at Sibpur under Dr. Anderson, put in an appearance in Cachar, and to the surprise of the few men then in the district, took up a block of grass land entirely destitute of timber. Previous to this, Silcoorie, the two Jaliugas, and one or two gardens in the Chutla upon which a large amount of timber had been left standing, exhibited an array of straggling bushes the result of constant drip. So marked was the success of putting plants out in the open at Doodputli that, in 1861-62, down came the timber in all directions, the improvement becoming apparent within a few weeks, in the filling out of the stems and branches, and greater development of vegetation. Shade in Assam has never been resorted to since; and as we happen to know something of the Wynaad and Southern India in general, we would strongly deprecate, in the interest of proprietors there, as also in Ceylon, its adoption for tea. At certain exposed spots in the Nilgiris we know that many planters have endeavoured to counteract the effects of the violent wind that sweeps across coffee plantations when the plants are blossoming by planting belts of *Acacia dealbata*, but the remedy, owing to the tendency of the roots if these plants to ramify in all directions, has proved worse than the evil is was hoped to mitigate. How high may he ask does "Finem Respice" intend to permit his *hevea* to run? Like all plants of the rubber yielding species the para requires and draws from the soil all the properties it possess is and will be found to flourish best upon land occasionally subject to submergence, as is demonstrated on the upper water of the Amazon, Orinoco and some of the streams in the different Guineas. The rubber is found under similar conditious on the Congo and Gambia, sufficiently proving it to be a most exacting plant; so that any variety put down between the rows of either tea or coffee can only be at the expense of the latter.

All true caoutchouc yielding plants are vines; we think that fact was established years ago by Sir W. Hooker, father of the present eminent botanist, when curator of Kew. Any plants put down between the rows will open up the soil, but as such plants as para develop, they will most assuredly uproot the weaker plant. As far as mere planting goes Assam has been demonstrated to be the land par excellence for tea, neither Ceylon or any part of Southern India being able to compete with in the full average of either quality or outturn, and though quite willing to admit that conditions of cultivation must necessarily differ under different aspect of climate, elevation, rainfall, etc., we unhesitatingly affirm that wherever tea is considered unable to get along without shade that locality is utterly unfit for the plant. This is the reasons it has failed in both Trinidad, Jamaica and other of the West India Island.

We do not belong to the "creeper" fraternity,* but our botanical experience dates from the winter of 1854, in addition to what we learnt by a pretty close attendance at Kew; whatever knowledge we possess has been acquired in hill and plain, in the West Indies, and in almost every district in India from Cape Comorin to Mussoorie and Karachi to the Salween. "Finem Respice" adduces five reasons for planting para rubber between the rows, everyone of which emphasises what we intimate in regard to his having got hold of an unsuitable locality for tea. Crowding plants together upon a hillside or land subject to a rush of water may prevent wash, certainly, but will inevitably choke the plants so jammed in, and to open up the soil by this means would expose it to the first contingency. If a plantation needs a wind: guard, the sooner it is abandoned for some less exposed site the better; if people will go up into the clouds for the sake of a pleasant climate like many of the Nilgiri planters have done, they must be prepared to put up with such exigencies as the proceeding entails. Instead of mitigating fungoid growth and lessening the number of insects, the merest tyro knows that the denser the vegetation the greater will be the development of these parasitical pests. Paragraph (f) would seem to imply the intention of permitting the plants between the rows to attain full dimensions, which, would ensure the destruction of either tea or coffee. The concluding remark as to para not being umbrageous enough to require lopping raises a suspicion, in our minds, that "Finem Respice" has got hold of the wrong plants. If leaf is wanted from tea, or coffee cherry is expected to mature, lopping will have to be adopted, the effect being a free distribution of the gum all round, which can hardly prove beneficial to either fruit or flush, and it will assuredly kill the rubber plant as the same process did in Assam and the Upper Valley of the Chindwin.—*Calcutta Planter*, Oct. 28.

MALABAR-WYNAAD PLANTING NOTES.

WYNAAD, Oct. 25.—The weather has been cloudy, muggy and showery during the past fortnight or three weeks, and a good deal of very heavy rain has been recorded. But notwithstanding this, we are still about 10 per cent. below our average to date.

Leaf disease has not attacked Arabica coffee more acutely than usual, except on certain well-defined fields of estates, where the blight seems to recur regularly towards the close of the S W Monsoon. Upon Liberian trees, the rust has, however, been severe, and the coming season's Liberian crops will probably prove disappointing. On the other hand, Arabica is furnished with an abundance of vigorous young wood, and, given a good season, next year's crops should equal, or exceed, those of 1898-99.

Prices of food grains in the local Bazaars do not appear to have been enhanced by the exports from the West Coast ports to Bombay and estate labour has no difficulty in supporting itself on the usual subsistence allowance. Coffee picking has been commenced, but it seems doubtful whether bushel picking will commence much before the middle of next month, excepc on a few favoured properties, which enjoy exceptional climatic advantages. The low prices which have been realised for some months past from the majority of tea gardens in Wynaad, has proved a disappointment to those who confidently anticipated that with the splendid soil all over the plateau (as compared with Ceylon) prices would rule high, with the advent of experienced.

* "Creepers" are unknown in Assam. They are purely a Ceylon production—ED., *Planter*.

TEA PLANTERS FROM THE "SPICY ISLE."

But, as a matter of fact, the averages, quoted in the public price lists of tea sales, indicate that the teas exported from factories which are under the sole management of Wynaad men, realise better prices than the breaks shipped to London from places "bossed" by ex-Ceylon tea planters. As an instance, one property in particular, which enjoys the advantage of being under the control of its resident proprietor, and which disposes of a great deal of its coarser grades of teas locally to native merchants at 5 as. a pound, (a figure that such tea would probably not realise in Mincing Lane) rarely exceeds 6½d per pound. A leading Ceylon planter, well conversant with the Wynaad, recently expressed the opinion that "improved manufacture" would insure Wynaad teas fetching at least 2 annas a pound in excess of recent prices. There would appear to be a prospect of a further influx of Ceylon planters shortly, and it is to be hoped that these gentlemen will be competent to introduce a more profitable standard of manufacture—should they invest locally.

While the Mysore Planters' Association appears to deplore the gradual depreciation of Nalknad coffee, and its susceptibility to leaf disease, it is noteworthy that where the Coorg bush has been tried in South Sylhet, and in the Straits Settlements, it has not as yet shown signs of the blight in those localities.

Interest in the profitable cultivation of rubber trees in the Wynaad seems to be increasing, but excepting where information is available from Ceylon newspapers, very little appears to be known of the peculiarities of either the Castilloa or Para varieties.

Local buyers are now offering to take the growing pepper crops at R220 per candy, whereas last year's sales did not exceed R180.

The Honourable Mr. G Acworth recently passed through the Wynaad, and appears to have been very favourably impressed with the appearance of the tea properties owned by a leading West Coast firm.—*Madras Mail*, Oct. 28.

THE KINTYRE TEA ESTATES COMPANY, LIMITED.

The following is from the report of the directors, to be submitted at the general meeting, to be held on Wednesday, Oct. 25th, at 12-30 o'clock, at the offices of the Ceylon Association in London, 61 and 62, Grace church Street, E.C. :—

"The estimated tea crop for the season was 460,000 lb., but this has been largely exceeded, the total secured amounting to 498,532 lb., or upwards of 60,000 lb. more than were harvested during season 1897-98. The average cost of production was estimated at 26·81 cents, but a considerable saving on this figure was effected, the actual average cost being 24·66 cents. The directors think these results very satisfactory, and they show careful and economical working. The net profit on the sales of the company's produce amounts to £5,770 4s 4d, and after paying directors' fees, income-tax, and the usual commission to estate superintendents, there remains a balance at profit and loss account of £5,148 1s 3d. The board have authorised the payment, half-yearly as usual, of the preference dividends, absorbing £1,000; they have set aside £500 for wear and tear of buildings and machinery; and they now recommend the payment of a dividend of 8 per cent. for the year on the ordinary shares, which will absorb £3,600 and leave £121 11s 11d to be carried to next account. A bungalow was built for the superintendent on Ayr estate, and the expenditure therein, with some item for the factory, &c., amounting in all to £488 14s 1d, has been charged to capital account. The average yield of tea, in full bearing was 570lb per acre, and the gross average price realised in London was 7.90d per lb. The sum of £44 12s 10d has been written off the coast advances, as the Ceylon agents advise that the amount is not likely to be recovered. The superintendents have certified that the remainder of the coast advances may be considered good and recoverable. The estimates for the current season point to a crop of 480,000lb of tea, to cost 26 cent per lb, and by the latest advices good progress had been made on each estate towards realising the above quantity.—*H. & C. Mail*, Oct. 20.

HORNSEY TEA ESTATES COMPANY, LTD.

The following is from the third annual report, 1898 99 :—

The directors beg to submit the report and audited accounts for the year closing June 30 last. The crop has weighed out 172,139lb, against last year 146,226lb, giving an increase of 25,913lb. The directors have during the last year sold most of the crop in Colombo, and the result has been satisfactory. The London sales have amounted to only 21,735lb, and the balance of the crop sold on the other side realised an average of 45.40 cents, equivalent to a London price of 8½d per lb. The cost of production, including manure, has been 31.12 cents, against last year 36 cents, or, in sterling, 5d per lb Colombo, against 5¾d per lb. Turning to the accounts, it is to be noted that the profit on working account is almost double that of last year, the result of better prices and a larger crop; expenditure being very little in excess of the previous year. During the twelve months the coast advance account has been reduced by £154 14s 0d, leaving the very moderate amount of £178 16s 11d outstanding. After paying all fixed charges, and preference dividend for the twelve months, and providing for the £126 3s 2d carried forward to debit last year, there is a balance at credit of profit and loss of £561 12s 4d. The directors propose to write off £310 from preliminary expenses account, pay a 2 per cent. dividend on the ordinary shares, taking £240, and to carry forward £11 12s 4d to credit of next year.—Ibid.

PRODUCE AND PLANTING.

Tea Acreage in Travancore.—In consequence of the misleading character of the figures with reference to the area of tea in Travancore published by the Government authorities for the period of 1897-98, which were so excessive as almost to cause a scare in Mincing Lane last year, considerable interest has of late been shown in the matter. We understand that there are about eight thousand acres of three years old tea, and about the same quantity of two years old, in addition to which Kanan Devan Hills Produce Company has put out some six thousand acres, which will no doubt lead to an increase in the crop from this district at no far distant time. The total crops have been as follows :—1893, 1,931,000 lb.; 1894, 2,022,000 lb.; 1895, 2,214,000 lb.; 1896, 2,226,000 lb.; 1897, 2,532,000 lb.; 1898, 2,610,000 lb. The crop during the current season will probably reach three million lb.

The Tea Buyers' Association.—This Association, the outcome of the dispute over the pound draft questions, has amalgamated with the Wholesale Tea Dealers' Association, or perhaps it is more correct to say that the latter has merged into the former.

Rubber Cultivation.—According to the views of Senor Horta, who has recently issued a pamphlet on "Rubber in Guatemala," the climate most appropriate for the growth of the rubber tree is that of the Tierra Caliente, or hot coast lands, at an altitude not exceeding 1,500 feet, and the trees should not be planted in the sun, although the contrary opinion is held, and has been expressed by some authorities.—*H. & C. Mail.*

SCOTTISH TRUST AND LOAN COMPANY OF CEYLON, LTD.

The following is the report by the Directors of the Scottish Trust and Loan Company of Ceylon, Ltd., to the twenty-second Ordinary General Meeting of Shareholders, held at the Company's Registered Office, No. 123 George Street, Edinburgh, on Thursday, the 26th Oct :—

The Directors present their Twenty-second Report, being for the year to 31st August, 1899.

Estates in the Company's Possession.—The Estates of the Company, along with most estates in Ceylon, experienced the effects of the abnormal season 1898-1899, and the yield of Tea fell short of the estimate. Notwithstanding this, the year's working shows fair results.

The Company's Estates now comprising 1,581 acres of Tea in bearing, 151 acres in partial bearing, and 293 acres of young Tea—in all 2,025 acres. Coffee cannot be depended upon for substantial returns; the crop being precarious, and the market at present much depressed.

Factories, Buildings, and Machinery.—The Capital outlay includes the extension of Annfield Factory, wire shoot for Rahanwatte, the planting of new land, and upkeep of Tea not yet in full bearing.

Debenture Debt.—The Debenture debt remains at the same amount as at the close of last year. The sole remaining Bond will mature and be paid off at Martinmas 1899.

Accounts.—The Balance at the credit of Profit and Loss Account is £7,065 14 5

And the Directors propose—		
To pay a Dividend of 5 per cent per annum, free of Income Tax .	£2,250	
Note.—Two and a half per cent of this was paid as an Interim Dividend at Whitsunday 1899.		
To pay Bonus of 5 per cent free of Income Tax	2,250	
To transfer to Reserve Fund	1,000	5,500 0 0
Leaving ..		£1,565 14 5

to be carried forward to next Account.

By the death of Mr. William Bowden Smith, the London Agent, in October 1898, the Directors sustained the loss of a sound adviser in all matters relating to the practical working and welfare of the Company, and they desire to place on record an expression of the value of his services. The vacancy in the London Management thus caused has been filled by the appointment of Mr. A Gordon Dickson and Mr. William G. Smith as Joint Agents.

The Director have pleasure in intimating that during the year under review they appointed by Mr. W Herbert Anderson as Resident Director in London, with a general supervision of the Company's affairs. Mr. Anderson's long practical experience as a Ceylon Planter has already proved of much valne to his colleagues. In terms of the Company's Articles of Association, Mr. Anderson falls to retire from the Board, and be re-elected by the Shareholders at the ensuing General meeting.

The Director retiring by rotation is Mr. James Haldane, who is eligible for re-election.

The Auditor for the current year falls to be appointed. Francis A. Bringloe, Secretary.

CEYLON TEA AT ZANZIBAR.

We have decided to give this product a trial, because of the healthy appearance of the tea bushes at Miss Thakeray's shamba, Mbweni, planted by Sir John Kirk. These were pruned down in October and flushed well, bearing enough new growth in two months to form a plucking surface and leave six inches of pruning wood. Half a maund of Horagalla, Ceylon, Assam Hybrid, has been obtained and planted in the new nursery at Mpapa and is growing well. This should give us enough plants for six acres, planting five by five, and leave a margin for supplies and distribution. I don't think that Zanzibar will ever enter the lists as a tea producing country, even if low-country varieties are found to flourish here, as the labour-supply is too small and uncertain. The plentiful supply of organised labour in Ceylon is one of the chief reasons why that country has taken the lead in this industry, while Natal is an example where the comparatively adverse conditions of labour have operated unfavourably. In our present unstable condition of labour we could not do more than grow a few acres for local consumption and perhaps induce Arabs and natives to cultivate a few trees for their own use. Another point to remember is that tea is a declining market and is probably already overproduced. —*Zanzibar Gazette.*

THE CONSOLIDATED ESTATES CO.

London, Oct. 14.

I see the *H. & C. Mail* attempts no report of Mr. R. A. Bosanquet's really very sensible and suggestive remarks at this meeting; while it rather bungles what I said in mixing up Rubber and Shade Trees. After very aptly expressing thanks for all connected with the work of the Company, Mr. Bosanquet alluded to his recent visit to Ceylon and to what he saw of the need for liberal cultivation; but he felt that manuring must be judiciously carried out, and he did not quite believe in "bones" for tea. He illustrated the need of taking action against tea pests betimes, by what occurred in the case of coffee; but by no means indicated the cases were alike.

I am much interested in the home campaign to induce all publicans to supply "tea" among other refreshing drinks! Support of this movement would repay Ceylon planters much more than wasting time and thought over the abolition of the Tea Duty—of which, even if desirable (which most people doubt), there is not the remotest chance, with war in South Africa.

Ceylon Green Teas in Canada.—Is Ceylon really exporting any green tea, or is its fair name being used as a handle for the ready sale of green teas from other sources? The following is an extract we have received from the agents of the "Salada" Ceylon Tea Co. at Montreal, dated October 4th :—"You may be interested to hear that we have just had a visit from Mr. Wm. Mackenzie, who has induced our firm to take hold of Ceylon green teas, and after talking the matter over the matter with our principal and Mr. Mackenzie (who were here together on Saturday last) we have decided to go into them, and we believe that there is a great future before them. We believe, in fact, that instead of climbing a very steep hill, as we have done in displacing Japan teas with Ceylon blacks, we have a comparatively easy path in Ceylon greens, and propose to push them for all we are worth." Mr. Mackenzie's next communication on this subject should afford food for reflection to planters who are not now turning out green teas at all.

CEYLON TEA SHIPMENTS.

MEMO OF DISTRIBUTION.

1st January, 1899, to 31st October, 1899, and same period 1898—vide Customs Returns.

Countries.	1899 lb.	1898 lb.	Increase.	Decrease.
U. Kingdom	83,857,219	80,627,843	3,229,376	—
Austria ...	7,491	13,398	—	5,907
Belgium ...	13,099	10,540	2,559	—
France ...	80,470	63,694	16,776	—
Germany ...	304,126	273,825	30,301	—
Holland ...	30,211	22,631	7,580	—
Italy ...	12,471	6,260	6,211	—
Russia ...	2,719,244	2,140,125	579,119	—
Spain ...	14,300	36,150	—	21,850
Sweden ...	57,362	33,230	24,132	—
Turkey ...	15,674	64,434	—	48,760
India ...	442,995	889,408	—	446,413
Australia...	13,210,163	12,662,760	547,403	—
America ...	2,657,330	1,907,950	749,380	—
Africa ...	236,775	317,000	—	80,225
China ...	1,174,743	977,643	197,100	—
Singapore...	57,946	51,113	6,833	—
Mauritius...	80,566	14,759	65,807	—
Malta ...	226,767	172,794	153,973	—
Total Export 10 months...	105,198,952	100,285,557	5,516,550	603,155
Less decrease ...			603,155	
Net Increase, 1898-99 ...			4,913,395	

1897...94,386,043 lb.
1896...88,433,172 lb.

Exports from United Kingdom to 30th September from Gow. Wilson and Stanton's Circular.

	1899 lb.	1898 lb.
Countries in Europe ...	5,494,425	5,035,871
U.S. America ...	945,212	1,070,275
B. North America ...	1,296,009	1,426,855
Newfoundland ...	192,959	156,625
Other Countries ...	984,184	1,141,914
Total lb. ...	8,912,789	8,831,540

	1899 lb.
United Kingdom Imports ...	83,857,219
Re-Exports	8,912,789
Leaving for Consumption in U.K. ...	74,944,430

TROPICAL CULTURE IN AUSTRALIA.

THE LABOR PROBLEM.

Below we quote one of the leading articles, which appeared in the Sydney *Daily Telegraph* of Monday, October 23, in which the benefits, which will accrue to North Queensland agriculturists when Federation is established, are pointed out and attention is also drawn to the success which has already attended the cultivation of many products, which we, in Ceylon, are interested in. One of the chief difficulties in the way seems to be the labour question, as the prejudice against the introduction of "colour" is very strong in Australia, not only on account of labour, but also from the fear of a half-caste race springing up in the community and the article in question comments on this point. No trade will be regarded as worth having if it involves any menace to the principle of a "White Australia." Fiscal difficulties are also alluded to, but the article itself is well worth perusal :—

TROPICAL CULTURE.

It can hardly be questioned that Federation and the extensive import duties which will accompany it will open a field for tropical cultivation, and Northern Queensland and probably the Chinese in the Northern Territory will be enabled to reap a harvest out of the needs of the southern markets. Hitherto it has only been a question of tropical labor which has stood in the way of the extension of such cultivation, even with the southern markets alienated by high duties. But with those markets freed and protection against the world outside Australia, there will be added inducements of a very powerful description to cater for consumers within the commonwealth. In New South Wales the sugar industry can thrive upon £3 per ton protection, and in Queensland it can hold its own even without the favoritism it is certain to secure at the hands of the Federal Parliament. Last year Australia turned out enough sugar to cover its entire consumption, and it may therefore be taken as beyond controversy that in the case of this most important of all tropical products the problem of internal production has been already fully solved. But sugar by no means covers the entire field. Those who perused the Queensland Financial Statement delivered by Mr. Philip on the 3rd inst. must have been struck with the amount of attention now being directed in that colony towards other forms of tropical culture. In 1896 Queensland put 138 acres under coffee, and last year this was increased to 432 acres, while in 1899 a further considerable extension has been notified. Queensland is already in a fair way to supply her own market, and with similar duties on imports into Australia she may look forward to supplying a very much larger one. Rice cultivation is entirely in its infancy in Queensland. But the area of 863 acres in 1898 was double that of 1897, and the yield was over 44 bushels to the acre. It may be argued that rice stands specially in need of colored labor, but the crop is highly prolific, and even a halfpenny per lb. duty will be found a great incentive. Queensland is also turning her attention to tobacco cultivation, more particularly to cigar tobaccos, and is likely to make a better show than the southern colonies have done. In times past Queensland has grown good cotton, arrow-root, and other tropical products, and of the suitability of the soil and climate to such crops there can be no question. The difficulty has been to offer sufficient inducement to growers, and there are many directions in which a large and protected market will act as a powerful stimulant.

That through the entire range of tropical culture the labor problem is pretty certain, sooner or later, to crop up is a point we shall not now attempt to discuss. It has to be recognised that the United States, with its £200,000,000 worth of tropical culture annually, and its entire command of the cotton markets of the world, could never have reached its present exporting and internal manufacturing power without the negro. The presence of the negro, however, has created a growing racial trouble, which renders even this trade dear at the price. We may take it for granted that no such price will be paid here, and that no trade will be regarded as worth having if it involves any menace to the principle of a "white Australia." But that will not be the question now in Australia. The problem is that of supplying a favourable internal market with products upon which already high import duties are levied, and there is really no reason why even the great revenue-yielding import of tea should not be covered by the northern producer. Thus Federation is more than likely to bring in its train a very extended utilisation of the tropical north, much more so than is at present understood. But from a revenue standpoint there will be serious trouble. The duties now paid upon tropical imports are high, and play a large and important part in our State finances. It has always been a safe source of income to levy high duties upon such products in the southern colonies, because internal supply was impossible. It will be different in the future, and the prospect appears to be that gradually, but surely, internal markets will command a growing share of attention to the possible detriment of production for export. That Australia must continue to export largely is beyond question, because the interest on her indebtedness has to be covered in that way, but there is at present a very large excess

of exports, which enables us to pay for our extensive imports, and that may be affected. This is one of the problems which Federation will open up in the probably not distant future, and it bids fair not only to at some important points direct employment into other channels, but gradually to alter the system of taxation. We shall have in the future to depend less upon Customs duties; more upon excise and direct taxation, as is now the case in all the older countries of the world. In a country differing so vastly as Northern and Southern Australia there are a number problems of a similar nature which are bound to arise.

ENGLISH TEA IMPORT DUTY.

The following is the return forwarded to us by the Planters' Association of Ceylon. It was unavoidably crowded out from the *Observer* on Monday :—

Year.	Quantity of China tea consumed annually in the U. K.	Quantity of Indian and Ceylon tea so consumed.	Total quantity so consumed.	Average rate of duty.		Average price in bond.		Average quantity consumed per head.	
	lb.	lb.	lb.	s.	d.	s.	d.	lb.	oz.
1801-04	24,016,235	..	24,016,235	1	7	3	0	1	8
1805-09	23,325,495	..	23,325,495	3	0¾	3	3¼	1	6
1810-14	24,264,949	..	24,264,940	3	1½	3	4½	1	5
1815-19	24,997,373	..	24,997,373	3	11½	2	0¼	1	4
1820-24	26 956,571	..	26,956,571	2	9¾	2	10	1	4
1825-29	29,402,033	..	29,402,033	2	5¾	2	5½	1	5
1830-34	31,678,328	..	31,678,328	2	2½	2	2½	1	5
1835-39	36,764,065	...	36,764,065	2	0½	1	8	1	7
1840-44	37,588,274	..	37,588,274	2	2½	1	10½	1	6
1845-49	47,200,093	...	47.200,093	2	2¼	1	1	1	11
1850-54	56,124,305	...	56,124,305	2	0	1	2½	2	1
1855-59	69,000,000	..	69,000,000	1	6	1	5	2	8
1360-64	82,000,000	...	82,000,000	1	4	1	5	2 27	lb
1865	96,000,000	...	96,000,000	0	6	— not available — see below —		3·00	,,
1866	97,681,000	4,584,000	102,265,000	0	6			3·42	,,
1867	104,628,000	6,360,000	110,988 000	0	6			3·68	,,
1868	99,359,000	7,746,000	106,815,000	0	6			3·52	,,
1869	101,080,000	10,716,000	111,796,000	0	6			3·63	,,
1870	104,051,000	13,500,000	117,551,000	0	6			3·81	,,
1871	109,445,000	13,956,000	123,401,000	0	6			3·92	,,
1872	111,005,000	16,656,000	127,661,000	0	0			4·01	,,
1873	111,665,000	20,216,000	131,881,000	0	6			4·11	,,
1874	118,751,000	18,528,000	137,279,000	0	6			4·22	,,
1875	122,107,000	23,220,000	145,327,000	0	6			4·43	,,
1876	123,364,000	25,740,000	149,104,000	0	6			4·49	,,
1877	123,300,000	27,814,000	151,114.000	0	6			4·50	,,
1878	120,652,000	36,744,000	157,396,000	0	6			4·64	,,
1879	126,340,000	34,092,000	160,432,000	0	6			4·68	,,
1880	114,485 000	43,836,000	158,321,000	0	6			4·57	,,
1881	111,715,000	48,336,000	160.051,000	0	6			4·58	,,
1882	114,462,000	50,496,000	164,958,000	0	6			4·69	,,
*1883	111,780,000	68,000,000	179,780,000	0	6			4·82	,,
1884	110,843,000	82,117,000	193,060,000	0	6			4·90	,,
1885	113,514,000	68,895,000	182,409,000	0	6			5·06	,,
1886	104,226,000	74,665,000	178,891,000	0	6			4·92	,,
1887	90,508,000	93,053,000	183,561,000	0	6			5·02	,,
1888	80,653,000	104,763,000	185,416,000	0	6			5·03	,,
1889	61,100,000	124,500,000	185,600,000	0	6			4·99	,,
1890	57,530,337	136,478,155	194,008,492	0	4			5·17	,,
1891	52,287,304	150,169,533	202,456,837	0	4			5·36	,,
1892	34,483,408	172,630,296	207,113,704	0	4			5·43	,,
1893	35,735,722	172,361,663	208,097,385	0	4			5·41	,,
1894	25,805,313	188,535,731	214,341,044	0	4			5·52	,,
1895	31,433,014	190,367,123	221,800,137	0	4	..		5 65	,,
1896	24,549,936	203,235,375	227,785,509	0	4	...		5·73	,,
1897	21,372,030	210,027,748	231,399,778	0	4	..		5·81	,,
1898	19,512,000	215,902,096	235,414,105	0	4	...		not avilable	

Average prices of Innian ann Ceylon Teas in Bonn from 1881 to 1894.

Years.	Indian.	Ceylon.		Years.	Indian.	Ceylon.
	s. d.	s. d.			s. d.	s. d.
1881	1 5	0 11¾	..	1888	0 10¾	0 11½
1882	1 3	1 0¾	.	1889	0 10¼	0 11¼
1883	1 2½	1 3¼	..	1890	0 10½	0 11
1884	1 1¾	1 2¾	..	1891	0 10¼	0 10
1885	1 2½	1 3¼	..	1892	0 10	0 9½
1886	1 0	1 1¼	...	1893	0 9¼	0 9
1887	0 11½	1 1	...	1894	0 9¼	0 8½

* The importation of Ceylon tea in large quantities commenced in 1883.

TEA GROWING IN MEXICO.

About 300 Japanese colonists located two years ago in the southern part of Oaxaca, near Jimillepec under authority of a concession granted by the Mexican Government. The colony has been experimenting in tea-growing and has made such a success that 5,000 more Javanese men and their families are to be brought to Mexico to join the original colony. — *Glasgow Weekly Mail*, Sept. 23.

A VISIT TO THE SEYCHELLES.

IMPRESSIONS OF A CEYLONESE.

Mr. J. R. Dissanaike, who returned to Ceylon the other day by the steamer "Khandalla" from Bombay, is a son of Mudaliyar A. Dissanaike, the retired President of the Village Tribunals. After a course of training at the Ceylon Technical College and after some experience in survey and other connected work, under Government, he left two years ago for the Seychelles islands, accompanied by, and as assistant to, Mr. Waddell, of the Ceylon P. W. D., who was seconded for service in these islands in the construction and repairing of roads and otherwise improving the internal communication of the islands. Unfortunately, Mr. Waddell had to resign before he could have accomplished much, owing to ill-health; but Mr. Dissanaike was able to continue to the end of his term, the climate (which much resembles that of Ceylon) agreeing with him. A correspondent, who had a talk with Mr. Dissanaike, informs us that he learned from him that there are now in Máhé, where the latter was stationed, nearly twelve miles of good road, besides many more miles of bridle and foot paths. The majority of the inhabitants, (creoles and niggers) however, are slow to use them, especially for transport purpose, as they are prejudiced in favour of their boats which are called "perogues" and which are "gulled." The old roads traversing the island are more like footpaths than roads, owing to the steep gradients over which they pass, due to the rocky and mountainous nature of the islands.

CORAL MACADAM

is chiefly used on the roads, with occasionally some metal, which is of a very hard character indeed.

To Mr. Dissanaike the islands presented a very lovely and picturesque view as he approached them by steamer from Bombay and what was most remarkable to him was the pretty and varied colour of the water within the reefs near the shore, due to the coral formations of different tints. The view of the town of Mahé from the harbour is also very picturesque, dotted as it is with houses and other buildings on hilly prominences here and there. The houses are built of timber, on raised masonry pillars, a few feet above the ground, with shingle roofs; but accidents by fire are very rare. With the vegetation of Máhé. Mr. Dissanaike was quite at home—most of the trees and vegetables found in Ceylon growing there, such as coconuts, jak, breadfruit, oranges, pineapples, bananas, pink apples (jambus), lime, tamarind, sugarcane, manioc, sweet potatoes, bandakai, etc. Coffee, cacao, cinnamon and cloves also grow there; but the latter two products appear to be neglected, especially the cinnamon, the natives not knowing how to prepare it for the market, or the uses which it is put to. Lime and tamarind, are scarcely used by the creoles and negroes, and consequently are allowed to rot under the trees. Some of the fruit and vegetables are exposed for sale in the town; but in the interior there is very little demand for them, except manioc and sweet potatoes, which, with fish, is the principal diet of the creoles and niggers.

COCONUTS,

too, go very little into human consumption and are chiefly prepared into oil for export; while a portion of

the oil is also used in the local soap-manufactory in the immediate neighbourhood of the town.

The chief industry in the Seychelles is, of course,

VANILLA GROWING

which is mostly in the of hands French settlers, creoles and niggers, though there are plantations belonging to Europeans. The vine is grown on supports for which live trees six to seven feet high are utilized, and comes into bearing in two or three years when handled in the usual manner.

Beside the creoles and niggers, the population of Máhé include English and French settlers. All seem to be peaceful and contended and are very hospitable to strangers. Serious crime is seldom or never heard among them, although there is a chief court and police court in the town—in fact during the two years' of Mr. Dissanaike's residence in the island, he did not hear of a single case of homicide.

The peoplo are chiefly Roman Catholics, and the French priests, who minister to them, take a great deal of interest in the education of the masses, and have several schools and churches all over the island. There is also a Government school in the town, beside two Protestant Churches—one in the town and the other in the country. The language chiefly spoken in the island is French, but the creoles have a peculiar dialect of their own.

Rice is the

STAPLE FOOD

of the settlers, but the creoles and niggers mostly live on manioc and sweet-potatoes and fish. In the town a couple of bulls are slaughtered twice a week —on Wednesdays and Saturdays—and the meat is sold at fifty cents a lb. Pork and turtle flesh can be had in abundance and pigs are reared in large numbers. Fish is very cheap and in point of relish is superior to the kinds found in Ceylon. Hardly any mutton or goat flesh could be had, while chicken and eggs too are scarce. A kind of bird's eggs of a smaller size than hen's eggs are brought at a certain season in the year, from a neighbouring island, and they are sold at Màhè, at about half a cent each. Turtles, when caught, are kept in a pond near the shore, which at low tide runs quite dry, and then the poor creatures undergo much suffering. There are no hotels except a boarding-house kept by a creole woman; but the respectable portion of the community seldom or never patronize it.

There are no rivers in Màhè, except streams not more than four or five feet at their widest parts; and the people chiefly depend on these for their water supply, though the town is served from a tank a few hundred feet about it, by pipes; but often trouble is experienced with the latter.

There are pretty seashells to be found all over Màhè, while coco-de-mer is the principal natural feature of Praslin, the next biggest island in the group

Steamers plying between Bombay and Zanzibar call at Màhè once a month for passengers and cargo; but not unfrequently men-of-war of different nations pay visits to Port Victoria, when the town presents a more animated scene than usual, with "Jack ashore."

CEYLON FISHING CLUB.

ANNUAL REPORT.

(For the season ending 30th September, 1899.)

The annual report of this Club was read at the general meeting held on the 26th November, 1898, by the then hon. Secretary, Mr. S M Burrows, when accounts of the Club to the end of October, 1898, were submitted, and the same office-bearers were unanimously re-elected for the ensuing year. Two general meetings have been held since: one on the 8th February and the other on the 14th April, 1899. In view of the resolution passed at the general meeting of the 26th November, 1898, fixing the closing of the open season for Trout for the 30th September, the accounts and the report are made up to the end of September, instead of October as heretofore.

FINANCE.

2. The accounts of the Club up to 30th September are appended to this report. (Appendix A.) The financial position of the Club is satisfactory. The balance standing to the credit of this Club on the 30th September, 1899, is R364·69. A statement of probable revenue and expenditure for the ensuing year is also appended to this report. (Appendix B.)

THE OUT-TURN OF OVA.

3. Three consignments of ova were received from England during the year; two consignments of 20,000 each of the ordinary brown Trout ova (Fario) at a cost of R648·76, and one consignment of 10,000 rainbow Trout ova (Irideus) at a cost of R216·19. The total out-turn of fry from the first two consignments was 11,670 fry, distributed as follows:—

4,230	"Hatchery Stewponds," Nuwara Eliya.
2,500	Mr. Farr, "Horton Plains."
1,500	Mr. Ross-Clarke, "Calsay," Nanuoya.
1,000	"Queen's Cottage Stewpond."
840	Nuwara Eliya Streams.
700	Mr. Brown, "St. Leonards," Udapussellawa.
500	Mr. Cuff for Maskeliya Club.
200	Mr. J Fraser, "Abbotsford," Nanuoya.
200	Mr. Cuff, "Patna Streams," Maskeliya.
11,670	

RAINBOW TROUT.—*(Salmo Iridens.)*

4. Out of the 3rd consignment, that of rainbow Trout ova, only 1,510 fry were available for distribution; this small out-turn is attributed mainly to the faulty packing of the ova, to which was due the fact that a very large percentage of the ova were found squeezed into pulp on arrival here. The healthy ova, however, hatched out very well, the percentage of deaths being few. The young Rainbow fry have thriven very well, and it seems probable that the introduction of this variety will prove a decided success. There are two disadvantages in importing Rainbow Trout ova: (1) that the ova hatch out within 25 days of fertilising, and so it is difficult to get them delivered from Guildford in time, a certain percentage of the ova having hatched out and died before reaching Nuwara Eliya; and (2) the ova reach Ceylon rather late in the season, when the rains may have commenced, the temperature of the water has risen, and no precautions can prevent the deposit of some sediment on the eggs which is fatal to their hatching out. One half of the consignment of the Rainbow ova was ordered out for Mr. Wilson-Wood, who paid half the cost of the consignment, viz. R126·66. The distribution of the Rainbow fry was as fallows:—

801	Mr. Wilson-Wood, "Drayton," Kotagala.
324	"Hatchery Stewponds," Nuwara Eliya.
150	Mr. Farr, "Horton Plains."
75	,, Ross-Clarke, "Calsay," Nanuoya.
75	,, Brown, "St. Leonards," Udapussellawa.
75	,, Lyall, "High Forest," Maturata.
10	,, J. Fraser, "Abbotsford," Nanuoya.
1,510	

The notes made at the time when this consignment of ova was unpacked are appended in Appendix C., a copy of which, it is suggested, should be forwarded to Messrs. Andrews & Andrews for their guidance with the orders for the forthcoming season.

It is suggested that two consignments of Brown trout, 20,000, and one consignment of Rainbow

trout, 10,000, be ordered for the coming season from Messrs. Andrews & Andrews of Guildford.

STEWPONDS.

5. In compliance with the Resolution No. 3, passed on the 26th November, 1898, most of the young fry were turned into Stewponds, of which three new ones, A, B and C, were constructed at the hatcheries, two on the Horton Plains, two on Calsay, Nanuoya, one at St. Leonards, Udapussellawa, and one at High Forest, Maturata. The upper pond on the grounds of the Queen's Cottage was also utilised for the purpose.

At the Hatcheries, 4,230 Brown trout fry were placed in four stewponds, and 324 Rainbow Trout fry in two stewponds. These stewponds were emptied on the 1st, 2nd and 4th October, immediately after the close season had commenced, with the following results. The number of Brown Trout fry was 796, the greatest length being 7 inches. and the average was 4 inches, their age being then 7½ months. The number of Rainbow fry was 170, and the average length was 4½ inches their age being then 6 months. The whole seemed healthy, and in fair condition, the Rainbow fry especially being very game, thriving excellently on their diet of fresh water shrimps: there was, however, a great diversity in the growth of the consignment, a number having hardly grown at all.

At the time when the Brown trout fry were turned out into the stewponds, the daily mortality was serious; and it is probable that they were not, as a whole, in healthy state. Whenever any fry show signs of weakness they are attacked and eaten by the healthier fry, and it is probable that numbers were thus disposed of when quite small. Very few dead were detected. The Rainbow fry on the other hand were always healthy while in the troughs, an admixture of earth every few days to the sand at the bottom of the troughs seeming to neutralise the ill effects of the pollution of the water arising from the decay of food which had not been eaten. In the stewponds, too, they did not fight like the Brown trout, nor are they such depraved cannibals.

A fissure occurred in the bottom of stewpond E, through which may fry escaped into the small stream adjoining it, where they were seen working their way down to the river. One thousand fry had been placed in this pond, but when drawn only 53 were left.

OUT-TURN FROM STEWPONDS.

(A.) NUWARA ELIYA.

6. (I) The result of the out-turn of fry into Pond A, the first of the new upper ponds.

Consignment received on 12th February, 1899. 1,250 fry put into the pond about 15th April.

This pond was drawn on 2nd October, 1899, 236 fry were taken out in good condition, great variations in growth.

19	...	7" long
30	..	6" long
50	...	4" to 5"
137	...	varying from 4" to 2"
236		

This pond was probably too crowded. Six were put back; all the rest were put into the Nuwara Eliya river.

There were three very small fry which have not grown at all since they were put in April, these have been returned to the troughs.

(2.) The out-turn of the Brown trout fry put into B, the second of the Upper Pond was as follows:—

Consignment of Brown Trout ova arrived on the 12th February, 1899. Put out into the pond about the 15th April, 1899, 1,750 fry.

Pond drawn on the 4th October, 1899. 325 fry were taken out.

20	about	7" long
50	do	6" ,,
100	do	5" ,,
100	do	4" ,,
55	do	3" and 2" long
325		

All appeared to be healthy. They were distributed as follows:—

223	Nuwara Eliya Main Stream.
96	Hawa Eliya Stream.
6	Back to the Pond.
325	

(3.) The out-turn of the Brown trout fry put into the Stewpond D, in front of the Hatchery, was as follows:—

Consignment of Brown trout ova received on the 12th February, 1899. Put into Stewpond about the 1st May, 1899. About 230 fry were put in.

Pond drawn on the 4th October, 1899. 182 fry were taken out in good condition.

10	about	5" long
100	,,	3" to 4" long
72	,,	2 to 1½" ,,
182		

They were all put into the Nuwara Eliya Stream.

(4.) The out-turn of the Rainbow Trout fry put into C, the large new Stewpond was as follows —

Consignment received on 25th March, 1899. 250 put into Stewpond on 6th May, 1899.

Pond drawn on 1st October, 1899, 150 fry were taken out in good condition. Great variation in growth. Greatest growth (15 fry) 7"; smallest growth (25 fry) 2"; average growth about 4¼"; six large fry (6" long) left in Pond.

The remaining 144 were distributed as follows:—

72	between the Tavern and Rose Bank Bridge
47	Hawa Eliya Stream.
25	Sita Eliya Stream.
144	
6	back into the Pond.
150	

(5.) The out-turn of the Rainbow fry put into Pond E at the back of the Hatchery:—

Consignment of Rainbow Trout ova received on the 25th March, 1899, and put into Stewpond about the 10th of August, 1899. 23 fry were put in.

20 fry were taken out on the 4th October when the Pond was drawn.

4	about	5" long
10	,,	3" ,,
6	,,	2" ,,
20		

the Queen's Cottage pond is largely due to the fact that a pair of Kingfishers settled by the pond, and that otters infest the pond and cannot be kept out through want of fencing.

(B.) HORTON PLAINS.

Mr. T Farr reports as follows regarding the fry placed in the Horton Plains Stewponds, viz. —1,500 Brown Trout fry and 150 Rainbow fry. (1,000 Brown Trout fry were turned into a stream falling into the Horton Plains River.)

9th August, 1899.

DEAR SIR,—In reply to your letter of August 8th, I do not think the time has yet arrived to transfer the trout from the ponds to the river, therefore I can only by observation guess at the number of fish in each.

They may, so far, I think, be considered a success, and I should estimate the pond into which 1,500 fry were placed as containing say 500 to 700, and the rainbow fry should turn out 50 per cent of the number put in.

I may mention that the growth of fry in both the ponds is very uneven—some of the fish being very strong and of good size whilst others have grown very little.

The Rainbow Trout appear to have grown better than the Faro.—Yours faithfully,

(Signed) T. FARR.

(C.) OTHER STEWPONDS.

(I.) Calsay, Nanu Oya.—Mr. Ross-Clarke reports of the "Calsay" Stewponds, where 1,500 Brown trout fry and 75 Rainbow fry were placed, as follows :—

July 25th, 1899.

DEAR SIR,—On the 19th instant I emptied my two stewponds with the following results:—

the Top Pond contained 196 trout
the Lower Pond ,, 305 ,,

out of 700 and 800 put in ; the following day I took 209 up to Ambewella and turned them in there in good condition, 40 were turned into the Rajah Patna stream, several 5 inches long, and the average about 4 inches.

I returned 250 about an average of 2½" to the Stewponds, where they ought to thrive well now that the bigger fish are gone.

I am of the opinion that the larger fish were preying on the smaller latterly, hence the perhaps rather small out-turn. During the five months I only found some ten dead ones which were picked out, they were in very good condition and appeared to have died from enlarged liver, with the exception of one which had his tail bitten off.

The Rainbow trout are doing very well and are of a fair size, one dead and one was found so far.

I propose keeping the 250 in the Ponds for another three months or so, or until they reach a size of 4" or 5."

These are the figures :—

Took out of Top Pond ...	196	
,, ,, Lower ,, ...	305	
Turned into Ambewella Stream		209
,, ,, Rajah Patna ,,		40
Returned to Stewponds		250
Escaped		2
	501	501

Yours faithfully,

G. G. ROSS-CLARKE.

PRODUCE AND PLANTING.

KEEPING THEIR PACKERS UP.—In this review of the trade of India during 1898, Mr. O'Conor proffers comfort to Indian tea planters. He points out that last year the outturn of Indian tea was the largest on record, giving a total of 157 million pounds, being more than double the quantity exported thirteen years ago. When a limited market is found in conjunction with an unlimited supply, the inevitable result is a heavy fall in prices. Yet Mr. O'Conor would not have Indian planters despond. He recalls the fact that it took Indian tea twenty years to drive Chinese tea out of the market, and he reminds us that Indian tea is at present consumed in a comparatively limited area. A very large proportion of the white race of the world does not yet consume tea Mr. O'Conor warns the planters—by the way, they are well aware of the fact—that in their efforts to force their way into these huge untapped markets they must be prepared for a struggle as strenuous as that undertaken by them when they entered the lists against China tea. But with courage and perseverance there is no reason why they should not forge ahead.

REALLY!—The writer on "Trade Topics in "The Grocer" has the following:—"Now that the pound tea draft question is settled, it is not surprising to learn that those who proposed its abolition are feeling the results of their ill-advised attempt to abolish it. At a meeting of one of the large tea-producing companies the other day, the chairman said there was no doubt that the falling-off in trade which they had experienced was due to the agitation in connection with the question. It would, of course, he wrong to rejoice too loudly over the victory which has been achieved, at the same time it is satisfactory to note that those who stirred the matter up have learned that they cannot attack the distributing trader with impunity. It is certain that only a few even now fully realise the importance of the issues involved in that struggle, but it is to be hoped that it will be very many years before we shall again witness such an attempt to interfere with the rights of such a large body of traders, as is the retail food distributing industry of this country." It should be noted that his majesty, the "distributing trader," must not again be disturbed in his beneficent work of distributing tea at very profitable prices to the consumer, and any further attempt to interfere with his right will—well, it is too awful to contemplate what might happen, so we will consider the incident closed.—*H. & C. Mail*, Oct. 27.

THE PUBLIC SALE DAYS.

A report has reached us to the effect that certain parties are agitating for some alteration of the days for the public auctions of Indian and Ceylon Tea in Mincing Lane. It is perhaps too much to expect that any state of finality will ever be reached in regard to tea matters, but as the changes proposed are in our judgment rather opposed to the best interests of the whole body of buyers and, therefore, indirectly antagonistic to the interests of the sellers, we make no apology for examining the arguments put forward pro. and con, more especially as we took considerable interest in the arrangement of the present system, and consider it too satisfactory to be rashly disturbed.

From a circular emanating from the secretary of the Tea Buyers' Association we learn that the present practice is objectionable to some of its members, but whilst we do not claim for the present arrangements absolute perfection, we should have been glad to know why and wherein it is objectionable, and this is not stated. There are manifest advantages to buyers in

knowing at the beginning of the week how much tea is to be offered during that week, as it will be evident to any one that no buyer will operate freely on Monday if he is not absolutely certain that similar tea from the same garden will not be in print the next morning for sale on Thursday. Such things have happened before today, when every importer of tea was a law to himself; and when, perhaps, well satisfied with the sale of his tea effected on Monday, he cheerily ordered another invoice to be offered on Thursday. Buyers generally do not like to be treated in this manner, and we think that over a course of years the importer would find such a course of action would destroy confidence. Take the Assam Company method of procedure for example. For years past they have regularly offered a catalogue of tea once a fortnight. Buyers know they will not have any more for another fortnight, and it is matter of notoriety that the relations subsisting between the Assam Company and their regular buyers in public sale is of a most friendly character. No doubt there are difficulties to be encountered in every human arrangement, and the efforts of those at the fount of action should be to minimise those difficulties by effecting some general plans which on balance of advantages against disadvantages will show the largest surplus on the credit side. It is for this reason that we strongly deprecate any disturbance of the present system.

An ideal plan would possibly be to have one large sale at the commencement of each week, and no more for the remainder of that week, but in short winter days that would be clearly impossible, even if physically within the capabilities of buyers and sellers to get through a week's work in one day. But the next best thing is to have a large sale catalogued for Monday, and get on with its disposal as far as possible on that day, con-concluding automatically at four o'clock, and finishing what is left unsold on the following Wednesday. Buyers then know exactly what they have to deal with in the week, and the confidence they feel in the position of affairs enables them to act freely and boldly, which is clearly in the interests of the sellers. Gradually but surely during the last twenty years the tendency has been for less and less tea business to be done towards the end of the week. To offer a sample in a country town on Friday or Saturday means either that the local buyer has supplied his wants on the earlier days of the week, and now prefers attending to his own customer's wants; or if he does entertain samples the upshot in a majority of cases is that he says he will wait to see what comes out of Monday's sale. Hence in the eyes of Mincing Lane dealers public auctions on Thursday and Friday, the purchases in which have to be forced on unwilling country buyers on Friday and Saturday are by no means favourably viewed.

For this reason we strongly maintain our opinion that the present system is the best that has yet been devised. If any small change were to be made it should rather be in the direction of discontinuing Thursday's Indian tea sale, and allowing whatever portion of the Ceylon sale of Tuesday was left over, to be finished on Thursday. But we deprecate such action as the Tea Buyers' Association contemplate in holding a large sale of Indian tea on Thursday; for the reasons we have assigned above we think it is foredoomed to failure.—*H. and C. Mail*, Oct. 27.

THE KINTYRE TEA ESTATES COMPANY, LIMITED.

The third ordinary general meeting of the shareholders of the Kintyre Tea Estates Company, Limited, was held at the offices of the Ceylon Association in London, 61 and 62, Gracechurch street, on Wednesday, Oct. 25.

The Chair was occupied by Mr. G A Talbot, Chairman of the company.

The Secretary read the notice convening the meeting.

The Chairman, in moving the adoption of the report and accounts, said: The report which has been circulated among you will, I presume, be taken as read. It is with no small satisfaction that we are able to present this report to you, for if you look back upon the history of tea during the past three years you will observe that circumstances have occurred which have made it almost impossible to realise the estimates made when the prospectus was issued, and I think you will agree with me that in paying 8 per cent on the ordinary shares we have fully anticipated what was promised last year, and what many other companies were unable to perform. The circumstances which have led to the reduction of profit in tea are chiefly in the fall of price on the London Market, a rise of 2nd in the exchange, which has increased the cost of production by ¼d per lb, and so reduced the profits, and the unfavourable weather of last year. The circumstances, though at the time they were looked upon as misfortunes, have really been blessings in disguise, for the fall of price on the London Market has tended to increase the consumption, and the rise in exchange has certainly stopped the further planting of tea in Ceylon, besides giving investors the advantage of what may be looked upon as a fixed exchange. This, in my opinion, is very much better than the uncertain one which was common when this company was formed, when the finances of India were more or less demoralised, and when it was felt that something of the kind was greatly needed. As regards the bad season, it has been the cause of the great bulk of cultivation being checked. When I was in Ceylon during the early part of this year I saw a good deal of tea planted on old worn tea-land that had been abandoned. There is no doubt that this tea must go out of cultivation, and if this is so, we must regard the production of tea as having reached its limits. This is a benefit for those who are able to produce tea, for with a gradually increasing demand, our prices are bound to be on a firm basis. Next we come to last year's working. There was a great deal of anxiety about what were called tea pests, but we are glad to tell you that in spite of this fear, we produced 570 lb. per acre as against 519 lb. for the previous year. Then a word about the cost of production. This has been reduced to 24 2-3 cents per lb. f.o.b., which, considering that this company holds two-thirds of its estates in Ceylon on the high-lying ground, I think you will agree with me is very good indeed. Our agents and our superintendents on the estates deserve our warmest thanks for their careful management, for it is chiefly through them that these better results as regards costs have been obtained. I must mention, however, that I think it will be extremely difficult, and, perhaps, impossible, to maintain this low cost, for, with the extensions in manuring that are desirable and the renewal of buildings, this rate, which is an extremely low one, may be exceeded. The amount of our profits, therefore, the rate of production

being fixed, depends on the price on the London market, as is the case with all producers. I think we may confidently expect that the prices will not diminish, in fact, we may reasonably hope that they will considerably improve. I now move the adoption of the report and accounts, and before putting it to the meeting I shall be very pleased to answer any questions, any, shareholder may wish to ask.

The proposal was seconded by Mr. W Nevett.

In reply to questions from Mr. Fort, and Mr. Gibson, both of whom, in the course of their remarks, congratulated the company on its results, the Chairman stated, as regarded the great discrepancy between the income-tax for last year and for this year, the explanation was that on the one side the income-tax was worked on a three years average, and on the other that the previous two years income-tax came into the calculation. The cost of shipping the tea in Colombo is half a cent. per lb.

In reply to a question by Mr. Gibson as to the advisability of having an interim report and dividend, the Chairman said that he did not think they could hold out any hope as regarded the interim report. It was quite an unusual request, and he did not think it would be of much utility, in fact, if they took last year as an example, when there was a very bad season it would go very much against the shares. As regarded the interim dividend, it was customary for a good many tea companies to pay one, but he did not think either that it influenced the shares, or that it benefited the shareholders. However, the directors would consider the suggestion.

The Chairman then proposed that a dividend of 8 per cent should be paid on the ordinary shares. This was seconded by Mr. Baumann, and carried unanimously.

On the proposal of the Chairman, seconded by Mr. Nevett, the retiring director, Mr. Baumann, was unanimously re-elected.

Mr. Fort proposed, and Mr. Gibson seconded, the re-election of the auditor. The motion was carried.

The proceedings closed with a vote of thanks to the Chairman.—*Home and Colonial Mail*, Oct. 27.

THE WYNAAD TEA COMPANY, LD.

The following is from the report to be presented at the fifth annual meeting of shareholders, to be held at No. 20, Eastcheap, at the office of the Ceylon Tea Plantations Company, Limited, on Monday, 30th Oct. :—

The directors, in presenting to the shareholders the profit and loss account and balance-sheet for the year ending March 31, 1899, wish to explain that the reason the accounts are for eleven months only, is due to a request made by the managing director in India that the financial year in future shall finish at the end of March, instead of the end of April as heretofore. The working for the past season has resulted in a net profit of £728 2s 9d, after crediting the block account with the proceeds of tea sold from the Cootacovil Estate; this profit the directors propose to write off the debit balance of last season. The coffee crop turned out fully 51 tons, and was the largest gathered for some years, and the directors were fortunate in having sold it at the high figure of 78s c.i.f., before the great fall in the value of coffee took place. The pepper crop of about 14 tons was also sold for arrival at the satsfactory price of 45s 6d per cwt., whilst the first pluckings of tea, viz, about 15 lb., from the Cootacovil estate from the 1895 plantings, realised an average of 7½d per lb. The net proceeds of tea, coffee, and pepper during the season 1898-99, after deducting proceeds of Cootacovil tea which has been carried to block account, amount to £3,957 2s 7d, and the expenditure in India to £2,413 11s 7d, leaving a credit balance of £1,543 11s on the season's operations in India. The manager in India reports condition of the estates as most satisfactory, and that the tea leaf is coming in so fast that further machinery for rolling and firing is necessary. He expects to obtain more than his estimate of 78,000lb for the current season. According to present appearances, Mr. Walker estimates this season's coffee at 18 to 20 tons, and the pepper crop at about 20 tons. The prospects for 1900-1 are so promising that the directors confidently look for a yield of about 150,000lb made tea, and a coffee crop of about 40 tons, whilst the pepper crop is likely to be quite equal to this season's yield, but, of course, these are only estimates which may be influenced favourably or otherwise, according to the weather. The directors have much pleasure in stating they have now completed arrangements with Messrs. R. and J. Henderson, of 7, Mincing Lane E.C., to finance the company as from April 1 last. These gentlemen have also undertaken to subscribe for the balance of the £8,000 6 per cent. debentures not taken by the shareholders. The directors and Mr. Walker have subscribed for £500 each, and the shareholders are now given the opportunity of securing a good 6 per cent investment with the option of turning their security into 10 per cent preference shares any time prior to the date of repayment of the debentures. The acreage under cultivation remains the same as last year. Dr. Inman retired from the direction during the early part of this year, and according to the articles of association, Mr. J C Sanderson retires from the board, and being eligible, offers himself for re-election.—*H and C Mail*, Oct. 27.

Sugar and our North-Central Districts.—In the note, written in connection with the lecture delivered by Mr. Ferguson in London, the local "Times" has the following comment:—

Sir C. Clementi Smith's suggestion at the debate at the Royal Colonial Institute yesterday that sugar and palmyra should be tried in the North-Central districts is, doubtless, good advice as regards palmyra, but sugar requires a rich soil. The subject of cotton cultivation might also be considered in the near future; and the Agricultural Department may do good work in following the railway line through the Wanni and the rest of the comparative unknown country south of the peninsula.

Nepenthes Distillatoria.—Growers of these plants should include this interesting species in their collection. It was the first species brought to the knowledge of botanists, being found in Ceylon in 1674 by a Swedish physician named Grimm. Dr. Trimen, in his "Flora of Ceylon," says that it grows in large quantities around Colombo, usually in very wet places. He also says the stems are very tough, and are used as ropes. The pitcher is about four and a-half inches in length, one side being flattened between two ciliated ridges. The colour is for the most part green, but is thickly set with small dark-coloured glands. The lid is at first pressed down over the mouth of the pitcher, but later it stands erect. This species is, I think, synonymous with N. Khasiana.—F. T. S.in—*Amateur Gardening*, Oct. 21.

REFORM IN THE TEA TRADE.

(Produce Markets' Review, October 21.)

DOCK CHARGES.

Some time back we printed a short comparison of the charges made by the London Docks and Wharves upon Tea, especially upon Indian Tea as compared with Indian Coffee. We now append a fuller table of the charges on each, calculated so far as possible upon the same basis, and it will be seen that a ton of Tea costs £4 0s 2d, and the same weight of Coffee costs only 17s 2d, or less than a quarter of the charge on Tea.

DOCK AND WHARF CHARGES ON INDIAN TEA IN LONDON.

Charges on one ton of Indian tea landed and sold at public sale, taking 20 chests to a ton :—

	£	s.	d.
Landing and Housing Rate, 1s 6d per chest	1	10	0
Public Sale charges, 4d per chest	0	6	8
Bulking and Taring each chest, 2s per chest	2	0	0
Thirteen weeks' Rent, ½d per chest	0	10	10
	4	7	6
Less 10 per cent ..	0	8	9
	3	18	9
Weight Notes ...	0	0	8
Warrant Stamps ..	0	0	9
	£4	0	2

Note.—The Landing and Housing Rate comprises : Landing, wharfage, housing, separating into chops, weighing, average taring, furnishing lading weights, examining and turning out and in for damage, mending, laying down for private inspection, lotting, nailing down, placing in delivery pile, and delivery by land.

DOCK AND WHARF CHARGES ON COFFEE IN LONDON.

Charges on one ton (16 bags) Indian coffee, for the same period as tea, sold at public sale.

There are no charges for arranging coffee for public sale.

	s.	d.
Consolidated Rate, including bulking and sampling, 8½ per cwt ..	14	2
Sorting and Lotting, 1½d per bag ..	1	8
* Seven weeks' Rent, 6d per ton ..	3	6
	19	4
Less 12½ per cent ..	2	5
	16	11
Warrant Stamp ..	0	3
	17	2

If there is no bulking done the consolidated rate is 6d per cwt.

The Consolidated Rate includes : Landing, wharfage, weighing, gross, mending, housing, or piling, accounts of landing weights, original warrants, six weeks' rent free ; weighing on delivery, and delivery.

Lest it should be thought that the comparison with Coffee is of an exceptional nature we have compiled the following table, showing what the charges are for the consolidated rate on other articles of grocery produce, and it will be seen from this how enormous is the surcharge upon Tea :—

CONSOLIDATED RATES PER TON ON VARIOUS GOODS COMPARED.

Indian Tea (placed on about the same basis)	56s
Coffee	14s 2d
Refined Sugar	4s 6d
Currants	7s 6d
Valencias (½-boxes)	12s
Tapioca	8s 6d
Rice	3s 9d
Salmon (in tins)	4s
Sardines	5s 6d

It seems to us impossible to account for the extraordinary difference in the charges upon Tea, except on the supposition that an antiquated system of business has lasted longer than in any other goods, owing to the absence of competition, and of modern methods of trading in Tea. Thirty years ago the wholesale price of Tea in bond, on the average, exceeded 1s 9d per lb., while it is now less than 8d , and, probably, if we went back sixty years the difference would be still more striking. Yet, as compared with the charges of a generation ago, we believe the dock and wharf rates on Tea in London to be, if anything, higher than they were then.

TEA BONDED WAREHOUSES.

It is always said that competition is the lifeblood of business, but if so, the Tea warehouses are in a bad way, for there is no competition whatever between them. A good many years back the system of secret discounts to importers was introduced, which was responsible to a very great extent for the cutting down of the wages, which led to the great Dock Strike of ten years ago. The system of discounts is in itself a most objectionable one, for there can be no object in sending a bill for £100 and on a subsequent occasion returning £10 or £25 out of it, unless it be that the original invoice is intended to be forwarded to some one who is not to receive the discount. After the Dock Strike, the dishonest nature of the system became so apparent, that the Dock Companies felt themselves obliged to publish their discounts in their rate books, so that the Tea growers, when they sent Tea to this market, could have an opportunity of seeing that only the proper prices were charged to them. The publication of the discount, however, was with the condition that it should not be given away, so that beyond the Tea planters knowing that they are charged 10 per cent more than their agents really pay, there is no gain to them in the publication, as is the case with similar pickings in freights and insurance charges.

TEA CLEARING HOUSE.

In order to bring about greater fixity in the charges on Tea a sort of Trade Union was formed, at the time we speak of, between the importers, the warehouse-keepers and the wholesale trade. By this arrangement a Clearing House was established, which somewhat facilitated the daily work of getting Tea through the Customs, and the members agreed, first, that they would only buy Teas lying at specified warehouses, and secondly, the warehouse-keepers agreed that they would only charge certain rates, allowing a discount, first off the importers' charges, and secondly, off the dealers' charges, in both cases on the conditions that these discounts should not be given away. The Board of Customs was also brought upon the

scene, and has since practically refused to fully license new bonded Tea warehouses, so that as a matter of fact, it is practically impossible at the present moment to obtain a new bond for the warehousing of Tea in London.

The result has been unsatisfactory—though at the time well intended, because the object was to protect the minimum wages of the dock labourers. The combination has now clearly become injurious owing to the changed circumstances of the case. The distributor can no longer afford the enormous charges made, and the whole trade, whether importers or wholesale or retail distributors, recognise that the cost of distributing Tea is enormously out of proportion to that of distributing any other article of grocery produce. After carefully considering this question, we can only arrive at the conclusion that this state of things is due simply to tradition, and that simplification and much greater cheapness are possible in dealing with Tea.

CUSTOMS RESTRICTIONS AND SUPPORT OF THE COMBINE.

The first step towards modernising the Tea trade is to obtain greater elasticity in the Customs regulations. In the first place, what reason exists for insisting that the duty on Tea shall only be payable at bonded warehouses? It is obvious that this at once limits the trade to those happy warehouse-keepers who were the parties to the Tea-clearing warehouse scheme. So far as we can judge, there is no reason whatever why the Customs should not gladly welcome the payment of duty on Tea over the ship's side, as is (we are told, but we do not know) the practice with other goods. A covering amount should be paid as the cargo was put over into lighters, and an officer should then attend at the destination of the Tea (at the cost of the owner, of course) and collect the balance, if any be due or return it if the duty be overpaid. To the commercial mind it appears that this would be an obvious gain to the Revenue; but the authorities, on the other hand, appear hitherto to have thought it more advantageous to insist on Tea being warehoused —to take charge of it in detail, and to look after each particular chest for months and years at a time. It is quite clear that until our present restricted Tea warehouse system is broken through, our Indian and Ceylon planters will not have a fair chance in this matter of charges. They should at once bring pressure publicly to bear on the Customs, to insist on sufficient new bonds being granted to ensure free competition in Tea warehousing—at present a highly profitable monopoly.

The *Investors' Review* has lately shown in a series of articles how largely the planters' agents in this country are interested as owners or shareholders in Tea warehouses, and therefore in the maintenance of the present system. The matter will thus be a difficult one to fight, more especially as the wholesale Tea trade have also become interested, through the discount system, in the maintenance of the existing plan. We think, however, they are open to reason on the matter, for their gain from this source is absolutely trivial when compared with the complications and high cost of the system of selling Tea, which are rendering the wholesale Tea trade so difficult.

WEIGHT NOTES AND WARRANTS.

Apart from warehouse charges in themselves, there are many details in the working of the trade which are quite of an exceptional and unnecessary character. There has been no change in the number of packages entered upon a warrant since the time that Tea was three times its present price, and this seems simply absurd. The old system was to have six chests upon a warrant, and the present proportionate document, therefore, should have placed on it eighteen chests or thirty-six half-chests, as representing the former value of a much smaller number of packages. The warrant in Tea is still accompanied by a weight note, a system which has been given up in every important branch of the grocery trade, though it is still kept up in some minor commodities such as spices. The issuing of a weight note, of course, means that the work in connection with Tea is done twice over, for which there can never have been any reason that we can see, but which is, at any rate, a simple waste of time and of money at the present moment. We are aware that the weight note in its present form is considered to be necessary as a security for the deposit paid on the purchase of Tea. We are not, however, aware that any particular sanctity is attached to the deposit system in itself, as it also has been abandoned in the large grocery trades. Supposing it, however, to be continued, security might readily be given by a coupon attached to the warrant. The weight notes are not only unnecessary in themselves, but they embody an immense number of equally futile details. For instance, they give full import particulars in excessive detail, either in writing or printing, which also appear on the warrants. In addition to this, the weight note is supposed to bear three separate signatures, and often does so, and it then forms a separate contract for the sale and purchase of each six chests, being signed by all the parties. In addition to this, each weight note works out, in detail, for every six chests of Tea, the weight and price at so much per pound. From this result the deposit is deducted separately, and the lot money, 4d, is then separately added to the total. The weight notes give the particulars of the country of origin of the Tea, the name of the importer, the date of importation, the variety of Tea, the name of the ship, the name of the captain, the port of origin, the name of the selling broker, the date of sale, to whom the warrant is issued, the date of the prompt and of the commencement of rent. Several of these particulars are repeated twice over upon this valuable document —the weight note—though they all appear on the warrant also. What could be more childish and absurd than all this? There is no doubt that a very considerable economy in money may be effected by enlarging the number of packages on the warrant and by abolishing the weight note altogether. This is a simplification which forms, in our opinion, the initial step towards the cheapening of the distribution of Tea. To those accustomed to modern systems of trading, the weight note appears simply a farcical, though unfortunately a costly, absurdity. If the Coffee trade can be conducted with the utmost ease without such documents, why cannot the same be done with Tea?

DELIVERY ORDERS FOR CLEARING.

Further great simplification might be caused by using delivery orders for clearing and delivering tea, as is done in other trades. There is, however, a considerable practical difficulty in this matter in the case of tea. Many years ago Mr. Gladstone, as Chancellor of the Exchequer, in one of his great Budgets freeing trade from Customs imports, unfortunately made a detailed change which was worked a great

deal of mischief, by imposing a penny stamp on delivery orders for goods issued on warehouses where rent is taken. Tea at that time was delivered in great detail to the retail buyers, who kept stock in bond in London, often for long periods, in the charge of the wholesale dealers. This system still continues, and the quantities in which tea is cleared are proportionately smaller than is the case with other articles of grocery produce. Representations were made to Mr. Gladstone as to the injurious bearing of the penny stamp on delivery orders in the case of tea, and it was agreed that the warrant stamp of 3d should, as a compromise, cover all deliveries made on the face of that document. It has been argued over and over again at the Board of Inland Revenue, that the stamp having been paid on the warrant as a compromise for separate deliveries, a penny stamp should not be required when separate pieces of paper are used for delivery orders, instead of the deliveries being written off on the warrants themselves. The authorities at Somerset House, however, held a different opinion, and it has not been considered worth while to go to law to test their right to make the charge though it appears to be very doubtful. The result of this is the maintenance of an extremely complicated system in the clearing of tea. The warrant, with the order to deliver written upon it, has to be lodged at the Clearing House, from whence it is sent on to the wharf, and subsequent to the delivery of the tea, the warrant is returned to the Clearing House, from whence, in due course, the wholesale dealer fetches it back. The delays and expense caused by this little obstacle to business, devised by the perverse ingenuity of our Revenue departments, are inconceivable to those who have been accustomed to the broader, easier, and far cheaper system used with all other grocery goods. If it were not for this stupid piece of obstruction on the part of our Government to a rational system of delivery, there would be no necessity whatever for such an institution as the Clearing House, and the home trade would not only move as smoothly again but be conducted at much less cost.

DELAYS IN GETTING WARRANTS.

The warrants and weight notes are not only obsolete and obstructive in themselves, but there is a quite objectless delay in obtaining them. In all other trades that we know of payments for warrants as they are required are made to the actual holders of the documents. A notice is sent them in the morning that such-and-such warrants are required. They are at once sent on by hand to the applicant, and handed over in exchange for a cheque. In Tea, this is not the case, and endless loss of time and temper results. The importers should do one of two things: either trust their brokers with their warrants if they cannot manage the details themselves, or else accept direct payments. Their can be no doubt that the second is the proper plan to adopt, and it is surprising that the wholesale Tea trade have not long since insisted on the removal of this great hindrance to business. It is true that a poor compromise was adopted some years back, by which it was arranged, that when payments were made to the brokers before noon, the brokers would procure the warrants from the merchants by 2 p.m. This plan constantly leads to a day being lost in the delivery of Tea, to the loss of both the wholesale and the retail buyers. We, are, of course, fully aware that one cause of these delays, is the fact that such a large proportion of warrants are pawned by their holders. When they are their own property there is no objection to this than to any other legitimate pawnbroking operation. But when the pawners are not the owners of the goods other considerations arise, and after the sale of Tea, the original owners have no right to leave it in pawn than they have to mortgage some one else's house.

THE PUBLIC SALE SYSTEM.

The system of disposing of Tea almost exclusively by public sale lends itself to much criticism. It will be seen above that the cost of arranging Teas for public sale is no less than 4d per chest, so far as the docks and wharves are concerned. For the work done, the charge is not out of the way, but the question is whether the whole system might not be greatly simplified and more closely approximated to other cognate trades. First, there is the payment to the brokers for the hire of rooms, and for the printing of the catalogues, and for their distribution, often to a very unnecessary extent. Tea catalogues are printed in a different way to those current with other groceries. We do not know whether the system of printing and the sort of paper is more or less costly, but this deserves looking into. There is one very obvious source of waste in Tea catalogues, which are often very small documents, but in which two pages are always given, first for the names of the brokers and rough particulars, and next for the conditions of sale, which are given in full in every catalogue. These particulars it is surely unnecessary to print in every catalogue in detail, especially when, as they often do, they take up from 20 to 50 per cent of the paper used. The catalogues are not, it is true, in such minute detail as was the case years ago, but it is questionable whether this does not still admit of a great deal of simplification.

The brokers' charge for public sales, in addition to their brokerage, is 9d per lot of six chests. It would be interesting to compare this with the public sale charges on other Mincing Lane produce, and the materials could easily be collected. On 2,000,000 chests a year sold publicly, 9d for six chests represents a cost of £11,000.

A great deal of the work connected with catalogues is due to the separation of the teas into miserable little lots, which are supposed to be of different qualities, though the teas are very frequently all plucked at the same time, from the same bushes, and on the same gardens. Owing to the inefficient appliances in India, Indian teas have, as a rule, to be rebulked in London, and while this operation is being conducted, we feel sure it would be in the interests of every one concerned—planters, importers, and dealers alike—to put an end to these separations, and to make larger breaks for one average sort of tea. The cost to the wholesale trade of distributing these trifling lots is out of all proportion to the profit to be obtained upon them. Probably the old days when China teas reached us in breaks of 300 to 600 chests, which could be judged of by a single small sample, will never return, but the Indian tea trade will never be in a satisfactory condition until a minimum parcel of one quality should be represented by quite 100 chests. This cannot be done till teas are bulked at the gardens, and so tared that each chest does not require to be turned out here for separate taring, at an enormous cost to

the grower, which only entails unnecessary labour on the home trade, with no advantage in return.

HUGGER-MUGGER AUCTIONS.

The system of sampling the public sales on the part of the trade is a very cumbrous one. In other business the samples are on show in the broker's sale rooms, but that is mostly in the case of commodities where elaborate tasting is not so essential as it is in the case of tea. It has been suggested that it would be more convenient if the public sale samples were sent round to the trade in time for the sales, by the bonded warehouse-keepers and payment taken for them at some average price, or so many pounds of "returns" given. At present the whole number of the representatives of the wholesale dealers attend at the different bonded warehouses, and the supply of the separate samples to them creates an immense amount of expense and of waste of time. We do not suggest this as a definite solution but only as one that might be considered, now that the new Tea Buyers' Association is engaged in going into all such questions. As it is, the time allowed the trade for valuing is quite insufficient, and only the largest houses can cope with the samples, and then only hurriedly. The interests of growers must often be seriously affected by this excessive haste.

As we pointed out some time back it appears certain that much of the present great depreciation in the value of tea, as compared with former years, is due to the system of unrestricted public sales. Whether the teas are or are not wanted, they are pushed upon the market in constantly increasing quantities, and fall to a dead level in price in consequence, because it is not worth while for anyone in this country to stock more tea than they can possibly help. It is our firm conviction that what the Indian tea planters have been long trying to do, that is abolishing what they erroneously call the Mincing Lane monopoly, is the source of half their troubles. In former days when the varieties and qualities of tea were far less than they are now, it was worth the while of an intermediate class, acting as merchants here, to buy up suitable teas, and to wait for markets, so that the prices were equalised. At present this class of dealers practically confine themselves to hand-to-mouth purchases, for they can always get plenty of supplies at auction, and there is no reward whatever for holding larger stocks than are sufficient for a few days' trade. So far as we know, there is no other article whatever, which taste and fancy so largely enter into, which is sacrificed in the same way as Tea is, in this hugger-mugger without reserve system. In years past we have strongly advocated public sales for Tea, as the only way to fix values, and to this we fully adhere, if they are supplemented by large private transactions, conducted in a more leisurely way. The Indian and Ceylon trade can never be on a satisfactory basis until the public sale system is largely supplemented in this fashion.

BULKING AND TRADING IN INDIA.

We alluded above to the great cost inflicted upon the Indian planters, through the necessity for bulking and for separately taring their Teas in this country. Some progress has been made with regard to bulking abroad, but it is inconceivable here why the system has not become universal. Years ago we heard the old excuse about the dampness of the climate and the difficulty of keeping Teas; but if the facts are as alleged, the difficulty can easily be remedied by such simple appliances as hot-water pipes. Then again, as regards the taring of the teas, the smaller gardens no doubt have to rely on rough native labour, and this is given as an excuse for the chests not being cut to scale. The excuse seems to us totally insufficient, and we can only ascribe the continuance of the existing system to ignorance. In these days when metal chests can so easily be obtained, as well as the beautifully-made "Venesta" and other artificial wood chests, uneven tares seem simply inexcusable. It pays our Sugar refiners to import ready-cut wood for such a cheap commodity as theirs, and when a single manufacturer requires 40,000 or 50,000 cases a week of the size of a tea chest, it surely would be worth the while of Indian planters to import either the "Venesta" packages or wood cut in proper shooks from other countries, in places where the native labour and the appliances are so deficient as they appear to be in a vast number of cases. The planters also go far to necessitate rebulking in this country by the excessive subdivision of their teas into different sized leaves. This can only be effected by a costly system of sifting, in addition to the exposure of the tea to friction, which breaks a large portion of the leaves, and turns them into comparatively waste dust or broken leaf. We have long held that the planters would do far better to buy a reasonable-sized grocers' bulking and cutting machine, and then make much larger breaks of an average quality. The cost would be less, and, we believe in the long run, the relative price would be higher.

INCREASING PRODUCTION, LOWER PRICES, AND THE ARTIFICIAL RUPEE.

The production in India, Ceylon and Java, is consequently increasing, for the fresh plantings are year by year coming into bearing. Even if another tea plant were not planted for the next five years, the increase would still continue from previous sowings. The consumption of tea in this country has reached its limit, and the next great consuming country—the United States—uses only something like one-sixth of what we use, and is at present greatly wedded to the flavoury China teas. The same is the case in Russia, and although we hope, and believe, that Indian and Ceylon teas will readily make their way in both these countries, the demand cannot be important for years; its progress is not quick, and the increasing supplies must therefore continue to deluge this market. The action of the Indian Government in artificially fixing the exchange value of the rupee at the rate of 1s 4d, when the intrinsic value of the coin is something about 11d, is also most injurious to the Indian tea planters. In these depressing times it must to a large extent tend to ruin our own growers, or to divert the trade to the common tea of China, because China owing to the unrestricted exchange for the dollar, enjoys an advantage of 2d in every pound of tea. While the possibilities of economies in the trade are great, we fear that the possibilities of decreasing prices are even greater, so that the question should be actively taken in hand. It is, therefore, obviously to the interest of the whole trade to take up tea reform in earnest. It is possible that the result of the coming depression will be the extension of something like the Central Factory system. If so, the small gardens would cease to manufacture tea, and would sell the green leaf to the larger operators, who can work better and more economically than the small growers. This is the system which long usage has established in China, and it is already beginning in India. These latter

changes, however, are matters for the future, and the present necessity is for a simplification and modernisation of the tea trade, such as will greatly reduce the present unnecessarily high cost of distribution.

CONCLUSION.

In the above remarks we have given a short outline of the main changes required whether at home or abroad, for it matters little which section of the trade is benefited so long as expenses can be lessened. The necessity for reform must come home very forcibly to the producer, in consequence of the present great depression in values. It is true that, for temporary reasons, very common teas have recently very considerably advanced, but we do not think that this can possibly last for long with the supplies coming forward. If it do so, and the price of common Indian tea is maintained, we shall shortly be swamped with common China Congou, which will bring prices once more down to a lower level. If there is no hope for a rise in the price of tea, but rather a strong prospect of a further fall in it, the only way to save the planters from ruin is economy in production and distribution. The mixture of the two branches of the trade in the above remarks is apparent and not real, for we hold that the whole tea trade is organised far too expensively, for the present scale of prices, and that economies in cost in any direction will benefit all sections alike.

WILD AND PLANTATION CINNAMON FOR EXPORT.

The following circular has been issued by the Customs:—

H. M. Customs, Colombo, 9th November, 1899.

It having been brought to notice that wild cinnamon has been entered for export as cinnamon, it is hereby notified that from this date the description "Cinnamon" will not be admitted at the Customs and Exporters must declare the bark as being either "Plantation Cinnamon" or "Wild Cinnamon."

The attention of Ships' Agents is requested to the rule that the description of goods in the "Outward Contents" must correspond with the description in the boat notes.

H. L. MOYSEY, Principal Collector.

The Steamer Agents, Colombo.

SNAKES FOR THE PARIS EXHIBITION.

The Portuguese barque "Atlantico," from Para to Brazil, has reached New Orleans with a cargo consisting entirely of snakes, valued at fifty thousand dollars. They were gathered along the Amazon River, and include Boa constrictors thirty-three feel long. They will be shown at the Paris Exposition. French snake-charmers own the collection, which represents the labour of twenty-five years spent in gathering the rarest specimens from America, Asia, and Africa.—*East African and Uganda Mail*, Oct. 20.

THE MINERALS OF CEYLON.

Mr. Archibald K. Brown, a mining expert of considerable experience and influence, who is at present on a visit to Ceylon is anxious to obtain a concession from Government and if it is granted to him he points out that it will cost the Government nothing, as he is willing to bear the whole cost of prospecting operations throughout the island. From a contemporary we learn that Mr. Brown has already been to the Colombo Museum where he was favourably impressed with a good many specimens of the stones and ore he saw there, and he has interviewed some of our local experts. He was a little surprised that so little was known in Ceylon about its mineral capabilities.

MORE LIGHT ON THE TEA QUESTION.

We have already referred more than once to the complaint made by cyclists and others as to the difficulty frequently experienced in getting tea served at country inns. A correspondent now comes forward with what he claims to be an explanation of the reluctance of inkeepers to supply anything except beer and other alcoholic liquors. He says it all comes of the tied-house system. Many a publican has tried to improve the character of his trade by selling something else than intoxicating drinks, and as surely as he succeeds the sale of beer falls off. Then comes the brewer's agent, who reminds the publican he is there to sell beer, and that if he allows the brewer's interest to suffer, someone else will be found to do the work better. Many a publican is said to have been turned out of his house for this reason, and this correspondent declares that it is because the publican is afraid to supply it that people find it so difficult to get a cup of tea in a tied public house.—*Home & Colonial Mail*, Oct. 27.

PLANTERS' MEETING IN CENTRAL AFRICA.

(*Central African Times*, Sept. 30.)

In response to several requests an informal meeting of the Chamber of Agriculture and Commerce was called for Monday afternoon, 18th September, to meet the Mlanje planters who had come in for the Agri-Horticultural Show.

The Chairman in his opening remarks explained the object of the meeting and stated that it was a quite informal and not a regular meeting of the Chamber. It had been suggested that a meeting between the Mlanje men and the Chamber would lead to good results as there were many questions of common interest which were ripe for discussion.

Mr. Bradshaw then referred to the name of the association and stated that he was in favour of a Planters' Association such as they had in Ceylon and India. He did not doubt that the Chamber had done good work in the past, but he thought it would be much better for the country if it were a Planters' Association. At present there was a certain confusion of interests, whereas planters as a body would be more able to do good work for the industry. If a purely Planters' Association were formed he would be one of the first to support it for all it was worth, but he did not see his way to support the Chamber on its present footing.

The matter was then discussed by those present. Mr. Moir said he agreed pretty much with all that Mr. Bradshaw had said. He recognised the good work which had been done by the Chamber and he thought it had fully justified its existence. At the same time if it were thought that it would better fulfil its functions as a Planting Association he was also quite willing to go n with the proposal.

Mr. Israel agreed with the proposal to change the name and thought that it would be better to have two separate Chambers, one for the trading interest and one for the planting interest.

Mr. Moir then referred to the new Mining regulations and pointed out how they would affect certain titles. The position of such titles was not clear and he suggested that the Chamber Committee should go into the matter and make it clear otherwise it might seriously affect the titles of many holders of land.

The Chairman pointed out the danger to the growing tobacco industry in B. C. A. by the proposal of the Rhodesian Legislative Council to tax tobaccos.

Several other matters, such as Labour going south and the need of the natives being made to work for their taxes, or the tax being raised were referred to, and after an interchange of views on these and other questions the meeting terminated.

COCHIN MARKET.

Cochin, Nov. 11th.

C. N. Oil.—As anticipated in our last this staple has made a slight advance, and the closing quotaions today are R88·12 to R89 per candy. A large quantity of oil is booked for New York by one of the steamers of the Indian-American line due next month. The market in London is also firm and Cochin oil is quoted at £29 10s 0d. for spot and £26 10s 0d. for January-March shipments c. i. f. per ton.

Coir Yarn.—By the English mail of 20th ultimo particulars of a public coir sale held in London on that date were received. The quantity of Cochin yarn brought forward was only 212 bales and two ton in dholls and the prices realised were decidedly in seller's favour. Locally supplies arriving from the interior continue to meet with a good demand, but prices shew no change.

Rope Yarn.—Contracts are reported at higher rates and the market is firmer. We quote today assorted R36·46 per candy baled weight.

Coir Rope.—Extreme prices were realized for the small quantity of Cochin rope offered at the last sale owing to limited stock. Early shipments from this side will most probably shew very favourable result. We quote here today R8 to R8·8 per cwt.

Coir Fibre —Picked R19·20 per bale of 200 lb. —*Cochin Argus*, Nov. 11.

RUBBER CULTIVATION IN CEYLON.

M. Fernand Vivier has arrived in Colombo by the M.M. ss. "Tonkin" from Singapore, and is proceeding home by the ss. "Polynesien." He is interested greatly in the process of extracting rubber from young stems, and of preparing it by a purely mechanical process the bark of young trees. He (with his partner, M. Emile Deiss,) is dealing with a new process and has taken bark (specimens of which can be seen at the *Observer* Office) from the *Willoughbeia firma*. M. Vivier is now on his way to Paris, but will return to Ceylon in January, when he hopes to be able to meet planters and merchants interested in rubber cultivation in Ceylon with the view of introducing the new process which, he claims, will add materially to the pecuniary advantages to be derived by those concerned in the cultivation of rubber trees.

MINOR PRODUCTS REPORT.

Cardamoms.—The moderate supply in auction today met a poor demand, and a small proportion found buyers at about 2d per lb lower rates. The following were the prices paid:—Ceylon-Mysores, good bold pale, 3s 8d to 3s 9d; medium ditto, 3s 2d to 3s 5d; small to medium, 2s 5d to 2s 10d; small pale, 2s 3d to 2s 4d; very small pale, 1s 10d to 1s 11d; shelly and split, 1s 8d; seeds, 1s 8d to 2s; wild Ceylon, 10d; Ceylon-Malabars were not in demand.

Cinchona.—The average percentage of sulphate of quinine in the bark to be offered at Amsterdam on November 2nd, is 5·32 per cent against 5·25 per cent in the September auctions, 5·60 per cent. August, and 5·2d per cent for the ten auctions of 1898. The 6,141 packages to be offered contain 561,330 kilos of Java bark, with a total of 26,850 kilos (939,750) oz. The only offering in auction was a parcel of six bales red bark, dull broken quil, for which 4½d was refused.—(From the *Chemist and Druggist*, Oct. 28).

CEYLON TEA.

THE NEW TARING ORDER:

HALF-POUND AND MORE TARERS TO BE USED.

London, Nov. 15 (received 12 p.m.).

The Customs have decided to issue an order for Taring teas with an added half-pound weight in the scale: and increasing the number of tarers taking for averaging. The order takes effect from the 1st December.

"CORN" RUBBER.

From a French paper of date in October, we make a translation of what seems to be the latest information respecting "corn" rubber. In view of the great demand for the article, few products are more adulterated in various processes of manufacture than rubber; and here we have one of the processes by which it is hoped to get a substitute:—

For some years a kind of rubber has been made from Indian corn (*maïs*); now it is corn which will soon give the precious substance. Corn-rubber looks remarkably like the ordinary reddish-brown rubber, but it has not yet been found out how to make it as resistant to heat as its predecessor. Corn-oil, which is the first constituent of this false rubber, is not readily oxidized; and, without knowing whether this is a fault or a good quality, they say that, thanks to this peculiarity, the new product will always preserve its suppleness and will not crack. The public has not yet been able to judge, as this rubber has not reached the trade; chemists wish to continue their researches until success is assured. The corn-oil is taken from the germ of the grain and not from its cover. The starchy and glutinous parts of the seed served in the manufacture of starch or of glucose while the oil of the corn was practically useless.

Hence it is thought that the new rubber could be put on the market at 33 centimes (3d.) per lb. Already it can take the place of rubber in cycle tyres or linoleum or for cheap toys; but will not do for scientific or industrial apparatus.

It was started in Chicago and will probably make its *début* at the Paris Exhibition.

In another Paris paper, there is the following reference to gutta-percha of some local interest:—

THE CULTIVATION OF THE EUCOMIA.

M. Dybowski, Director of the Garden for the Colonies, has given the Academy of Science an interesting note on the possibility of obtaining a very superior gutta-percha from a shrub native of the North of China, called *Eucomia*. Hitherto the production of this article (which fetches often 12s. the lb.) has been confined to the islands of Sunda. The *Eucomia* can be grown in very temperate climates. The gutta extracted from the fruits is of very good quality, and the fruits contain 28 per cent of gutta. The leaves and branches also contain it and can be utilized.

THE CAROLINA TEA COMPANY OF CEYLON.

SEVENTH ANNUAL REPORT.

The following has been published as the annual report :—

Your Directors beg to submit the Balance Sheet and Profit and Loss Account for the year ending 30th June, 1899.

The surplus of £8,236 11s 8d it is proposed to appropriate as follows :—

Nett Profit ..	£8,236 11 8	
Amount at Credit of Ordinary Shares ..	112 18 1	
		£8,349 9 0
Debenture Interest ..	£2,450 0 0	
Dividend on Ordinary Shares at 7 per cent per annum ..	3,500 0 0	
Proposed to place to Reserve Fund ...	1,200 0 0	
		£7,150 0 0
Balance carried forward to the credit of the Ordinary Shares ..		£1,199 9 9

The actual tea crop from the Company's properties was 961,757 lb. as against an out-turn for the previous year of 939,491 lb., in addition to which 32,862 lb. tea were made from purchased leaf.

The cost of the tea free on board Colombo, was 4·61d per lb., as against 5·10d for the previous season.

The average gross sale price in London was 7·65d as against 8·02d in 1897-1898.

The fall in price as compared with last year was to some extent owing to the disorganization of business brought about by the dispute between buyers and importers on the subject of the condition of Auction Sales. This has now been arranged, but importers of teas generally have suffered in the matter.

The crop of cocoa has increased from 441 cwt. to 555 cwt.

The season's working of the estates shows a very substantial increase in profits over those of the previous two years, notwithstanding that the average sale price of the teas has declined, proportionately with the drop in values of Ceylon teas generally, and in the face of a continuously advancing average rate of exchange. This result has been obtained by means of increased crops, as also by large economies effected in expenditure on the estates and in Colombo.

Your Directors are pleased to add that these economies have been arrived at without at all interfering with the continued thoroughly satisfactory condition of the properties.

The following statement will be of interest as showing the progress of the estates :—

Season.	Tea in full and partial bearing.	Actual Crop from Company's estates.	Cost per lb.	Average Sale price. Gross.
	Acres.	lb.	d.	d.
1895 ..	1,987	916,715	4·43	8·35
1896 ..	2,046	930,066	4·88	8·26
1897 ..	2,116	939,491	5·10	8·02
1898 ..	2,233	961,757	4·61	7·65

The total area of land now under cultivation is 2,602 acres, comprising :—

Tea in full bearing ..	1,784 acres	
Tea in partial bearing...	449 „	
Tea not in bearing ..	208 „	
		2,441 acres
Cocoa, Coffee, &c		161 „
		2,602 acres

The sum of £1,200 has been added again to the Reserve Fund, bringing up the total of this account to £8,400.

Your Directors have resolved to carry forward a large sum this season, having under discussion at present representations from the General Manager in Ceylon that considerable additions be made to accommodation and machinery at the principal Factory of the Company, to provide for the proper manufacture of the constantly increasing crops of tea.

Your Directors have to express their entire satisfaction with the working of the staff in the Company's employ.

The thanks of the Company are due to the Colombo agents for a modification in their scale of charges to the advantage of the Company's which has been accepted by the Directors.

It is with great regret that the Directors have to report the resignation, owing to failing health, by General Hopkinson, C.S.I., of his seat on the Board. It is not proposed in the meantime to fill up this vacancy.

The Directors retiring by rotation are Mr. C A W Cameron and Mr Evelyn Heseltine, who being eligible, offer themselves for re-election.

C. A. W. Cameron, Chairman.

London, 18th October.

MESSRS. SCHIMMEL & CO., OF LEIPSIC AND NEW YORK.

THEIR ASSOCIATION WITH CEYLON.

We have received by the German mail a report from the above firm, which opens with the remark that : " the progress of all branches in the German Empire, continues unabated ;" reference is made to the operations of the Company in the United States, Brazil, Mexico and South America, as well as Europe : and they add :—

We would further mention that, taking into account the importance of the English market, we have opened, from the 1st of October, a branch office at 27, Mincing Lane, London, E.C., under the management of Mr. H. Breitenstein, late manager to Messrs. Volkart Bros. of Galle, Ceylon. This branch will be exclusively devoted to the sale of the products of our Leipzig and New York works and to the general furtherance of our interests in Great-Britain.

With regard to cardamom oil, the following particulars are given :—

E. J. Parry contributes a paper on the oil of Malabar-cardamoms. The author has prepared and examined the oil obtained from two different varieties, known respectively as Ceylon-Malabar and Ceylon-Mysore-cardamoms, and has found them identical in point of odour. Their physical properties, also, were almost the same.

CINNAMON.

This occurs in the course of the report :—

The quotations of cinnamon chips have, during the last few months, gradually risen in Ceylon to $3\frac{1}{2}$d. per lb., and the exports are nearly double those of the corresponding period of 1898. This would imply, either that active speculations are carried on, or that new openings have been found for this article.

The exports of chips were :—

	Jan. to	July		lb.,	
from 1st		25th	1899 :	1,159,761	as against
„ 1st	„	25th „	1898 :	677,656 „	
„ 1st	„	25th „	1897 :	666,454 „	
„ 1st	„	25th „	1896 :	450,348 „	

This increase seems to have been at the cost of a reduction in the exports of quills, which, in the above named period, fell from 1,123,653 lb. in 1898 to 886,132 lb. in 1899.

The shipments of chips were distributed as follows:—

To United Kingdom 444,349 lb.; to Germany 349,096 lb.; to United States 28,000 lb.; to Austria 105,926 lb.; to Italy 100,320 lb.; to Belgium 95,760 lb.; to France 1,750 lb.; to Holland —; to Spain 18,200 lb.; to Australia 15,120 lb.; to Turkey —; to Africa 1,240 lb.; Total: 1,159,761 lb.

According to these figures, Germany now occupies the second place. The bulk of the German imports, of which a full third comes to our firm alone, would appear to serve for the preparation of Ceylon cinnamon oil.

CITRONELLA OIL.

Since our last Report, the value of this important article has slowly declined by a further 10 per cent, and has now reached the lowest point within our knowledge.

The new variety of citronella oil, which we have recently introduced, is being distilled in Java exclusively for us. Its cost is almost twice that of Ceylon oil, but the last-named cannot be compared with it, and, in respect to strength and sweetness of aroma, it throws all other varieties into the shade. As a result, this oil has found so many buyers, that there can be no question of the accumulation of considerable stocks.

CHINA AND JAPAN TEAS.

EXPORT OF TEA FROM CHINA TO UNITED KINGDOM AND CONTINENT.

	1899-1900. lb.	1898-99. lb.
Hankow and Shanghai ...	9,544,030	10,608,322
Amoy	221,484	390,250
Foochow	13,095,083	11,408,050
Canton	4,042,645	3,770,406
	26,903,242	26,177,028

EXPORT OF TEA FROM CHINA TO UNITED STATES AND CANADA.

	1899-1900. lb.	1898-99. lb.
Shanghai	1,222,849	1,132,577
Amoy	8,339,928	7,253,022
Foochow	5,630,617	5,876,852
	15,193,394	14,262,451

EXPORT OF TEA FROM CHINA TO ODESSA.

	1899-1900. lb.	1898-99. lb.
Shanghai and Hankow ...	25,363,948	22,676,900

EXPORT OF TEA FROM JAPAN TO UNITED STATES AND CANADA.

	1899-1900. lb.	1898-99. lb.
Yokohama	22,212,276	21,084,786
Kobe	11,782,517	11,235,261
	33,994,793	32,320,047

—*China Overland Trade Report*, Nov. 4.

RUBBER AND PLANTING IN BRITISH CENTRAL AFRICA

MLANJE, Oct. 21st.

THE CULTIVATION OF RUBBER

would seem to deserve the serious attention of the capitalists, for there appears to be no limit to the demand and increasing uses to which this product can be put; and in the course of years, not very many I should say, the present supply must become very limited. I have read with much interest the articles appearing in your *Tropical Agriculturist* from time to time on this subject. I shall now venture with a few remarks on the subject myself.

Central Africa, from what I know of it, and what I have read, does not furnish a vast or unlimited supply of rubber vines or trees. The whole country from north to south, and from east to west, is a bush-grass field, as one may call it, covered with native grasses with single fire-proof trees standing in it from 10, 20 to 30 yards apart and on many places thinner; and the bulk of the country has no trees at all. The forests are few (very limited in extent) and usually only in gullies and strips on the sides of the higher ranges of mountains. Stanley's dark forest, of course, is an exceptionally large piece of the continent.

Now the bush country contains no rubber-yielding vines or trees except by the sides of some streams which have a small bulk of trees left by natives to conserve water, so it is not difficult to see that the supply of

RUBBER FROM AFRICA CANNOT LAST

especially owing to the wasteful way in which it is collected.

There are only two vines in British Central Africa from which rubber is collected by natives, viz:—Landolphia Florida and Landolphia Pertersiana, very small delicate vines, only to be found in *forest* which the bush fires don't run through. Traders are offering 1s to 1s 6d per lb. for this rubber and engage squads of men to search every nook and corner for it, regardless of the method of collecting.

The Negro finds a vine or two, climbs the trees to which they are attached, cuts the vine in sections, even the very primary roots he cuts, and carries away the whole thing to the nearest path, or his camp, where he slices away at the bark just as he fancies, till he get a small ball of a few ounces (the rubber coagulates as fast as exposed, and is gathered at once) and off he goes in search of more. The primary roots being cut, and the root bulb removed, the vine is done for, as no shoots ever spring from the roots left in the ground. Some useless and, it would appear to me,

UNWORKABLE RUBBER REGULATIONS

have just been published by H. M. Commissioner for B. C. A. What is wanted is to restrict the collecting of rubber altogether, except by license under proper supervision: even then I question very much whether the Congo Free State, B. C. A., and the South African Co. will permit the destruction and ultimate extinction of the "goose that lays the golden egg" in their territory.

I do not think many years are wanted to exhaust the rubber supply of East, Central, and West Africa, though West Coast exports have fallen off greatly during the past few years. We have several large forest trees here, which yield rubber, and one large vine that is not tapped by natives as the caoutchouc does not readily coagulate.

One of those trees answers to the description of Kickxia Africana, a West African rubber tree; another I take to be Ficus Elastica. The yield of the latter would seem to be very large. I set two men to work on a large tree in my forest; and in about eight hours they brought in over 1 lb. of rubber each in the

evening. It took the whole day to coagulate. The men cut slits out of the bark, which is very thick, and allowed the rubber to collect and set in them. I have sent rubber and herbarium to Kew for identification.

The vine rubber, &c., I have also sent to Kew. I was always struck with the enormous amount of caoutchouc this vine yields : it simply runs out of a cut in the bark for any length of time, and I was

LED TO EXPERIMENT

with some from what I read in your *T. A.* I went to the forest with two men and from one vine, in the course of a few hours, we returned with two quarts of caoutchouc. Into one quart, I stirred half a tumbler of water, in which one tea-spoonful of J. T. Morton's tartaric acid was dissolved. After a little stirring, the contents coagulated the same as butter would come in a churn. I then went to the bath-room and washed the rubber, squeezing it and working it in my hand for some time, till all the refuse was washed out, when I had a piece of beautifully *pure* rubber quite white. When exposed it turned reddish grey in colour. The other quart I boiled pure and simple without the addition of any acids. In a quarter of an hour, stirring all the time, I got the same result. Gradually the rubber stuck to the stick until all was collected. This seemed to take place gradually as the water evaporated until I had one lump like very thick porridge, which I tumbled out on a board, poured water on it, and worked it about till I had

A LOVELY PIECE OF RUBBER

much nicer looking than what was made with the acid—more elastic with a pretty bluish transparent look about it. I am sure the above treatment is simple and inexpensive enough, and perhaps better results may be got than by the use of patent machinery. I shall try the churning; but as the use of my dairy churn is prohibited, I shall have to construct one for myself. I shall let you know the result in due course.

The abovementioned vine is very hardy, easily propagated from seed, and only takes about ten years to become fit for tapping, with a stem a foot in diameter. I am thinking of

PLANTING IT ALONGSIDE ALL THE SHADE TREES

in a coffee clearing on which native shade was left, although the coffee is a decided success so far up to 18 months old. I do not think the rubber vines would do any harm; and, of course, it is always better to have two strings to one's bow.

I have frequently read in the columns of your *Tropical Agriculturist* about hybrid coffee. Why, it is as common as anything here. From

SOME ORANGE COFFEE

imported by the Church of Scotland Mission by Gardener or some other person, we have got it hybridised on, I suppose, every estate in British Central Africa. At all events Mlanji has got it in every shade from the real orange to nearly approaching the dark green of our Coffee Arabica. I have often wondered whether this variety would resist the attack of leaf-disease. I could send some seed to any one in Ceylon who may wish to try it. From a small-leafed West African coffee we have several hybrids. The narrow-leafed coffee that my P.D. in Dimbula used to point out as a mail coffee, and give orders to reject when counting the plants, is also here, and has got hybridised with the Arabian variety.

I got some Liberian coffee seed from the Blantyre Mission in 1892 and put it into a nursery, and remember a few of the seeds came up; but what became of the plants I never found out from my assistant who did not know much about coffee. After some years I discovered several of the Maragogipe or hybrid variety of coffee trees in a field of about 140 acres; but how they came there I do not know, for I never got any seed or plants of Maragogipe from anywhere, and can only surmise that a Liberian plant must have existed somewhere and got

HYBRIDIZED WITH THE ARABICA.

I have not had much experience of tea-making. In the early days of hand work, I got some lessons from the late A. Cameron when on his rounds and turned out fairly good tea, which sold at 50 cts. per lb. in Colombo. But what puzzles me here is, I sometimes make a break of tea which is quite better; and if any of your experienced planters or your worthy self would tell me what is the cause of better tea I would be much obliged. I see nothing in T. C. Owen's book about it, and never remember turning out better tea in Ceylon. I have an idea that it is the withering or fermenting that has to do with the bitterness as it is only occasionally it turns out better. The crop is just over in British Central Africa and said to be a large one, and it would need to be, for the past two years have been very short.

THE RAINS

have been seasonable this year and our coffee is blossoming early: we have a grand show of spike on the trees at present. Early blossoms always do well in British Central Africa, so that I may safely say prospects are good for 1900 crop. H. B.

Analysis of a Coconut.—Dr. Bachofen, of Mr. Baur's Laboratory, has produced an analysis which should be of much interest to coconut-growers. The chemical constituents are most precisely detailed, while the amount of each important ingredient in the soil, removed by 1,000 nuts, is also added for reference. The latter should be extremely useful in the analysis of soils under consideration with a view to coconut-planting. In the former the most noticeable points are that Potash and Sodium Chloride are the chief constituents of every portion of the coconut; and that the dry matter exceeds the moisture only in the Shell, (by 69·60 per cent) while it is less in the Husk and Kernel by 31·12 and 5·6 per cent respectively.

OUR PLUMBAGO INDUSTRY.

CROWBORO', Oct. 27.

A merchant largely interested in our one mineral of commercial importance, although he knows nothing of Ceylon, has been placing some enquiries before me as follows :—

"Plumbago, which a couple of years ago, could be bought at £25 a ton is now up at £75 per ton, a corresponding increase having taken place in the inferior qualities. To what is this owing? Are the mines exclusively in native hands or are they subject to any control from European or American buyers? Are the different qualities of plumbago taken from different mines? Does the working of a mine require much capital? I am told that the principal expenses is timbering. What is the present output? And is the supply likely to run short? Perhaps you can say what probability there is of the present abnormal prices being maintained. Could a large consumer depend upon receiving a regular supply all the year round? At present it seems to be very scarce as well as dear."

My answer was that he (my correspondent) as using plumbago, ought really to know more about the cause of the rise in price than I, a Ceylon man. That, we have heard, is the greatly multiplied requirements for crucibles in view of increased armaments of the United States, and European Powers. But I must enquire about all this on my return to town, or it is possible some light may be thrown on the matter after my lecture on the 7th November. A trebling of price is certainly phenomenal; and I see the total export this year is not to be less than 600,000 cwt. in all probability, or 33 per cent above the last year's export! Thirty thousand tons at an average of £40 to £50 a ton will mean an enormous amount of money to divide among the Ceylonese mine-owners. Probably not less than twenty million of rupees! How much of this will go into the hands of the labourers? Some years ago, Mr. de Mel had one mine that gave him £2,000 profit a year for eleven years. With prices trebled, he and other fortunate plumbago pit-owners must be making very large sums. Let us trust they see to the comfort and safety of their workmen and their proper remuneration. It would be interesting to know if any mines are worked on the co-operative system? Then surely the Government should make "hay" for the general revenue while the sun is shining. The royalty on 600,000 cwt. expected will be only R150,000 or not one per cent on the value; but that cannot be helped. It is the royalty from plumbago dug on Crown lands that should yield more revenue at such a time, or the sale outright of such land.

Turning to the question of my correspondent, I was able to tell him as an exception to the native owning of mines, the case of the late Mr. Tottenham (how far-seeing was our friend to bring out a Mining Engineer to develope his property when he did), and that since then other English capitalists had entered the field. As regards the supply running short, I ventured to say that I saw no reason for its doing so; and that in fact with the advent of a Geological Survey Staff early next year, there ought to be a fresh impetus given to plumbago mining; but as to the price keeping up, that is a matter, I suppose, for which the answer must be sought in London or New York rather than Ceylon.—Now should be the time to get intelligent progressive Ceylonese like the Messrs. de Mel, Fernando and some others in plumbago, to confer some lasting boon on their countrymen—why not provide a YOUNG MEN'S INSTITUTE FOR COLOMBO?

PRODUCE AND PLANTING.

AMERICAN TEA BUYERS.—Our New York contemporary, "The Commercial," has the following on the influence exercised by the American tea buyers on the London market. It says: "The London market, the great tea mart of the World, was until lately controlled by a few large buyers, who, by agreeing between themselves to remain out of the market for a sale or two, could readily depress prices. These buyers were, and are, by force of circumstances necessarily 'bears,' because the tea they buy is put up in packets and sold at fixed prices, to which the consuming public has been educated. It can be readily seen that with every change of the market to a higher basis, the price of the packet to the consumer could not be changed, hence the packet tea buyer must purchase at a low price or sustain a serious loss. In this connection a leading dealer in packet teas said yesterday: 'With the American business an important factor in the London market, such a combination becomes unavailing at once, as there are always ready buyers of Ceylon and India tea here when London prices go below a certain limit. Formerly China tea, at 8 cents a pound, came into competition with the pure teas of Ceylon and India, which cost 12 to 13 cents to land. Through the strict enforcement of the standards by the United States Government, those inferior "compounds" are entirely excluded, and China tea cannot be bought under 12 to 13 cents a pound, which brings the two classes of tea practically to a parity, and at the same time the more desirable for blending or any purpose is the machine made tea of Ceylon and India. Thus, it will be seen that the operations of the American buyers immediately nullify any contemplated "bear" movement in London,' as the offers to buy at a price for export to America are always in evidence there. The result will be that possibly after one or two bear attacks the combination will have to fall into line and buy at market prices in self defence. With the consumption of Ceylon and India tea increasing here, in Great Britain and, in fact, all over the world, the trend of price is upward, and after the British "bear" combination has been compelled to buy at current values, the American buying interest will have to raise its limit also, and in that way values will reach a still higher level. Certainly it is that prices are looking upward, and there is nothing in existing conditions that would make shrewd tea buyers hope for or expect lower values. Another strong factor which tends to lessen the influence of the "combine" of packet tea buyers in London upon the world's market is the great number of orders now sent direct to Colombo and Calcutta from houses in America, Russia and Australia." By the way, apropos of tea in America, it may be mentioned that two-thirds of the total tea importations of the United States go in through New York, and amount to nearly 60,000,000 lb. a year. Although Americans are not especially known as a tea-loving or tea-drinking people, they consume 90,000,000 lb. of tea annually.

TEA CULTIVATION IN THE UNITED STATES.—The "New York Commercial," commenting on the report of the tea crop of the Pinehurst tea estate, Summerville, S.E., says "The 'Commercial' has from time to time published opinions of members of the tea trade in this city to whom samples of the Pinehurst tea were submitted. These opinions varied but little regarding the quality of the product. In all cases it was described as inferior to

the best quality imported, and equal to the grade sold at from 22 to 27 cents per pound. Some doubt was also expressed regarding the possibility of tea growing ever becoming profitable."

Tea in France.—There is clearly scope for further and energetic operations in connection with the sale of tea in France. A correspondent of "The Grocer" calls attention to the fact that many tea-rooms have been opened which announce the sale of tea in liquor and in leaf, and most of them advertise themselves as "Five O'Clock Tea Rooms." He says: "I called at one of the newest of these—a very small shop—the other day, and found that the business was being run by two young ladies, daughters of an English clergyman. I tried their tea, and must confess that if the same article were served in Regent Street or Piccadilly the trade done by that shop would be very small. The tea was of a very thin and flavourless description, especially when mixed with milk and sugar. I purchased one of their packets of tea, which was sold to me at the rate of 4s per lb. and on examining it I found the tea was such as would not find a very ready market in England. I submitted it to an expert, who assured me that it would be worth about 7d per lb. on the English market; to that has to be added about 2s 3d for duty and 'octroi,' bringing the cost of the article up to about 2s 10d a lb. Curiously enough, it bore the name of a Swiss merchant, from whom I understand it had been obtained. It is a pity that the French taste for tea should not be educated with something better than this, because there can be little doubt that if the French consumers were taught how to make tea properly, and were taught how to appreciate a good cup of tea, a very great trade might be done in this article in France. There is, I am informed, an attempt to popularise tea in connection with the Indian and Ceylon sections of the Exhibition, but the restriction which has been laid down by the authorities that it shall not be sold within the precincts of the Exhibition is one which will very greatly handicap exhibitors. No doubt many of your English merchants have turned their attention to France as a country into which tea might be profitably introduced, but the failure which has attended their efforts in the past doubtless accounts for the slowness of English merchants at the present day to make a fresh attempt. As, however, there will be a great number of English-speaking tea-drinkers in Paris next year, no doubt a good opportunity will afford itself of making a fresh attempt. In the Exhibition year of 1889 some Englishmen did make the experiment of providing tea served in the English fashion, which met with a limited amount of success; but the numbers of English-speaking visitors next year it is expected will be greater than ever, and so it must be for the consideration of English merchants how far they will make another experiment in this direction."

Coffee Adulteration.—Coffee suffers in the matter of adulteration as compared with tea. The fraud, which is made in Germany, has found its way into Yorkshire, and, according to the Government analyst, it is most difficult, even on close inspection, to distinguish the doctored maize from the genuine coffee berry.—*H. and C. Mail,* Nov. 3.

SHEVAROY PLANTERS' ASSOCIATION.

The following are from proceedings of a meeting of the committee of the Shevaroy Planters' Association held in Yarcaud, on Monday, the 6th instant:—

Present:—Messrs. W J Lechler, Thurston, Short, Rev. M Anderson, Messrs. C Rahm, C G Lechler, S B Nicholson, Rev. J M Kempf, Mr. R Gompertz, (Chairman and Hony. Secy).

Read circular 89-99 from the Secretary, U. P. A. S. I., *re* exhibiting and selling Indian coffee at the Paris Exhibition, and enquiring what our Association is prepared towards the expenses. Resolved:—"That the Secretary, U. P. A. S. I., be informed that this Association is prepared to subscribe R200 towards the expenses of advertising and dispensing Indian coffee at the Paris Exhibition, provided that other Associations will subscribe in proportion."—*Madras Mail,* Nov. 17.

LANKA PLANTATIONS COMPANY, LTD.

Report presented at the Nineteenth Ordinary General Meeting of the Lanka Plantations Company, Limited, held at the Office of the Company, on Wednesday.

1 The Directors now submit their Report for the twelve months ending 30th June last, together with the Balance Sheet and Accounts of the Company made up to that date and duly audited.

2 The season was unusually favourable for Coffee. The crop shipped to London amounted to 722 cwts., and realized £2,843 10s 2d. Last year, the crop shipped was 247 cwts., and realized £1,072 11s 8d. The acreage under Coffee alone is nominally 134 acres.

3 The total crop of Cocoa gathered on Yattawatte amounted to 1,665 cwts., and realized £5,509 18s 10d, against 1509 cwts. last year, which realized £4,866 1s 9d. The cost of seven acres new land, and the net expenditure on clearings not yet in bearing, are charged to capital account. On the same estate 420 lb. Cardamoms were gathered, realizing £40 4s 9d.

4 The Tea received from the Company's estates amounted to 769,578 lb., and has been sold at an average of 7·44 per lb. net, realising £23,862 4s 4d. Last year the company received 731,593 lb. which was sold at an average of 7·45 per lb. net, and realised £22,840 18s 1d. The season was generally unfavourable and the yield fell short of the estimates.

5 The average rate at which drafts were negotiated on account of the season's crops was 1/4, 9-32nds per Rupee against 1/4, 3-32nds last year.

6 The following statement shows the acreage and state of cultivation of the company's estates on the 30th June last;—

Estate.	Coffee.	Tea.	Cocoa.	Grass.	Chena & Patana.	Forest and Timber Trees	Total.
Ampittiakande, Arnhall	20	444	..	4	167	70	705
Fruit Hill	..	227	...	..	10	...	237
Fordyce, Garbawn, Gonagalla & Paramatta	..	794	..	7	..	135	936
Rappahannock	..	322	..	31	30¾	90	473¾
Rillamnlle	...	232	..	..	6	20	258
Thotulagalla	114	264	...	...	63	114	555
Yattawatte	..	..	*751	95	294	82	1,222
*68 acres interlined with Liberian Coffee	134	2,283	751	137	570¾	511	4,386

7 The net profits for the past year amounted to £9,544 2s 7d, to which must be added the sum of £644 6s 11d, the balance brought forward from the year 1897-98, making together £10,188 9s 6d.

8 Having already paid a half year's interim dividend on the 6 per cent. Preference Shares to the 31st December, 1898, amounting to £426

6s 0d, the Directors recommend payment of the Dividend on these shares to 30th June last, requiring (less property tax) a similar amount, and having deducted £1,247 1s 8d, being one-tenth of the sums charged to Suspense Account during the ten years ending 30th June, 1898, and (in anticipation) the tenth of such sums for the ten years ending 30th June, 1899, amounting to £1,136 14s 4d, they further recommend a dividend of 8s per share, being 4 per cent. (free of income tax) on the Ordinary Shares, amouuting to £6,000, carrying forward a balance of £952 1s 6d to the next account.

9. The Director who retires on this occasion is Mr. George Allen, who, being eligible, offers himself for re-election.

Mr. John Smith, the Auditor, also retires and being a Shareholder offers himself for re-election.

CEYLON AND INDIAN PLANTES' ASSOCIATION LTD.

SECOND ANNUAL REPORT, 1898-99.

The Directors beg to submit their Report and Audited Accounts for the year closing 30th June last.

The past twelve months have proved somewhat better for the tea industry in Ceylon. With the exception of Kandaloya Garden, all the Estates give a larger profit than for the corresponding period. Kandaloya tea is now being sold on the Colombo maket with better results than would be obtained here, and the Directors hope that next year this portion of the Company's property will do more to increase the profits than it has done hitherto.

The crop has not weighed out as much as expected, but is still 46,664 lb. in excess of the previous year. Estimates for this year anticipate a further increase of 68,000 lb. of made tea, or a total of 740,000 lb., for an expenditure very little exceeding the past year's.

It will be noted that in the accompanying analysis the average sale price has been more, and the cost of production less than last year, except in the case of Kandaloya,

The Directors during the year have paid off the Mortgage and issued Mortgage Debenture Stock for £45,000 at 5 per cent secured on the whole of the Company's properties.

The Directors desire to record their thanks to Mr. George Greig and the Staff in Ceylon for their efforts in promoting the welfare of the Company during the period under review.

The Accounts show that after paying Interest and preference dividend and manager's commission, there is a balance at credit of Profit and Loss of £1,834 6s 9d, the Directors propose writing off £450 from prelimanry expenses, £400 from machinery account, and £150 from debenture issue account, and to pay a dividend on the ordinary shares of 2 per cent absorbing £800, carrying forward the small balance.

Both Directors' and Secretarial fees have been surrendered.

The Auditors, Messrs, Singleton, Fabian & Co., beg to offer themselves for re-election.

Directors—C A REISS, C F DICKINSON.

CENTRAL TEA COMPANY OF CEYLON LIMITED.

Report of the Directors submitted at the fourth annual ordinary general meeting of shareholders held at 20, Eastcheap, E. C., on Monday the 13th Nov.:—

The Directors have the pleasure to submit the general balance sheet and profit and loss account for the year ending 30th June, 1899, duly audited.

	£ s. d.	£ s. d.
The net amount at Credit of Profit and Loss Account, including the balance brought forward at 30th June, 1898, and after providing for General Expenses, Directors' Fees, Income Tax, &c., is ..		,935 7
Dividends on the 6 per cent. Preference Shares were paid for 1898/9 (less Income Tax) amounting to ..	1,305 0 0	
It is proposed to pay a Dividend of 6 per cent. (less Income Tax) on the Ordinary Shares which will absorb ..	1,073 0 0	
And to carry forward to next year a balance of ..	557 7 7	
		£2,935 7 7

The Directors trust the results of the year's working of the Estates will be considered satisfactory by the Shareholders.

The gross average price realised for the tea was 7·87d per lb., as against 7·75d per lb. last season, and the rate of exchange was 1s 4 19·64d as against 1s 4d.

The yield of tea was 331,427 lb., being 377 lb. per acre over a plucking area of 879 acres.

The acreages of the Estates are as under—

Estate.	Tea. In bearing.	Partia bearing.	New clearings.	Cardamoms.	Forest Grass and Waste.	Total acreages.
Kabragalla	..431	61	16	32	397	937
Somerset (Including Easdale and Loxa).	..387	..	13	..	33	433
Total	.. 818	61	29	32	430	1370

Under clause No. 24 of the Articles of Association Mr. J. Sancroft Holmes retires on this occasion from the Board, and, being eligible, offers himself for re-election.

The Auditors, Messrs. Harper Brothers, Chartered Accountants, also retire from office, and offer themselves for re-election.

TEA MACHINERY.—Amongst the announcements of Messrs. Crosby Lockwood & Son's new and forthcoming publications is the following:—

Tea machinery: A Descriptive Treatise for the Use of Planters and Others. By A. J. Wallis-Tayler, A.M.Inst.C.E., Author of "Refrigerating and Ice-Making Machinery," &c.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees. R. N. Lyne, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price according to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Sterculia Acuminata.—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, Eucalyptus various varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—MESSRS. P. W. WOOLLEY & Co., 36, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq,

Telegraphic Address:
WILLIAM, VEYANGODA, CEYLON.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
HENARATGODA, CEYLON.

WYNAAD TEA COMPANY, LIMITED.

The fifth annual meeting of The Wynaad Tea Company, Limited, was held at the company's office, 20, Eastcheap, E. C., on 30th Oct., Mr. J. C. Sanderson presiding. The secretary having read the notice convening the meeting,

The CHAIRMAN, in moving the adoption of the report and accounts, said:—You have all had a copy of the report and accounts, so I presume I may take them as read. As explained to you in the report, the accounts are only for eleven months, the reason being that our managing director in India wished that our year should end at the same time that the financial year of all other tea companies ends, viz., at the end of March. The net profit of the working for the past season, after crediting the block account for the tea which had been picked from the Cootacovil Estate, is £728 2s 9d and this profit the directors are going to write off the debit balance of last year. They regret they cannot give you a dividend; but, of course, while that debit balance exists we cannot declare one. We hope that it will all be wiped away next year, and that there will be something to the good. Besides the credit which we have taken for the tea, there are legal charges to the extent of £231 13s, which have been outstanding for some years, but which are now all wiped off, so that I think (and I hope you will agree with me) that this year's report is decidedly the most favourable one we have had for some time. The crops for the past season turned out very satisfactorily. The coffee crop was the largest gathered for some years, being fully 51 tons, and the director were very fortunate in selling it at a very high price before the fall in coffee took place. The pepper crop was also sold at a profit, fetching 45s 6d per cwt, while the first pluckings of tea, which amounted to about 15,000 lb. from the Cootacovil estate from the 1895 planting, fetched an average price of 7½d per lb. With regard to the present position of the estates the manager reports that their condition is highly satisfactory throughout, and the prospects for this year are encouraging. The tea leaf is coming in so fast that we shall have to put in more machinery, and according to the letter which we have received today we are some 7,000lb ahead of estimate. The estimate, as the report tells you, is 78,000lb for this season, and with by far the heaviest month, of the year to come we have in the first six months received nearly half the estimate. The shrubs are flushing splendidly, and they are in a very healthy condition. The estimate, for the pepper crop this season is about 20 tons, and we are just on the point of selling it at considerably more than the price realised last year. With regard to the coffee crop, it will probably be from 18 to 20 tons, but the market is rather too uncertain for us to forecast what we shall get for it, although we think it will come on a better market. The outlook for 1900-1 is very promising. The coffee trees are making splendid wood, so that we may expect a considerable increase over this year's crop, and the tea yeild will be much more, because we shall have the first hundred acres in full bearing, and we shall also pluck from the second hundred acres. Under these circumstance the directors confidently look for a yield of about 150,000 lb. I do not want to hold out too sanguine a view, but I think we have turned the corner, and that the time is coming when we shall all be repaid for our long waiting. Before asking you to adopt the report and accounts, I shall be very pleased, with the assistance of Mr. Walker, to answer any questions any shareholder may wish to put to me. I have now great pleasure in moving the adoption of the report and accounts.

The resolution was seconded by Mr. Labouchere.

In reply to a question from Mr. Summerhays, the CHAIRMAN stated that the proceeds of the tea were credited to the block account and not to the revenue account, because the tea was not in full bearing.

In reply to a question from Mr. Donald Andrew, Mr. WALKER stated that with the exception of a short period at the beginning of the year they had had no difficulty in getting labour, in fact, there was far more labour than they could employ. They had lost no tea through scarcity of labour, so that he thought they could fairly say that they would be able to get all the labour they might require.

The report and accounts were then unanimously adopted.

On the proposal of Mr. LABOUCHERE, seconded by Mr. Andrew, Mr. Sanderson was unanimously re-elected a director of the company.

Mr. KNOTT proposed, and Mr. Goodwin seconded the re-election of the auditors (Messrs. Lovelock & Co.). The motion was carried unanimously.

The next business of the meeting was to consider the resolutions for financing the company by borrowing money secured upon debentures.

The CHAIRMAN in proposing these resolutions said:—You will no doubt remember that last May we had a meeting, and a resolution was passed giving the directors power to raise £10,000 in debentures to carry on our properties and to pay off a large block account which we owed. There were certain informal matters which interfered with carrying this proposal through, and one, the most important, was the question of taking away all our borrowing powers. Those shareholders who understand the working of tea will know that the business has to be carried on by means of agencies, and that we have to borrow money for the upkeep—that is the cultivation of our crops until they are marketed. The resolution as it stood would have debarred the directors taking powers to borrow money for this purpose. We have since reconstructed the resolution, and I now beg to bring it to your notice. I am sorry to say that we have had to change our agents, and it is with great regret we have done so, for we have experienced every consideration and assistance at their hands. It was, however, hardly within their province to take up debentures in another tea company, so they informed us that if we could make other arrangements they would not stand in our way, that is to say they very kindly allowed us to break our contract in the middle of the season. We have therefore arranged with Messrs. R. and J. Henderson to take the balance of any debentures that the shareholders do not wish to take. The directors have subscribed for £500 each, and you may be sure it is considered a very good and safe investment as otherwise your directors and Messrs. R. and J. Henderson would not be willing to take them up. Our property is a valuable one; an independent valuation which we had made in 1897 amounted to £40,000, and since then the value has been increasing by a part of the acreage of tea having come into cultivation, and the coffee and pepper crops having greatly improved. I repeat, therefore, that with these fine and valuable properties as security, it is a very good and

safe investment for the debenture holders. Messrs. R. and J. Henderson wish first to give the shareholders an opportunity to take the debentures, because they carry the condition with them that they can be exchanged for 10 per cent. preference shares any time prior to the date of repayment, so the shares may become of great value. Those, therefore, who help the company through the pressure at the present moment will not regret it hereafter. I do not think that I have anything more to say, so I will proceed to move the following resolution :

"That in lieu of the authority to borrow £10,000, conferred upon the directors by the resolution of May 27, 1899, the directors be, and they are hereby authorised, from time to time to borrow for the purposes of the company sums of money not exceeding in the aggregate £10,000, to be secured by debentures charged upon the company's property in such manner as the directors think proper, such debentures to bear interest not exceeding six per cent per annum, and to be repayable at par at the expiration of five years from the date of issue, with the option to the company of repayment, in the meantime, at a premimum of £2 10s per cent., upon six months' previous written notice, and to confer upon the holders thereof :

"(a) The right to receive notices of general meetings of the company, and to attend and vote at such meetings in manner provided in the case of shareholders by the articles of association of the company.

"(b) The right during the said period of five years to exchange such debentures or any of them for fully-paid 10 per cent. preference shares of the company, notwithstanding the terms of clause 6 of the articles of association."

The Chairman said that he must here explain that, according to the terms of clause 6 of the articles of association, any issue of new shares should be offered to the shareholders pro rata. As they had only about £4,000 left of the preference shares unissued, and they intended issuing £10,000 debentures, there would be a difference between that sum of £6,000, which might have to be issued hereafter. The second resolution was :

"That the directors be and they are hereby further authorised from time to time to borrow upon the security of the crops and prodnce of the company's estates any sums of money required for the purposes of the company."

These resolutions were seconded by Mr. Donald Andrew.

Mr. Summerhays then said that, as the legal adviser of the company, and also as a small shareholder, they might like him to make a few remarks. From a legal point of view the case was an extremely simple one. Here was a company to all appearances on the eve of prosperity, but in order to make its position absolutely secure it was necessary to raise a substantial sum of money, viz., £10,000 to give full effect to its powers and to make the most of a very valuable property. It seemed the best way of accomplishing this object in the interests of shareholders was by raising money upon the issue of debentures which form the first charge upon the company's estates. This is a case in which the shareholders should first be considered, and in which they should have the first opportunity of taking up these debentures, more especially considering the special advantages which were to accrue to the debenture holders. It might not suit the views of a good deal of the company's share holders to add to the present holding of preference shares, and for the very good reason that money could be raised for the purposes of the company which would come in front of those shares, but on the other hand, if those shareholders now came to the assistance of the company they were only helping towards this, and they got the very best security for their money. They got a first charge for this relatively small sum of £10,000 upon £40,000, so that their security, became undeniable. This was not all. They also got the special condition of being able, while these debentures were accruing, to surrender their debentures which gave 6 per cent. interest, and taking 10 per cent. preference in their place. He could conceive of very few securities more advantageous than that which was offered in the first instance to the shareholders, and afterwards to the public. The method of procedure was perfectly simple. He might mention, as a small shareholder in the company, that he was so convinced of its being a safe investment that it was his intention to recommend it to his Indian clients. It was an essential part of this scheme that debenture shareholders might exchange their debentures for preference shares, so that it was really necessary to alter the sixth article of association. However, it was the spirit of the thing that was the main principle. If any difficulty should arise two meetings would have to be held, and then the position of debenture-holders would be secure.

The resolutions on being put to the meeting were unanimously adpoted, The chairman then proposed a vote of thanks to the staff in India for their hard work and efficient management. This was seconded by Mr. Summerhays and carried unanimously.

On the proposal of Mr. Labouchere, who said that, as next year they would probably meet the offices of Messrs. R and J Henderson, this was the last opportunity the directors might have of passing a vote of thanks to the Secretary, Sir Wm. Johnston, for the eminent way in which he had done his work. He had pleasure in proposing the vote of thanks. The proposal was seconded by the chairman and carried unanimously. A vote of thanks to the chairman concluded the meeting.—*Home and Colonial Mail*, Nov. 3.

GOOMERA (CEYLON) TEA ESTATES CO., LTD.

DIRECTORS' REPORT.

The Directors herewith beg to submit the fifth annual report and balance sheet for the year ending June 30th, 1899.

The accounts, after paying debenture interest writing off the balance of preliminary expenses out-standing, and paying 3 per cent. on the preference shares, show a balance to the credit of profit and loss of £353 2s 8d. Out of this a final dividend of 3 per cent. has been paid on the preference shares, leaving £203 2s 8d. to be carried forward to next year.

Although considerably better than last year, the result of this year's working has not been as satisfactory as hoped for. There has not been a good market for medium teas, such as the Company produces, during the year. It is hoped that the young tea now coming into bearing will add

materially to the yield and the profit of the Company in the immediate future.

The estates of the Company are reported to be in thoroughly good order. During the past year some of the machinery has been renewed and the factories put into good repair. Extensions have been made to both of them in view of the young tea about to come into bearing; this latter expenditure has been charged to capital account.

During the year Mr. C. J. Rowe and Mr. F. A. Macrae died, and in accordance with the Articles of Association, Mr. B. F. White was appointed in the place of the former and Mr. A. Valentine Holland was appointed in the place of the latter.

THE "KNOCK-OUT" IN THE TEA MARKET.

(COMMUNICATED.)

In spite of many assurances to the contrary from those interested, for sometime it has been generally known that a unity of action existed among the larger buyers of tea, which has now assumed the shape of The Tea Buyers Association, with the object of buying collectively at the public sales and acting on the lines of what is generally known as "a knock-out." There is no doubt about it, and after all it is only an outcome of the modern mode of doing business. Anyone who likes to go to Ingram House, 165 Fenchurch-street, can see the title in the porch:—

THE TEA BUYERS ASSOCIATION.

Most of the following was compiled in January, 1899, by one who had previously devoted some months to studying the Tea Trade in all its branches, from arrival of its produce in London to its retail—comparing it with the other large industries, such as brewing, distilling, iron, cotton, leather, &c.; in search of any information likely to be of service in improving the system of selling tea.

In carrying out this, his endeavours have been to adhere as closely as possible to simple facts and direct conclusions, and so avoiding all that is remote, or complex.

The Tea Planting Industry of India and Ceylon is now suffering depression from four causes:—

1st. An arbitrary action of the Indian Government, affecting so-called exchange.

2nd. Occasional and periodic rushes of tea from India and Ceylon upon the London market, necessitating some order and regularity in the quantities offered for sale weekly.

3rd. The want of definite and reliable information on the quantities of tea produced and likely to come forward from India and Ceylon.

4th. The same collective care in selling that is exercised in buying teas.

Temporary over-supply seriously brought down the price in the tea market during the early part of last and this year; and although the statistical position of all teas, a little later, shewed the stocks to be almost identical with those of 1897, yet there was no reversion to the prices then ruling, at least for Indian teas. Ceylon, by extra fine plucking, has barely (1898) maintained its average price. It is observable, however, *that a return to what economists call an equilibrium of the market, does not re-establish a relative and permanent recovery of price.*

There is also every indication that the market has hitherto periodically suffered far more from the irregular manner in which produce has reached it, than from over-production, although this position has been very nearly reached.

Some years ago, when consumption was smaller, the public sales market in Mincing Lane was frequented by a proportionately larger number of tea buyers than now: tea was brought in smaller parcels obtaining livelier competition.

PUBLIC SALES.

Now in spite of the so-called sales by Public Auction, everyone knows that by far the larger proportion of tea now sold in Mincing Lane goes from seller to buyer without any public competition whatever, it evidently being arranged beforehand who shall be the purchaser. Formerly, the statistical position of the tea market was no more favourable to growers than it is now; the present market, however, has ceased shewing the same response to improved statistical conditions as it then did.

Although the excessive supply of tea brought to sale during the past few years, has gradually been worked off, assisted by the increased consumption of foreign markets, yet there is not the reacting buoyancy that the market should in consequence possess.

Nor is any one prepared to dispute that the buying of teas in Mincing Lane has fallen into fewer hands, and that the results obtained are not so satisfactory as formerly.

Also few will admit that the market responds now as formerly to supply and demand; for, from a grower's point of view, whatever be the cause, the fact remains of the existence of some adverse influence somewhere. Consequently, if the present order of things continues unaltered, the open market is not likely to adjust itself in any adequate degree.

The following table shews that something besides supply, demand and over-production have been influencing the downward tendency of tea prices, for the past 15 years, although probably the chief cause has been the irregular supply of the market.

HOME CONSUMPTION OF TEAS.

Memo shewing the total home consumption of all teas, including India, China, Ceylon and Java; also stock at the close of each year; with average of price and the proportion of stock to consumption over 15 years, in intervals of three years, from January 1st to 31st December in each year:—

Year.	Home consumption in lb.	Total stock at the end of each year.	Average price. d	Proportion of stock to consumption. per cent.
1898..	235,414,185	101,638,000	8·35*	43
'95.	221,731,490	103,480,802	9·63	46
'92...	217,135,679	98,244,217	10·07	45
'89...	185,578,298	113,189,357	10·79	60
'86...	178,809,197	103,157,446	11·77	57
'83...	170,780,777	118,060,000	12·46	69

The foregoing table proves that just the opposite has happened to what would be expected. A proportionate reduction of stocks should be followed by a corresponding rise in prices and a proportionate increase of stocks by a fall.

This surely shews that some other influence must be at work, for there is no natural response to supply and demand.

The progression of the figures from ·43 to ·69 are *gradual* over 15 years, so the result can scarcely be considered accidental.

* 8·35 is only approximate.

As a matter of fact, judging from all ordinary experience, the markets were proportionately overstocked 15 years ago, than they are now.

It is no use hiding the fact, that the influence of the regular arrivals of Ceylon teas throughout the year has in a measure stopped the necessity of so large stocks—a secure condition which, if less assured, would be more to the advantage of tea-growers.

MARKETS.

Probably buyers have noticed that tea has gone steadily down for the past 25 years and so do not care to stock against a falling market. Reverse the order, even by the slightest degree, and the opposite will happen and this latter is urgently wanted.

CLOSING THE MINTS.

In spite of Great Britain's boast of Free Trade, the Indian and Ceylon tea-growers have suffered from the arbitrary action of the Indian Government, in protecting its own exchanges at the expense of exporters, by closing the mints, which has been disastrous to tea-growers.

Without going unnecessarily into details, it may be considered that between the natural value of the rupee and its present forced value, that 1d per lb is added to the cost of production, which, roughly speaking, is almost equivalent to 4 per cent profit on the average standing capital value of the tea property of India and Ceylon—a very serious loss of itself, but far more serious when regarded in its capitalized form.

If trade were conducted free of undue influence, from either buyer or seller, these unsatisfactory relations would soon readjust themselves; but with buyers becoming fewer in number, representing larger collective capital and working on larger lines, there appears to be evidence that they have undoubtedly obtained some undue influence over the market.

Within the last twelve months it was mooted that further amalgamations and the offering to the public of certain large distributing Tea Companies was probable, which would still further reduce the number of public buyers at sales.

Indeed it is not necessary to hide the fact, that for this purpose capital is easily procurable, expenses of management saved, and additional power attained with every probability, that these conditions will increase rather than diminish in the near future.

For, doubtless, in these large concerns with special organization, there arises a most careful scrutiny of where money can be saved or made; they also command the most efficient and skilled men, and with their increasing magnitude, opportunities in their dealings for keeping down prices will not be neglected.

As compared with butter, bacon, sugar and other groceries, tea is sold at a much higher profit by retailers, further evidenced by the gratuitous offerings to those who will only purchase their teas. Growers, if united, might have something to say on this; indeed they would actually posses a power right through the trade, which, even if not used, would at least exercise some control.

PRICES OF TEA.

Unlike wheat and other annuals, the production of which can stop at the close of any season, tea does not come into heavy yield until four years after planting operations have begun, by which time it has attained a value which *necessitates* continued cultivation: consequently, from this cause among others, it is apt to arrive with considerable irregularity in the market and this produces falls in price, quite unexpected and unprovided for.

There is also a time in each year, usually during June and July, when it may be expected that the London market will become inactive owing to the bulk of new Indians shortly expected; and it is at this period of the year that the heavy shipments of Ceylon arrive. The consequent fall in prices, that takes place then, exercises its influence on prices throughout the remainder of the year.

Those who have studied economics know that the measure of price of the first transaction has a most material effect upon those which follow, and this principle is acknowledged by all traders.

If so, what can be expected from sellers in a market, who use no systematic and general mean of regulating the quantity of tea offered for sales and allow large and ordinary arrivals to take their place indiscriminately without attempting their regulation?

What would be thought of a man who rushed Company shares on the Share market without any regard, at the time, whether they were wanted or not? What principle is right in an individual, must also be right in an industry, having similar pursuits and interests.

Doubtless, the permanent price of tea, from year to year, is ruled more by the *lowest price* of the market at the beginning of the season than by any other cause; and if these periods could be tided over without any material fall, a better price, until these circumstances occurred again, might be insured.

IRREGULAR ARRIVALS.

The effect of these irregular arrivals being thrown thus upon the market is bad enough on produce; but upon the capital value of property and upon the tea share-market, it may truthfully be said that recognised stability is destroyed; and there is every reason to believe that, unless some permanent equalising control can be brought to bear, this condition of things will most assuredly be *more frequent in the future* than it has ever been in the past.

Owing to the small margin gradually remaining to tea-growers to go and come upon, the collapse of prices, which takes place almost yearly, assumed a very serious aspect during the early part of last and also this year. This, however, might have all been moderated by the slightest equalisation of the quantities of tea thrown upon the market, from both Ceylon and India.

No fair critic would allow that, in the public auction sales, the buyer and seller are upon equal terms. The buyer can, at any sale, buy or not, just as he chooses; he claims the right of re-bulking, objects to non-sampling breaks, claims right of objection on every conceivable point, not the least of which is a regular outcry of "quality falling-off," whenever the market becomes a little over-supplied, leading to endless, and often useless, correspondence between London and the tea gardens.

Against these the individual seller has but one redress, a futile one; if the bid be unsatisfactory, he can withdraw his teas, but as, under the present condition of the market other sellers are easily found, he is no better-off. Individually, he is powerless, on the other hand; combined growers would have it practically their own way.

The buyer can always arrange his purchases so as to obtain a marginal profit on his re-sales,

which no ordinary circumstances are likely to upset, while with the seller, everything is against a fair marginal profit at all commensurate with his outlying capital and yearly cost of production: so the only way this can with any permanency be retained must be by some collective means.

PROPRIETORS NOW RESIDENT IN LONDON.

The present system was unavoidable when the grower and proprietor lived abroad; but now the proprietary of tea-gardens chiefly rests in London, it is time more up-to-date and equitable terms of business were instituted between buyer and seller. If for no other reason, at least to be prepared for differential actions of Government and adverse defensive measures of trade.

It might be asked why sellers should not exercise the same controlling influence over the markets of wheat, sugar, coffee, cocoa, etc. The reply is: other markets compete with London in these, but London practically has the monopoly of British-grown teas; neither are these other products so favourably situated for the purpose, their growers being too much scattered.

Anyhow British tea-growers have object lessons before them, in closed mints and sugar bounties; so may rest assured that any satisfactory countervailing influence will not arise unless they take a lesson *from the owners of British industries* and either rise as one man and protect themselves, or allow the *interests of the consumer* to be alone considered, as with the West Indian sugar industry.

ASSOCIATIONS IN LONDON.

Tea-growers or their representatives do business with brokers, dock-owners, etc., *who all have their unions or associations*; and there are also very distinctly arranged understandings among tea-dealers and grocers; perhaps, not so definitely arranged, *but they exist*, or, as they know very well, trade would not be so advantageously done: unwise competition would as soon, with tea growers, make their business unsteady and insufficiently profitable.

Political economists lay down a maxim, that what is division of labour in the individual becomes Free Trade in the State: so surely it is within the legitimate function of the seller, to regulate his sales to the requirements of the market, without infringing the laws of Free Trade; and if so individually with division of labour, collective action does not alter the principle but merely increases the numbers in operation.

Indeed, no principle of Free Trade is infringed and the evidence of one of the first Professors of Political Economy, on combining to regulate the ales of the tea market, is that it would be wise rade to do so.

It is certain that the ordinary operation of natural trade cannot fight against the differential impositions of the Indian Government, any more than a man who does not fully protect his own business can expect to compete with another who defends his at every turn.

No matter how necessary for the financial arrangements of India, it is not likely that the protective action of the Indian Government would have been so widely approved, were it not that it gives immediate benefit to the official classes and to British investors in Indian finances. If the measures taken by India were necessary and so right, a similar course under the circumstances by the British Tea Industry *will not be less right*; federated too, it will have sufficient power to carry out the measure.

SOMETHING MUST BE DONE.

Under any circumstances, as British growers are at present placed, with a practically differential tax against their own products, with continued falls in price, irrespective of favourable statistical conditions, *something must be done* to prevent this continual downward tendency of the market. Last year, between May and August, tea fell ½d and *there is no reason, as the market is at present constituted*, that it should not continue doing so unless come collective means are adopted to meet the situation.

SUUM CUIQUE.

A REPLY TO "SUUM CUIQUE."

Colombo, Nov. 22.

DEAR SIR,—Your article appearing in today's paper signed "Suum Cuique" is indubitably a most interesting and able communication. It brings into prominence the leading features of the position of tea and the factors that effect its price.

I think, however, that the table of comparison of prices and proportion of stock to consumption is not carried far enough to prove that stock has no, or even little, effect upon the prices which the "Buyers' Combination" is prepared to pay. This is not fault of your correspondent because the proportion of stock to consumption has only lately, namely, at the end of 1898, dropped materially below the proportion shewn in 1892, which was, (I quote his figures), then 45 per cent against 43 per cent in 1898; the effect of this falling-off of stock at the end of 1898 has been that during the current year the average price of tea has risen, and if the Calcutta export falls off a little and we do not go ahead too fast, there is no doubt whatever that the price of tea will still further advance; but these are big "ifs." But, as your correspondent says, the constant flow of tea into the consuming markets (there is no off-season now to give a buyer a chance of holding) prevents any distributor feeling that he is bound to stock; and the markets, are therefore, immediately affected by an excess in the offerings over and above the immediate hand-to-mouth demand. I think that sellers and buyers are agreed that there is no more sensitive market than the the tea market, nor any market where the prospects of supplies are more studied and the effects more anticipated or discounted; but as the trade are forced to buy every year during the months of September, October, November, December, and January, 20 per cent more tea than they can deliver, it is not to be wondered at that however sanguine the buyers may be as to the cheapness of the article, there is bound to arrive a time each year when the price is forced down below the level which the estimate of the crops warrant.

The position would be improved for the planter if there were a buffer between him and the distributor such as there is in every other large article of produce; I refer to merchants, speculators, men who seeing that a position was unwarrantable as regards prices, could have facilities of

buying and of holding the "Umbrella" during the downpour of tea which occurs during the months named above.

It is not the business of a planter to speculate. His risk and duty is to make tea, and to sell it at once and obtain his money quickly, and the agency houses in London and elsewhere recognise this and wisely sell on arrival, and, in my opinion, no combination of Tea Companies could be formed of sufficient strength to regulate supplies so as to keep the price of tea up during the heavy months of the year.

If a body could be formed, among the various owners and Companies—each proprietor subscribing *pro rata* according to the number of acres under bearing, to a sufficient amount to enable the body to sustain prices when they fell below a level warranted by the whole position of tea—why then prices would not fall below their proper level.

Such a company would have to keep itself well informed of every movement in the trade; it would have to know what the export from India was going to be; what the out-turn from Ceylon would be, how Dealers' Stocks were working off; and watch any increase in the export of China, caused by the keeping of the prices of British-grown tea too high; its operations would have to be guided by the deliberations of an experienced Committee, and directed by a smart tea expert.

Granted that these conditions are obtainable, in combination with a few others, which I will not weary you with now; and, there is no doubt in my mind, that they are obtainable: then the mere announcement that the "Planters' Protection Society" was going to buy, would so reassure the trade, and tighten things; that it is more than probable they would have to buy nothing, the competition of the alarmed distributor would prevent the Company buying at low prices.

If the Company did buy a few thousand chests, the operation would not only have prevented the Market falling, but when the months of light supply came along, it should have an opportunity of making a profit on them; and pay a dividend—a dividend wrenched from the maw of the insatiable distributor.

London Warehouse charges.—There is an agitation very justly in progress, to reduce the London Warehouse charges; some years ago the London Warehouses used to compete for business and in doing so they would cut their prices; some would offer 25 per cent discount, others 50; and 75 per cent has been known; this was suicide for them, so they met together and made a scale, and bound themselves under large penalties to not accept business under the scale. The result was that tea found its way into the Dock Warehouses and the last state of many of the outside Warehouses was worse than the first. What did they do?—with commendable enterprise, they bought tea gardens, and floated Companies; and even bought tea when it was cheap in Colombo and in Calcutta. The result of the buying and flotation of tea gardens, has been that the warehouses have tea to warehouse, and make a fine profit out of the business; the result to Ceylon has perhaps not been an unmixed evil, for one of the factors of the boom in tea estates a few years ago, was the anxiety of the wharfinger to obtain tea to warehouses. These facts, sir, would tend to show the difficulty of fighting the London Warehouses on the subject of their charges, they being so intimately mixed up with the proprietorship of much of the tea in this island, and regarding a dividend as quite secondary to charges "fine and large."—Your humble and obedient servant,

DIRECTOR.

The British Tea-Industry.—A most exhaustive study of the tea-trade appears on page 414, one which is well worth the attention of all planters who are at all concerned in the subject. The letter is the third of a series from a veteran correspondent, signing "Suum Cuique," who has devoted months of reflection and enquiry to the question. Two important conclusions are arrived at—we cannot today touch on all the points he passes in review—which are:—(1) that, the permanent price of tea from year to year being ruled by the lowest price at the beginning of a season, efforts should be directed towards tiding over these periods without any material fall, the constant tendency of the market of recent years having proved a downward one; and (2) that some collective means must be adopted to prevent this downward tendency. Every one knows or ought to know that, even if advisable at all, the reduction or abolition of the British tea-duty is an impossible object to aim at, this time of heavy war expenditure; and that whatever decision, on the matter, if any, is arrived at by the Planters' Association next month will be an academic one merely. The Indian Tea Association, the minutes of whose meeting of October 31st, are unfortunately crowded out today, have set about the right line of attack—namely, that upon excessive dock and warehouse charges. And, it will be seen from them tomorrow, the London Committee of the I.T.A. have been asked to bring matters to a definite issue. We cannot believe that any practical good can be attained at Kandy by discussing the Tea-Duty on Tuesday week, whereas if Ceylon joined hands with India over dock and warehouse charges, some effective means of cheapening the cost of supplying tea to the London market might be secured. Meanwhile everything must be done to develop the Colombo Market as far as possible for there is ample scope in this direction, and it would be a curious reflection on the tea island if the foreign buyers we have welcomed here, were at any time to find they could not obtain all their requirements at this growing source of direct supply to the countries they represent.

Indian Tea Exports.—Statistics published by the Indian Tea Association, with reference to the exports of Indian tea from Calcutta, show that in the month of October last the sailings to Great Britain increased to 21,692,976 lb. as compared with 21,466,999 lb. in the same month last year. More noticeable increases took place in the sailings to Australia and New Zealand, the figures being 1,763,291 lb., and 426,867 lb. respectively, and to America, the latter total being 1,495,391 lb. in comparison with 583,316 lb. in October 1898. The sailings to other places show a slight falling off, 1,216,278 lb. having been exported in October last year and 1,031,405 lb. in this.—*Pioneer*, Nov. 18.

Correspondence.

To the Editor.

ALL ABOUT RUBBER.

Botanical Department, Trinidad,
Sept. 22, 1899.

GENTLEMEN,—Always the first in the field to collect and disseminate information likely to be of use to the planting interest, you have only acted up to your traditions in issuing "All about Rubber" 1899. The book is a perfect compendium of information on the rubber question, and affords me my first look at the latest circular of the Ceylon Botanical Department, and of Mr. Parkin's Report. I have no time today to point remarks at length, but I may say that I am unable to follow some of the propositions of Messrs. Biffen and Parkin.

I cannot see where the evidence comes in, which makes the Ceylon Castilloa a different *species* to that in Trinidad. Surely it is possible to follow the recognised method of sending specimens to some large herbarium for identification, rather than to *guess them different*, to explain differences in the latex. I might as well declare the Heveas different because that of Ceylon has "no pronounced odour or taste," while our *Hevea brasiliensis*, is readily distinguished by a strong odour of stale saltfish; as can the prepared Brazilian article. I cannot reconcile Mr. Parkin's views on coagulation with my own. If coagulation is brought about by the "*separating of the proteid matter from solution which entangles in its meshes the rubber particles so to form a clot*," how is it that on analysis of rubber prepared by another method it "*just showed a trace of nitrogen*" only. The latex of Ceylon "*does not behave*" like the latex Mr. Biffen describes, so it is made out to be a different species. "Cream left on" the surface of water, after all proteids are washed out, will coagulate naturally, that is to say, it will be "*brought into a mass*" curdled, or solidified. "All about Rubber" should be in every Rubber-planter's hand, because it is right that they should be conversant with the different views afloat, and the course of the various experiments.—I am, yours faithfully, J. HINCHLEY HART.

CEYLON TEA IN CANADA.

Montreal, Oct. 4.

DEAR SIRS,—Richmond is the Province of Quebec, in which province there is a population of one million five hundred thousand souls, eighty per cent of these being French, who use almost exclusively China and Japan teas. "Salada," our own specialty, is being pushed on this ground vigorously, and has been very kindly received by the English-speaking portion of the population, and we are gradually (though *very* gradually) getting some support from the French element. The paper above referred to will give you an idea of what we are doing in the way of advertising. This is only one of a series of seven subscription papers that have a large circulation throughout this province, and our red advertisment appears in each of them the same as copy sent you, and is an innovation in newspaper advertising and a striking one too. Besides these papers we are advertising in many others in this province, both by display advertisements and readers, together with an extensive display of enameled window signs, and an almost lavish distribution of samples. This good work is backed up by travelling representatives that are on the road continuously covering every town, village and hamlet. Some day we hope to have succeeded in converting a large proportion of the French-speaking people to the use of the better and purer teas from your island in which we are mutually interested. Of course beyond this Province are the provinces of Nova Scotia, New Brunswick, Prince Edward Island, and Cape Breton; all of these places we are doing a large and growing business in, and have lately opened up in Newfoundland. We shall feel obliged if you will mention these advertisements in your next issue.—Yours very truly,

GEO. MANN, Manager for Eastern Canada.,
The "Salada" Tea Co.,

[Planters in Ceylon will be glad to hear of the work that is being done to specialise their tea, more especially among the less easily convertible French-speaking population of the Dominion. The advertisements are of a most striking and attractive nature.—ED. *T.A.*]

A COCONUT ANALYSIS.

Colombo, Nov. 21.

DEAR SIR,—I beg to enclose report an analysis of a Coconut and shall be obliged if you will give it publicity in the columns of your paper.—Yours faithfully, A. BAUR.

REPORT.

Though there exist several analyses of parts of of the Coconut, no one seems to have undertaken the task of getting a complete analysis made with a view of ascertaining the actual demand made by the coconut upon the mineral constituents of the soil. Yet this knowledge is of paramount importance to those going in for manuring owing to the different customs which prevail, either of exporting the whole or only part of the nut.

I am glad therefore to have the opportunity of supplying those interested with a complete analysis executed by Dr. F. Bachofen, in charge of my Chemical Laboratory. Together with the analysis will be found a table showing the quantities of the more important constituents removed by 1,000 coconuts from the soil. A. BAUR.

THE CEYLON MANURE WORKS.

ANALYSIS OF THE COCONUT.

	Husk.	Shell.	Kernel.	Milk
Total weight in lb.	2·702	0·546	0·875	0·593
,, in %	57·28	11·59	18·54	12·58
* { Moisture in %	65·56	15·20	52·80	..
{ Dry matter in %	34·44	84·80	47 20	..
Pure ash in %	1·63	0·29	0·79	0·38
Containing, viz.:—				
Silica Si O2	8·22	4·64	1·31	2 95
Oxide of Iron & Alumina Fe2 O3 Al2 O3	0 54	1·39	0·59	trace
Lime CaO	4·14	6·26	3·10	7·43
Magnesia MgO	2·19	1·32	1·98	3·97
** Potash K2 O	30·71	45 01	45·84	8·62
Soda Na2 O	3·19	15·42	..	..
** Potassium chloride KC1	..	..	13 04	41·09
Sodium chloride NaC1	45·95	15·56	5 01	26·32
Phosphoric acid P2 O5	1·92	4·64	20·33	5·68
Sulphuric acid So3	3·13	5·75	8·79	3·94
	100·00	99·99	99·99	100·00
** Containing total potash K2 O	30·71	45·01	54·05	34·54
* Containing nitrogen N	0·137	0·100	0·504	..

Thus, of the more important ingredients of the soil, 1,000 nuts remove the following:—

in lb.	Husk.	Shell.	Kernel.	Milk.	Total lb.
Nitrogen N	3·7017	0·5460	4·4100	..	8·6577
Phosphoric acid P2 O5	[0·8456	0 0735	1·4053	0·1279	2·4523
Potash K2 O	13·5255	0·7127	3·7362	0·7783	18·7527
Lime CaO	1·8234	0·0991	0·2143	0·1674	2·3042
Sodium chloride NaC1	20·2375	0·2464	0·3563	0·5431	21·4233

INDIAN TEA ASSOCIATION.

Abstract of proceedings of a meeting of the General Committee held on 31st October, 1899. Present: Messrs. H S Ashton (Chairman), H C Begg (Vice-Chairman), W Brown, A C Lawrie, R Magor, M R Quin, A Tocher, and T Traill, Mr. R R Toynbee was absent from Calcutta.

Proceedings of the last meeting of the Committee, held on the 3rd October, having been approved in circulation, was confirmed. Proceedings of the Assam Branch of the Association for the month of September were to be recorded. Letters of 22nd and 29th September, and 6th and 13th October, from Mr. Ernest Tye, Secretary, Indian Tea Association, London, were brought up, after previous circulation for final consideration. The principal matters to which Mr. Tye referred in these letters were :—

(a) *Bonded Warehouse Charges in London.*—With his letter of 22nd September, Mr. Tye enclosed copy of a letter dated, 21st September, addressed by the London Committee to the Tea Clearing House Committee in reference to this question. In this letter the London Committee laid stress on the onerous nature of the charges levied upon teas by the warehouse proprietors, and strongly urged that substantial reductions should be made. In his letters of 6th and 13th October, Mr. Tye referred at length to the General Committee's letter, No. 561-O. of 13th September, in which the whole question of the warehouse charges was fully discussed. He stated that a Special Sub-committee of the London Branch of the Association had been appointed for the purpose of negotiating with the Tea Clearing House Committee with a view to a reduction of charges. The London Committee had also considered the question of the organization of opposition warehouses on the principle of co-operation. Itwas pointed out that this principle had been adopted for some years by several of the largest London tea Companies who had subscribed capital for the purchase of Butler's wharf. Other warehouses might be established on the same principle; and possibly a license might be granted by the Customs authorities if the combination were sufficiently strong to guarantee, say, two hundred, or two hundred and fifty thousand chests. If the warehouse were not in a position to offer the facilities provided by the Tea Clearing House, there would be a difficulty with the tea trade; but this might be met by either purchasing or hiring one of the existing bonded warehouses. If, in raising the requisite capital, the amount subscribed by each shareholder was approximately in proportion to the quantity of tea sent by him to the warehouse, the rates could be fixed on any scale, because it would be the same thing to the shareholders whether they received the benefit of their co-operative working in the shape of low charges, or as a return in the shape of profits. Companies selling their teas in Calcutta would, however, be unable to control the warehousing of their produce on arrival in London. Precautions similar to those taken on boardship to prevent contact with other produce have to be taken in the warehouses. This necessitates separate buildings; consequently a warehouse which could depend upon a full supply of tea would be at a considerable advantage compared with one which could only utilize a portion of its tea space and could get no return from the balance. For this reason the London Committee believed that some of the existing warehouses had difficulty in working to a profit.

The question was considered by the Committee, and the Secretary was directed to address the London Committee again in regard to its urging them to bring matters to a definite issue. In this letter attention was to be drawn to the suggestion made in the General Committee's letter of 13th September that a scheme for establishing co-operative warehouses should be formulated in London, an enquiry was to be made as to whether it was proposed to devise such a scheme, and it was to be recommended that this should be done.

The Secretary was also directed to write (in continuation of his letter No. 569-O. of 14th September) to the twenty-six Calcutta tea companies named in the proceedings of the meeting held on the 15th September. In this letter the remarks made in the letters from the London Committee were to be incorporated, and it was also to be stated that they were again being addressed on the subject in further reference to the establishment of co-operative warehouses.

(b) *Area of Tea under Cultivation.*—With his letters of 22nd and 29th September and 13th October, Mr. Tye forwarded copies of correspondence between Mr. J E O'Conor, C I E, the Director-General of Statistics, Mr. A G Stanton of Messrs. Gow, Wilson and Stanton, and himself in regard to the difficulty of obtaining accurate returns of the area under tea in several districts in India. Mr. O'Conor drew special attention to the case of Travancore. In that district the total area under tea was returned as 30,076 acres in 1897, while in 1898 it was given as 19,634 acres. On the other hand the outturn was given in 1897 as 2,545,913lb. while in 1898 it was returned as 8,413,860 lb. Mr. O'Conor also stated that 84 gardens in Assam had withheld the information for which they were asked in connection with the matter. The London Committee suggested that the Association in Calcutta should give all the assistance possible to Mr. O'Conor in order to enable him to procure more reliable figures.

The question was discussed, and it was pointed out that it had engaged the attention of the Committee in connection with the Report issued by the Director-General of Statistics on the 1st November 1898. Some correspondence had ensued between the Statistical Bureau and the Association, with the result that it had been suggested to the Director-General, that if practicable, before publishing the figures in his next report, he might place them before the Committee for verification. No reply had been received to this letter and it was accordingly decided to write to the Director-General of Statistics pointing this out; and stating at the same time that the Committee would glad to do everything possible to procure more accurate returns. It was also to be suggested that the names of the 84 Assam gardens referred to should be furnished, as it would be difficult for the Committee, without that information to take any steps in regard to them.

The Secretary was also instructed to address the United Planters' Association of Southern India and the Planters' Associations in Travancore, drawing their attention to the mattter and laying stress on the importance of reliable statistics being furnished to Government in all cases. The Chairman undertook to interview Mr. O'Conor in regard to the question.

(c) *Scientific Officer.*—It was stated in the letter of 13th October that the London Committee had again considered this question. In view of Mr. Kelway Bamber's re-engagement with the Ceylon Association, they asked for the views of the General Committee as to whether a scientist should be selected in England. The Chairman of the Association in London had undertaken to make enquiries, and the necessary arrangements would be made by the Committee there if desired.

The matter was considered, and on reference being made to the replies received from the various local Associations to the Committee's Circular letter No. 31822 O of 12th June, it was seen that a majority were in favour of the engagement of an agricultural chemist.

The Committee were also of this opinion, and it was accordingly decided to write to the Association in London, stating that their offer to select a scientist in England had been accepted, and asking that enquiries be made at once regarding an agricultural chemist. It was also to be pointed out that it would be necessary to consult the Government of Bengal and the Administration of Assam before anyone was finally engaged.

Considered file of papers in connection with the Bill to consolidate and amend the law relating to emigration to Assam which was introduced into the Imperial Legislative Council on the 13th October. Copies of the Bill had been forwarded to the Assam and Cachar Branches for their consideration. The Assam Branch had arranged for a special meeting of members in November to discuss the Bill, and steps were, it was understood, also to be taken in Cachar for the due consideration of the measure. Mr. Buckingham, C I E., Chairman of the Assam Branch, had been appointed by the Government of India as an Additional Member of the Imperial Council to participate in the discussion of the measure. The Committee then proceeded to the formation of a Special Sub-Committee to examine and report upon the provisions of the Bill. It was agreed that the Sub-Committee should consist of five members and Mr. Begg and Mr. Magor accepted seats upon it. It was further agreed to ask Mr. A Topping, of Messrs. Macneill & Co., Mr. W Warrington, of Messrs. Finlay Muir & Co., and Mr. C de C Richards, of Messrs. McLeod & Co., to act. A letter of 20th October from the Chairman of the Assam Branch upon certain of the provisions of the Bill, and a letter of 24th October with enclosures from Messrs. Begg, Dunlop & Co., were to be referred to the Sub-Committee for their consideration. Considered letter of 28th October from Messrs. Shaw, Wallace & Co., covering papers in original in regard to a case in Cachar in which an application had been made under Act XIII of 1859 for the arrest of certain absconded coolies. The Magistrate had refused to issue warrants for the arrest of the coolies on the ground that the advance of one rupee made under each contract was not sufficient to make the contracts binding. Messrs. Shaw, Wallace & Co. stated that it appeared to be a custom on many gardens to make an advance of only one rupee, deducting the sum at the termination of the contract. There appeared to be no decision of the High Court upon the point and they thought it was a question upon which the Association might obtain a legal opinion. After some discussion the Secretary was instructed to forward the papers to Messrs. Sanderson & Co., the Solicitors to the Association, with a request for an expression of opinion upon the points in question. Considered letter No. 4,491-T., of 27th October, from the Director-General of Telegraphs, in reply to the Committee's letter No. 611-O., of 10th idem, in regard to telegraphic news for the mofussil. With the last-named letter, the Committee forwarded a letter of 2nd October, from Mr. J. Buckingham, C.I.E., the Chairman of the Assam Branch, suggesting the establishment of a regular system of wiring the latest telegraphic news to Assam. Mr. Buckingham estimated that at least forty stations in the Assam Valley alone would be only too glad to avail themselves of the opportunity of getting the latest telegraphic communication, provided they had not to pay deferred rates. He proposed that for all telegrams conveying English or Indian news, "press" rates only should be charged. This proposal was supported by the Committee in their covering letter.

In his reply the Director-General of Telegraphs stated that he was not empowered to grant the concession asked for. He, however, drew attention to Rule 109 and footnote, Section 11 of the *Telegraph Guide.* He pointed out that under that rule if in any district served by a telegraph office, whether by hand or postal delivery, four subscribers combined, and desired each to be provided with a copy of a telegram containing a summary of news, the cost to each subscriber would be practically the same as that of a telegram addressed to each subscriber at press rates. If more than four subscribers desired copies, the cost to each would be less than press rates. Such telegrams would have to be drawn up and sent by an agent independent of the Telegraph Department.

The Secretary was instructed to forward a copy of this letter to Mr. Buckingham, with a request for his opinion upon the proposal referred to by the Director-General of Telegraphs, and asking whether the Committee could do anything more in the matter.

H. S. ASHTON, Chairman.

—*Indian Planters' Gazette,* Nov. 11.

THE COMING FIBRE INDUSTRY.

There can be little doubt, judging from present appearances, that the profitable growing of agaves for the production of fibres in India is merely a matter of time. A few years back little was known in this country concerning these plants and their great economical value. Thanks to "Forester" and others they have, during the last few years, been brought prominently forward, and now that a machine is invented which can be worked by a couple of natives after a few hours' practice and turn out fibre at the rate of $1\frac{1}{2}$ tons per hour, there is every prospect that during the next few years we may have an industry which may rival in dimensions that of the Bahama Islands themselves. Although a good deal of information upon the subject has been furnished from time to time to the press, there are still a large number of enquirers into such details as to the very best agave to grow, the probable cost of planting, yield per acre, &c. As I have for the last five years given considerable attention to the subject with the view of planting up waste land, perhaps a few of the facts regarding the cultivation of the plant may not come amiss at a time when a great many zemindars and planters are seeking information on the subject.

THE AGAVE GENUS.

There are numerous species of the agave genus, and they are nearly all *monocarpic perennials,* that is they grow on for an indefinite number of years producing leaves only and then flowers. They only flower (poll) once in their lives as when they flower they die. The usual period between the very young state and the throwing up of their flowering poll is between seven and fifteen years, but this would appear to entirely depend on the nature of their environment.

SISAL HEMP.

Sisal hemp is produced by more than one species of agave, but one recognised as producing the very best agave fibre is *Agave rigida* var. *sisalana.* This is the species which has been introduced into this country, and considerable care has been taken to import only the true variety. *Agave sisalana* is the name that Dr. Perrine gave to the plant known to the natives of Yucatan as Yaxci. Another variety cultivated in Yucatan is named *Agave rigida* var. *longifolio.* This variety produces equally as valuable

a fibre as the one known as *sisalana*. As a matter of fact tbey are the same plant in every particnlar, with the exception that *longifolio* is armed with side teeth which renders it more difficult to handle and cannot be conveniently planted so closely as the *sisalana* variety, which is wholly, or almost wholly, destitute of side teeth, and only armed with a sharp spine at the point of the leaf. There are several other varieties of the *rigida* type cultivated in Yucatan, and also some varieties of the *Furcroyas* and the fibre all goes nnder the name of *Sisal*. But although the produce of these different plants go under this name in the market, they are of different value, and the fibre of *Agave rigida var sisalana* is now recognised by experts as prodncing the very best agave fibre for white ropes, and which is only second to real Manilla hemp itself, and some assert that in some instances it is even superior and commands a better price than the latter.

One of the Kew papers upon vegetable fibres states that in the report on fibre plants by the late Director of the Botanical Department, Jamaica, it is mentioned that with regard to the value of *Agave rigida* and its allied forms as the sources of the sisal hemp of commerce, there were two important points deserving attention. The first was the nniversal increasing demand which exists in all countries for this fibre; and the second was the drought-enduring character of the plant and the simple and economical treatment which it requires at the hands of the cnltivator. It has been stated that in regularly-planted areas there shonld be 400 plants to the acre; bnt it should be pointed out that this statement applies to Yucatan, where the majority of the plants under cultivation are fully armed with side teeth and cannot be planted closely. The selected variety, which was named *sisalana* by Dr. Perrine can be planted very much closer, and it is said by those who have tried this varicty in India that 6 feet between the plants in the row and 8 feet between the rows gives ample room for the full developement of the leaves which can be easily harvested owing to their being unarmed. Young plants from 1 foot to 2 feet high when planted commence to yield in the fourth year. It has been stated that the same plants continue to yield for fifty or sixty years. It may be said at once that no reliance should be paid to such a statement. Their yielding period is between their fourth year and the time they flower, and that period may only be four or five years, and it may extend to twelve or fifteen years. The great rule to be kept constantly in practice is to plant a young sucker whenever a plant commences to yield leaves. The leaves of the older plant will in no way interfere with the growth of the younger one underneath, as whenever the leaves of the big plant come down to a horizontal position they are ripe for cutting, and the leaves left on are always more or less pointing upwards. Where young plants are planted for the first two or three years they will grow suckers from their roots. These ought to be always removed, as they take strength from the parent plant. If they are pnt in a nursery by themselves they will always be there ready to plant when reqnired. If this supplying rule be strictly observed there can be no reason why a plantation will not last twice fifty or sixty years, as the agave is really a "scrub jungle," and the roots of plants which have polled are in a continual state of decay, and by adding humns to the soil through the process is really one of Nature's land reclaimers.

To give some idea of the probable returns from a sisal hemp plantation it may be stated that each plant from 4 to 5 years old is found to yield on an average 25 to 35 leaves per annum, and tbese leaves will give 1½ lb. of clean fibre; this amount has been actually got by *hand* clearing, from leaves grown upon waste land in Assam. Eight hundred plants to the acre of the smooth-edged *sisalana* variety will not prove a single plant too many, and this would mean 1,200 pounds of clean fibre to the acre. This may be taken as a fair calculation; much depends upon how the plantation is planted and the details of management.

COST OF GROWING.

The actual cost of growing and preparing the fibre would naturally vary according to the locality in which the plantation was situated, but in any part of India it must be very much cheaper than it is in the West Indies, where the price of labour is so mnch higher. The land upon which the agaves are grown in Yucatan is of a gravely, stony and in some places of rocky character, and they thrive best and give most fibre in comparatively arid districts. Moist or rich land is considered unsnitable, and it has been proved in this country tbat, although the plants grow lnxuriantly upon such lands, the yield of fibre is comparatively small and of less strength than it is when grown upon what is usually called barren or useless land.

HARVESTING.

The proper time to harvest the leaves is when they have nearly come down to a horizontal position on the rosette. But the leaves take no harm if they are left on the plant for three months after coming to this position so long as they are cut before they commence to turn yellow, as after this the fibre is apt to be discoloured which detracts from its appearance and consequently its value. As the leaves are not ripe till they come down to the horizontal position or nearly so, it is always the outer leaves whioh are cnt first. The leaves are cnt and made into bundles of 50 each, and 30 such bnndles is reckoned a fair day's task when carried ont to the edge of a oart road. The machine should be plaoed near a supply of water, and one machine (of the latest invention) is ample for 200 acres. After the fibre has passed through the machine, it is hung np in the snn and thoronghly dried, but care must be taken that none of the green juice is left on the fibre when exposed to the air, or it is bonnd to be discoloured. If a high degree of whiteness is desired it is left ont all night to bleach and during next day carefully turned. The fibre is made into bales by means of a screw press, and great care is taken to have these bales as tidy as possible, and the fibre ought to be kept straight in the bales. Proprietors of gardens are reticent of risking money in experiments, but, as far as can be judged from the data available, those who have land lying idle npon which they have to pay rent will be consulting heir own interests by giving this indnstry their careful study and attention—L. in *Calcutta paper*.

The British Tea-Industry: A Reply to "Suum Cuique."—An excellent reply to the letter of "Suum Cuique" appears on page 418, and a notable suggestion is made for the keeping ot prices up to a proper level. It is surmised that if a body of proprietors (including Companies) could be formed, each subscriber subscribing according to his property, to enable prices to be maintained at a high level when the downward tendency became marked, such prices would not sink. The qualifications of the "Planters' Protection Society," as it is named, are further detailed; and it is shown that this body could withhold supplies when there was a rush of imports, and sell them again at a profit when deliveries became lighter. Some pungent remarks on Warehouse Charges are also made, and we commend these to the attention of the Planters' Association, which we yet hope to see directing its main attention, ten days hence, to this topic, while submitting the Tea-Duty *pro forma* for discussion as invited by our Indian friends. "Director" shows some of the difficulties of the attack. Will not some planter's ingenuity come to the rescue with a plan of campaign?

CEYLON LAND AND PRODUCE COMPANY LIMITED.

ANNUAL REPORT.

Report of the Directors, submitted to the fifteenth annual general meeting of Shareholders held at the Registered Office of the Company, Leadenhall House, 101, Leadenhall Street, London, on Monday, the 13th day of Nov. 1899 :—

Your Directors have the pleasure to submit the Annexed Profit and Loss Account and Balance Sheet for the Crop year ending 30th June, 1899, duly audited.

The amount at credit of Profit and Loss Account is £11,978, 11s 10d, which, with the sum of £321, 12s brought forward from last year, leaves £12,300, 3s 10d to be distributed.

On the 22nd July last an Interim Dividend of 7½ per cent. on the ordinary Shares and 3 per cent. on the Preference Shares was paid, and your Directors now propose to pay on the 15th day of December, 1899, the balance of the fixed Cumulative Dividend on the Preference Shares (3 per cent.) making 6 per cent. for the year, and 7½ per cent. on the Ordinary Shares, making 15 per cent. for the year, and in addition, a bonus of 5 per cent. on Ordinary Shares—all free of Income Tax. It is also proposed to transfer £4,000 from Profit and Loss Account to Reserve Fund, increasing that account to £17,500, and carry forward the balance of £1,532 16s, subject to the Directors' remuneration for the year under review, and to the payment of Income Tax, &c.

In accordance with a Resolution of the Board, a call of 10s per Share was made upon all Members holding Preference Shares upon which only £3 10s had been paid, and the same was payable on the 30th March, 1899.

Your Directors regret that owing to unfavourable weather the total crop of Tea fell short of the quantity estimated, though the intake slightly exceeded that of last financial year. It will be observed on reference to the Statistics herewith that the plucking area was increased from 1,676 to 1,754 acres. Your Directors, however, desire to point out that this additional acreage was only in partial bearing.

With regard to Cocoa, your Board are pleased to note that the Estimates were exceeded, though, owing to the wet weather prevalent when this product was being prepared for Market, a lesser percentage of "good red" kinds was obtained.

A welcome rise in the price of Tea has been recorded, whilst freights have ruled on the average somewhat lower than during 1897/98. Average Cocoa values, for the reason above stated, are less than last year.

Your Directors desire to inform the Shareholders that during the past three years the total expenditure on Manure and its application amounted to over R60,000, the whole of which has been charged to Revenue.

It is a source of gratification to your Directors that, though the cost of production tends to increase by reason of the higher rate of exchange plus a more liable cultivation, they are able to assure the Shareholders of the continued prosperity of the Company, and they are of opinion that the outlook for the future is bright.

Tea.—At the beginning of the year the quantity available for shipment to Great Britain for 1899 was estimated in Colombo at 93 million lb. against rather over 96 million lb. actually exported in 1898. So far as can be judged at present, the amount sent to this country during the current year will not exceed that of the for going one, and the Indian crop being also likely to prove of moderate dimensions, the statistical position of all Tea may be considered satisfactory, especially in view of the larger deliveries which have been going on recently, both for Home and Foreign use.

A check was given to business by the dispute which arose in the early part of the summer, between Importers and the Trade, regarding the 1 lb. draft, and Public Sales were virtually suspenpended in consequence for three or four weeks. This caused some accumulation of Imports, which however have now been about worked off, and the Auctions are rapidly resuming their normal size.

Prices ruled above those of 1898 for the first six months of this year, but latterly have not been quite so favourable. For the 964,500 packages passed through the Mincing Lane Sale Rooms from 1st January to 31st ult. the average is 8d per lb., compared with 7⅞d. per lb. in the corresponding ten months of 1898 for 984,300 packages.

During the spring months quality, as is usually the case, shewed a falling off, many of the Teas being deficient in strength and flavour. Later on a general improvement was manifested, and some very desirable invoices were received which attracted considerable attention.

That the use of Ceylon Tea in other countries than Great Britain is growing, is evidence by the shipments from London to outside quarters, and as will be seen by the undermentioned figures, business direct from Colombo with Russia, America and Australia, for the first nine months for the year, marks an increase.

1899.	1898.	1897.
TO AUSTRALASIA.		
11,967,000 lb.	11,259,000 lb.	9,524,000 lb.
TO RUSSIA.		
2,719,000 lb.	1,915,000 lb.	325,000 lb.
TO AMERICA.		
2,344,000 lb.	1,870,000 lb.	707,000 lb.

Cocoa.—The marketing of this article has been subject to many peculiarities this season, mainly attributable to the effects of unfavourable weather on the greater portion of the Crop, which has given a larger proportion of inferior and ordinary kinds than in any previous season. The effect of this was shewn in the scarcity of good and fine red parcels almost throughout the entire Crop, and in consequence, there was a considerable rise in the price of the finer grades, with a corresponding decline in those for the less desirable kinds, the result being that the general average is at a lower level. At the same time it may be pointed out that higher prices have been obtained for really well-prepared lots than for the past few years. Manufacturers generally are becoming more favourably impressed with this growth, and the increasing consumption is more than sufficient to deal with any likely large increase in the production of the island. Your Directors look favourably upon the future of this article. The out-turn of the Company's Crops was, as stated above, affected by the weather, and was much below our usual high standard of quality, but in the realisations full advantage was taken of the exceptional Market movements.

Acreages.—The following Statement shews the approximate acreage of the Company's Properties at date :—

Name of Estate.	Tea. 1 yr.	2 yrs.	3 yrs.	4 yrs. & over.
Alloowiharie Group ..	—	117½	50	47
Andangodde Estate ..	—	16¼	39¼	120¾
Fetteresso Estate ..	5	—	—	405
New Peradeniya Estate .	—	1¾	—	384¾
North Matale Group ..	18	13	61	315
Owella Estate ..	—	40	28	30
Rickarton Estate ..	—	12	23	503
Strathisla Group ..	58	48	114	—
Forest Land ..	—	—	—	—
	81	248½	315¼	1,805½

2,450¼

	Cocoa. Bearing.	Not Bearing.	Coffee, &c.	Forest Grass, Chena, abandoned, &c.	Total Acreage.
Alloowiharie Group	263	84	116¼	15	692¾
Andangodde Estate	—	—	—	—	176¼
Fetteresso Estate ..	—	—	—	28	438
New Peradeniya Estate ..	17½	—	—	54½	458½
North Matale Group	721	10	85	354	1,577
Owella Estate ..	—	117	—	242	457
Rickartou Estate ..	—	—	—	58	596
Strathisla Group ..	3¾	170¼	—	44¾	438¾
Forost Land ..	—	—	—	430	430
	1,005¼	381¼	201¼	1,226¼	5,264¼

1,386½

N.B.—Coconuts are planted through Tea, Cocoa and Coffee. In the absence of detailed surveys these figures, as mentioned above are approximate only.

Your Directors greatly regret having to inform the Shareholders of the death of Wm. Keiller, Esq., and Sir N. A. Staples, Bart. The vacancies thus caused have been filled in accordance with the Articles of Association by Alex. D. Wilson, Esq., of Messrs. Chapman, Wilson & Co., 23, St. Mary Axe, E.C., and Lewis A. Lewis, Esq., of Messrs. Lewis and Noyes, 14, Mincing Lane, E.C.

The prospects of the Tea crop for 1899/190 are so far, favourable, the intake to 30th September being in excess, as compared with the Crop at same date last year. Your Directors hope that the Estimates of Cocoa will be realised, but at the moment it is practically impossible to speak with any certainty.

Your Directors have decided to issue the balance of the 6 per cent. Cummulative Preference Capital, viz., 2,150 Shares of £5 each, at a premium of 12s 6d per Share, and the attention of the Shareholders is drawn to the Secretary's Circular accompanying this Report.

Mr. Alex. D. Wilson, by rotation, retires from the Directorate, but being eligible, offers himself for re-election.

Mr. James B. Laurie, the Auditor, also retires, but he is eligible, and offers himself for re-election.

James Wilson, *Chairman*. Alfred E. Lock, *Secretary*.

(CIRCULAR ACCOMPANYING REPORT.)

Dear Sir or Madam,—I am desired to inform you that by Article No. 6 of the Company's Regulations, it is provided that—

"The Capital of the Company is One Hundred Thousand Pounds, divided into Twenty Thousand Shares of Five Pounds each, where of Ten Thousand are Preference Shares, and Ten Thousand Ordinary Shares. The Preference Shares are and shall be entitled to receive out of the profits of each year a Cumulative Preferential Dividend of £6 per centum per annum on the Capital paid up thereon, and no more than such Dividend and the surplus profits of each year shall (subject to the right to create a reserve fund) be divided in payment of Dividends on the Capital paid up on the Ordinary Shares."

I am further desired to point out that on the 30th June, 1893, the Company had in its possession a total area of 4,554 acres, out of which 2,780 were under cultivation at the then book cost of £96,958. At the cose of last financial year 3,836 acres in all had been planted up, excluding the area under Coffee, and the total extent increased to 5,264 acres, the book cost being £116,414—in other words, during this period a sum of £19,456 has been added to Capital Account, the major portion of which (£17,500) will have been provided out of the profits of the Company.

In view however of the further expenditure needed to bring the clearings into full bearing, and to provide for the building and equipping of Tea Factories to be erected on the Strathisla and Alloowiharie Groups, the Directors beg to offer to the Preference Shareholders, in proportion to their present holdings, the balance of the unissued 6 per cent Cumulative Preference Capital, viz., 2,150 Shares £5 each, at a premium of 12s 6d per Share. * * *

The amount due in respect of the Shares will be payable in instalments as follows, viz :

On 1st December, 1899 .. £1 10s 0d per Share.
1st January, 1900 ... £1 10s 0d "
1st February 1900 .. £2 12s 6d " (including premium).

The Dividend at the rate of 6 per cent per annum will accrue as from dates of payment; pre-payment of the whole sum will be accepted, the Dividend being calculated at the rate of 6 per cent per annum also.

Interest at the rate of 7½ per cent will be charged on instalments, after they become due, during the non-payment thereof. Failure to pay any instalment will render the previous payments liable to forfeiture. Interim Dividends are generally payable in July, and Balance Dividends in December.

I am, &c., Alfred E. Lock,
Secretary.

STATISTICS FOR PAST 10 YEARS.

TEA.

Year ending 30th June.	Acres of Tea in bearing.	Crop, lb.	Average per acre lb.	Teas made for others, and from purchased Leaf, lb.	Net Av. per lb. realised for all Tea sold in London. d.	Rate of Exchange. s. d.	Rupee Cents.
1890	1131	354,842	314	286,292	9·46	1 5½	54·06
1891	1345	480,684	358	357,648	9·10	1 6	48·61
1892	1385	503,293	364	479,005	7·81	1 4¾	46·63
1893	1406	589,192	419	528,172	7·70	1 3	51·33
1894	1451	608,110	419	342,040	6 77	1 2½	46·68
1895	1556	597,399	384	435,908	7.34	1 1¼	55·40
1896	1556	694,720	446	590,111	6·80	1 2	48·57
1897	1571	748,994	476	432,652	6·51	1 3	43·40
1898	1636	753,151	460	393,360	6·22 / 6·27*	1 4	38·88 / 39·19*
1899	1754	754,768	430	281,457	6·75 / 6·78*	1 4¼	41·54 / 41·72*

* Including Sales made in Colombo.

COCOA.

Year ending 30th June.	Crop cwts.	Net Average per cwt.		Highest price realised.		Dividend: Preference.	Dividend: Ordinary.
		s.	d.	s.	d.	per cent.	per cent.
1890	1224	95	11	115	—	6	10
1891	1355	108	—	129	6	6	10
1892	1431	96	5	120	—	6	15
1893	2201	90	11	130	9	6	15*
1894	1212	58	4	83	—	6	15
1895	2840	52	9	65	6	6	15*
1896	2335	56	8	80	—	6	15*
1897	2266	66	1	85	—	6	15*
1898	2523	68	3	80	—	6	15*
1899	2594	66	3†	86	—	6	15*

† Estimated. * And 5 per cent. Bonus.

NORTH BORNEO TRADING COMPNAY (LIMITED.)

Here is a report from *The Times* of a Company in which we, in Ceylon, should take some interest, in view of its pioneering with "rubber":—

The second ordinary general meeting was heldat Winchester-house. Mr. A. J. Scrutton presided, and, in moving the adoption of the report, said that he would leave it to Mr. C. P. Bennett, the managing director, to explain the present position and the prospects of the company. Mr. Bennett, who seconded the motion, stated that they had 103,500 acres of land, which stood in the balance-sheet at 12s per acre. There could be no doubt that the land, which was located round the Bay of Sandakan, was some of the finest in Borneo, and as it was held for a period of 999 years it might be regarded as practically freehold. The total outlay on the development of their estates was £1,241 in the period covered by the accounts—from July 1, 1897, to December 31st last. Of this amount £723 was for rubber cultivation on the Sekong plantation. He rather hoped to see this item still larger in the next balance-sheet, because if they got good rubber they would obtain very satisfactory results from the investment. The 27,050 shares, credited with 8s paid up, which appeared in the balance-sheet as unallotted, had, since December 31st last, been applied for and issued. On the whole, he thought that the shareholders should be satisfied with the gross profit of £2,694, seeing that, during the first six months of the period covered by the accounts, no business was being done. Mr. Roberts, the manager, was in England, and the work of reconstructing the old company was being carried out. Judging by the figures received lately from Mr. Roberts, he believed that the accounts for 1899 would show much better results than those now presented. On the 10th ult., the board were informed that China was now prepared to take more timber than the company could ship, so that they were not exactly in the position of having to seek for fresh markets. However, a good look-out was being kept for other markets in the East, and only lately they concluded a contract for 20,000 cubic feet of timber for Manila, and other orders could be had almost for the asking on favourable terms. They had succeeded in overcoming the shipping difficulties which stood for a long time in the way of the company's progress, and he expected that there would be a considerable increase in their output in the immediate future. Their company, and he believed, all the other Borneo trading companies were now receiving every consideration on the part of the Chartered Company. The motion was unanimously adopted.

TRAVANCORE TEA SALES.

Average 8·64d. November 10th.

Garden.	Total. Quantity.	Aver. Price.	Bro. Or. Pek. or Flowery Pekoe. Quantity.	Price.	Pekoe and Unassorted. Quantity.	Price.	Bro. Pekoe. Quantity.	Price.	Pekoe Sou. Quantity.	Price.	Broken and Souchong. Quantity.	Price.	Fannings, Dust, and Various. Quantity.	Price.
Travancore ...	1058	7·10												
Ashley ...	120	6¾	—	—	70	6½	47	7	—	—	—	—	3	6
BA ...	3	6½	—	—	—	—	—	—	—	—	3	6½	—	—
Balamore ...	74½c	6¾	—	—	50½c	6½ 6¾	21½c	7¼	—	—	2½c	5¾	1½c	5½
Bon Accord ...	133 p	7	—	—	50	7	44	7½	22	6½	—	—	17½c	6 6¾
CMR ...	9	6¾	—	—	6	6½	3	7¼	—	—	—	—	—	—
Corrimony ...	140½c	7¾	—	—	92½c	7¼	43½c	†8¾	—	—	3½c	6¼	2½c	5¾
Glenmore ...	85½c	6¾	—	—	59½c	6¾	24½c	7	—	—	1½c	5¾	1½c	5½
ME ...	11	6¾	—	—	6	6¾	—	—	—	—	5	6½	—	—
Merchiston ...	56 p	7	18½c	7	24	6¾	11½c	7½	—	—	—	—	3½c	6
P ...	22 p	6¼	—	—	12½c	6¾	—	—	—	—	10	6	—	—
Poonmudi ...	88 p	7¼	11	7¼	97	6½ 6¾	17	8¾	13	6½	4	6 6¼	4½c	6¼
Riviera ...	60	6¼	—	—	50	6¼	9	6¾	—	—	1	5¾	—	—
Seafield ...	147½c	7½	—	—	90½c	7¼	55½c	†8¼	—	—	1½c	6	1½c	5¾
Sth Trav Co Ven...	96	7¾	—	—	49	7¼	41	8	—	—	—	—	6	6¼
W ..	14½c	7¼	—	—	14½c	7½	—	—	—	—	—	—	—	—

In these tables all packages are chests unless otherwise stated. ½c for half-chests; p for packages; prices marked thus † represent the highest offer in the room. In calculating these averages two half-chests or four boxes are takes as equal in weight to one chest.

PRODUCE AND PLANTING.

Twaddle about Tea.

The fact that the consumption of tea is increasing rapidly in the United States is perhaps the chief reason why certain people whose hobby it is to attack everything that is popular hasten to assert the danger of tea drinking. One of the latest diatribes against tea is attributed to Dr. Kellogg, the founder of a sanatorium at Battle Creek, in Michigan. Tea according to this investigator, is a

most dangerous drug. He tells of servant girls arrested in the streets of Boston for being drunk and disorderely who had tasted no alcohol, but who had "chewed tea constantly"; also, of an old lady in Minneapolis who drank thirty or forty cups a day and ended her life in a lunatic asylum. But even worse than these cases are those in which tea plays a more silent and insidious part. Among women it produces a kind of mania, "the mania for acting the persecuted saint. Among men, unlike the much condemned alcohol, it prodnces fear. One patient who was suffering from tea poisoning in this way never passed a high building without looking up to see if something was going to fall upon him. Then the relentless Dr. Kellogg goes on to argue that tea is responsible for sleeplessness, and, in fact, most of the ills which flesh is heir to. We have heard all this so often that it has ceased to be funny. There is another kind of mania than that produced by drinking tea, and it appears to be brought on by the knowledge that a number of people drink tea in moderation and find pleasure and comfort in doing so.

RUSSIAN GROWN TEA.

The Official report as to the results of the tea crops on the experimental tea plantation in Tchakva, near Batoum, shows that all the three crops collected produced exceedingly good tea. The Commission appointed to report classfied the tea under two qualities, and came to the conclusion that the first sort could be sold retail at two roubles a pound. As the best Russian tea is sold at two roubles eighty copecks a pound, the two-rouble tea corresponds to tea at about 2s 3d in Mincing Lane. The Tchakva tea was appraised more highly because was it was manufactured on the Indian and Ceylon method rather than the Chinese.—*Home and Colonial Mail*, Nov. 10.

SOUTH INDIAN PLANTING NOTES.

OOTACAMUND, Nov. 25.—Mr. Barber, Government Botanist, is under orders to proceed to Vizagapatam to report on the sugar-cane disease, which is prevalent in that District.—*Madras Mail*, Nov. 28.

COORG PLANTING NOTES.—Nov. 24.—Crops began to ripen up early this season owing to the early blossom last February, and some fly-picking was done towards the end of October; but no full picking was commenced till the middle of the current month. Every care is being exercised the whole country over in the curing of the coffee, for which there is more opportunity with the present small crops than when, like last season, crops are large and things have to be done at high pressure. There is every reason to hope that Coorg coffee of this season's growth will go a long way to re-establish its reputation for quality which it had so largely lost last season. The samples of beans already gathered are very fine. There has been a better demand for East Indian coffees in the London market lately.—*Madras Mail*, November, 28.

WYNAAD PLANTERS' ASSOCIATION.

The following extracts are from proceedings of a General Meeting held at Meppaddi, on the 8th instant:—

COFFEE ROBBERY.—Read letter from the Superintendent of Police, Calicut, asking for information as to the best time to send up the extra constables to prevent the theft of coffee. Resolved, that the Superintendent be thanked for the trouble he has taken in the matter, and that he be informed that the Association considers that the 1st November would be the best date on which to send up the constables.

U. P. A. S.—(1) Paris Exhibition.—A subscription list towards the Paris Exhibition Fund was circulated; the total amount collected came to R645. (2) The Secretary was requested to ask the Secretary, U. P. A. S. I., for a copy of the draft of the new labour ordinance; and the Committee were asked to meet to discuss it at the earliest opportunity.

ALLEGED COOLY-CRIMPING.—Read copy of letter from the Ceylon Labour Federation re-alleged crimping from Ceylon. Proposed by Mr. R. Lamb, seconded by Mr. M. D. Taylor, that this Association point out that it is not within its province to interfere in the matter referred to by the Secretary of the Ceylon Labour Association in his letter to the U. P. A. S. I., dated 13th September, 1899.—*Madras Mail*, Nov. 28.

ROADSIDE FRUIT IN EUROPE.

The cultivation of fruit trees along the highways of France is being extended each year. The Government having first set the example, the communes in certain departments adopted this practice as a source of revenue, so that now roadside fruit cultivation has become an important branch of national industry. It is not, however, only in France that fruit trees have been planted along the roadside. The United States Consul at St. Etienne says that in Germany, Belgium, and the Duchy of Luxemburg, the system has been greatly developed, giving satisfaction to the State as well as to local interests. On the Wurtemburg roads, for instance, the fruit harvest from this source produced in 1878 over £40,000, and last year the returns had more than trebled. The annual revenue derived from the national roads of Saxony planted with fruit trees, rose from £1,800 in 1880 to £8,400 in 1892, furnishing a total sum of £68,000 for the 13 years. In Belgium, according to the statistics of 1894, over 2,875 miles of rods were planted with 741,571 fruit trees, which furnished the large sum of £400,000. In France the production of fruit trees is estimated at £12,000,000. In Westphalia, in the Duchies of Baden and Saxe Weimar, in Alsace-Loraine, Switzerland, &c., the *employes* of the Administration of Roads and Bridges and the road supervisors, are instructed in fruit culture. In some of the southern departments of France the roads are bordered with cherry trees, producing the small fruit called *merise* (wild cherry), much appreciated for making wine *suigeneris*, preserves, and even alcohol. In the Tououraine, plum trees predominate, while in the Allier, the walnut trees transform the roads into shady walks. In Auvergne the chestnut tree flourishes; while in Normandy, place is naturally given to the apple tree. Some twenty years ago, the picturesque roads of tho north-east of France were lined with stately poplars; but although ornamental, their roots went far and wide, rendering the adjacent meadows sterile, and ploughs were continually stopped by offshoots lying almost at the surface of the soil. The farmers appealed in such strong terms, that the communes decided upon the fall of the poplar, and soon axes and saws were brought into requisition, and the roads cleared of these trees in favour of the humble but more useful *mirabelle* (small plum), to the great satisfaction of the villagers. Thousands of baskets of this fruit are sent to Paris daily. Some thirty years ago the distillation of the mirabelle was unknown in the country districts, the people plucked it as food for their pigs, but to-day they have learned to make more profitable use of it. They distil it in large quantities, and find a ready market for it. A quart of this alcohol, slightly perfumed, sold five or six years ago for only about 10d. or 15., to-day it brings not less than 2s. or 2s. 6d., while in Paris the best kind cannot be obtained under about 4s. 3d.—*Journal of the Society of Arts*,

RUBBER CULTIVATION IN GUATEMALA

According to the views of Senor Horta, who has recently issued a pamphlet on "Rubber in Guatemala," the climate most appropriate for the growth of the rubber tree is that of the Tierra Caliente, or hot coast lands, at an altitude not exceeding 1.500 ft., and the trees should not be planted in the sun, although the contrary opinion is held, and has been expressed by some authorities. Senor Horta gives as his reasons for this opinion: (1) The nature of the rubber tree; (2) experiments made in Guatemala; (3) the fact that by planting in the shade there is complete security and a satisfactory result. Experiments in Guatemala have shown that rubber plantations in the open do not develop nor give a profitable yield, and planters have suffered serious loss on this account, not only in this country, but also in Tabasco, Chiapas (in Mexico), and in British Honduras. By planting in the shade it will always be an easy matter, if special conditions of the soil so require to remove superfluous shelter. Under these circumstances it is not necessary to consider the manner of cultivation suggested by some persons, namely, that of planting rubber in the sun and using the trees as shade for coffee or cacao. This mode has been tried and, has given very unsatisfactory results, not only in Guatemala, but also in Tabasco and British Honduras; in some cases it was necessary to destroy the rubber tree and substitute others giving better shade, and in other cases the entire plantation had to be abandoned. It is a mistake to cultivate together such plants as coffee and rubber, which require distinct climatic conditions, soil, and atmosphere; the result invariably is that neither acquires a proper development. The yield of rubber trees has been estimated by some agriculturists as high as 3 lb. yearly from the sixth year; Senor Horta does not consider that trees should be tapped before their ninth year, and says that, according to his personal experience, 1 lb. of rubber, say 2½ lb. to 3 lb. of milk, is a good annual yield. According to him, the milk may be extracted twice each year, during the rainy season, about two months after its commencement, and again towards its close; the most propitious time being when the tree has dropped its leaves, and when the sap is most abundant and most active. He adds that, if agriculturists would devote themselves to giving great attention to the study of the nature and conditions of life of the rubber trees, to the progress of its sap, to the stimulants and fertilisers that might be advantageous to it, it is probable that this yield might be greatly increased.

SPRUCE GUM IN RAMIE, U.S.A.

The gathering of spruce gum as a side issue of lumbering during the less active months in Maine has grown to be quite a large industry. The crop for the past year was the largest on record and the last consignment of six tons was delivered late in August, bringing the total for the year to nearly thirty tons, valued at about $63,000. The process of collecting the material has many interesting features. During the winter, when the snow in the woods is not too deep, a "hunter" goes from camp to camp picking out good-looking trees that have a supply of gum clinging to the bark. He makes a note of each tree, making it by cutting into the bark with his axe. In the spring, when the snow has melted he leads a party of pickers over the same territory, and they clean the trees of the gum that has accumulated. The instrument used for picking purposes is of fine surgeon's steel, tempered to such a degree that it can be bent to almost any shape and not bark. This is necessary, for on many of the trees the gum is hanging to the bark in such a manner that to attempt to remove it with anything but a crooked blade would be useless.

The gum as it is scraped from the tree is taken in a large basket to the nearest lumber camp and left for the coming of the "chaser," whose duty it is to see that the gum is delivered to the "boss" who has sent the expedition out. When the gum arrives at the latter place it is spread on a carpet and the whole neighborhood takes a hand in sorting the good from the bad, the lightcolored from the dark. Then it is "blowed," a huge bellows not unlike those used in a blacksmith shop being used for the purpose. The gum is then ready to be bagged and sent to the city dealer, who in turn disposes of most of it to chewing gum manufacturers. —*New York Manufacturer.*

Ceylon Land and Produce Company (Limited).—On page 422 we give the report for the year ended June 30th, which states that the amount at credit of profit and loss account is £11,979, which, with £321 brought forward, leaves £12,300 to be distributed. In July an interim dividend of 7½ per cent on the ordinary shares and three per cent on the preference shares was paid, and the directors now propose to pay the balance of the fixed cumulative dividend on the preference shares, making six per cent for the year, and 7½ per cent on the ordinary shares, making 15 per cent for the year, and in addition, a bonus of five per cent on the ordinary shares—all tax free. It is also proposed to transfer £4,000 from profit and loss account to reserve fund, increasing it to £17,500, and carry forward £1,533, subject to the directors' remuneration for the year under review, and to the payment of income-tax, &c. The directors have decided to issue the balance of the six per cent cumulative preference capital—viz., 2,150 shares of £5, which are offered at a premium of 12s 6d per share to the preference shareholders. We congratulate all concerned upon the result of the years' working.

Ceylon Tea in Russia.—It will be good news to planters to learn that the Russian firms in Colombo have been conferring with English firms doing business with Russia in Ceylon tea, with a view to a meeting in the early future at which it is hoped some arrangement may be reached whereby the scope of such business may be generally enlarged. The meeting, we understand, will most likely be held at the Bristol Hotel on November 27th, though the date has not actually been fixed. The ground for such a meeting is, we understand, the impossibility of supplying the Russian market direct with sufficient Ceylon tea at the present time: further orders from Russia would be forthcoming were it possible for the local firms to guarantee larger regular shipments from Ceylon. The only way to enlarge the scope of the business, therefore, would be to have more teas put up for auction in Colombo. If Russian firms in Russia increase their orders, while the same quantities are put up here week after week, prices may rise by reason of the increased competition among buyers; and this would in turn check the Russian orders from home undesirable. Hence the anxiety to obtain larger local deliveries; and, following up our remarks of last evening, we must urge the local exporter to cultivate the local market with more vigour than hitherto. Prices need not go down, but a larger capture of the Russian taste will be in store for Ceylon teas, if the deliveries in Colombo are considerably increased.

CENTRAL TEA COMPANY OF CEYLON, LD.

[The following is a copy of the report.]

The Directors have the pleasure to submit the General Balance Sheet and Profit and Loss account for the year ending 30th June, 1899, duly audited.

	£ s d	£ s d
The net amount at credit of Profit and Loss account, including the balance brought forward at 30th June, 1898, and after providing for General Expenses, Directors' Fees, Income Tax, &c., is ...	—	2,935 7 7
Dividends on the 6 per cent. Preference Shares were paid for 1898 9 (less Income Tax) amounting to ..	1,505 0 0	
It is proposed to pay a Dividend of 6 per cent (less Income Tax) on the Ordinary Shares which will absorb ..	1,073 0 0	
And to carry forward to next year a balance of ...	557 7 7	
		£2,935 7 7

The Directors trust the results of the year's working of the Estates will be considered satisfactory by the Shareholders.

The gross average price realised for the tea was 7·87d per lb., as against 7·75d per lb. last season, and the rate of exchange was 1s 4 19·64d as against 1s 4d.

The yield of tea was 331,427 lb., being 377 lb. per acre over a plucking area of 879 acres.

The acreages of the Estates are as under—

Estate.	Tea. In bearing.	Partial bearing.	New clearings.	Cardamoms.	Forest Grass and Waste.	Total acreages.
Kabragalla ..	431	61	16	32	397	937
Somerset (Including Easdale and Loxa) ..	387	..	13	...	33	443
Total ..	818	61	29	32	430	1370

Under clause No. 24 of the Articles of Association Mr. J. Sancroft Holmes retires on this occasion from the Board, and being eligible, offers himself for re-election.

The Auditors, Messrs. Harper Brothers, Chartered Accountants, also retire from office, and offer themselves for re-election.—By order of the Board,

Wm. Johnston, Secretary.

MINOR PRODUCTS REPORT.

Citronella Oil.—Quiet and unchanged, with small sales at 11½d per pound in tins, and 11d in drums on the spot.

Spices.—A quantity of Cinnamon-chips, offered without reserve, sold at 7d to 8d per pound for pieces, quillings at 5½d per pound, featherings at 4d to 4¾d per pound, bark and common chips at 2d to 3d per pound.—*Chemist and Druggist*, Nov. 11.

UNITED COFFEE GROWERS' CO.

The statutory meeting of The United Coffee Growers' Company, Ld., was held in the Assembly Room, Coonoor, on Wednesday. A statement was placed by the Directors before the shareholders, in which they were informed that the land for the erection of the buildings has been acquired in Coimbatore, but the building will, it is hoped, be completed in from two to three months' time; that roasting, mixing, and grinding machinery, as well as a tin-making plant, has been ordered from the Continent, and is now on its way out. It is estimated that this machinery will be capable of dealing with 400 to 500 tons of coffee per annum, which amount by the addition of another roasting machine, can be increased to 800 to 1,000 tons per annum, the engine-power and the tin-making machinery being sufficient for this additional output. The services of a gentleman who has been through a regular course of instruction in London and on the Continent have been secured. The Company has spared no pains to put itself into a position to place the best article on the market at the lowest price. A statement of the financial position of the Company was made by the Directors and was found to be in every way satisfactory. This being a Statutory Meeting, no other business was transacted. The Annual General Meeting of the Company was fixed for July, 1900.—*Madras Mail*, Dec. 1.

PRODUCE AND PLANTING.

Adulterated Tea.—It is to be regretted that the Commissioners of Customs, in their reference to the examination made by their analyst on imported teas before they are taken out of bond, do not state where the teas of doubtful character upon which they report come from. It is not difficult for the export to guess, but the public, not so well acquainted with the tricks of certain growers and manipulators in the Far East and in Germany, possibly imagine that Indian and Ceylon teas are sometimes adulterated. The report of Mr. W Cobden Samuel, tea analyst, is as follows of the 938 samples analysed 70 samples of green tea faced, 20 samples of green tea unfaced, 46 samples of green tea capers, 595 samples of black tea, congou, 160 samples of black tea dust, 47 samples of black tea siftings. Of the total 854 were, on analysis, considered satisfactory, and the importations represented by them were accordingly delivered on the certificate of the analyst. The remaining 84 samples represented teas of doubtful character, the results of analysis of which were reported to the Board for their decision, with the result that the whole of these, representing 1,603 packages, were restricted to exportation or for manufacture of caffeine. In regard to samples of tea examined by public analysts, it was stated in the annual report for 1896-97 that of the 4,289 samples examined in the previous five years only four had been reported against. In 1897 one sample was condemned, but during the past year, out of 486 samples taken, as many as fifteen were adulterated, while eight more were returned as of inferior quality. Many, of these were of the variety known as caper tea, and were reported to contain excessive quantities of mineral matter. Respecting this revival of an old and somewhat ingenious method of adulteration, which consists of the addition of stones and sand to tea in order to increase its weight, the analyst for the country of Derby writes: "The practice is defended by interested persons on the ground that the mineral matter is unavoidably introduced during the process of the preparation of the tea for the market. This contention, however, cannot be sustained, as genuine tea practically never contains 1 per cent. of mineral matter in the form of sand, where sand and stones are present in the proportion found in the samples under observation, these foreign substances must have been purposely introduced, and possibly caper tea is chosen as the chief medium for the operations because the shape of the leaf after its preparation for sale is favourable for the concealment of the stones. The tea certified by me to contain 4 per cent. of sand and stones was sold at the high price of 3s 8d per lb. and the adulteration, which was actually in the excess of the amount certified by me, was obviously of a fairly remunerative character,

Legal proceedings were taken in five instances of tea adulteration, and two fines were inflicted.

Adulterated Coffee.—Of the 1879 samples of coffee examined 10 per cent were condemned. As usual, many samples were reported to contain large quantities of chicory.

Tea Reform and Dock Charges.—With reference to the comments on this subject which have appeared in the *Produce Markets Review*, and which we have reproduced, that journal remarks in its issue of last Saturday that these comments have led to a good deal of criticism, especially on the subject of the dock charges. "Our figures," it says, "were compiled from the dock books themselves by one whose sole occupation it is to look after such matters, but the items are most obscurely given by the companies, and it is indeed impossible for any one except an expert to make head or tail of them. Our object was, however, to secure absolute accuracy, and as we find on close scrutiny that some of the items (notably the bulking and taring, in which, after reference, we believed we were right) are inaccurate, we append a corrected statement of dock charges on Indian tea in this port, and a comparison of them with those on other goods. This comparison is the important point and not fractional differences in details. The errors affected by our critics, which we gladly correct, affect this comparison to the extent that we overstated the Indian tea charges comparatively 3s 6d per ton, they working out at 52s 6d instead of 56s. Warrants and weight notes were not included by us in tea, which would practically cover this small balance, but we are content to take the smaller figure. What possible reason can there be, except gross mismanagement and monopoly, for the charges on Indian tea being four times more than those on Indian coffee? To satisfy our critics we now give the following corrected charges on one ton of Indian tea landed and sold at public sale taking twenty chests to a ton: Landing and housing rate, at 1s 6d per chest £1 10s; public sale charges, at 4d per chest, 6s 8d; bulking and taring each, chest, at 1s 5d per chest, £1 8s 4d; and ten weeks' rent, at ½d per chest, 8s 4d; giving a total of £3 13s. 4d. From this a discount of 10 per cent. is deducted, leaving a balance of £3 6s, and then again to this has to be added the charges for weight notes and warrant stamps, which are 8d and 1s respectively, thus giving a net total of £3 7s 8."

Coming Down Handsome.—The Tea Trade Section of the Mincing Lane branch of the Lord Mayors Transvaal Widows and Orphans' Fund has made a hearty response to the call for subscriptions. Tea companies, growers, agency firms, importers, brokers, dealers, distributors, and warehouse-keepers are doing their best to swell the fund, which already reaches £8,000. The tide of subscriptions flows bountifully, thanks to the energy of those who are working in the good cause. We hope shortly to publish a list of the subscribers.—*Home and Colonial Mail*, Nov. 17.

THE CEYLON LAND AND PRODUCE COMPANY, LTD.

London, Nov. 17.

Being in the City, I looked in at the annual meeting of that very prosperous institution—

THE CEYLON LAND AND PRODUCE CO., LD.

—to find the Chairman (Mr. James Wilson) and his co-Directors and the Secretary (Mr. Loch,) and four or five shareholders taking the Report as read; while Mr. Wilson (having a heavy cold) handed his address to be read by his son. It was both practical and interesting.

As last from Ceylon I ventured to second the adoption of the Report, congratulating the shareholders on continued prosperity, due largely to judicious management, but also to the low rate at which their fine properties stood in the Company's books, showing the prescience of the original founders of the Company and of Mr. Wilson. I called attention to the great extension of cacao-planting now going on in Trinidad in supersession of sugar, as a reason for some caution, and thought care should also be taken in planting coconuts among tea. At the same time I corroborated the view that, with attention and liberal cultivation, there was no reason for alarm in regard to tea blight or cacao canker.

Mr. Seton (the well-known tea share-broker, &c.) followed with some weighty remarks, as an expert on the financial position of the country, arguing that it was a pity with so many shares not fully paid, additional capital should be called up, and dealing also with blight from experience in Assam.—Capt. Brebner and another shareholder took the same view about the calling of new capital, and it was also suggested that the Company should get a quotation on the Stock Exchange.

But the Chairman and Mr. Seton both showed that this was really not worth the trouble it involved and indeed it might require the remodelling of the Company *de novo*; while the Chairman also showed that they could not call up the balance of capital due on shares without paying off debentures and the time had not come for that yet. He also mentioned that the coconut palms on Peradeniya were prosperous and seemed to do no harm to the tea; that the cacao now being planted was *Forastero* and he called on Mr. Lewis (of Messrs. Lewis and Noyes, cocoa brokers) to refer to cacao.

This Mr. Lewis did in a very reassuring way, saying he did not think West Indian cocoa would ever compete with the Ceylon article which had special qualities of its own. That great efforts had been made in Trinidad to prepare similar quality, but without success, and he had no fear for the future.

(Still, it is a fact that the price of Ceylon has fallen from the maximum a good deal, and that it is not now rated in value so much above the West Indian cocoa, although the price is still satisfactory.—Mr. Lewis also mentioned that Ceylon cocoa was used for special purposes by the manufacturers. Altogether the discussion was an interesting and instructive one, as regards tea, cocoa, coconuts and rules of finance).

Thanks were duly moved to the Chairman and Directors, and, on my suggestion, the resolution was extended to include the Visiting Agent and Estate Managers in Ceylon; and I testified to Mr. Anderson, of Peradeniya, being one of the most reliable and hard-working planters in the island. This was readily agreed to, and the Chairman promised to convey the unanimous thanks of the meeting to Mr. Anderson and the different superintendents.

One announcement made by the Secretary (Mr. Loch) gave general satisfaction, namely, that a register of shareholders was to be kept open for inspection at any time.

Correspondence.

To the Editor.

COLLLECTIVE ACTION FOR TEA GROWERS.

London, Nov, 17.

Dear Sir,—Those who have carefully investigated, admit that a combination exists among buyers, which is undoubtedly evidenced by their strong Buyers Association at Birmingham and what is soon started in London, extraneous evidence too has come from America, shewing conclusively that an arrangement has existed among the larger buyers in London, for some years.

LOSS BY FALL IN EXCHANGE.

What is unsatisfactory in the position of tea just now is the loss the interest has sustained by exchange. If this were recovered, profits would average 4 per cent. more than at present, but so long as the buyers are strengthened by their Associations; unless met by similar methods; it is difficult to see how a permanent recovery can be accomplished. Organization must always, in the long run, beat what is not organized; discipline what is indisciplined.

REGULATION OF SUPPLIES,

Supply and demand will undoubtedly in time fairly adjust prices, but in the lengthened process of the swing, first credit and then capital go. By a system of regulation, now almost universally adopted by the various industries of Great Britain, the great extremes of the crude supply and demand process, are eased and a more moderate result ensues. It has been found that by allowing the price of any product to fall to a low level, that it is next to impossible to re-establish it. This, of course, applies more to imperishable, rather than perishable commodities, and in this respect tea is favoured. When Pattison's Whisky Company failed, the trade arranged that the stock should not be thrown on the market, simply, in case it should establish a lower price. Thus within the process of supply and demand, the extremes produced are modified, a more average result ensucs, investors know better where they are; and an industry is better established and accredited.

So far everything goes to shew that the organization is only on the side of the buyers, the seller, using no means of meeting them; in this the produce markets of Great Britain stand alone.

THE INDIAN TEA ASSOCIATION'S MEASURES.

Since most of the foregoing was written the Indian Tea Planters' Association in London has wiscly regulated its sales, and if Ceylon would only do the same, say, from 1st May to 31st October, prices would be improved. Since "regulation" has come in, it is only necessary to compare now much better, relatively, Indian teas have sold than Ceylons. A very casual glance over sale lists will prove this. It should be the endeavour of Ceylon to begin regulating their sales from May next.

The beneficial result of regulation by the Indian growers is shewing itself in an earlier return to better prices and against a less favourable statistical position at the same time last year.

A TEA PRODUCERS' ASSOCIATION MUST BE FORMED.

The only way of meeting buyers on equal grounds now; is for a Tea Producers' Association of London to be formed and after due attention has been made, to regulation of sales of all teas, to bear the following in view.

To facilitate also the production of tea to its requirements, the Association should have a record department, wherein should be kept at the disposal of members, complete statistical and general information, with compiled tables made therefrom. These should be as complete as possible so as to have some influence in preventing unwise extensions.

EDUCATION OF THE PUBLIC.

There should also be some effort made at educating the public, for already, although the less discriminating are satisfied, those who can pay for their teas have little opportunity of obtaining the choicest blends and of which, most know nothing.

There is a large grocer in an important provincial town who buys wholesale 1s 1d, 1s 2d and 1s 3d, teas which he retails respectively at 1s 4d, 1s 8d and 2s per lb. Indeed a close investigation shews that such anomalies exist small sides.

OBNOXIOUS REDUCTION IN VARIETY OF TEAS.

The worst feature, from a producer's point of view, is the growing efforts to reduce teas to only two or three kinds; when there should really be as great a choice as there are of wines. Against this the strongest stand should be made. So far as has brought · the staple down to an indiscriminate mass, without distinctive flavour, or character, a practical blending of port, sherry, and claret to a general average. To anyone with a palate for what is delicate and choice it has no attraction and the fear is that amongst our customers, who are prepared to pay for a choice article, that they will sooner or later revert to coffee and chocolate. Unfortunately this catering for the masses, in cheap teas in packets, has drawn in the thrifty, though well-to-do, housewife to purchase 1s 4d instead of 2s teas, and until some effort is made to shew the distinction, things are likely to become worse rather than better. From cottage to palace, one and all are buying cheap teas in a manner never known before, not from choice, but ignorance.

Medium teas have little value in the public market. Large quantities of low-priced are blended with a strain of anything likely to make them pass muster. Buyers recognise two kinds, high and lose, but are determined to throw the bulk, the medium teas out of competition, consequently, whether by a preconcerted arrangement or not, they fall to the buyer without any apparent public competition whatever.

THE PUBLIC BUYS AS IT IS TAUGHT.

There are people who will say, the public buy what they want. This is a mistake, those of the public who have an opportunity of judging are not satisfied. The bulk are led by advertisments and what appears in the interested public papers, and which the Association should refute—for instance it is advertised everywhere, "that the best tea the world produces" can be bought for 1s 7d; personally, the writer considers this 1s 7d tea dear at the money. and not what a gentleman or lady should have on their table. He also recognises among well-to-do people, that good China is gaining ground; which can only

be accounted for by a natural reaction from the strong pungent tea of the masses, being so indiscriminately used in the drawing rooms of many of the wealthy.

HOME ACTION MUST BE TAKEN.

With a Tea Producers' Association in London, that would fairly face all these questions, of regulation of sales, collecting accurate and complete statistics, instructing and educating the public and having machinery to touch the trade in every part, there is nothing to fear in the future of the tea industry. On the other hand, if producers believe that the falling of the distributing of their teas into fewer hands, as has happened more or less with almost every industry, means that they are to make no action themselves, they will have a rude awakening.

SUUM CUIQUE.

CARDAMOMS AND (ALOE) FIBRES.

Bambragalla, Rattota, Dec. 3.

DEAR SIR,—In your para "Tea and Cardamoms," in the *Observer* of the 1st instant, I see that a brother planter has corroborated what I stated in my letter to you of the 26th November. I know several small fields once planted with cardamoms, which are now growing good tea; but I do not know and never heard of any land which failed to grow tea well having been planted with cardamoms and I am quite sure that cardamoms would not bear in such land. The article by "L." in a Calcutta paper was about aloes not about rami. "L"'s experience of growing aloes has been very different from mine. My experience of growing aloes, the large kind with spines on the edges of the leaves, is distinctly adverse to growing them in poor useless land. Twenty years ago I thought they could be grown on any kind of land, so I planted up 15 acres of useless land with them (the large kind) and kept the field free of weeds for two years; but finding that the plants made little or no progress I abandoned it. Some of the plants continued to live for years afterwards, but never became large, though plants put in fairly good soil grew to the usual size.—Yours faithfully,

R. B.

JADOO.

KANDY, Nov. 29.

DEAR SIR.—Can any of your readers tell me, from *bona fide* EXPERIENCE, if Jadoo is good for strawberries, as regards the bearing of fruit.

E. F. T.

DEAR SIR,—In reference to "E. F. T"'s query *re*-Jadoo I may say from experience that this is a nutritious and convenient—because light and clean—form of soil, which is especially useful for plants grown in pots in rooms and verandahs. As regards its application to strawberries, however, it would no doubt be found to be productive of healthy growth for a time, provided it did not get too soon washed away by the rain; but, from a commercial point of view, it is very doubtful whether it would thus pay. Jadoo is a light spongy sort of soil, similar to decayed coconut fibre. At one time it was thought to be the medium *par excellence* for nursery-beds for tea, coffee, &c., but apparently it has not as yet stood this test.—Yours truly,

X.

THE TEA DISPUTE AND RESULTS.

(*From a Home Correspondent*).

LONDON, Nov. 17.

H. M. Customs has at last given its decision with regard to the Dealers and Importers' petition regarding the terms of agreement come to in August last, and has issued its order. * * * It will be seen that this is distinctly an advantage in favour of the Importers.

It remains to be seen what steps the Buyers will now take to secure the "overtakers." I understand they have taken Counsel's opinion which is that they are legally entitled to them: but Importers have an opinion to the contrary effect. Perhaps, the best course would be to settle this by a friendly "test" case.

Notwithstanding the adverse criticism of the few that the draft was badly engineered, it appears to me that the result obtained has fully justified the efforts of the Joint Committee. The Importers have scored in the matter of Customs weighing, while Buyers have gained nothing.

The regulation of sales of Indian teas has been an unqualified success: the system adopted is working smoothly and has undoubtedly saved the market from being flooded with tea at this time of the year. Although Ceylon teas do not require regulation, the course adopted has been the means of keeping up the market for Ceylons as well as Indians.

The Associations are quietly working the warehouses, regarding a reduction of rates, and this is, I believe, in a fair way of being obtained. The docks, however, do not see their way to fall into line with the other warehouses which are prepared to make a reduction.

Should they persist, and the others do not break from the "ring," the inevitable result will be that a planters' warehouse will be started.

Another result of the "Tea Dispute" is that an Importers' Association is being formed. The draft of its constitution has, I learn, been drawn up by the Joint Committee of the Indian and Ceylon Associations; but will not be submitted to those interested until the Committee have thoroughly matured the scheme.

The amount of time given by the members of the Joint Committee to the *great dispute*, and all these other questions affecting the Tea Industry on this side, has been a severe tax on busy men. In my opinion, those growers and importers who did not support the Committee, and more especially those who seceded after signing the agreement, should be heartily ashamed of themselves. No doubt, however, they will gladly accept all the advantages that others have fought and gained for them. You will remember it was the same with the voluntary tax and export cess for pushing our teas. A miserable minority who could not see beyond their noses, protested, but all the same reap the advantages with others. It is always good to have an opposition, but, when the fight has once begun, we should stand shoulder to shoulder, as our country is now doing in this Transvaal war.

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS FOR OCT. 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Padupola in the Central Province, 43·07 inches, and the lowest at Kekanadura in the Southern Province, 1·29 inches.

WESTERN PROVINCE.

Negombo, Mr. Bucknall (6) ... 14·26
Kalutara Mr. Gregson (36) ... 20·18
Labugama, Mr. Bond (369) ... 25·23
Henaratgoda, Mr. Silva (33) ... 15·95

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,500) .. 15·55
New Valley, (Dikoya) Mr. Ward (3,708) .. 23·41
Helboda, (Pussellawa) Not received (3,300) ... —
Yarrow Estate, ... Mr. Peto (3,400)... 22·68
Peradeniya Mr. ... Perera (1,540) ... 13·92
Duckwari, Mr. Edwin (3,300) ... 26·12
Caledonia, Mr Goork .. (4,273) ... 15·83
Pussellawa, Mr. .. Powell (3,000) .. 23·79
Hakgala, Mr .. Mac Millan (5,581) .. 11·43
S. Wararajah Estate, Mr. Tatham (3,700) ... 23·03
St. Andrew's (Maskeliya), Not received (4,200)... —
Padupola, Mr. Ward ... (1,636) .. 43·07
Mylapitiya, Mr. Fletcher (1,707) ... 4·50

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) . 11·88
Jaffna Mr. MacDonnell (8) 18·06
Mankulam, (N. Road) Mr. Walker (167) .. 12·14
Elephant Pass, Mr. .. Silva (7) .. 12·15
Vangalachettykulam, Mr. Oorloff (179) ... 10·25
Point Pedro, Mr. Pararachasinghe (24) .. 15·34
Jaffna College, Mr. Cooke (9) ... 15·16
Kayts, Mr. Kretser ... (8) .. 8·93
Kankesanturai, Mr. ... Adams (10) . 12·76
Pallai, Mr. Silva (24) .. 10·90
Murikandy, (North-Central Road) Mr. Silva — 3·85
Nedunkeni, Mr. Sanmukam (122) ... 19·47
Chavakachcheri, Mr. Silva (16) ... 13·22
Udupiddi, Mr. Hastings (35) ... 15·09
Marichchukaddi, (14) Mr. Thamotharampillay 11·70
Murungan, Mr. Nunn (52) 9·36
Vavuniya Mr. Walker (318) 1·30

SOUTHERN PROVINCE.

Ella Vella (262) Mr. Smith 11·49
Kekanadura, (150) do 1·29
Denagama, (286) do 6·13
Udukiriwila Mr. Leurensz (235) ... 4·63
Kirama, Mr. Ismail (260) 4·06
Hali-ela (200) Mr. Smith 9·05
Tissamaharama, Mr. Peris (75) ... 1·77
Matara (15) Mr. Smith 8·93
Dandeniya, (157) do 0·13
Urubokka, Mr. Smith (890) ... 13·27
Elagala, Not received (121) —
Tangalla, (94) Mr. Barttlett ... 4·62
Mamadola, Mr. Cade — (56) ... 4·72

EASTERN PROVINCE.

Irrakkamam, (42) Mr. Bower ... 9·98
Devilana, Mr. Vanderstraaten (136) 6·85
Sagamata, Mr. Bower (40) ... 7·90
Ambare, do (65) 11·17
Kanthalai, Mr. Carte (150) 2·86
Allai, Mr. Carte (95) 17·90
Rukam, Mr. Vanderstraaten (120) .. 4·99
Periyakulam, Mr. Carte (20) ... 5·44
Chadaiyantalawa, Mr. Edge (57) ... 5·67
Kalmunai, do (12) 6·78
Rotewewa, do (30) 11·23
Lahugala, do (70) 7·40
Naulla, do (30) 6·-0
Andankulam, Mr. Carte (41) ... 5·02
Manalpuddy, Mr. Vanderstraaten (21) 3·00
Maha-Oya-Tank, Mr. Vanderstraaten (190) 6·88

N.-W. PROVINCE.

Magalawewa, Mr. Sooperayan (176) .. 7·40
Maha Uswewa tank, Mr. Crabb (160) ... 8·93
Tenepitiya, Mr. Churchill (8) ... 12·20
Batalagoda, Mr. Fonseka — 20·60

N.-C. PROVINCE.

Kalawewa, (268) Mr. Carson 9·09
Maradankadawala, Mr. Carson (443) ... 10·47
Mihintale, Mr MacBride (354) ... 10·63
Horowapotana, Mr. MacBride (217) ... 7·50
Madawachchiya, Mr. MacBride (285) ... 10·58
Topare, (200) Not received .. —
Minneriya — Mr. Eves 11·22

UVA PROVINCE.

Bandarawela, Mr. Christie (4,000) ... 0·74
Haldummulla, Mr. Viramuttu (3,160) ... 12·10
Kumbukan, (446) Mr. Emerson ... 8·45
Koslanda, (2,258) Mr. Emerson ... 26·44
Tanamalwila, Not received (550) ... —
Bibile, Mr. Silva (180) 16·56
Talkena, Mr. Fernando (1,100) ... 7·55
Allutnuwara — H. L. 3·63

SABARAGAMUWA.

Ambanpitiya, Mr. Caldicott (729) 16·13
Pelmadulla, Mr. Clarke (408) 14·85
Kolonna Korale (Hulanda-oya) (203) Mr. Dabre 8·64
Avisawella, Mr. Jeffery (105) 16·08

Ceylon Rainfall.

S. G. O. METEOROLOGICAL OBSERVATIONS FOR JUNE, 1899.

The following is the return of the total fall of rain for June, from which it will be seen that the highest fall was at Coldstream Estate, Watawala, 39·88 inches, and the lowest at Mannar, 0·01 inches.

Colombo (40) 9·23
Ratnapura (84) 26·24
Puttalam (27) 0·40
Anuradhapura (295) 0
Mannar (12) *0·01*
Jaffna .. 0
Trincomalee (12) 0
Batticaloa (26) 0·02
Hambantota (50) 2·64
Galle (48) 8·75
Kandy (1,654) 9·94
Nuwara Eliya (6,188) 13·72
Hakgala, Nuwara Eliya (5,581) 7·56
Badulla (2,225) 0·48
Vavuniya (317) instruments removed
Kurunegala (381) 9·57
Maligakanda, Colombo Mr. Johnson (70) 12·00
Agricultural School —
Colombo, Mr. Rodrigo 12·73
Welhelmina Puttalam, Mr. Ratnayeke (31) —
Horahele Estate, Chilaw, Mr. Peven (50) 5·55
Chilaw Kachcheri
Chilaw, Mr Koch (10) 2·65
Franklands Estate —
Veyangoda, Mr. Beven 10·17
Orange Hill, Ragama Mr. Bury (60) 14·87
Henaratgoda Gardens, Henaratgoda, Mr. de Silva (33) 14·38
Kotua Godella, Rambuk'a Mr. Windus (580) —
Eadella or Liberia Estate Polgahawela Mr. Craighead (425) 10·51
Geekianakanda, Neboda —
Mr. Towgood (200) 17·02
Polgahakanda, Neboda Mr. Wight (500) 17·13
Labugama, Hanwella. Mr. Bond (369) 21·74
Rayigam, Horana, Mr. Dawson, (300) 17·69
Kanangama, Avissawella Mr. Cooke (200) —
Dunedin Estate, Avissawella, Mr. Bayley, (400) 19·57
Digalla Avisawella, Mr. Tottenham, (400) 23·01
Pambagama, Avisawella, Mr. Bridgman (600) —
Avisawella Estate Avisawella Mr. Byrde (250) 21·86
Yatiyderiya, Kegalla, Mr. Fairweather — 23·23
Mahawalatenna, Balangoda Mahawalatenna R. M. — 8·28
Agarsland Estate Balangoda Mr. Boyd (2,915) —
Maduwanwala, Rakwana, Maduwanwela R.M. (750) 2·50
Anninkanda, Morawaka, Mr. Anderson, (1,400) 21·43
Panilkanda, Morawaka, Mr. Davidson. (1,900) 18·93
St. John Del Rey, Bogawantalawa Mr. Glanville (4,300) 14·31
Friedland, Bogawantalawa Mr. Rammell (5,200) 15·83
Campion, Bogawantalawa, Mr. Gidden, (4,840) 12·01
Blair Athol, Dikoya, Mr. Lane (3,641) 31·93
Annfield, Dikoya. Mr. Knight (4,300) 20·54
Maskeliya Hospital, Maskeliya Mr. Bulner (4,200) 21·25
Hope Estate, Hewaheta, Mr. Bagot (5,000) 14·79
Coldstream Estate, Watawala, Mr. Speeding (3,800) *39·88*
Holmwood Est., Agrapatana, Mr. Gray (5,240) 16·58
Sandringham, Agrapatana Mr. Orchard (5,200) 12·42
Gingran-oya, Kotmale, Mr. Cox (3,800) 25·4
Labookelle, Ramboda, Mr. Stone (5,000) 37·00
Dunsinane, Pundalu-oya, Mr. Metcalfe 4,800 2·01
Sogama, Pussellawa, Mr. Eustace (3,500) 19·52
Kurundu-oya, Maturata, Mr. Corbetta (5,150) 1·67
Kabaragalla, Maturata, Mr. Maclean (4,200) 19·57
Maragalla Estate, Moopana, Mr. Betts, (2,200) 0·30
Moopana, Hospital, Moopana (Mr. Sela) (500) 0·20
Madulsima Hospital Lunugala Dr. Vethecan (2,400) 0
Meeriabedda, Haputale, Mr. Dupuis (3,600) 0·40
Udahena Estate, Haputale, Mr. Bisset, (4,500) 0·31
Post Office, Bandarawela, Mr. Mendis (4,035) 0·38
Callander, Ohiya Mr. Green (5,125) —
Mariawatte, Gampola Mr. Salmond (1,600) 15·74
Orwell Estate, Gampola Mr. Taylor (1,800) 14·15
New Forest, Deltota, Mr. Wardrop (3,500) 16·26
Rajawella, Estate, Telleniya Mr. Miller, (1,500) 3·95
Lower Spring Valley, Badulla Mr. Rettie (3,650) 0·63
Gourakele Estate, Badulla Mr. Hope (1,200) 1·25
Mousagala Estate, Badulla, Mr. Deaker (4,500) 0·67
Ledgerwaite, Badulla Mr. Rettie (4,000) 0·50
Dea Ella Estate, N'walatenna Mr. Vanderslott (800) 13·65
Sembawatte Estate, N'pitiya Mr. Roe (1,600) 29·82
Gammaduwa, Estate, Rattota Mr. Westland (2,400) 4·17
Kobonella Estate, Rangala, Mr. Pole (3,300) 8·37
St. Martins, Rangala, Mr. Wyllie (3,600) 4·83
Crystal Hill Matale, Mr Van Srex (1,400) 5·31
Vicar on Estate, Matale Mr. Carnie (3,250) 15·51
Matale Mr. Tisseverasinghe (1,208) 6·29
Wariapolla, Matale, Mr. Dickenson (1,200) 6·83
Dambulla, Mr. Sinnetamby (400) 0·37
Kotta Estate, Pallai, Mr. Todd (13) ...
Mantota Hospital, Mannar, Mr. Adams (17) 0
Buttala Hospital, Buttala, Mr. Somasundrum —
Police Station, Hatton Police Constable Miskin (4,141) 36·56
Medway Estate Nilaveli, Mr. Abraham, ... 0
Delwita, Kurunegala, Mr. Neame (490) —
Woodside, Uragalla Mr. MacMahon (3,000) 7·86
Gillardstown, Wattegama Mr. Hardy (2,500) 10·63

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Agra Ouvah Estates Co., Ltd.	500	900	—	900
Ceylon Tea and Coconut Estates	500	—	500 n'l	..
Castler agh Tea Co., Ltd.	100	..	100	—
Ceylon Hills Estates Co., Ltd.	150	—	30	..
Ceylon Provincial Estates Co.	500	500	..	500
Claremont Estates Co., Ltd.	100	..	25	—
Clunes Tea Co., Ltd.	100	—	90	—
Clyde Estates Co., Ltd.	100	—	70	—
Doomoo Tea Co., Ltd.	100	60	65	—
Drayton Estate Co., Ltd.	100	150	—	.
Eila Tea Co., of Ceylon, Ltd.	100	62·50	65	65
Gstates Co., of Uva, Ltd.	500	—	325	..
Gangawatta	500	—	..	—
Glasgow Estate Co., Ltd.	500	925	950	—
Great Western Tea Co.,	500	—	646·40	—
Hapugahalande Tea Estate Co.	200	—	..	..
High Forests Estates Co Ltd	500	—	570	—
Do part paid	350	—	—	387·50
Horekelly Estates Co., Ltd.	100	—	—	..
Kalutara Co., Ltd.	500	..	..	..
Kandyan Hills Co Ltd.	100	—	70	..
Kanapediwatte Ltd.	100	..	97·50	...
Kelani Tea Garden Co., Ltd.	100	—	65	—
Kirklees Estates Co., Ltd.	100	—	145	—
Knavesmire Estates Co., Ltd.	100	—	65	65
Maha Uva Estates Co., Ltd	500	—	500	
Mocha Tea Co., of Ceylon, Ltd.	500	640	—	..
Nahavilla Estate Co., Ltd.	500	450	475	475
Neboda Tea., Co. Ltd	500	500	..	..
Nyassaland Coffee Co. Ltd.	100	..	..	..
Ottery Estate Co., Ltd.	100	..	—	—
Palmerston Tea Co., Ltd.	500	—	415	..
Penrhos Estates Co., Ltd.	100	97·50	100	..
Pine Hill Estate Co., Ltd.	60	—	50	..
Pitakanda Tea Company	500	1,000	—	..
Putupaula Tea Co., Ltd.	100	—	120	.
Ratwatte Cocoa Co., Ltd.	500	—	—	..
Rayigam Tea Co., Ltd.	100	65	70	65
Roeberry Tea Co., Ltd.	100	—	—	—
Ruanwella Tea Co., Ltd.	100	—	70	..
St. Heliers Tea Co., Ltd.	500	500	—	..
Talgaswela Tea Co., Ltd.	100	25	—	..
Do 7 per cent. Prefs.	100	...	..	..
Tonacombe Estate Co., Ltd.	500	—	450	—
Udabage Estate Co., Ltd.	100	..	—	—
Udugama Tea & Timber Co., Ltd.	50	..	—	..
Union EstateCo., Ltd.	500	—	300	—
Upper Maskeliya Estate Co., Ltd.	500	..	500	—
Uvakellie Tea Co., of Ceylon, Ltd.	100	...	70	...
Vogan Tea Co., Ltd.	100	..	90	87·50
Wanarajah Tea Co., Ltd.	500	—	1145	...
Yataderiya Tea Co., Ltd.	100	—	375	..

CEYLON COMMERCIAL COMPANIES

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Adam's Peak Hotel Co., Ltd.	100	40	..	—
Bristol Hotel Co., Ltd.	100	—	85	...
Do 7 per cent Debts	100	105	—	..
Ceylon Gen. Steam Navgt. Co., Ltd.	100	..	200	200
Colombo Apothecaries Co., Ltd	100	—	137·50	—
Colombo Assembly Rooms Co., Ltd.	20	12 50	..	..
Do prefs.	20	—	..	..
Colombo Fort Land and Building Co., Ltd.	100	..	..	95
Colombo Hotels Company	100	..	300	300
Galle Face Hotel Co., Ltd.	100	—	150	—
Kandy Hotels Co., Ltd.	100	112·50	—	—
Kandy Stations Hotels Co.	100	..	35	—
Mount Lavinia Hotels Co., Ltd.	500	—	350	..
New Colombo Ice Co., Ltd.	100	170	175	175
Nuwara Eliya Hotels Co., Ltd.	100	—	25	25
Public Hall Co., Ltd.	20	15	—	—
Petroleum Storage Co.	100	—	—	..
Do 10 % prefs.	100	—	...	..

LONDON COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Alliance Tea Co., of Ceylon,	10	8—9	—	..
Anglo Ceylon General Estates Co.	100	—	45·50	..
Associated Estates Co., of Ceylon	10	—	..	4—5
Do. 6 per cent prefs.	10	—	7½	..
Ceylon Proprietary Co.	1	—	12·6—17·6	.
Ceylon Tea Plantation Co.,	10	—	25—26	..
Dimbula Valley Co.,	5	—	5½—5¾	..
Do prefs.	5	—	..	5½—6
Eastern Produce and Estates Co.,	5	—	6¼	..
Ederapolla Tea Co.,	10	—	7—8	..
Imperial Tea Estates	10	—	5—6	..
Kelani Valley Tea Assop.,	5	—	5—6	..
Kintyre Estates Co.,	10	—	..	7—9
Lanka Plantation Co.,	10	4½	5—6	..
Nahalma Estates Co.,	1	—	½—¾	..
New Dimbula Co.,	1	—	2½—3	..
Nuwara Eliya Tea Estate Co.	10	9¼	—	9¼
Ouvah Coffee Co.,	10	7	—	..
Ragalla Tea Estates Co,	10	—	10	..
Scottish Ceylon Tea Co.,	10	—	14—16	.
Spring Valley Tea Co.,	10	—	4—5	..
Standard Tea Co.,	10	—	..	11—12
The Shell Transport and Trading Company,	100	—	200	..
Vatiyantota Ceylon Tea Co.,	10	—	8—9	..
Yatiyantota pref. 6 o/o	10	—	9¾—10¼	..

BY ORDER OF THE COMMITTEE.

Colombo, 8th December, 1899.

RAINFALL RETURN FOR COLOMBO.

(Supplied by the Surveyor-General.)

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897	1898	Av of 29yrs.	1899
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch	Inch	Inch	Inch.	Inch.
January ..	0·81	1·45	7·39	5·42	0·62	5·00	2·92	3·81	2·32	3·09	6·98
February ..	4·36	2·81	5·32	2·36	0·52	0·81	0·35	1·68	1·98	1·90	2·78
March ..	5·34	9·43	1·52	5·15	7·44	1·84	5·64	3·66	4·21	4·92	0·88
April ..	14·27	5.93	13·92	20·39	12·51	9·34	5·93	10·97	22·81	11·47	6·66
May ..	6·48	17·65	3·00	10·32	3·00	10·09	9·31	8·30	5·80	11·89	17·73
June ..	1·87	9.79	6·62	11·01	11·32	13·99	8·37	10·14	10·94	8·34	9·23
July ..	3·32	4·59	1·10	2·20	1·72	0·52	2·85	5·24	6·15	4·49	1·11
August ..	0·73	1·65	1·86	1·01	0·86	0·92	6·35	9·09	0·97	3·77	0·62
September	1·50	4·42	1·14	1 99	0·78	4·09	10·99	4·58	6·90	5·13	1·48
October ..	13·33	35·28	12·24	5·59	20·81	30·36	16·78	4·71	20·60	14·57	12 99
November..	12·32	18·37	5·86	18·10	14·63	5·83	19.81	11·68	17·38	12·80	8·78
December..	8·47	7·66	0·86	6·13	3·25	9·44	11·76	8·89	3·45	6·45	1·08*
Total..	72·80	119·03	60·83	89·67	77·46	92·23	101·06	82·73	103·11	88·82	70·12

From 1st to 6th Dec. 1·08 inch, that is up to 9·30 a.m. 7th Dec.—ED. *C.O.*

THE TEA GARDENS ON THE CAUCASUS.—The report of the Russian Government on the results of the tea crops at the experimental tea plantations near Batoum shows that all three crops produced exceedingly good tea. The first sort could be sold at two shillings and three pence. The tea is prepared by the Ceylon method.—*Pioneer*, Nov. 27.

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo, 5th Dec. 1899.

EXCHANGE ON LONDON :—Closing Rates: *Bank Selling Rates*:—On demand 1/4 3-32 to ⅛; 4 months' sight 1/4 to 23-32 to 3-16; 6 months' sight 1/4 7-32.

Bank Buying Rates:—Credits 3 months' sight 1/4 7-16 to 15-32; 6 months' sight 1/4 ½ to 21-32; Docts 3 months' sight 1/4 ½ to 17-32; 6 months' sight 1/4 11-16 to 23 32.

Indian Bank Minimum Rates 6 o/o

Local Rates: 1 % to 2 o/o Higher.

COFFEE:—

Plantation Estate Parchment on the spot per bus—R10·00

Plantation Estate Coffee, f.o.b on the spot per cwt R70.00 Scarce. No fine offering.

Liberian Parchment on the spot per bus—None offering

Native Coffee f.o.b per cwt. None offering.

TEA:—Average Prices ruling during the week—Broken Pekoe per lb. 40c. Pekoe per lb. 35c. Pekoe Souchong per lb. 32c. Fannings, Broken Mixed and Dust per lb. 28c.—Averages of Week's sale.

CINCHONA BARK:—Per unit of Sulphate of Quinine per lb 9c. 1 o/o to 4 o/o.

CARDAMOMS:—Per lb R2.00

COCONUT OIL:—Mill oil per cwt. none

Dealers' oil per cwt. R13.75; Coconut oil in ordinary packages f.o.b. per ton R312.50

COPRA:—Per candy of 560 lb. R42.00

COCONUT CAKE:—(Poonac) f o.b. per ton, R80.00

Cocoa unpicked & undried, per cwt. R45.00

Picked & Dried f. o. b. per cwt. R49.00

COIR YARN.—Nos. 1 to 8 { Kogalla per cwt. R17.25 / Colombo „ R16.00

CINNAMON:—Nos. 1 & 2 only f.o.b. 65c. / Do Ordinary Assortment. per lb 58c.* { The attention of the trade is called to the fact that considerable quantities of wild Cinnamon have been shipped from Colombo for some time back, and that the same were included in the returns of Cinnamon shipped.

EBONY.—Per ton. No sales.

PLUMBAGO:—Large Lumps per ton, R1,100

Ordinary Lumps per ton, R1,100

Chips per ton, R750, Dust per ton, R600; Dust Flying R200.

RICE.—Soolai per bag, { R7.60 to 8.35

„ per bushel, { R2.90 to 3.20

Pegu & Calcutta Calunda per bushel. R3.20 to 3.30

Coast Calunda per bushel, R3.15 to R3 25 Scarce

Mutusamba per bushel R3.75 to R4.00

Kadapa and Kuruwe, per bushel None.

Rangoon, raw 3 bushel bag. None.

Soola iKara per bushel R2.95 to 3.00

Coast Kara per bushel R3.00 to 3.10

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.

Colombo, Dec. 5th, 1899.

COFFEE:—

Estate Parchment :—per bushel	R9·00 to 10·00	Nominal.
Chetty do do	R6·00 to 8·00	
Native Coffee } per cwt. do F. O. B }	R35·00 to 37·00	
Liberian coffee:—per bushel	R3·00	
do cleaned coffee:—per cwt	R18·00	
Cocoa unpicked:—per cwt	R40·00	
do cleaned do	R43·00 to 45·0	
Cardamoms Malabar per lb	R1·10 to 1·10	
do Mysore do	R1·65 to 1·90	

RICE:—

Soolai per bag of 164 lb. nett	R8·00 to 8·25	
Slate or 1st quality:—per bushel	R3·08 to 3·15	
Soolai 2 & 3rd. do do do	R3·00 to 3·07	
Coast Calunda	R3·15 to 3·25 s	
Coast Kara	R3·00 to 3·10	
Kazala	R2·95 to 2·98	
Muttusamba Ordinary	R3·80 to 4·00	
Cinnamon. per lb No 1 to 4	} scarce	
do do 1 to 2		
do Chips per candy	R95 00	
Coconuts Ordinary per thousand	R35·00 to 38 00	
do Selected do	R36·00 to 39·00	
Coconut Oil per cwt	R14·00 to 14·12½	
do do F. O. B. per ton	R280·00 to 282·50	

POONAC:—

Gingelly per ton		R90·00 to 92·50
Coconut Chekku	do	R70·00 to 72·50
do Mill (retail)	do	R75·00 to 77·50

POONAC:—

Cotton Seed per ton		R77·50
Copra· per candy		
Kalpitiya	do	R41·50
Marawila	do	R40·00
Cart Copra	do	R38·00
Satinwood per cubic feet		R2 00 to 2·25
do Flowered	do	R5·00 to 6·00
Halmilla	do	R1·90
Palu	do	R1·00 to 1·12
Ebony per ton		R75·00 to 175·00
Kitul fibre per cwt		28 00 to R30·00
Palmyra do	do	R4·50 to 17·50
Jaffna Black Clean per cwt		none
do mixed	do	R12·00 to 13·50
Indian	do	R8·50 to 13·50
do Cleaned	do	R12·00 to 17·50
Sapanwood per ton		R50·00 to 59·00
Kerosine oil American per case		R7·25 to 7·50
do bulk Russian per tin		R3·00 to 3·06
do Russian per case		R3·25 to 6 35
Nux Vomica per cwt		R2·00 to 3·50
Croton Seed per cwt		R30·00
Kapok cleaned f o b per cwt		R24·00
do uncleaned do		R6·00
Plumbago per ton, according to grade	Large lumps	R700·00 to 1,
	do	R550·00 to 950·
	Chips	R300·00 to 650
	Dust	R100·00 to 50

CEYLON EXPORTS AND DISTRIBUTION. 1899.

COUNTRIES	Tea, 1899 lbs.	Tea, 1898 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cinchona Branch & Trunk lb. 1899. lbs.	Cinchona Branch & Trunk lb. 1898. lbs.	Cocoa cwts.	C'moms lbs.	Wild Cinnamon Bales. lbs.	Wild Cinnamon Chips. lbs.	Coconut Oil. 1899 cwts.	Coconut Oil. 1898 cwts.
To U K. ..	92648109	86793704	13925	..	13925	459138	601765	34461	303209	109868	452430	160886	111912
„ Austria ..	8231	14293	1	..	1	..	..	...	...	...	..	6173	10579
„ Belgium ...	14424	12090	111	..	111	..	4421	357	380	...	..	2287	903
„ France ..	946[illegible]7	8[illegible]813	165	...	165	33	28228	34	...	...	..	..	4209
„ Germany ..	312[illegible]79	319929	125	..	125	1630	..	116	30176	5900	36133	8850	9003
„ Holland ..	30211	26351	..	..	..	..	..	..	...	...	..	...	..
„ Italy ..	1[illegible]471	6730	..	..	..	...	..	...	20	..	...	404	603
„ Russia ..	339526[illegible]	2140125	44	..	44	...	..	...	923	..	...	..	..
„ Spain ..	17800	44650	..	...	..	..	...	..	...	..	..	..	..
„ Sweden ..	63337	40821	..	..	..	..	..	...	4036	..	..	206	..
„ Turkey ..	18733	64834	1	..	1	..	...	..	636	..	...	..	..
„ India ..	5368[illegible]5	931233	149	..	149	..	..	1	50039	..	..	59600	122813
„ Australia ..	14560468	13959072	2933	..	2933	..	...	235	..	.	..	742	465
„ America ..	2021312	2047786	442	..	442	94005	186819	549	6240	..	..	90926	58786
„ Africa ..	265836	355882	9	..	9	...	724	..	2206	...	...	...	19
„ China ..	1201418	1034388	64	...	64	36549	22089	...	7751	..	..	3381	2633
„ Singapore ..	75[illegible]42	57330	80	..	80	..	..	..	880	..	..	23336	91893
„ Mauritius ..	90508	17759	..	..	..	..	..	..	...	..	..	..	..
„ Malta ..	231967	176394	..	...		...	..	..	..	...	..	..	...
Total export from 1st Jan to 5th Dec 1899	116599700	108154184	18049	..	18049	591355	844046	35753	406496	115768	488563	356791	413809

MARKET RATES FOR OLD AND NEW PRODUCTS

(From Lewis & Peat's Fortnightly Prices Current, London, October 18th, 1899.

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ...	44s a 100s
Zanzibar & Hepatic ,,	Common to good ...	20s a 60s
BEES' WAX, ,,		
Zanzibar & Bombay { White ,,	Good to fine	£6 a £7 10s
Yellow ,,	Fair ,,	£5 10s a £6 10s
Madagascar ,,	Dark to good palish	£5 15s a £6 7s 6d
CAMPHOR, China ,,	Fair average quality	137s 6d
Japan ,,	,, ,, ,,	142s 6d
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 7d a 2s
Ceylon.—Mysore ,,	Fair to fine plump ..	3s 8d a 4s 3d
	Seeds .	1s 6d a 2s 6d
,, Tellicherry ,,	Good to fine ..	2s 11d a 3s
	Brownish .	2s 6d
,, Long ,,	Shelly to good ..	2s 6d a 3s 6d
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4¼d
Madras ,,	..	3½d a 3¾d
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	34s a 42s 6d
CINCHONA BARK.—		
Ceylon lb.	Crown, Renewed	5d a 7d
	Org. Stem	8⅞d
	Red Org. Stem	3¼d a 4⅛d
	Renewed	3⅜d
	Root	2¼d
CINNAMON, Ceylon 1sts per lb.	Ordinary to fine quill	1s a 1s 7d
2nds	,, ,,	9½d a 1s 7d
3rds	,, ,,	9d a 1s 5d
4ths	,, ,,	8½d a 1s 1d
Chips	,, ,,	2½d a 8d
CLOVES, Penang lb.	Dull to fine bright bold	4¼d a 9
Amboyna ..	Dull to fine	4d a 5¼d
Zanzibar and Pemba }	Good and fine bright	1¼d a 3⅝d
	Common dull to fair	3d a 3s 3-16d
Stems ..	Fair	1¾d
COCCULUS INDICUS cwt.	Fair	9s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	100s a 115s
	Middling to fine mid .	85s a 95s
	Low mid. and low grown	75s a 82s 6d
	Smalls	55s a 75s
Native	Good ordinary	30s a 70s
Liberian ,,	Small to bold	25s a 35s
COCOA, Ceylon ,,	Bold to fine bold	80s a 90s
	Medium and fair	65s a 77s 6d
	Triage to ordinary	42s 6d a 62s 6d
COLOMBO ROOT ,,	Fair to good	20s a 30s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair	£14 a £23
FIBRE, Brush ,,	Ord. to fine long straight	£10 a £21
Cochin ,,	Ordinary to good clean	£18 a £22
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	,, ,, very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	40s a 55s
CUTCH ,, ,,	Fair to fine dry	28s a 42s
GINGER, Bengal, rough ,,	Fair	22s
Calicut, Cut A ,,	Good to fine bold	75s a 82s
B & C ,,	Small and medium	27s 6d a 55s
Cochin Rough ,,	Common to fine bold	20s a 27s 6d
	Small and D's	17s 6d a 21s 6d
Japan ,,	Unsplit	21s 6d
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £20
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 2/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ..	£4 8s a £8
	,, ,, red .	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 55s
Turkey sorts ,,		67s 6d a 85s
Ghatti ,,	Pickings to fine pale ...	12s 6d a 35s
Kurrachee ,,	Good and fine pale ...	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras	Dark to fine pale ...	23s a 35s
ASSAFŒTIDA ,,	Clean fr. to gd. almonds	40s a 80s
	Ord. stony and blocky	12s 6d a 35s
KINO ,,	Fine bright	2s a 3s
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	17s a 20s
siftings ,,	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 4d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 2d
	Common to fine	1s a 2s 4d

	QUALITY.	QUOTATIONS.
INDIARUBBER, (Contd).		
Java, Sing. & Penang lb.	Foul to good clean ..	8d a 3s 3½d
Mozambique ,,	Good to fine Ball ...	2s 8d a 3s 7d
	Ordinary to fair Ball..	2s a 2s 10d
	Low sandy Ball ..	1s 3d a 1s 7d
	Sausage, fair to good ..	3s 2d a 3s 6d
	Liver and livery Ball	2s 4d a 3s 2d
Madagascar ,,	Fr. to fine pinky & white	3s a 3s 4½d
	Fair to good black .	2s a 2s 3d
	Niggers, low to fine ..	1s a 2s 6d
INDIGO, E.I. ,,	Bengal—	
	Shipping mid to gd violet	3s 9d a 4s 6d
	Consuming mid. to gd.	3s 6d a 3s 8d
	Ordinary to mid.	3s 2d a 3s 5d
	Mid. to good Kurpah	2s 2d a 2s 8d
	Low to ordinary	1s 11d a 2s 1d
	Mid. to good Madras	1s 5d a 2s 6d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a [illegible]s
	Ordinary to fair	1s 6d a 1s 11d
	Pickings	1s 3d a 1s 4½d
MYRABOLANES, Madras } cwt	Dark to fine pale UG	[illegible]s a 6s
	Fair Coast	5s 6d a 6s
Bombay ,,	Jubblepore	4s 3d a 7s
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 6s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	1s 1d a 2s 4d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 21s
NUX VOMICA, Bombay per cwt.	Ordinary to middling	1s a 5s 6d
Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	6s
CASSIA ,,	According to analysis	3s 11d a 5s 6d
LEMONGRASS ,,	Good flavour & colour	3d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3½d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1s 1/0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody .	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER - (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	5½d a 5⅝d
Singapore	Fair	5 9-16d a 5⅝d
Acheen & W. C. Penang	Dull to fine ...	4¾d a 5¼d
PLUMBAGO, lump cwt.	Fair to fine bright bold	64s a 72s
	Middling to good small	2[illegible]s a 50s
chips ,,	Dull to fine bright ..	23s a 57s 6d
dust ,,	Ordinary to fine bright	12s a 35s
SAFFLOWER ,,	Good to fine pinky .	60s a 65s
	Inferior and pickings	40s a 57s 6d
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £50
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay,,	Lean to good ..	£4 a £5
Madras ,,	Good average ..	£4 a £5 nom
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	55s a 60s
SENNA, Tinnevelly lb	Good to fine bold green	5d a 8d
	Fair middling medium	4d a 5d
	Common dark and small	3¼d a 3¾d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's / D's and B's / Small ...	£3 12s 6d a £5 10
Mergui ,,	Small to bold ..	£6 a £8 10s
Mussel ,,	Small to bold ..	£1 a £2 17/6
TAMARINDS, Calcutta ..	Mid. to fine bl'k not stony	15s a 16s
per cwt. Madras	Stony and inferior ..	7s 6d a 9s
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	16s a 21s
TURMERIC, Bengal cwt.	Fair ...	26s
Madras ,,	Finger fair to fine bold bright	30s a 36s
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger .	21s
	Bulbs ...	9s a 11s
VANILLOES— lb.		
Mauritius and Bourbon } 1sts	Gd. crystallized 3½ a 9 in	20s a 29s 6d
2nds	Foxy & reddish 4½ a 8 ,,	21s a 25s
Seychelles . 3rds	Lean and inferior ...	10s a 14s
VERMILION lb.	Fine, pure, bright ...	2s 7d a 2s 8d
WAX, Japan, squares cwt	Good white hard ...	30s a 31s

THE

AGRICULTURAL MAGAZINE,

COLOMBO

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for December :—

Vol. XI.] DECEMBER, 1899. [No. 6.

VETERINARY NOTES.

Actual Cautery or Firing.

THIS form of treatment well-known in Ceylon by the name of "Firing" or by the commoner expression "Burning," has by unjudicious use created a prejudice in the minds of many.

The lameness caused by sprains and exostosis is common enough in animals, and especially the horse, which though destined by nature to do fast work, is often worked without moderation, and this form of lameness requires the use of irritants in the shape of liniments, blisters or even the actual cautery to stimulate and check the growth of calcarious substances in case of exostosis, and also to stimulate and produce absorption and mechanical support in cases of sprain.

In serious cases of lameness by exostosis, blistering is often attended with only a partial success, and the use of the actual cautery will in many instances indicate in a short time the advisability or inadvisability of continuing further treatment. The advantages of the actual cautery over other forms of treatment are that it is acute and effectual, and that the cicatrix left serves as a mechanical support for the part that has undergone the operation.

No doubt it leaves a blemish. In cases of acute lameness caused by exostosis, point-firing is much preferable, because it does not cause much blemish ; but in cases of sprains, blistering and firing should be resorted to only when other forms of treatment fail.

Successful Operation of Neurotomy in a case of Navicular Disease.

A case of lameness was reported to me by a well-known horse owner, and from the history of the case I had very little difficulty in telling him that the animal was suffering from navicular lameness. I also informed him that I believed neuratomy to be the only treatment that could be adopted with success. I explained to him the evil results that usually follow neuratomy, but assured him that in the hands of good horsemen and under proper shoeing and care they could easily be prevented. I further explained that the operation is a very painful one, but considering the chronic pain the animal suffers daily, the tension pain caused by the operation can never be considered cruel. Accordingly, it was agreed to operate on the animal.

The animal underwent the operation on the 25th September, and owing to want of a well-trained assistant, it was operated upon without general anæsthesia. I found it rather difficult in carrying on my work with the use of a magnifying glass, but it is important to be able to pick out the nerve from the other vessels that run along with it, and which are very often severed by mistake.

It is also usual to tie up the nerve before it is severed, and in this conneciton I should like to emphasise that only loose knots should be used and not a surgical knot. If the operator learns that he has made a mistake by securing an artery or vein, it will be a herculean task to untie a surgical ligature when it is jammed up.

I have found sutures hardly of any help when it is aimed at bringing only the severed skin in juxtaposition ; for in the absence of highly organized muscular tissues, sutures generally fail, and so the wound was left unsutured, and I am glad to say in this case union was prompt and good.

The animal is now quite free from lameness.

D. A. CHINNIAH, *Vet. Surgeon.*

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF OCTOBER, 1899.

1	Sunday ..	Nil	17	Tuesday ..	1·03
2	Monday ..	Nil	18	Wednesday	·05
3	Tuesday ..	Nil	19	Thursday ..	Nil
4	Wednesday...	Nil	20	Friday ..	3·77
5	Thursday ...	Nil	21	Saturday ...	·33
6	Friday ...	Nil	22	Sunday ...	1·02
7	Saturday ...	Nil	23	Monday ...	·66
8	Sunday ..	·85	24	Tuesday ..	·09
9	Monday ...	Nil	25	Wednesday	·28
10	Tuesday ..	1·28	26	Thursday ..	·06
11	Wednesday	·41	27	Friday ..	Nil
12	Thursday ..	2·56	28	Saturday ..	Nil
13	Friday ..	·51	29	Sunday ..	·16
14	Saturday ..	·19	30	Monday ..	Nil
15	Sunday ..	2·65	31	Tuesday ..	Nil
16	Monday ..	·5			
				Total...	16·40

Greatest amount of rainfall in any 24 hours on the 20th inst. was 3·77 inches.

Mean rainfall for the month ·52 in.

Recorded by MR. J. A. G. RODRIGO.

OCCASIONAL NOTES.

Before the present number of the *Agricultural Magazine* is out, the office of Director of Public Instruction for Ceylon will have changed hands, Mr. Harward, the present holder of the office giving over charge to Mr. S. M. Burrows, C.C.S. We cannot let this opportunity pass without recording our high appreciation of Mr. Harward's regimé as the head of the Department of Public Instruction and of the liberal spirit which he shewed in all his relations with the School of Agriculture and its kindred institutions.

The new Director comes with a reputation not only as an administrative officer, but also as an enthusiastic educationalist. What is, however, of more importance to us, Mr. Burrows has been known to evince the greatest interest in agricultural improvement, whether as regards land cultivation or stock-breeding; and for this reason we accord him a specially hearty welcome in his dual capacity of Director of Public Instruction and Agriculture.

It is currently reported that the Agricultural Commission appointed by H.E. the Governor have decided to recommend that a department of Agriculture and Irrigation be established for Ceylon, and that scientific experts in the persons of the Director Royal Botanic Gardens, the Entomologist and Veterinary Surgeon (officers already holding appointments) as well as an Agricultural Chemist and Cryptogamist (to be appointed) are to be "attached" to the Agricultural Department.

We take over from *Farm and Dairy* an interesting case of milk-prosecution, the details of which should be of special interest to dairymen. It is said that the defendant will appeal, and we shall be interested to know the final issue of the case.

ORIGIN OF THE NITROGEN OF NON-LEGUMINOUS PLANTS.

It has been shown by numerous analyses that soils abandoned for centuries to natural vegetation in which grasses predominate are quite rich in nitrogen. There are mountain meadows in France which during the open season are grazed by milch cows, and although this involves the removal of a considerable amount of nitrogen, and no fertilisers are used, these soils constantly increase in nitrogen content. While soils which are continously cultivated frequently contain not more than 1½ to 2 parts per thousand of combined nitrogen, permanent meadows contain 5, 7, 9, and even 10 parts per thousand. The prairies of Western America are also well stocked with nitrogen. It is interesting to trace the origin of this nitrogen. Although the investigations of Ville and Atwater and those at Rothamsted and Grignon had proved that free nitrogen intervenes in the phenomena of vegetation, the process of fixation of nitrogen in the soil was not understood until explained by Berthelot, who showed that nitrogen is fixed in the soil by bacteria. Winogradsky cultivated certain of these bacteria in sugar solution, and found that they decomposed the solution, forming butyric and acetic acids and evolving carbon dioxide and hydrogen. They are therefore very similar to, if not identical with the organisms studied by Maquenne and Dehérain in 1882, and which decomposed sugar as explained above. The latter investigators, however, had no idea at that time that the ferments were able to fix the nitrogen of the air, and the investigation is mentioned simply to call attention to the fact that these ferments are very widely diffused, since they were found in all the soils studied. These organisms are all anaerobic, and it would seem surprising that they should grow in a medium so thoroughly aerated as arable soil; but this has been explained by Winogradsky as follows:—The organisms which fix nitrogen are capable of action only when associated with certain common species of organisms which are capable of oxidising orgainc matter, and which thus surround the anaerobic forms with an atmospbere changed with carbon dioxide and deprived of oxygen. Winogradsky further suggests that the hydrogen set free in the decomposition of the carbo-hydrates furnishes ammonia which is assimilated by the micro-organisms and used in the formation of tissue. It is not, therefore, simply the nitrogen which has recently been drawn from the air which is utilised by plants. They assimilate also the nitrogen derived from vegetable and animal remains. The work of Pasteur has shown that the action of micro-organisms is necessary to the transformation of the complex organic substances of the tissues of living plants into the simple forms which may be assimilated by plants. Without these organisms life would be impossible, as Pasteur himself has said, because the work of death would be incomplete. By their intervention the complex substances are burned, the carbon passing into the form of carbon dioxide, the hydrogen into water and the nitrogen into ammonia; and in these different forms the matter is again carried into

circulation. It often happens that vegetable matter remains for a long time in the form of humus; but even in this form it is utilised by plants. The humus is constantly subjected to the oxidising action of the lower organisms, and undergoes gradual decomposition. The ammonia produced by the decomposition of the humus is assimilated by plants as well as the readily available product of oxidation, nitric acid. Schloesing and Müntz 20 years ago showed that nitrates are formed in the soil by the action of organisms. More recently Winogradsky has demonstrated that the action of two different organisms is necessary for the transformation of ammonia into nitrates; one converts ammonia into nitrites and the other completes the oxidation, producing nitrates. We thus see that micro-organisms seize upon the nitrogen of the air and convert it into organic compounds; they convert vegetable matter into humus, and then breaks down this humus, producing ammonia and finally nitrates. At every step they perform a useful work, and are valuable auxiliaries of agriculture. There are, however, other organisms which interfere with the work of beneficial kinds. Bréal observed several years ago that there is an aerobic organism which decomposes nitrates and sets clementary nitrogen free. This organism is abundant in vegetable débris, especially in straw. It is also encountered in the excrement of domestic animals. The extent to which the losses of nitrogen in arable soils is due to the action of this dentrifying organism and the conditions most favourable to its action are questions which require further investigation.

NOTES ON EXHIBITS FOR PARIS.

Edible Birds' Nests.

(*Continued.*)

Portman is quoted by Dr. Watt as having published an interesting account of collecting the nests as pursued in the Andaman Islands:—

"Before the arrival of the swallows, and as soon as the weather is sufficiently settled, say, about the first week in November, all the caves in the islands should be visited and thoroughly cleaned, the portions of old nests and débris being removed. After the arrival of the birds, and as soon as it is ascertained that they have built their nests, all the caves should be visited and the nests collected and brought in. The date of this visit, and, indeed, the number of collections, during the seasons are fixed by the time at which the north-east monsoon rain ceases. Being unusually late this year (1885-86), we did not commence nest-collecting till the end of February, but with a dry December the collection might commence on the 15th January. As the collection of nests from the present known caves takes about a month, and the swallows rebuild their nest in six weeks or so, the collectors should wait about ten days in Port Blair, and then go out again, taking care to observe exactly the same order in their rounds. The nests may be collected until the commencement of the rains, when the collection should cease, and the birds be left to breed. Although the great demand is for the white nests, still it may be remarked that the fucus attachments of the grass nests, and the old nests gathered in November cleaning, may be sold locally at R5 per seer, and should, therefore, be collected. Each collection averages about 52 lb. of nests." He then proceeds to state the number of men employed by Government to collect the nests, adding: "The six collectors are supplied with torches, rough ladders, axes, and dahs, also with a large clean bag lined with linen slung to the side, and an iron implement, about a foot long, with three prongs at one head, and the other end being shaped like a cold chisel. These men detach, with this implement, nests from the sides and roofs of the caves, placing them carefully in their bag, from which, at the end of the work, they are transferred to a box provided with a lock."

In cooking the nests, they are first soaked in cold water for two hours, when they swell up and become soft. They are then easily picked to pieces and cleaned. After this they are boiled in clear chicken-broth until dissolved, a process occupying about two hours longer. The usual allowance is one nest (value R1) to a tea-cup of soup. Any clear soup may be used. The nest is absolutely tasteless and flavourless, but Mr. Portman does not consider them to be particularly strengthening or useful in any way.

Particulars are not available regarding the full extent of the Indian trade in nests. The merchants are Chinamen who reside in Rangoon. They recognise three classes:—

- No. 1. Large, pure white nests averaging from R110 to R115 per viss = 3½ lbs.
- No. 2. Clean but slightly coloured nests, averaging from R100 to R140 a viss.
- No. 3. More discoloured and dirty nests.

The refuse sells at from R5 to R15 a seer. Balfour states that 8½ million nests are annually imported into Canton, and that nests of the first quality fetch from £5 to £6 the lb.; those of the second, 9s. 4½d.; those of the third, 3s. 1d. McCulloch says that the second quality fetches £4 14s., and the third £2 15s. The bulk of the more expensive nests are sent to Pekin for the use of the Court. The Japanese do not use the nests, but they prepare from a sea-weed an artificial nest called Dschin-Schan, which they export to China. Of the Ratnagiri District it is stated the right to collect nests is farmed out to Goanese. The Andaman contractor used to pay R3,000, but last year, owing to the contractor having thrown up his contract, the Government worked the nesting and realized £4,900.

In Ceylon *Collocalia nidifera* is widely distributed with the exception of the North and North-Western Provinces. It does not confine itself to any one altitude, even its building station extending from the seaside to the highest hills. These swifts select for their breeding places large dark and gloomy caverns, in the darkest parts of which they build their famous nests. These may number only a few or thousands, and are not always made of the same substances. The Ceylon nests are considered to be very poor in nutritive properties in comparison with those of Java, Borneo and China, having much less glutinous matter in their composition. The nests are closely built together against the face of some overhanging rock, and if one may judge by the

accumulation of guano below them, the same nest is used frequently. The nests are often found among the refuse on the floor of the caverns where these birds build. According to Dr. Trimen the isinglass-like matter which so largely enters into the composition of these nests, is most probably secreted by the glands situated on either side of the gullet, and which if pressed in a bird just shot emit a viscid matter.

The bird itself is an insignificant-looking little creature, of a somewhat smoky colour, darker on the head, wings and tail than on the other parts of the body. The Japan and Borneo representatives of the species are blue, but the two are said to be identical. The article is prepared for export to China by the natives of that country, who pay Government a small annual sum for the exclusive privilege of collecting the nests in certain caves, chiefly in the Morawak Korale of the Southern Province. The yearly value of this article of export does not exceed R4,000.

As regards the Guano, Dr. Watt says:—"There is no reason why India might not meet its own demands for Guano, if not open up an export trade in the article." Mr. de Roepstorff, referring to the Nicobar Islands, said, "I am certain that I can produce bird nests and guano to the value of at least one lakh of rupees per annum"; to which might be added the possible supply from the Andamans. There is no reason why all the guano procurable in Ceylon should not be conserved and utilized for manuring purposes.

RINDERPEST AND ITS REMEDY.

Captain Leonard Rogers, I.M.S., who has been holding the post of Imperial Bacteriologist in India during the absence of Dr. Lingard on sick leave, has published a most interesting paper on his researches in connection with the treatment and prevention of rinderpest. He does not claim to have fathomed the subject to its bottom, as may be seen by his opening remarks, but no one interested in cattle in this country can read his paper without feeling that very important and practical advances have been made. He commences thus:—"During the last three years a large amount of research work, with a view to discovering methods of protective inoculation against rinderpest, has been carried out in South Africa, with the result that several methods, differing more or less completely from each other, have been discovered and put into practice in that country. Differences of opinion as to the value of these divers methods were inevitable, and as, moreover, the conditions with regard to the prevalence and severity of the disease in India are very different from those of South Africa, it has been deemed necessary to test these methods carefully at the Muktesar laboratory and to apply the results obtained in actual outbreaks reporting with regard to what steps should be adopted to check the enormous loss of cattle from this disease which annually occurs in India. At the same time some new lines of inquiry have been opened out, although any great advance on the discoveries recently made in South Africa as a result of several years' work by numerous observers can hardly be expected. As it was not until January, 1899, or four months ago, that these experiments were commenced, no definite conclusions have as yet been arrived at, so only a brief outline of the work that has so far been carried out can be given in this report, reserving for a future occasion a full examination of the question. He then goes on in a most lucid manner to deal with the various methods of inoculation for rinderpest that have been in vogue in South Africa. It is of interest to note that the original method by Professor Koch, of inoculating the animals it was desired to protect with the fresh bile of an animal suffering from rinderpest, was borrowed from the natives of South Africa. There were many objections to this method, and, therefore, other means had to be resorted to. One of these was the injection of a large quantity of defibrinated blood of an animal which had suffered from rinderpest. The inoculated animal was then exposed to natural infection, contracted a mild form of the disease and was thereby rendered permanently immune. This plan was a great advance and formed the basis of the serum treatment to be presently mentioned. The principal objections to it were the large doses of the blood required, and the risk of transmitting malaria with the remedy.

The method which has been adopted in South Africa with the most encouraging results was one discovered by Messrs. Turner and Kolle. It consists in injecting a small dose of a powerfully protective serum into one side of the animal, at the same time, that a dose of virulent rinderpest blood is injected into the opposite side. The protective serum is obtained by repeated injections of gradually increased doses of virulent blood into an animal which has had rinderpest. The serum of the animal so prepared is thus made powerfully protective. The inoculated animal then goes through a mild attack in 90 per cent of the cases tried, and is, thereafter, permanently immune. Only half per cent of the animals so treated die. The latest report states that in Rhodesia over 100,000 animals had been inoculated with a loss of less than one per cent, the disease being thus stamped out of the country. Dr. Rogers goes on to say: "It might be thought at first sight from the above description that it only remains to put into practice in India the methods which have been so successfully used in South Africa, but a moment's consideration of the great differences between the intensity and distribution of the disease in the two countries will suffice to show that the problem is not quite so simple. . . In India the disease has been present for centuries, and consequently a certain degree of immunity has been gradually acquired, so that the disease is usually rather of an endemic than of an epidemic type, and is attended with a lower mortality, and has much less tendency to spread widely and rapidly than was the case in South Africa, although at times it assumes a more epidemic character."

What is most wanted is a method which will produce an immunity as rapidly as possible, as the outbreaks will seldom be reached until they are at their height, while, if it is to gain the confidence of the villagers, care must be taken not to run any risk of any material mortality among the inoculated cattle, or of a too

severe degree of illness, even at the expense of a less durable immunity, which is of much less importance in this country than it was in South Africa, for the reasons already pointed out. The religious susceptibilities of the people must also be reckoned with, and for this reason alone the bile method of Koch, which necessitates the slaughter of some 7 per cent of the animals, at from the sixth to the eighth days, in order to obtain bile for the protection of the others —a protection, moreover, which is only a temporary one—is practically out of the question in India. The glycerine bile method is next reviewed and rejected, because of the slowness of its action, and the necessity for a second injection ten days after the first. Captain Rogers rightly urges that the simplest possible method will be the best in this country, and he considers it probable that "the serum method or a modification of it, so as to give but a very slight attack of the disease with a sufficiently long consequent immunity, will be best suited to the conditions met with in this country, especially as the protection will be obtained in a very few days. Moreover, the serum in larger doses can be used as a curative measure in early cases of the disease, if a sufficient quantity is available, a matter of the greatest practical importance."

The writer then goes on to give a full account of the experiments he has conducted with Indian cattle, which will well repay perusal by all who are interested in cattle. Here, however, a bare outline is all that we have space for. We may, therefore, pass over the interesting, though hitherto commercially unprofitable, results of the various other experiments, to deal with what promises to be a most important advance, so far as the interests of the Indian agriculturist are concerned. The method of Turner and Kolle, which we have described above, was carried out in the Muktesar Laboratory—which was recently burned down—with the result that 30,000 cubic centimetres of serum were manufactured in a comparatively short time. The serum so obtained was then tried experimentally on cattle, with the most gratifying results. It was discovered that whereas cattle from the plains were comparatively easily protected from rinderpest by the serum, the hill cattle required much larger doses to protect them. It was, however, merely a question of dose, and given large enough doses, the hill cattle could be as effectively protected as the plain cattle. In each of the experiments mentioned above the rinderpest test was carried out by the injection of a dose of virulent blood subcutaneously, the most certain way of producing the disease in an unprotected animal, and yet, given sufficient doses of the serum, the cattle showed no signs of the disease. A most interesting and important feature of the inquiry was the practical application of the method to the cattle of infected villages. The villagers readily assented to the experiments being carried out, and allowed blood to be taken from a diseased animal for the purpose. The result was most gratifying, since not one of the inoculated animals contracted the disease, while of the uninoculated a number suffered from rinderpest, and several died.

From what has been said it will be obvious that though Captain Rogers neither claims nor has attained finality in his results, he has nevertheless done enough to show that the method he advocates is a practical one, which promises to very materially diminish the great mortality from rinderpest in this country. It will, however, be first necessary for Government to obtain a sufficient organisation to put into practice the important outcome of the experimental work we have alluded to.

AN INTERESTING MILK PROSECUTION.

The first prosecution of any importance to the milk-vending trade reached a definite stage last week, when a Sydney Dairyman was fined at Newtown, by Mr. Isaacs, a Sydney P.M., for selling milk below the strength laid down in the Public Health Act.

The case was commenced six weeks ago and concluded last week. William Liddell, Inspector under the Health Act for the Borough of Marrickville, proceeded against Alfred Wedlock, registered dairyman, of Marrickville, for that he did by his servant, John Wedlock, sell to the said William Liddell an article of food, to wit milk, the same not being of the quality of food demanded by him in terms of section 62 of the Public Health Act of 1896. Mr. Ralston, instructed by Messrs. Norton & Co., appeared to prosecute; and Mr. Ferguson, instructed by Messrs. Deane and Deane, appeared for the defendant. Evidence was given by the inspector of the purchase of the milk and the submitting of the same to the Government Analyst for analysis. In answer to Mr. Ferguson, the inspector stated that defendant's cattle were in excellent condition, and had the appearance of being well fed. The dairy premises were kept in splendid order. The cows were stall fed, and appeared to receive every care and attention.

Mr. Hamlet, Government Analyst, stated that he had made an analysis of the milk in question. The milk was below the standard notified by the "Gazette." The deficiency of total solids was ·47 per cent. The fat was deficient ·45 per cent. The solids not fat were deficient ·02 per cent. The material difference was in the fat. He could only account for the absence of the fat by its abstraction by dilution or skimming. The standard given was a low one, and in favor of milkmen. He had received a number of authentic samples from veterinary inspectors. He had seen samples actually taken from the cow, which he had analysed, and found that they averaged 3·8, sometimes over 4·, and evening milk up to 5·. These samples had been taken at all times of the year and in all weathers. As a result of these investigations he fixed the standard approved by the Board of Health. Morning milk contained less fat than evening milk. Cold, wet weather practically made no difference in the quality of milk. He took samples from his own cow which averaged 13 per cent of solids and over 4 per cent. of fat. The fat in the milk comes from the food that the cows take. It would take six hours to make a complete analysis of milk, and could only be done by an expert. The English standard for solids had gradually fallen from 9·5 to 8·25. They had no standard for fat in England.

For the defence, evidence was given by the defendant that he spared no effort to get the best cattle and the best feed for them, irrespective of price, in order to make his dairy a model one,

The milk was delivered to his customers direct from the cow, and he at no time had ever received the slightest complaint from any of the 400 persons he served. Other witnesses corroborated the testimony of the defendant as to the milk being delivered to the customers direct from the cow, and that complaints were at no time received as to the quality of the milk supplied.

Henry Wilson, manager of the dairy department of the Fresh Food and Ice Company, stated that he had acted as judge at many Shows. Defendant exhibited his cows, and won prizes with them. The method of feeding described by defendant, and the nature of the food mentioned, was as good as it could be for stall-fed cattle. Of course, grass was the best of all food for milk purposes.

Mr. Ferguson submitted that to be an offence under the Act it must be one of adulteration, and the evidence showed the very opposite. The milk was sent out direct from the cow in a pure state, and that was what the Act required of the vendor, and nothing more. If in this case a fine was imposed the defendant was injured in the eyes of his 400 customers, not one of whom, if they were in Court and heard the evidence, would believe that they had received anything else but pure milk.

Mr. Isaacs said that whatever might be his decision he was satisfied that the milk had not been tampered with after it left the cow, and before it was delivered to the consumer.

Mr. Ralston submitted that all he had to prove was that the milk was not up to the standard provided by the Government. That had been done, and he asked for a conviction.

Mr. Isaacs said he considered that the only question he had to decide was whether this milk was up to the standard fixed by the Government on the recommendation of the Board of Health. He, however, stated expressly that he considered that this milk was sold as it was taken from the cow, and that defendant had done his best—and more than 99 out of every 100 milk vendors did—to supply his customers with milk of the best possible quality. He was sure that defendant's *bona fides* was perfectly clear, but as the milk was not up to the required standard he would convict the defendant and order him to pay a minimum penalty of 5s., with 21s. professional costs, and 10s. 6d. analyst's fees added, in default levy and distress. The defendant intimated his intention of appealing to the Supreme Court on the decision.

The points relied upon by Mr. Ferguson, the defendant's counsel, in his appeal are as follows:—

The Public Health Act of 1896, s. 62, provides (*inter alia*) that: "Every person who to the prejudice of the purchaser sells any food or drug which is not of the nature, substance or quality of the food or drug demanded by such purchaser shall be liable to a penalty not exceeding £20."

Section 63 provides that "Any person who sells a food or drug shall deliver the same to the purchaser in its pure state." A breach of this section is deemed an offence under the preceding section.

Wedlock, the defendant in this case, was charged under the 62nd section with selling to the prejudice of the purchaser an article of food, to wit, certain milk, the same not being of the quality of food demanded by him.

Section 53 of the Act empowers the Governor, on the recommendation of the Board of Health, to fix limits of strength and purity for articles of general consumption, but it does not go on to make it an offence to sell articles which are not in conformity with this standard. In pursuance of this section the Governor has fixed the standard of milk as follows:—Natural milk solids to be not less than 12 per cent, of which the fat shall be three-and-two-tenths per cent. Wedlock's milk fell short of this standard in butter fat and other solids, and the magistrate held that this constituted an offence under the Act, although it was proved to his satisfaction that the milk was sold as it came from the cow, without anything added to or taken from it; that the cows were of the best possible quality, fed in the best possible way, and that everything possible was done by the defendant to get the best milk.

The defendant's contention was that though the law authorised the fixing of a standard, there was nothing in the Act to make it an offence to sell milk which deviated in quality from the standard, and that having sold pure milk fresh from the cow he had thereby supplied a customer who asked for milk with milk of the quality demanded by him.

FIBROUS PLANTS.

(*Continued.*)

While 30 or 40 species of plants supply the world's demand for commercial fibres, hundreds of fibrous plants could readily be enumerated, the simple fibrous matter in many of which to outward appearance is just as good as the fibre of the commercial species widely cultivated. There are many wild plants for instance which produce fibre stronger and better than jute. Such plants have been the subject of constant enquiry, and in considering them as a source of fibre there are many points to be taken into consideration. We should enquire whether the plant is capable of successful cultivation, what its uses will be in manufacture, what commercial fibre it will replace or be a substitute for. In fact this latter point is the most important to be settled, for the present commercial fibres represent in a sense those that have stood the test of experience, and until these are crowded out by new conditions, or through what might be termed evolution in the economic arts, they will have no chance. The only opportunity which may be afforded these secondary forms is in the creation of special uses to which they may be peculiarly adapted, for which the standard forms known to the market are not so well fitted. Should a fibre be "promising" it would need to be subjected to chemical and microscopic study to determine the length of the ultimate fibre cell, the proportion of cellulose, and any other elements which would give it its rating among textiles. By such technical study we are enabled to obtain direct knowledge of the species, and in a measure to avoidlong and costly economic experimentation.

Experiments for the developments or extension of vegetable fibre industries under Governmental

auspices or direction have been instituted at different times in many countries, and such experiments date back nearly one hundred years. In some instances these have been confined to testing the strengths of native fibrous substances for comparison with similar tests of commercial fibres, as the almost exhaustive experiments of Roxburgh in India early in the present century. Another direction for Government experimentation has been the testing of machines to supersede costly hand labor in the preparation of the raw material for market, or in the development of chemical processes for the further preparation of the fibres for manufacture, or in microscopic and chemical investigation. The broadest field of experiment, however, has been the cultivation of the plants, either to introduce new industries as sources of national wealth or to economically develop those which require to be fostered.

The introduction of ramie culture is an example of the first instance, the fostering of the almost extinct flax industry of our grandfathers' days an illustration of the second.

The United States Government has conducted experiments or instituted enquiries in the fibre interest at various times in the last fifty years, but it is only since 1890 that an office of practical experiment and inquiry has been established by the Department of Agriculture, that has been continued through a term of years. This is known as the Office of Fibre Investigations. The work of this branch of the Department of Agriculture has been mainly directed towards the development or introduction of those fibres which we do not produce commercially, but which are capable of cultivation in the United States, and which will add to our national resources. This work has been prosecuted by the importation and distribution of the seeds of fibre plants, by encouraging and directing field experiments, by testing fibre machines and by affording information, both through personal correspondence and through a series of publications.

CIRRHOSIS, CHRONIC INTERSTITIAL HEPATITIS, OR CHRONIC INDURATION OF THE LIVER.

This is a chronic disease in which the liver becomes hardened, it may be increased or diminished in size, depending on the particular phase of the morbid process. The interstitial or connective tissue takes on a slow form of inflammation, and a very active over-growth, which leads to a general compression and atrophy of the secreting cells, and a hindrance to the flow of blood through the liver. The liver is hard and tough, giving, in many instances, a distinct grating sound when cut; the cut surface presents a variable appearance depending on the particular stage of the pathological process. "When cirrhosis is old, the surface of the liver is granulated and irregular, sometimes covered with new membranes; the serous membrane is thickened, whitish and opaque. At the beginning the colour of the liver is nutmeg-brown; later it turns light yellow, and the organ becomes anæmic. On section we find a fibrous network formed by the thickened connective tissue, a network the principal traces of which circumscribe more or less large fields of the atrophied hepatic paren-chyma, whilst its ramifications separate the various hepatic lobules. . . . With these alterations of the liver we find also a passive hyperæmia and a chronic catarrh of the stomach and intestine, ascites, anasarca, congestion of the meninges, and hæmorrhages in different organs."*

Chronic inflammation of the liver, although very prevalent amongst horses which graze on the veld in some districts of the Colony, is not so frequently met with amongst cattle which feed solely on the veld, although many cases do occur, such as has already been referred to. The disease is very common, however, amongst cattle which are either wholly or partially fed in the stable, especially amongst milch cows. In some instances cases of chronic hardening of the liver are met with in which no previous history of any acute attack can be obtained, but in the great majority of cases, in which the animals have been under close observation by the same owner for some considerable time, the animals have suffered from one or more previous attacks of the illness, which indicated the presence of acute congestion or inflammation of the liver. A rather unusual case of this character occurred recently. The patient was a pure bred red polled cow which was imported about six months ago. She calved, either on board the steamer or immediately after her arrival, and suffered from derangement of the digestive organs for some little time after. She recovered, however, and appeared to be doing fairly well, until about three months after, when she had an acute attack of inflammation of the liver. She made a slow and somewhat irregular recovery from this attack; her appetite remained delicate, and her bowels somewhat irregular. Latterly, however, her owner reported that she was doing much better and feeling well. This continued until about five days before she died, when she became suddenly ill, and manifested symptoms of acute constipation. Suitable aperients were administered, but after four days' illness she began to strain violently. When examined the day that she died by Mr. Spreull, she was found lying down with her head turned round on her shoulder persistently; her breathing was quick, and she strained continuously as if wanting to expel something; her temperature was 106·2. The rectum was inflamed, and contained a mixture of blood, slime, and a little very black fæces, but no injury could be detected. The stomachs were not full, nor was the abdomen tympanitic. She died very suddenly. The postmortem examination revealed the gall-bladder but ductus choledochus—the bile duct leading from the gall-bladder enormously enlarged and distended to its utmost capacity; its contents measured fully one gallon. Its wall were much thickened and inflamed, but the ductus choledochus—the bile duct leading from the gall-bladder to the duodenum—was not obstructed, but narrowed. The greater portion of the contents of the gall-bladder closely resembled the white of an egg in its character and consistence and was of a light lemon colour.

* Friedberger and Frohner.

There was a sedimentary portion which formed about a tenth of the whole; this was of a yellow colour and flacculent in its character, corresponding to the yolk of the egg. The liver was very hard, grated when cut, and was smaller than normal. The cut surface presented a grey mottled anaemic appearance, and the thickened bands of connective tissue could be plainly seen with the naked eye. The first, second, and third stomachs were normal and full of food of a soft consistence, due principally to the medicines administered. The fourth stomach was inflamed, and numerous petechae on the rugae or folds of the lining membrane. The duodenum was but slightly inflamed, but there was severe congestion and inflammation of the rest of the small intestines. They contained a blood-coloured watery fluid. The carcum was not much inflamed, and there was little inflammation of the colon, but the coats of the large bowels were infiltrated from ¼ to ½ an inch thick with a pale yellow serous fluid. This infiltrate was abundant in the mesentery and loose tissue around the coils of the large intestines. The rectum was inflamed and the abdominal cavity contained about half-a-pint of a pale sherry-coloured fluid. The spleen, kidneys and lungs appeared normal. The urinary bladder was full of urine of a rather deeper colour than natural. The heart was pale but firm; there were large blood extravasations under the endocardium of the left ventricle, and numerous punctiform haemorrhages under the epicardium.

Symptoms.—As already remarked, animals may be affected with cirrhotic livers in an advanced stage without manifesting any prominent symptom indicating its presence, but there is generally irregularity of the bowels—constipation alternating with diarrhœa; a somewhat delicate and variable appetite. In one herd of dairy cows which I had under observation for some time, and in which over twelve consecutive cases occurred at comparatively short intervals, one prominent symptom which was noted on close observation was frequent grinding of the teeth. These cows ate and ruminated very much as usual, their appetites were not so keen perhaps as they should have been, and their fæces were rather firmer than natural, considering the food which they were receiving, but with the exception of this occasional grinding of the teeth, which was observed a number of days before any other symptom became manifest, an ordinary observer would not have detected anything amiss with these cows. In this particular instance the grinding of the teeth was perhaps due more to the indigestion which was associated with the cirrhosed liver, than to the pain and uneasiness caused by the condition of the liver itself, as in nearly all these cases the acute symptoms were ushered in by diarrhœa and a catarrhal condition of the stomach and bowels, which we found great difficulty in controlling. In the more ordinary cases the animal continues to feed and ruminate as usual, until it suddenly manifests symptoms of acute indigestion and liver complications, associated with constipation. After administering the usual purgative medicine, and the bowels have acted freely, the patient may appear relieved and commence to feed a little, but frequent relapses occur, and although temporary improvement may follow the judicious administration of saline medicine, the patient, as a rule, becomes gradually more and more emaciated; dropsical swellings appear in front of the chest and between the fore legs extending towards the abdomen. In more favourable cases, by careful dieting, and the frequent use of saline medicines, the animal may be maintained in fairly good health and condition for many months. But injudicious feeding will at any time bring on an acute attack which may terminate fatally in two or three days.

Treatment.—The treatment of chronic induration of the liver, when such a condition is suspected, either from previous attacks of an acute character, or from the general sypmtoms, can only be palliative, and consists principally in regulating and arranging the diet, so as to avoid over-loading the stomach, and keep the bowels in a laxative condition. To maintain the latter, an occasional pose of sulphate of soda (Glauber's salts)—from qalf a pound to a pound—may be given, or when the oows can be tempted to eat it, about two ounces of salt may be dissolved in a little boiling water and added to a small bran mash every morning or every second or third morning as may be required. A tablespoonful of common salt should be given daily. When acute symptoms appear, these should be treated in the same manner as recommended for acute inflammation of the liver, by giving first a dose of calomel followed by repeated doses of Glauber's salts as may be necessary to keep the bowels acting. It will be evident from what has been said that when an animal has just recovered from an acute attack of indigestion, congestion of the liver, or any serious derangement of the digestive organs, it is a great mistake to force all kinds of food upon it, combined with tonic medicines, in order to stimulate its delicate and defective appetite, as is usually done. The treatment which such an animal rerequires is not medicine so much as a light nourishing diet of a laxative character, given in small quantities and at short intervals. A little laxative medicine judiciously administered occasionally will relieve the debilitated and congested organs, and assist their defective action. An excellent stimulant under such conditions is the carbonate or chloride of ammonium, which may be given along with gentian and ginger in the following doses:—

Powdered Chloride of Ammonium	..	½ ounce.
„ Gentian root	..	2 drachms.
„ Ginger ..	..	2 „

Mix in a bottle of thin linseed or oatmeal gruel, and give twice a day. The carbouate of ammonia may be substituted for the chloride if the animal is weak in addition to having a delicate appetite. But the principal consideration is the regulation and selection of the diet in all such cases. Remember that the habitual tendency of all that goes on in the animal body is always in the direction of health. This is the inherent beut of all the vital powers and processes of the animal organism. The object of medicine, therefore, is to assist this "healing power of nature," as it is called, and one of the principal means of doing that is to remove every obstacle to the free action of this health-restoring force.

If an animal is dull and depressed with a feeble appetite arising from a sluggish liver, it is not a stimulant that it wants, but a dose of opening medicine to relieve the congested liver and the inactive bowels, and by careful feeding to prevent a recurrence of these conditions.

D. HUTCHEON, C.V.S.

GENERAL ITEMS.

The *Town and Country Journal* lately published the following method of pasteurising milk:—The vessel containing the milk, which may be the bottle from which it is to be used or any other suitable vessel, is placed inside of a larger vessel of metal, which contains the water. If a bottle, it is plugged with absorbent cotton, if this be at hand, or, in its absence, other clean cotton will answer. A small fruit jar, loosely covered, may be used instead of a bottle. The requirements are simply that the interior vessel shall be raised about half-an-inch above the bottom of the other, and that the water shall reach nearly, or quite, as high as the milk. The apparatus is then heated on a range or stove until the water reaches a temperature of 155 degrees Fahr., when it is removed from the heat and kept tightly covered for half-an-hour. The milk bottles are then taken out and kept in a cool place. The milk may be used at any time within 24 hours. A temperature of 150 degrees maintained for half-an-hour is sufficient to destroy any germs likely to be present in the milk, and it is found in practice that raising the temperature to 155 degrees and then allowing it to stand in the heated water for half-an-hour, ensures the proper temperature for the required time. The temperature should not be raised above 155 degrees, otherwise the taste and the quality of the milk will be impaired. The simplest plan is to take a tin pail, and invert a perforated tin pie-plate in the bottom, or have made for it a removable false bottom perforated with holes, and having legs half-an-inch high, to allow circulation of the water. The milk is set on this false bottom, and sufficient water is put into the pail to reach the level of the surface of the milk in the bottle. A hole may be punched in the cover of the pail, a cork inserted, and a chemical thermometer put through the cork, so that the bulb dips into the water. The temperature can thus be watched without removing the cover. If preferred, an ordinary dairy thermometer may be used, and the temperature tested from time to time by removing the lid. This is very easily arranged, and is just as satisfactory as the patented apparatus sold for this purpose.

We (says the *Queensland Agricultural Journal*) have begun an industry in the Colony which is rapidly expanding and which promises ere long to rise to great importance. This is the Coffee-planting industry. Few people need be told that while many years ago Coffee-planting was the principal industry in Ceylon, at the present day coffee in that island is a thing of the past, owing to the ravages of the parasitic fungus (*Hemileia vastatrix*) known as the Coffee leaf-disease. Of late years spasmodic attempts have been made to revive the industry, but without avail. The existence of wild coffee in the jungle operates against the planters. The disease remaining with the plants cannot be eradicated, and what was once a source of great wealth to the planters and consequent prosperity to Ceylon has had to be finally abandoned, and cinchona, cacao, (*sic*) and tea have successively taken the place of coffee.

The amount of water absorbed by large trees is very considerable, and hence ring-barking has a marked effect on the grass. The destruction of heavy timber over a large area of country has, notwithstanding all that has been said to the contrary, the effect of reducing the rainfall, particularly in flat country. But the water beneath the surface, which went to nourish the growing trees, is, after the latter are destroyed, left to nourish by capillary attraction the roots of the grass, which grows more luxuriantly in consequence. Not unfrequently springs burst forth spontaneously in ring-barked country, owing to the superabundance of subterranean water now no longer expended in supplying the trees.

The latest method of destruction of ants is said to be the use of gasoline. Pour about a half-pint of gasoline into the ant hill or nest, and set it afire. The gasoline will instantly spread through all the nest, and, as the heat on the surface increases, the gas will generate from the utmost recesses and the fire will cook the ants. Half-a-pint of gasoline will burn from three to eight hours, and kill every ant in the largest nest, as well as all which attempt to enter it from without.

Here is another remedy:—When it is a big mound nest, pour a little bisulphide of carbon down each hole and throw a wet bag over the nest immediately afterwards. Remove it in a couple of minutes and apply a lighted stick over each opening. The fumes explode, wreck the nest, and burn all the ants beneath. Care must be taken not to put too much bisulphide near the roots of fruit trees, as it will destroy them. Also, as it is very inflammable, no light or spark should be allowed to be near the bottle, which should be kept corked. It is well to have the lighted stick five or six feet long, though even if the nest explodes near the land no harm would be done.

A farmer, writing to the *New York Tribune*, says:—Eight years ago I lost about one-third of my crop of corn and cow peas on account of the weevil, but luckily I made a discovery that has been worth many dollars to me since. During the same year I sacked up a lot of cow peas, and about one-fourth of the sacks used were salt sacks, with the salt still clinging to them. When I was ready to market the peas I unsacked the lot, and found to my surprise that the peas in the salt sacks were in perfect condition, while those in the other sacks were almost destroyed by the weevil. When I gathered my grain crops the next fall I used salt sacks entirely with the same success. It is the custom in this section to put the corn in the barn with the shuck on, and the consequence is that a great many insects secrete themselves in the shuck and afterwards destroy a great deal of

grain. Knowing this I dissolved 1 quart of salt in 2 gallons of water, and as the corn was thrown in the barn I gave it a light sprinkling. I was not bothered with any insects that year, and of course I have continued to use the salt remedy ever since with the best of results.

It is generally thought by household authorities that brown-shelled eggs are superior to the white-shelled varieties. An investigation has been made into the relative merits of the two kinds of eggs at the Californian Experiment Station, with the result that the impression that brown-shelled eggs are richer is not borne out by chemical analysis. Further, a physical examination proves that the main points of superiority, though extremely slight, are possessed by the white-shelled eggs. But practically there is no difference so far as the food value is concerned, between the two classes.

It is a troublesome question to know what to do with the flies this summer. This is the best method of destroying them that we know of. Take half-a-teaspoonful of black pepper in powder, 1 teaspoonful of brown sugar, and 1 teaspoonful of cream; mix them well together, and place in the room on a plate when the flies are troublesome, and they will soon disappear. Cold green tea made very strong and sweetened with sugar will also, where set about the room in aucers, attract flies and destroy them.

The results of a series of experiments on the preservation of eggs are published in the *Berliner Markthallen Zeitung.* Fresh eggs were treated by twenty different methods in June, and after being allowed to remain eight months were examined at the end of February, In only three of the methods employed did all the eggs remain sound. These were (1) covering with vaseline, (2) preserving in lime water, (3) preserving in a solution of silicate of potash. The treatment with vaseline, however, is a tedious business, submersion in lime water induces a disagreeable flavour, and the use of silicate of potash renders the shell extremely brittle so that it is expedient to pierce it with a needle before putting it into boiling water for cooking. Whichever be the method employed, it is desirable that only non-fertile eggs should be subjected to the process of preservation. Twenty per cent. of the eggs went bad that had been (1) covered with lard, (2) preserved in wood ashes, (3) varnished with shellac, (4) put in a mixture of boric acid and silicate of potash, or (5) treated with permanganate of potash. Of eggs varnished with silicate of potash or with collodium, 40 per cent turned bad. Of eggs that had been plunged for 12 to 15 seconds in boiling water, or immersed in a solution of alum, or in a solution of salicylic acid 50 per cent. were found to be bad. Of eggs rubbed with salt, or preserved in bran, or covered with paraffin, or treated with a mixture of salicylic acid and glycerine, 70 per cent. went bad. Of eggs wrapped in paper 80 per cent., and of eggs kept in salt water 100 per cent., were found to be bad.

Place 4 lb. of unslacked lime, 1 lb. of salt, and 1 oz. of cream of tartar in an earthen jar; then add 3 gallons of boiling water, stir well and allow the mixture to stand for two days, when it is ready to receive the eggs. The vessel should stand in a cool place where it is not likely to be disturbed. There should be quite 2 inches of the liquid standing above the top layer of eggs. As the water evaporates, add cold water up to where it previously stood in the vessel.

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NEW AND OLD PRODUCTS IN ZANZIBAR.

(From Annual Report of the Agricultural Department of Zanzibar.)

COCOA.—We have rised a quantity of young seedlings in the nursery, chiefly from seed obtained from Mr. H. Baty, Seychelles, in June. The seed arrived in capital condition, was at once germinates between blankets and planted in bamboo pots. Some of the plants have been transplanted out with scarcely one failure as the roots suffered no disturbance during the process, and with cacao this is most important. The Plantation which we set out in the beginning of the year from last year's seed suffered severely from the want of rain. Still many trees survived, while the gaps have been supplied. We have enough plants to bring up the total acreage under cacao to about 8 acres. The trees are being placed 14 feet apart. We have planted intermediate rows of bananas for temporary shade and we find these better than castor oil trees. The latter bear a scanty crop of leaves in the dry weather and have a straggly, unsightly growth. For permanent shade we have planted bois immortelle but these have also suffered. We are also trying *Melia azedarach* for permanent shade which promises well; it has a healthy and rapid growth when young. There are I think several species of trees on the island suitable for shade as for instauce *Erythrina tomentoso* a leguminous trees which sheds its seeds freely, and a species of *Dalbergia* also freely seeding and growing rapidly. We have as yet not proceeded far enough with the cultivation of cacao to form an opinion as to its suitability for this country. It evidently requires very careful attention when young and the trees cannot be set out and left to their own resources like for instance cloves or coconuts or even coffee. The tow cacao trees on Miss. Thackeray's shamba at Mbweni cropped abundantly last year, but this year the fruit shrivelled up when about the size of an areca-nut and one of the trees is now nearly dead.

Kola.—A small plantation of about 3 acres of Kola was, in March, laid out in the clearing near the police station. They survived the transplanting and the drought much better than the cacao, though they have grown very slowly. Some fresh seed planted in August and put out the October to supply the gaps has overtaken the old planting. Kolo, though it springs up rapidly in the nurseries, is evidently of slow growth. We placed them 20 feet apart shading them in the same way as the cacao. Kolas are subject to great vicissitudes in the London market, the price ranging from 2d to 6d or even 10d per lb. They readily fetch a high price if in small supply but fall to nothing if over produced. A good deal depends upon the condition in which they reach the market.

Coffee.—The few Arabian coffee trees which were put out last season have grown excellently and will be ready for toping in another year. Some more seed has applied for from Nyassaland. Young plants of Liberian are now coming in the nursery for a plantation of 4½ acres to be laid out this season.

Tea.—We have decided to give this product a trial because of the healthy appearance of the tea bushes at Miss. Thakeray's shamba, Mbweni, planted by Sir John Kirk. These were pruned down in October and flushed well, bearing enough new growth in two months to form a plucking surface and leaves six inches, of pruning wood. Half a maund of Horagalla, Ceylon Assam Hybrid has been obtained and planted in the new nursery at Mpapa and is growing well. This should give us enough plants for 6 acres, planting 5 by 5, and leave a margin for supplies and distribution.

I don't think that Zanzibar will ever enter the lists as a tea producing country, even if low country varieties are found to flourish here, as the labour supply is too small and uncertain. The plentiful

supply of organised labour in Ceylon is one of the chief reasons why that country has taken the lead in this industry, while Natal is an example where the comparatively adverse conditions of labour have operated unfavourably. In our present unstable condition of labour we could not do more than grow a few acres for local consumption and perhaps induce the Arabs and natives to cultivate a few trees for their own use. Another point to remember is that tea is a declining market and is probably already over produced.

Pepper.—The pepper vines at Mwera, planted some years ago by Mr. Bomanji, have seeded this year though not freely. The condition of these plants shows, I think that pepper, if properly cultivated would grow here. Still we do not propose to give this product any special attention at present. Pepper is cultivated largely in India. The Straits Settlements and Borneo where the plantations are well established, and though the market price of pepper ruled higher this year than last, it is subject to the caprices of speculation as all spices are when the supply fluctuates. Its cultivation is confined to the East Indies and thought this in itself is no reason why it should not be tried elsewhere it is a noteworthy fact that the West Indies have not found it worth their while to take it up. Unlike cloves and coconuts its cultivation requires detailed attention and if introduced here would be more suitable for wa-ha-dimu small cultivators than for Arab planters. In the East Indies the Chinese are the principal pepper-growers.

Vanilla.—The small plantation of vanilla at Dunga has survived the dry weather and is doing well. The trees lost their leaves and the plants had to be artificially shaded but beyond this the plantation has absorbed little labour. Once establised vanilla looks after itself fairly well but it must be sheltered from the sun and, in the dry weather, watered twice a week. Further supplies of cuttings have been ordered and I hope to receive them in time or planting in the rainy season. The live support —castor oil (Mbono) and Frangipani—have already been laid out and are ready for their reception, and we propose to plant some in a patch of natural forest growing on this estate. The vanilla at Mwera planted by Mr. Bomanji, flowered this year and a small quantity of fruit is now growing from flowers that were fertilised. Some of this fruit is 7 and 8 inches long. The length of bean that reaches the market from Seychelles, Mauritius and Bourbon varies from 5½ to 8 inches; our beans are therefore well up to the average length. There is an other patch of fruiting vanilla higher up the Mwera valley on a plantation owned by Jack Savey, an old skip's Krooman. Arabs take more interest in vanilla than in any other new product, though there are, as yet, no indications that they means seriously to take it up. The wild vanilla, which was described in the *Shamba* of August and November, deserves a passing notice from the fact that it is bearing fruit. In October Mr. Robertson and I visited a patch growing on the coral about a mile from the Dunga bungalow and found a quantity of fruit forming. One pod measured 5 inches in length. Some insect must have been at work fertilizing the flowers of which there were at that time, numbers, though no insects, excepting ants, were visible in the dense, stiffing jungle.

Para Rubber (Hevea Braziliensis).—The plantation of Para rubber made at Tundaua, Pemba, last year has suffered severely from the drought and only a few trees are now left. These however have grown well and were over 6 feet high in October. A young plantation, of a little over 2½ acres, has been laid out at Dunga in valley to the east of the house and we have a further supply of seedlings in the nursery for another ½ acre. All are doing well. The two-year-old trees at Dunga, of which there are about a dozen have, grown slowly. In July I tapped the large Para rubber tree growing in Miss Thackery's garden at Mbweni, and planted by Sir John Kirk. This tree is probaly 20 years old. It was flowering in January of this year (1899). We cut V shaped conduits on three sides of the trunk to a height of about 6 feet from the ground but no juice was obtained; the tree seemed completely lacking in latex. After operating for about an hour we obtained enough milk to work up into a piece of rubber the size of a pea. I visited the tree a few days afterwards but there were no signs of further exhudations. On previous occasions when I had pierced the tree with a penknife milk had flowed freely. I think, therefore, that the bad results obtained at the tapping must be due to the dry weather and the soil, which, in the locality, is dry and sandy. The result is nevertheless, disappointing, as a tree of this size should yield an appreciable quantity of rubber at any time.

Ceara rubber (manihot Glaziovii).—One thousand of these trees were planted out on the Wanda in April. The soil here is only a few inches deep but is of a rich vegetable mould. It overlies coral mixed with red sandy soil. Holes 18 inches deep were sunk through this and filled in with surface mould. The trees did well at first but the subsequently dry weather killed off all but 192. We shall replant this clearing in the rainy season, sowing the seeds in the holes which are already dug.

Central American Rubber (Castilloa elastica).—200 seeds of this variety of rubber were received in September, 92 of which grew. Some of these have been planted out in the same valley as the Para and at the same distance apart from one another, namely 17 feet. All are doing well, with the exception or a few that were attacked by mongoose. These annimals also destroyed some of the young Para and coccoa plants. We were compelled to put a fence of small stakes around each tree to prevent their attack, which takes the form of biting through the young stem an inch above the ground. With the exception of Para rubber the cultivation of Centeral America Rubber is receiving more attention in the tropical world than that of any other variety of rubber plants. The trees are described as tall and handsome, with large spreading foliage and deep roots and have been recomended as shade trees for cacao and coffee. The trees yield rubber in 8 or 10 years and are said to thrive equally well in a dry or a wet climate. *Castilloa elastica* is of the same natural order as our Jack fruit tree. In its native country, it is undergoing rapid extermination by the native rubber collectors.

Assam Rubber (Ficus elastica).—Several of these trees are growing about the island; we have one at Dunga. *Ficus elastica* is the "rubber plant" common in conservatories at home. It is found in the rainy mountain regions of Assam and is said not to thrive in low countries. Probably therefore, it would not as a rubber producer, suit our climate.

General remarks on Rubber.—We have now five different species of rubber producing plants on the island, including the native vine *Landolphia Kirki*—Seeds of Lagos rubber, *Kickxia African* have been applied for. The unfavourable results obtained from tapping the Para rubber tree, and, similary, from tapping the Ceara trees last year, of which there are numbers at Mbweni, make it I think doubtful whether rubber can be successfully grown here. Much of the cultivable areas of this island are of the same nature as the Mbweni land, namely dry and sandy, and is adapted for the cultivation of coconuts than of India rubber. The low valleys and swamp are, in extent proportionally small, and are utilised by the natives for growing rice. Allowance must be made for the dryness of the season, though at best the rainfall is but light. I think that the results in Pemba are much more favourable notwithstanding the high percentage of deaths, though of course we have had as yet no trees there large enough to tap. The two-year-old Para trees at Tundaua have far outstripped our two-years old trees at Dunga, though they have had the same dry weather to contend with. Both the soil and configuration of the land is more suitable in Pemba for the cultivation of rubber than in

Zanzibar. The soil in Pemba has a greater admixture of clay and therefore greater drought resisting properties than the soil in this island, while the low steamy valleys are numerous; the country being in fact one continuation of small hills and valleys.

If Ceara Rubber could be established on the coral it would indeed be a great gain. It is a tree that, in the opinion of some authorities, might be profitably grown in land corresponding to our coral country. After the holes are dug and the seeds planted the expenses are confined to keeping fires off, which involves judicious burning on the boundary of the plantation about twice a year.

The planting of the Landolphia Vioe is not practicable except in the natural forests, where it is a matter of preservation rather than of propagation. And it is far more important to preserve the forest trees themselves than the rubber vines, though the destruction of the latter naturally follows upon that of the former. But a forest could be stocked with rubber vines in a much shorter space of time than that required for rearing the trees to afford the necessary support and shade. The latter in fact would be an impracticable undertaking. The rubber forests of Pemba are so thickly festooned with creepers that it is almost impossible to penetrate them, but only a small portion of these are rubber yielding vines, and they are so widely scattered that the collection of rubber scarcely pays. The whole aspect of the forest would be changed in a few years by cutting away the superfluous creepers and planting young Landolphia plants in their places.

China Grass (Bœhmeria nivea.).—A small experimental plot of this fibrous plant has been grown in the nursery. Through the long drought it received no water yet it has preserved a fresh green appearance and in 12 months has grown about 5½ feet. But no cuttings have been made as the stems have not yet ripened. A small quantity of roots of the tropical species *B. tenacissima*, Ramie or Rhea fibre have been applied for.

The following are approximately the areas to which the principal new plantation will be brought up in the coming planting season. In the case of Tea and Liberian coffee no trees have as yet been planted out:—

Cocoa	8	Acres
Ko'a	3	,,
Liberian Coffee	4½	,,
Tea	6	,,
Para rubber	3	,,
Castilloa rubber	½	,,
Ceara rubber	1,000 trees	
Vanilla	uncertain	
Coconuts	About 3,000 young plants, half of which will be ready in April. At Machui about 3,000 plants will be ready in April and another 2 or 3,000 in November.	

II.—CLOVES.

Marseilles Shamba.—In addition to the Dunga plantation which this year came under our management we have had charge of two of H. H. the Sultan's shambas at Machui—Marseilles and Kitumba. The former is situated on the second range of hills which runs longitudinally through the island. The soil is a brick red mixture of sand and clay which gets very hard in dry weather. It is however superior in quality to the corresponding outcrop on the Masingini range of hills to the westward. Kitumba is in the low alluvial district of that name which spreads out to the eastward of the Machui range. The soil is generally a red loam overlying clay. As these two shambas adjoin and were as far as possible worked together they may be counted as one.

Marseilles plantation has a historic interest worthy of note. It belonged to Khalid, third son of Seyyid Said, first Sultan of Zanzibar. Khalid affected the French and so named his estate after the Mediterranean seaport town. Another account says that a Frenchman who visited the shamba was so struck with its rich and excellent appearance that he named it Marseilles. On Khalid's death it passed to two of his sisters. The place in those days was richly decorated according to the prevailing taste of Arabs and was frequently visited by members of the Sultan's household. When Seyyid Said died Majid, as eldest son in Zanzibar, ascended the throne, but his ambitious brother Barghash, fifth son and afterwards Sultan, conspired from the first to bring about his brother's destruction. In 1868, two years before his death, Seyyid Majid confined Barghash to his house which he surrounded with troops, but Barghash, by the help of his sisters, escaped in the guise of woman's clothes and collected his forces at Marseilles. Here he was followed and routed by the Sultan's troops who bombarded the palace and reduced it to a ruin. The final engagement was fought out in the open country in the western side of the hill, just beyond the palace, Barghash being compelled to fly back again to the town.

Cost of Clove-picking.—Clove picking began, in Zanzibar in the latter end of October. At Machui we departed from the usual method of picking and instituted a system of payment whereby we could ascertain the total cost of clove gathering. The shamba people who, according to the new *sheria*, should have given their labour four days in the week were paid for each operation. Under these circumstances picking proceeded from the first more briskly with us than with our neighbours and we were able to gather a much larger proportion of cloves. The men and women of the shamba were rated as follows:—

1 Nkoa or headman	27	pice for every 400 pishi brought in
2 Wakadammu or headmen 23 pice each	46	,, ,, ,, ,,
1 Storekeeper and caretaker	20	,, ,, ,, ,,
1 Woman cleaning sweepings	15	,, ,, ,, ,
Total	108	pice per 400 green pishi

Pickers 3 pice per pishi, and 3 pice per day (that is one pishi gratis) for spreading out and taking in the cloves in the morning and evening and in showery weather.

Wa-geni pickers, or outsiders, 3 pice per pishi. The number of wa-geni pickers varied from 60 to 100 a day early in the season, dropping to 40 as gatering became general. The cloves were conveyed to the Custom house for sale on donkeys at the rate of 24 pice per bag of 20 dry pishi, equal to 40 green pishi.

The total cost of gathering, not including the overseer's wages, may, therefore, be calculated as follows:—

Per 400 green pishi:—

Nkoa etc.	108
Picking at 3 pice per pishi ...	1200
25 spreaders daily at 3 pice each; reckouing an average of 400 pishi picked per diem	75
Transport (10 bags)...	240
Total pice ...	1623

1623 pice at 68 pice per rupee, the local rate of exchange, are equal to Rupees 23 pice 59.

Reckooing now that 20 green pishi will when dry weigh one frasla we have:—

Total cost of gathering and conveying to market:..
R. 23 p. 59 per 20 frasla (400 green pishis) or R. 1 pice 13 per frasla.

Quantity picked per day.—"Picking" includes the actual gathering and subsequent stalking. Pickers stop gathering at 2 o'clock and bring their loads in to stalk, after which the cloves are measured, stalks not being counted. Stalking and measuring will sometimes go on up to half-past six. The average quantity picked (and stalked) at Machui in a day was about 6 pishi per head. Our best picker was a woman named Binti Kiweti who gathered 9 and 10 pishi regularly, though she lost from an hour and and half each day in taking the cloves in an out. Our heaviest day was November 24th when we picked 874 pishi with

135 men: an average of 6·4 pishi per head. At Dunga our average was much less by reason of their being fewer cloves; besides having to visit more trees the people never became so expert. Our best picker brought 6 and 7 pishi, while our average was between 3 and 4 pishi per diem.

(To be continued.)

THE "CAUCHO" RUBBER OF PERU.

A published report from H. M. Consul at Parà states that the tree which produces the quality of india-rubber exported from Peru, through Parà, under the name of *caucho*, has recently been determined by M. Huber, a botanist, who is on the scientific staff of the Museum of Parà.

M. Huber lately visited the Ucayli region in Peru, and discovered that the tree was a *castilloa*, and will shortly be able to decide by comparison whether it is the same as the *castilloa elastica* of Central America, or a variety of the same genus.

It has been surmised previously that the tree might be a *castilloa*, but it is said that M. Huber is the first authority who has settled the point. With this knowledge it results that the distribution of the *castilloa* is winder than was previously thought to be the case.

Caucho is produced in the neighbourhood of the Bolivian tributaries of the river Amazon, and from parts near the said tributaries that pass through Brazilian territory.

A sample of *caucho* exists in the Parà Museum that came from the banks of the River Tocantins. It is said that *caucho* is also produced near Macapo and Mazagao, on the north bank of the River Amazon, near its estuary.

A recent statistical return on the exports of the State of Parà shows that this produce was exported in small quantities (altogether about 10 tons) from Aveiros (River Tapajos), Santarem, Alemquer and Obidos, on the River Amazon.

The total shipments of *caucho* from Amazonian ports amount to about 2,000 tons annually. M. Huber describes the process of tapping as follows:—

The trunk is almost severed in two at a distance of about 3 feet from the ground, and the tree is allowed to fall in such a manner that it is supported in an inclined position by its branches, and still holds on the part that remains standing. The sap is collected and poured into a hole made in the ground, and is coagulated by means of the juice of certain local *lianas*. The natives state that this is the best method of tapping, and that if the trees were treated in the same manner as the *heveas* they would soon be destroyed by insects, which would attack them where the bark would be injured by incision. This may be only an excuse for unnecessary destruction, which might be avoided. However, it must be considered that as these trees grow far apart from each other in their native state it must be inconvenient, if not impossible, to attend to more than one tree at a time.

Trees that have been tapped in the manner described do not survive the operation. In the course of time their places are no doubt taken by young trees that grow from seeds. The amazonian *castilloas* are found on elevated land which is beyond the reach of floods, whereas the *heveas* thrive best in the lowlands that are periodically inundated by the River Amazon.

Sir W. T. Thistleton Dyer, Director of Kew Gardens, in a communication to the Foreign Office, states that *caucho*, of which caouthouc is probably an expanded form, has been hitherto identified with "India-rubber" par excellence, the produce of one or more species of *hevea* indigenous to the basin of the Amazons and exported from Parà; it would now, however, appear that the *caucho* tree of Peru is a *castilloa*. One or more species of this genous produces the India-rubber of Central America. In South America the *castilloa* has been known to extent as far as Ecuador, where it is called *jebe*, otherwise *jeve* or *heve*. According to Aublet, this latter name was given in Northen Ecuador to a species of *hevea*, and in founding that genous he derived its name accordingly. In the Amazon basin the name for the species of *hevea* is "Seringa," and in Central America for those of *castilloa* "Ule" or "Tuun" (see *Kew Bulletin*, 1898, pp. 141, 142.) Perhaps in Western South America the names *caucho* and *jebe* are applied indiscriminately to rubber-producing trees.

According to a report by Mr. D. B. Adamson, H. M. Consul at Iquitos, dated 24th December, 1898, and published in the "Transactions" of the Liverpool Geographical Society for the same year, Peru has two kinds of rubber producing trees—*caucho*, which appears to belong to *castilloa*, and *jebe* to *hevea* (pp 39 40). Both Mr. Adamson and Mr. Churchhill also state that the rubber is extracted from the *caucho* tree by felling.

The *jebe* is always tapped. The former process results in a district being "worked out." In consequence, according to Mr. Adamson, "many of the 'caucheros' (or rubber collectors) are working on Brazilian rivers, where the supply is yet more plentiful." It is not, however, necessary to fell the *castilloa* trees to collect the rubber.—*British Central Africa Gazette.*

NOTES ON THE "SPOTTED COFFEE-BUG" AND KINDRED QUESTIONS.

BY J. MAHON.

When the particulars of Mr. Cameron's discovery were forwarded to me for examination and report it was suggested that I should write something on the subject as soon as the facts were made public property. There are a few points, perhaps, that may be briefly touched upon to some purpose.

With the descriptions and mode of life of the insect as set forth in the pamphlet just published I find no grounds for differing, and it does not seem necessary to repeat them here. When my attention was directed to the matter our dry season was too far advanced for any very critical observations, as undoubtedly the insects' chief depredations are committed while the coffee berries are young and growing. Careful search in a couple of plantations where "spotted" and "light" bean are common failed to reveal the insect, and but little success attended a considerable hunt amongst the flowers and fruits of many native plants. This was during the latter half of July.

In Mr. Cameron's company I subsequently saw the creature at work in his gardens wherever green berries were common. That the numbers seen were not great was due, doubtless, to the vigorous measures he was taking for their destruction. I observed the insect a day or so later in greater force on the neighbouring Magomero Estate but I did not find it on other Namasi plantations.

At Zomba, early in August, I met with another phase of the creature's mischievous habits, which, although it did not surprise me when I found it, is not mentioned by Mr. Cameron. Examining some beds of seedling *Coffee Arabica* (unshaded) which we raised recently I noticed the terminals and young "primaries" of many drooping, whilst some were killed. Presently I came on a few of the bugs sucking these parts in other seedlings proving them to be the cause. At the same time I took a relative of theirs, as large as a *longicorn* beetle and of a dull brownish colour, who was occupied in the same destructive work. He prefers to conduct operations head downwards always and resembles a fragment of dead branch or leaf at the first glance. This indicates that the planter's vigilance must not only be exercised over plant in bearing but actually from the time his coffee germinates. My observations lead me to the same conclusions as Mr. Cameron regarding the "spotted bug" and its congeners being the principal cause of "spotted bean" and, to a certain extent, of "empty" or "light" berry also. Concerning the latter, however, I find so much of it

with practically no traces of external attack that I am compelled to repeat the opinion hitherto expressed, namely, that "empty berry" is due to debility and want of stamina generally in the plant. But that "spotted bean" is largely due to the cause mentioned above I have no doubt.

As a matter of fact the *haustellate* group of *Hemipterous* insects are very numerous in the country, as they are in countries possessing similar climatic conditions, and it is necessary to wage incessant war on all of them. The sub-order *Hemiptera* of the class insecta contains, perhaps, the greatest pests that man and other animals, as well as the vegetable world suffer from, and this *haustellate* (i. e. provided with a *haustellum* or sucker) group are the worst of an extremely bad lot. The illustration of the ravages members of this group can effect in the case of a considerable indigenous forest tree (*Bersama*, native name "Sekese.") is instructive. Anyone who has collected seeds of our native plants must have been struck with the very small percentage of good material obtainable. This is true in almost every instance. Naturally, in the case of coffee we spread a plentiful table for the "spotted bug" and its relatives, just as we harbor and foster boring beetles (and the growth of fungi) by neglecting to burn or remove every particle of dead wood in a garden. For it is a rule that insects prefer to live in close proximity to the feeding material they find most suitable. It is also true that soil constitutionally poor, or impoverished by faulty cultivation, and where growth is stunted, are natural breeding grounds for insects.

The fact so frequently observed that young, or virgin, coffee crops are practically immune from "spotted bean" coincides exactly with what entomologists point out, namely, that injurious insects select sickly stunted, or weakly plants for their attack; while the preference "spotted bug" shows for green berries is characteristic of the group which lives on green food and whose ravenous propensities are notorious. we see this in the well known genus *Thrips*. Planters will recollect how these latter quite defoliated coffee gardens in several districts during the last months of 1897.

Professor Alphens Packard points out that injurious insects become suddenly abundant in newly cultivated tracts where the former presence of forest, and their natural enemies, kept them under. The balance of nature appears to be disturbed and insects, multiplying rapidly, become terrible pests. In the course of time, however, they seem to decrease in numbers and the former balance is restored.

He also remarks that insects often have a metropolis where they occur in great abundance, and judging from the numbers of "spotted bug" collected by Mr. Cameron this year, his plantation would seem to be in or near a metropolitan area.

Concerning remedies for the destruction of this pest I do not consider any means more satisfactory than their collection by children, as, fortunately, the creature is extremely easy to catch, and so are other members of the group that came under observation. It would be interesting to experiment with the locust serum or which might prove effective. I feel certain, however, hand picking, with the aid of their natural enemies, will suppress them, for we have many of their inveterate enemies, (the lady birds) here. I have seen and examined the latter myself, while various genera and species are named in the lists given in Johnston's "British Central Africa."

That Mr. Cameron should have noticed the "spotted bug" so far back as ten years ago at Mandala and suspect its evil-doing then is a matter of interest, and while it is to be regretted the facts were not brought to light earlier, yet this is an instance where the adage "better late than never" is happily *apropos*. Personally my attention never was drawn to the matter during my visits to coffee estates and although I learned recently the late Mr. Buchanan wrote about the creature in the "C. A. Planter" of his day, yet that was some time prior to my arrival in the Protectorate and the question, if ever it excited any local interest, had evidently ceased to be remembered. To Mr. Cameron, therefore, all the more credit is due for so effectively resusciating it.

SEED SELECTION. I am absolutely convinced the subject of seed-selection for furnishing new coffee gardens does not receive with us anything like the attention it deserves. Situated as the coffee industry is in this country it behoves planters to use every endeavor to ensure a high class seed being obtained for sowing. In consequence of the danger attending the importation of fresh seed and the resultant inbreeding that must ensue, it is essentially necessary that seeds used for sowing be taken from especially selected trees. To gather a coffee crop, pulp it, and afterwards take at hazard a quantity of the beans for sowing, is assuredly the worst methods that cultivators can adopt, for it does not at all follow that the largest beans will eventually furnish trees capable of yielding good crops of good quality.

The planter must select from his trees at bearing time those possessing as many desirable qualities as he can obtain, then mark the trees and see that their fruit is only picked when perfect ripeness is attain and that the seeds are expressed with the fingers and not fermented, but sun dried. I have no doubt whatever that the numerous blanks and failures one meets with in every fruiting garden during May, June, and July, (and a large percentage of the "empty" berry) are due to inherent debility transmitted through a weak parent tree, for when the strain of bearing is placed on such plants they collapse. Most people are aware of the trouble and expense incurred by agriculturists at home in keeping animal and vegetable stock pure and strong, obviously we must employ similar measures in our cultures here. Reference has just been made to the tendency insect enemies have for attacking weakly or stunted plants and it follows that a vigorous plant will tide successfully over the possible unfavourable climatic periods (drought &c.) that may occur here when the weaklings will be found to succumb. In this connexion the value of new blood suggests itself.—*British Central Africa Gazette.*

AGRICULTURE IN MEXICO.

In Mexico irrigation is necessary in the greater portion of the country, and on account of the scarcity of water, a large extent of land cannot be utilised. When the owner of land has sufficient water for the purpose indicated, he retains his property, and rarely can be induced to sell, as it is of permanent value to him. For the last three hundred years large trec s of land have been owned by individuals or families, who have spent heavy sums of money for canals and dams in order to make them productive. The United States Consul-General at Monterey says that on account of this, and the attending expenses of irrigaton, there are fewer small farmers in Mexico than there are in the Uited States. Until recently farming in Mexico has been of the primitive order, but the Mexican is an expert in irrigation, and if he can get the water, his land becomes fertile and yields generously. During the last two decades decided improvements have been accomplished through the introduction of modern improvements into farming in Mexico. The increase in production corresponds to the improvements in farming apparatus. The great railroads of the country have been important factors in this advance, enabling farmers with a surplus of production to supply those less fortunate. The cost of labour is from 6d. to 1s. per day depending on the locality. There are two crops of corn a season upon which the former averages about £5 per acre gross. Sugar cane, turned into *Piloncillo* or brown sugar, averages from £14 to £19 per acre gross; beans from £6 to £8 per acre; rice, from £7 to £9 per acre; all other products realising correspondingly high prices. Thus it will be seen that the profits of the farmer must be large. Hay is not made in any great quantity, but corn fodder is sold to advantage. Near the cities, a lucrative trade is carried on in

green barley and corn, which are cut before maturity and delivered in the cities to owners of horses and cows. Cattle breeding is, and always has been, a profitable business in Mexico, consequent upon cheap labour, low taxes, and the large tracts of cheap land which are suitable for grazing only. Until recently, no attempt has been made to improve the stock, hut certain large cattle men have now undertaken to do this, and steady improvement is certain henceforth. The demand created during the late war with Spain, and the high prices which obtained in the United States, increased the price of cattle to such an extent that the northern portion of the country has become depopulated of its stock, which, ft is said, will take several years to replenish. Dairy iarming in the neighbourhood of large cities is lucrative, milk selling at 1s. per gallon, and butter at 1s. 6d. to 2s. per pound. Those engaged in this business make money rapidly. Fruit and vegetable farming are heginning to attract attention. Formerly this amounted tc simply enough for the home market. Now an effort is to be made to supply the United States with early fruit and vegetables. The movement is in its infancy, but it is expected to grow into large propotions. Oranges, lemons tomatoes, beans, &c., are produced in Mexico from four to eight weeks earlier than in the United States. Hence this is expected to he a profitable business in the near future. Wheat is cultivated in the high tablelands of Central Mexico, and is fairly profitable. It is not the equal of that grown in the United States, either in quantity per acre, or quality. Para and Bermuda grass give pssturage in many sections of the country. They are said to be equal to any in the world. Parts of the country are adapted to the growth of tropical products, viz., coffee, vanilla, rubber, coconut, cocoa, &c., the quality of all heing excellent. It is said that the best vanilla of the world comes from the State of Vera Cruz, and the best cocoa from the State of Chiapas. The coffee of Michoacan is said to be equal to any; the tobacco of Vera Cruz is preterred by many to that of Havana, and the sugar production of Southern Tamanlipas, or Northern Vera wruz, is said to be surpassed by that of no country save Hawaii in quantity, and it is more profitable to the producers, for the reason that seven to ten crops are the result of one planting, whereas the Hawaiian planters get only two. Taken as a whole, farming in Mexico is an inviting field for persons of capital and intelligence.—*Journal of the Society of Arts.*

STORY OF A CLOVE PLANTATION.

The experiences of the Rev. Canon John Key of the Universities' Mission to Central Africa are worth recording as they throw light upon that rather obscure question—Clove planting. There are little or no data to enable one to figure out the approximate returns to be expected in this industry; no one can say whether clove growing pays or not; the general impression is that it does not pay and the impecunious state to which many Arab planters have heen reduced confirms that impression. Nevertheless we believe it to he a false one, based upon wrong date, or rather upon complications and no data at all. This story of Canon Key's, therefore, being record of actual facts, not calculations from data merely, is valuable accordingly, even when due allowance has been made for the wealth of last year's crop.

The shamba in question is known as Kizimbani about half an hour inland from Weti, Pemba. It was selected by Canon Key as a missionary site chiefly because of its situation on the Suka Road, one of the arteries which feed Weti from the north. Kizimhani contains in all 1,100 clove trees 950 of which are bearing, the other 150 heing unproductive. R1,132-8 0 were paid for the clove shamba originally two and R155 for three patches of waste land adjoining; in all R1,287-8 0. Occupation was entered into in January 1898 and clove picking began on October 29th lasting until February 21st 1899, 3 pice a pishi were given to pickers, the legal measure begin used. Arabs in the locality also gave 3 pice per pishi but used the native wooden messure, always used in the plantations for clove picking both in Zanzibar and Pemba and which contains a little more than the metal one used by the shop-keepers. Canon Key gave his people 2 pice per pishi daily and banked the other pice for them till the season was finished, an arrangement which they apparently appreciated. From 20 to 40 pickers were employed and two overseers at R14 a month each.

In all 520 fraslas were obtained from the 950 trees an average of 19 2-5 lb. of cloves per tree and a return after paying export duty of 25 per cent. of R1,965. Add. R38 for 43 fraslas stems and the gross rernrns are R,2003.

From this total there are seversl charges to be deducted. Eight pice per bag for cloves and five pice for stems, amounting to R29, were paid for conveyance to the beach on donkeys and R76-0-0 for freight to Zanzihar, landing charges, sorting charges, import declaration and scale fees:—

520 fraslas Cloves	1,965
43 „ Stems	38
Total..	2,003
2 Overseers 4 months	112
Picking 528 fras.	466
Conveyance to beach	25
Freight etc.	76
Balance profit	1324
Total..	R2,003
Balance profit..	1,324

Thus the purchase money of the shsmbs, R1,287 was more than recovered the first year. After paying for digging the shamba (R100), haskets, bags drying mats, bakshish to overseers etc. the year's profit was reduced to about R1,000. The former owner used to make R200 to R400 a year out of this shamba and Arabs now attribute these good resnlt to "the blessing of God" though the Canon, thinks that they may be accounted for largely by the fact of his having dug the shamba over.

It would he misleading to generalize from these results because doubtless Canon Key had much in his favour; proximity to a large village and a comparatively plentiful supply of labour; a good shamba and a prolific season. The record is that of a prosperous year and stands as such for what it is worth. Still in our opinion it is worth much. The bad years that now and then occur in clove plantations, and which have contributed to their disparagement, may be accounted for by the habit of the clove tree and vicissitudes of seasons but they may be also due to improper cultivation or at sny rate partly so. If clove trees will yield so roundly after years of casual mansgement and two years of extreme drought what may not he expected from them if properly cared for?

An interesting comparison may he drawn from the results at Kizimbani and those at Machui as published by the report of the Agricultural Department for last year:—

	Kizimbani	Machui
1. Yie'd per tree lh...	19 2 5	6½
2. Cost of picking and delivering per frasla ..	R1-4 3-10	R1-5½
3. Return per fras. net	R2-7	R3-4
4. Return per tree net	R1-5 3-5	R0 9¼
5. Approximate price obtained per fras. ..	R4-15 1-5	R6-3 9-10

(Less duty and disregarding stems)

The comparison is on the whole distinctly in favour of Kizimbani even when allowance is made for the fact that at Machui a quarter of the crop was abandoned for want of labour. The large quantity of cloves to handle at Machui made it necessary to employ a staff of spreaders while at Kizimbani this work was done by the pickers at no extra cost. In calculating the yield and return per tree the good

and bad trees are all counted together at Machui but at Kizimbani the unproductive trees have been neglected.

Still when all these deductions have been allowed for, the superiority of the Pemba trees remains very evident. They date from prehurricane days and are therefore older and larger, and the soil at Weti is stronger, than at Machni.

Canon Key concludes his report by some very interesting remarks which we append :—*Clove culture.*—The Arabs plants 6 or 7 trees together; the e often unite in a wanderful way and from one tree but knowing that several trees were planted together you can see how and where they join and the numerous branches, each "tree" having the same number as a single tree would have. In a shamba of young cloves that I bought I rooted out all except one with the result that the young trees have gained in strength.

Pruning.—I have found that many trees have overgrown their strength, hence reducing their branches has added strength to the rest of the tree. We made a mistake in the first instance in cutting away the middle branches which of course cannot bear many cloves, but this divided the tree making it difficult to climb. Lateral branches are wanted in clove trees; the upward growing branches should be cut off otherwise the tree in time will grow to wood and only bear on the sides and the top.

My own shamba I cleaned once before last clove season. Leaves and grass were dug in for manure and the rain was able to soak into the ground instead of running off the top. Nothing flourishes under cloves as the small roots spread out like a net on the top of the soil; the trees would probably be the better for their being cut. The shamba next to mine I foolishly offered to pick but the cloves were small and many dropped off before becoming mature, which made difficult work for the pickers. We made R100 but lost more by being compelled to neglect our own shamba. Clove trees seem to die in some parts of the shamba from some cause I do not know. I have noticed that trees on the outside of a plantation suffer most [May not this be due to the outside trees receiving the brunt of the sun's rays while the inside trees shade one another? Ed.] Many too have died in the valley from want of drainage. But most trees have recovered in a wanderful way. Arabs talk of the crop this year as half of that of last but I hope to make two thirds as our shamba is doing well."—*Shamba.*

CHILEAN AGRICULTURE.

About three-fourths of the persons engaged in agriculture in Chile use machinery and ploughs of European or American manufacture, the remainder using the same style of implements that were in vogne in Egypt 2,000 years ago. A pointed stick of hard wood with a single shaf stuck in the centre serves as a plougb. For harrowing, a heavy beam of hard wood, with the additional weight of the ploughman standing on it, is dragged by a yoke of oxen over the rough-ploughed farms. The reaping, according to the United States Consul at Valparaiso, is done by hand, the threshing, by forming a deep circle in the open air with straw, similar to the ring of a circus, driving in from 30 to 50 mares, posting as many men at regular intervals on the outer part of the circle, and, by means of shouting, shrieking, and lashing, driving the animals fast and furiously round and round the circle, thus treading out the wheat from the ears. This is called *la trilla*, primitive, indeed, but highly satisfactory to the simple farmers who do it, as they make this the occasion for a general feast on the farm, winding up the business of the day with copious libations of *chicha* (sweet grape cider). On each farm live a number of *inquilinos*, or farm labourers, who are allowed a house to live in, a small piece of ground sufficient to cultivate enough maize, pumpkins, potatoes, and onions for the use of their families, and where they can keep a few hogs and fowls, grow grapes, oranges, peaches, quinces, &c. Peaches grow almost wild, as do quinces. The valley of Aconcagua is celebrated for its fine quality of walnut, honey, wax, potatoes, onions, &c. About 3,000 tons of walnuts are gathered yearly in Chile, 2,000 tons of honey, and 300 tons of wax. The *papa colorado*, or red potato, is grown in quantities, not only sufficient to supply all the midland and northern provinces, but to be largely exported to Peru and Ecuador, and sometimes to Panama and intermediate ports. They hay grown in the valley is sufficient to supply all the northern provinces and nitrate regions, and to export many thousands of bales to Peru and the Brazils. Ship loads have also been sent to England. The same broad valley from Las Vegas to Los Andes is planted for many leagues, (as far as the eye can reach, north and south, with the vines of the black grape, from which is made *chicha* (cider) by boiling, sieving, and fermenting grapes together with the skins. It is estimated that 1,000,000 gallons of good sound wholesome claret could be made yearly from the grape crop of this valley. Don Guillermo Brown is the proprietor of a large vineyard, and produces great quantities of first-class claret. It is called "Vino escorial de Panquehue," the latter being the name of a village in the vicinity of the estate, near which is also the large estate of Errazuriz, producing excellent wines similar to those of the Brown estate. Grape culture extends also from Huasco to Cauquenes, or about 550 miles north and south. Delicious sweet muscatel wines are made in or near Huasco (north), and semi-sweet wines are made in Tome and Cauquenes (south). There seems to be no limit to the producing capacity of the soil, which is greatly favoured by the facilities offered for irrigation by the numerous streams of melted snow which can be, and are, trained in any required direction as they rush towards the Pacific Ocean, fertilising the lands through which they pass in a constant stream. This, of course, is applicable only to the central and southern provinces. The northern portion of Atacama, and all of Autofagasta and Tarapaca are rainless regions.—*Journal of the Society of Arts.*

USES OF TOBACCO JUICE IN FRANCE.

All tobacco shops in France are compelled to keep a stock of what is called "tobacco juce, rich in nicotine and guaranteed." This is manufactured by the tobacco monopoly in Paris. The article, it is claimed possesses the following advantages:—(1) It is free from all matter susceptible of fermentation, and keeps for an indefinite period if in closed vessels. (2) It contains no resinous matter, and is almost transparent, therefore, it does not injure or clog the spraying machines, and does not stain plants or flowers or the wool of sheep. (3) It has a Government guarantee as to the proportion of nicotine it contains, which never varies. This product, it is also claimed, contains from five to six times the quantity of nicotine that may be found in ordinary tobacco juice, and that, therefore, one-fifth to one-sixth of the quantity will accomplish the object to which it is applied. For spraying purposes the product is employed in the proportion of one part of juice to one-hundred parts of water. It is stated that the spraying of plants should be done after sunset, and that they should be sprinkled with clean water on the following day. For fumigating hot-houses the proportion is one part of juice to five of water. The mixture is sprayed upon bricks or iron sheets heated to a temperature sufficiently high to produce rapid evaporation. It is claimed that insects and prasaites are absolutely destroyed by this process. It is said, further more, that the proportion is most efficacious for the destruction of all insects in cattle, as well as being a preventative of all manner of parasite attacks. For these purposes the juice is mixed in the proportion of one part to twenty of water. It is recommended that the lotion be not used as a general bath but applied gradually on limited surfaces. It should not be brought in contact with sore or erosions of any kind. The benefits accruing from the use of

these mixtures are said to be greatly enhanced by mixing 100 grammes (about 3½ ounces) of soda crystals with each litre (1·7 pints) of diluted juice. Regarding the use of this product in the Alpes Maritimes, the United States Consul at Nice says that it is rapidly coming into general favour for all the purposes mentioned above. He has seen it used with complete success in curing what is popularly called "le noir." This parasitic affliction is not confined to orange, lemon, olive, and other trees, but has been most disastrous to such vegetables as potatoes, beans, peas, tomatoes, &c. He has also seen whole rows of orange trees so thickly coated with parasites that every leaf appeared coated with soot (hence the popular appellation, "le noir,") and he has been enabled to verify the fact that three or four applications of the lotion have prevented the disease from attacking new leaves, and have caused the disappearance of the black deposit upon those attacked. A proprietor of an olive grove in Nice has recently stated that the use of the juice in combating "le noir," which has destroyed many thousands of olive trees in the department, is most costly, but at the same time very efficacious. The spraying machines used to spread the mixture are the same as those employed in applying sulphate of copper to vineyards. Efforts have been made to ascertain whether the use of tobacco juice would not be more desirable in treating vines for the cure of the oidium—a parasitic disease of the vine leaves—than sulphate of copper, but it appears impossible to discover anyone who has experimented with the tow treatments. It would appear, at first sight, that tobacco juice would be preferable, as sulphate has always been considered a preventive of attacks upon the grapes themselves, especially after the bunches are completely developed, whereas the oidium attacks only the bases and indirectly the vitality of the plant.

FUMIGATION OF TREES.

The fumigation of trees for the destruction of insect pests has for some time been extensively used in California and other parts of the United States. The process will probably soon come into use in New South Wales, for Mr. W. J. Allen describes in the *Agricultural Gazette* of the Colony some very successful experiments in spraying and fumigating for red and other scales on orange trees. The tree to be treated, is completely covered with a tent, and is subjected for nearly an hour to the fumes of hydrocyanic acid, produced by the combination of sulphuric acid and potassium cyanide. The number of men generally employed in a fumigating gang is four or five, according to the size of the tree. One man introduces the chemicals, another looks out for the generator and measures the acid, and two or three handle the tents. Such a gang can handle from thirty to forty medium-sized tents, and cover four to six acres of orchard in a night. Fumigation is to be preferred above spraying, because the trees are not in any way damaged by the fumes, except in the case of a few of the tender leaves, while the solution used in the sprays must to a certain extent close the pores of the tree and slightly weaken it.—*Nature.*

MANGABEIRA RUBBER.

The current number of the *Kew Bulletin* contains an important article on the source of Mangabeira rubber (*Hancornia speciosa*). In consequence of certain objections to its use, the price has been but half of Para rubber. Recently, however, the price of Mangabeira rubber has advanced by reason of the improvement in the purity, and on account of its great suitability, when pure, for certain purposes. In consequence, the disparity between the price of the best sorts and that of Para rubber is much diminished. At the end of last year, a kilogramme (2lb. 3oz.) of the best Mangabeira rubber sold for upwards of 12 milreis (almost 8s.), a price not far short of that of Para rubber. An additional cause of the advance in price is to be sought in the change in making up the rubber; for, owing to the constant watch which is necessary to guard against adulteration by addition of iron or stones put in to make weight, pieces of rubber only half to three-quarters of an inch thick and two feet long by ten inches broad, the so-called "sheets" of commerce, are welcome in the trade.

Of recent years, the exploitation of this source of rubber has taken a considerable extension. While the intelligent collectors, who start from Bahia and work towards the interior, have only tapped mature trees, improvident itinerant collectors, making their own profit out of the pressing demand of the time, have in many places mischievously drawn on the supply and threatened its continuance.

The chief centres for export of Mangabeira rubber are Bahia and Pernambuco. A large supply is brought down the river São Francisco, and so to Bahia; and from this town, in 1889, 134 tons were exported: in 1892, 4,362 bales, to the value of £22,826; and in 1893, 3293 bales, to the value of £20,362. From Pernambuco were exported, in 1896 64 tons to the value of £1,800.* A small amount of caoutchouc from the Province of Matto Grosso (probably Mangabeira rubber) is exported down the Parana through Paraguay, and great quantities from Minas Geraes are shipped through Rio de Janeiro.

Recently the Province of São Paulo has begun to demand a place in the consideration of rubber export. Regions here, such as that through which the Mogyana railway runs, are exploited, even by persons coming from Bahia for the purpose, the owners of the land receiving, in return for the permission they grant, one-third of the clear profits. A worker can collect about 6½ lbs. of rubber per diem, and receives on the spot 75 mileris £(2 9s. approximately) (per arroba 32⅓ lbs.). The arroba is sold in London for 200 milreis. In the first half of the year 1898 no less than 76,498 kilogrammes (approximately 78 tons) of rubber were passed over this railway, and yet the railways of Paulista and Sorocaba equally traverse the country where the Mangabeira tree grows. In consequence of the increasing trade, Santos has become an important centre for rubber, and there, as at the town of São Paulo, now exist mercantile houses whose principal concern lies in this business.

In this Province an idea of the importance of cultivating and protecting the tree is arising. Many coffee-planters are turning their attention to the sowing of *Hancornia*, and seed is already hard to procure. The Govrnment hoping, by means of the duty on rubber (now standing at 13 per cent. *ad-valorem*), to recuperate its fiances, which have become disordered by the depreciation of coffee, has instructed Dr. A. Uchoa Cavalcanti, Acting Director of the Agircultural Institute at Campinas, to inspect the territory in question; and, further, the Congress of the State has decreed that the Mangabeira trees shall be protected, and its cultivation extended, as is advisable.

Although but little is known so far of the cultivation of Mangabeira, it may be said that there is a considerable probability of it becoming an important tree in rubber-culture. The apparently easy accommodation of the tree to soil and climate, its early and considerable yield, together with the fact that even under the rough treatment of the Indians it preserves its fruitfulness, and also the facility with which it can be cultivated, promise a future. And, taking a wide view of its possibilities, from its presence in the red coffee-growing soils of the west of the Province of São Paulo, it appears suitable for the red earths of the German colonies of Africa, Usambara and Togoland alike, such, for instance, as occur at Misahohe, in the latter colony. For these soils it promises to be considerably better suited than the Ceara rubber plant (*Manihot Glaziovii*), and the Para rubber (*Hevea*), and will probably give better results than *Castilloa*, than which it is more hardy, earlier maturing, and smaller.—*Journal of Society of Arts.*

* Probaly an error for £18,000.

THE RUSSIAN TEA TRADE.

LARGER SUPPLIES FOR COLOMBO MARKET.

In a recent issue we gave a summary of the proceedings at the meeting of those interested in the Russian Tea Trade which was held on Dec. 8, 1899, in the Chamber of Commerce room to discuss the desirability of laying before tea proprietors the possibility of increasing the quantity of tea put up for sale in Colombo. In opening the meeting,

Mr. F M MACKWOOD (Chairman of the Chamber of Commerce who presided) said he was glad to see so many present. The meeting was called at the instance of one or two of the Russian gentlemen in their community, who approached the Chamber as to the possibility of their being able to address those interested in the tea trade here in the hope that they might be able to offer figures and arguments which would induce the proprietors of estates and agents of Companies to sell a larger proportion of their tea in Colombo than was at present being sold. He was not called upon, he thought, to make any further remarks and he would ask Mr. Tokmakoff what he had to say to them.

MR. TOKMAKOFF'S VIEWS.

Mr. S J TOKMAKOFF said that it was by the kind permission of the Chamber of Commerce that they were enabled to hold that meeting that day. In his speech at the Planters' Association Meeting. Mr. Lane, the Chairman of the Association, passed some remarks upon the Russian tea market, Mr. Lane had asked "one and all of the planters who could possibly do so, to encourage the Colombo market as far as possible, for he understood that there were complaints that there was an insufficiency of tea offered in the local market to supply all the requirements of the foreign buyers who were amongst them. Although the development of the Russian market was partly due to the way these people had taken to our teas, a part was attributable to the falling off in the quality of China tea, but in view of the absolute importance of pushing the foreign markets, it was the duty of every member of the planting community to aid and assist as far as he could in developing the Colombo market."

Some of the firms who dealt with tea in Russia got complaints from the Russian tea buyers, that they (the latter) could not buy enough tea in Colombo. Consequently, they were unable to enlarge their orders, as they could not get tea enough. They certainly wished to enlarge their business and the question was how they could enlarge their orders if the Ceylon people did not enlarge the market in Colombo. (Hear, hear). If they continued to put the same quantity on the market as before and the Russian traders enlarged their orders, then the price would go up. The total consumption of Ceylon tea in Russia in 1897 was about six million lb. out of which only about 440,000 lb. were exported from Colombo. That was about 12 per cent. In 1898 it increased nearly 50 per cent, the total consumption being about 11 millions as against six millions in 1897, and of this 11 millions there were sent direct from here 2,700,000 lb. or 23 per cent. The estimate of the total consumption of Ceylon tea in Russia for the present year was about 17,000,000 lb. of which it was hoped that about 14,000,000 lb. would go from Ceylon. They would see therefore, that the consumption of Ceylon tea was increasing (applause), and at the request of his countrymen, both here and in Russia, Mr. Mackwood had been kind enough to call that meeting so that the matter might be placed before the Planters' Association and the "Thirty Commitee" to see whether they could find it possible to increase the tea sales here. He proposed that gentlemen representing the firms who dealt in tea with Russia be appointed to write an official letter to the Planters' Association and the "Thirty Committee" explaining the reasons why they wished more tea put upon the Colombo market. (Applause.)

NEW METHODS REQUIRED: DO AWAY WITH GRANTS.

Mr. HEATH, seconded the resolution. He had been in China and had some experience of the Russian trade for a good many years. He had also been in Moscow. Last year, he made a trip in the winter with the special object of trying to get orders for the Colombo market. He had just come from there, having started a branch of his firm there. He was almost invariably met by the same arguments on the part of the Russian buyers that if they put large orders on the Colombo market prices were driven up to a limit much beyond London, and therefore they could not trade to such advantage out here. Consequently they restricted their orders and took up small quantities as they required from London. He thought that if the Thirty Committee were inclined to help them in this matter, they could do a great deal of good. He was sure that, for instance, instead of giving away so much money as had been lately spent in grants, if they were to distribute some of their money to aid the Colombo market, and the planters who were inclined to sell their teas locally, it would be to the advantage of everybody, and especially to the planters themselves. They were willing to spend money on this, and they were very anxious to do business in Russia and he thought it could be very easily worked. The amount of tea that could be taken in Russia was practically unlimited. They could take the whole crop, if they could get the right kind at a reasonable price. They were quite ready, too, to take Ceylon tea, as far as he could judge by the increase of the figures. He did not think it was a partiality for China tea that it had been so popular so long. Ceylon tea, wherever it went, was taken *on its merit* entirely—(applause)—and he did not think it required any pushing, provided it could be got at a reasonable figure, to compete with the China teas which had been taken previously. He thought, if the planters were inclined to help in the matter, and would put more of their breaks on the market, they would certainly do no harm, and probably they would do themselves a lot of good. At present it seemed to him their great mistake was they put everything on the market in one break—pekoe, broken pekoe, pekoe souchong and did not consider whether they were suitable for the requirements of Russia. He maintained that if they liked to pick out their broken pekoes and broken orange pekoes, which were not wanted at any particular time—they could be advised by the agents to that effect—they could send them to London, but give them a show with the pekoes, and pekoe souchongs and leafy teas which were particularly required for the Russian market, and at the worst, if they did not get fair bids they could always ship them to London, and they would not be losers thereby. But he was quite sure that

if planters and local sellers would only give the Colombo market a fair amount of tea, so as to give local Russian buyers a good selection, they would find that the demand from Russia would be enormously increased, and that instead of a few millions, as at present, it would be double and treble the quantity, provided that local Russian buyers were well backed up. He was certain, that the fact of any one firm starting a branch locally and pushing the sale of tea for all they were worth did more good than all the grants given by the Thirty Committee since the time the fund was started. He believed that most of the buyers would bear out what he had said. He begged to second the motion.

The CHAIRMAN said that as regarded liberty of speech it was advisable that the meeting should take the form of a Committee meeting so that members could speak more than once and ask any questions they wished.

SMALLER BREAKS WANTED, AND MORE VARIED.

Mr. HEATH understood that very often a planter would send a break down to this market for which he wanted a good bargain and marked it "X. Y. Z." The broken pekoes people were, perhaps, suspicions of it, as they did not know the tea and no fair bids were made; but the pekoes and pekoe souchongs required for Russia got fair bids. They said that was a mistake and they would not send the whole break home because people were prejudiced in London if they knew that it had been shown in the Colombo market. To obviate that, could not some of the big concerns try half their breaks on this market and ship the broken teas home? Everyone knew that they could buy this particular class of tea for Russia so that it would be no advantage to put up these teas here. He thought that if the planters sent part of their lots to London and some of their leafy teas here, they would find that they would get very good offers, in fact, far better than in London, in many instances, provided the teas were suitable. Of course some kinds could not be bought for Russia at any price. It seemed to him to be a mistake to put up the breaks as they did at present.

RUSSIA BUYS ONE-SIXTH OF COLOMBO TEAS.

Mr. WALTHEW thought it would be interesting to mention that at the last auction 165,000 lb. or about one-sixth of the total was bought for the Russian market at prices considerably over London. The figures he had quoted were collected that morning from the various buyers in Colombo.

The CHAIRMAN said that to him two points seemed to stand out clearly on which he thought it would be quite fair for them to ask for information, at least with reference to one of them. As to the other there might perhaps be a certain amount of delicacy as trenching on individual sources of interest. The first question they were all interested in was this. They knew that Ceylon tea was increasing in quantity annually, and it would be a great comfort for them to know that there was any one country or group of countries that would be likely to take an increased quantity of tea each year so as to work off the surplus. The first question that he would therefore ask his Russian friends was this. At present Russia was supplied from the two markets, Colombo and London practically, and it amounted to so many million lb. a year. The first question he would ask was, if there were greater facilities and greater quantities of tea put in the Colombo market would it mean that they should simply sell more in Colombo for Russia and less in London than at present, or did it mean that owing to the facilities offered here, they should actually increase the total quantity of tea sent to Russia from here irrespective of what they might do in London. In other words would they buy more tea here and less in London? If so, there was no great advantage as regarded getting rid of surplus teas. The other question was this. He could quite understand that that gentleman would not care to go into detailed figures showing that it would be of advantage to the planter to sell in Colombo in preference to London, because there were all sorts of interests concerned—there were the Russian interests in London and other things. It was quite possible that they might go more into detailed figures in addressing a letter to the Planters' Association and the Thirty Committee where communications of that description were often held to be of a confidential nature and not made public.

Mr. HEATH said, with regard to the first question of the Chairman as to whether more would be taken if more and a better selection were offered in Colombo at a reasonable price, he thought there was no doubt that the sale of Ceylon tea would be enormously increased if they could show importers in Russia, the Continent and other countries that there would be material advantages in giving orders in Colombo.

The CHAIRMAN:—The total aggregate sale?

Mr. HEATH:—Yes, certainly. But if they move round the Russian firms and tried to get orders and then found that they were not in a position to buy in Colombo, people would naturally think that they had been wasting their time and had been talking nonsense, and that these people would go back to China tea, or whatever they had been taking previously. They had to give everybody some inducement and prove to them that what they were telling them was true.

The CHAIRMAN:—In other words if you get more Ceylon tea, the Russians would take less China tea.

Mr. HEATH thought there was no doubt about it. It was a question of price. If they gave them a better article, as they thought Ceylon was, at a lower price, they would certainly take more because it suited their taste.

Mr. WALKER pointed out that an advantage in selling tea in Colombo was that they saved the London charges and that tea could be landed in Odessa for ½d as against 1⅝d in London. If Russian buyers were prepared to give the same price as to the seller in London they would still have the advantage.

Mr. TOKMAKOFF thought the figures he had given as to the consumption of Ceylon tea in Russia spoke for themselves, and in his opinion the increase of orders here would not decrease the London market. There had been an increase from 11 to 17 millions and very probably the consumption next year would be 24 millions.

The CHAIRMAN: I hope so.

Mr. RENTON said it had been remarked that the advent of one Russian firm here had done more to bring Ceylon tea into Russia than the Thirty Committee. He would like to ask who made the first efforts to introduce Ceylon tea into Russia. Eight or nine years

ago when it was first attempted they were told, as they were now being told in Germany and France, that Ceylon was not known as a tea-growing country. It was very much the same thing in Russia. But the Thirty Committee had made known the fact that there was an island called Ceylon which grew tea and asked all those who were in the habit of drinking tea to try the Ceylon growth. The very fact that they began in a small way to make Ceylon tea known brought before the attention of the Russian buyers and—he would not say compelled but,—induced them to give Ceylon tea a trial. Now that the work had commenced and now that the Russian buyers had formed a trade for themselves it was probably no longer necessary to make grants, but he was perfectly certain that the first effort made seven or eight years ago on behalf of the Thirty Committee laid the foundation stone and had been the means of bringing the Russian buyers here (applause). With reference to what had been said as to shipping the broken teas and putting only the leafy teas on the Colombo market, could not the Russian buyers do as those in other countries did, and try to a certain extent to cure or alter the taste of their constituents so that they might be able to buy a proportion of broken teas. If other markets, such as the Australian, English and Irish, were willing to take a percentage of broken teas, why could they not alter the Russian taste too. Surely they would learn in time that the quality of tea did not merely depend upon its appearance. Surely if it was too strong it was only a case of watering it down, was it not?

Mr. HEATH said it did not suit them at all. As buyers they had simply to buy what they were told. If a man sent an order for pekoe at 40 cents and he sent broken pekoe it would probably finish the business.

Mr. RENTON.—But could they not be induced to buy broken pekoe?

Mr. LAMPARD said that every house in London interested in the trade kept their own special buyers both for leafy and broken teas and so on; they were absolutely separate things.

Mr. RENTON was very glad to hear that; it was something worth knowing. He would like to suggest, however, to the Russian buyers that they should try to make a market for the broken teas.

Mr. TOKMAKOFF said he had sent samples of small lines and got orders for broken pekoes, and he wondered why other firms did not do the same thing. (He was understood to add that some of the biggest firms bought broken teas on the London market.)

Mr. RENTON thought it would be a drawback to put one or two or three lines of tea on the market here and send the rest home. Estates that shipped tea here would want to sell the whole lot. If they did so there would be an accumulation of broken teas in the Colombo market, for they would not be able to find buyers. If this were carried out too much broken tea would come on this market. That was a point on which he was glad to hear that Mr. Tokmakoff had tried the Russian market and to make the tea known. He feared that it would be difficult to get leaf teas sent here and broken teas sent home, estates preferring to sell all or nothing. Buyers here knew very well that teas put up in Colombo and withdrawn were tabooed in London and would never get their proper value.

Mr. HEATH thought that Mr. Thomson of Messrs. Finlay Muir & Co. would probably be able to give them some information on that point, as he understood that when they could not get the price they wanted for breaks here, these breaks were sent home.

Mr. THOMSON took exception to that remark. It was very seldom that they withdrew teas, and if they were withdrawn that did not make the slightest difference to their selling in London.

The CHAIRMAN asked whether the trade in London would be able to discriminate whether tea was not going home through third hands.

Mr. THOMSON did not think that any broker in London having printed the tea as being sold on any company's account or estate account, would question the fact at all. They would take it as estate tea.

Mr. LAMPARD said they had to study the requirements of the Russian market, and the point that weighed with him was that although there were very cheap internal rates, still with these advantages frequently tea could be bought very much cheaper in London than in this market. He was not speaking from any particular point of view about this thing, because his interests were quite equal. The same point really applied to the whole of the foreign trade which depended upon the supply of the local market. He thought Mr. Lane, the Chairman of the Planters' Association, would bear him out when he said that was a point he had been hammering at ever since he came to Ceylon. He came here chiefly with the idea of pushing the Russian business which had gradually grown to a point which made the men who dealt with it say that they must go on the same lines with regard to Ceylon as they had hitherto done with regard to China. It was the same feeling all the world over. They preferred to pay equal rates and get their goods direct, rather than get them *via* London and it must be in the interests of the producers here to study the local market. They had to study the rates of produce from here to London, and they would find that it would cost them at the cheapest a fraction over one penny. Roughly speaking it was one penny three farthings, and from here direct, it took about one half-penny per pound, and in addition to that they had more favorable internal rates for transit to Moscow. If they consider these points and allow the market to be supplied with a larger quantity of suitable tea, it stood to reason, that the trade would go forward with leaps and bounds. In studying the local market, they were not studying the interests of one particular country, but the only possible chance of getting the tea up to paying level, and that was by opening fresh markets. The danger that Ceylon had was in concentrating the supply in one particular market. If they supplied this market they would gradually get away with the surplus, and drive it into countries direct where all the surplus would be taken up and tea kept at a paying level.

Mr. THOMSON said that every house of any size was represented in one way or another by agents in this matter, as well as probably every foreign trade outside England.

Mr. HEATH thought there was no doubt that buyers on the Continent generally would far rather import their teas direct than buy in London, if they could get equally good value. He thought it would be the experience of all the buyers here, that preference was given to importing direct.

Mr. RENTON thought he could corroborate that.

The CHAIRMAN thought Mr. Renton had hit the nail on the head very fairly and clearly. If they wanted those who produced tea and had the disposal of it to put only certain grades in greater proportion on the local market, and ship the remaining grades to London, it seemed to him that those remaining grades would create such a glut in the market at home that they would run the prices down of those grades quite enough to balance the relief they would have in selling their leafy teas. That was the difficulty and the true solution of the difficulty was that if the Russian buyers wanted to assist them in the matter, and they should like to assist them, by putting larger quantities of tea in the local market, and as Mr. Renton suggested by getting the Russian people by degrees, however small it might be at the beginning, to take some of our other grades.

Mr. LAMPARD thought the wisest thing to do was to print the whole invoice.

Mr. LANE said his reason for coming here was to learn as much as possible on that very important point, because, as they were all aware the Planters' Association and the Thirty Committee were most anxious to develop the Russian —and in fact all foreign—markets. Mr. Tokmakoff had made a suggestion that a letter with certain suggestions should be addressed to the Thirty Committee. That would be the best way of meeting the difficulty, because they would have in writing the views of those who were anxious to develop the market. He had been anxious to hear whether there had been any suggestion made as to the reduction of duty on tea going into Russia, and how that would help in the introduction of Ceylon tea into that country, and to cause a greater demand for their tea. It had been proved that the reduction of the duty had been of great assistance in opening up different markets in other countries, and the Planters' Association, last year, addressed the Foreign Minister in hopes of getting a reduction on the duty on the European frontier of Russia. They made no reduction on the European frontier but they made a slight addition to the duty on the Siberian frontier. The duty of 1s 10½d on the European frontier fell very hard on Ceylon tea. He should like to hear from those who were likely to know something on the matter; whether they should press this subject still in the hope by reduction of duty and increasing facilities they could bring the tea within the reach of the poorer classes. He was very glad to see so many persons present interested in the market.

Another matter he would like to ask about was this. They said that the planters upcountry did not know what grades were required, but it was very difficult for them, to know, unless somebody interested in the development of the Russian market made it known. He was sure, after the report of that meeting came out and it was understood that pekoes and pekoe souchongs were the chief grades required for Russia, that there would be men—there would be lots of independent planters—who would be very glad of the hint and send their better and higher grades in the hope of securing better prices. Of course the sale of tea in the local market would depend a great deal on the prices. If encouragement was given, teas would be sent here; otherwise they would be sent to London.

Mr. TOKMAKOFF explained that all attempts to have the duty reduced on the European frontier had been unsuccessful, The Russian revenue—nearly 60 per cent—was derived from the duty on tea.

Mr. LANE said that with a lower duty there might be double the quantity of tea used and that would make up the amount to Government.

Mr. TOKMAKOFF said they tried this about three years ago, but could not manage it.

Mr. LANE said he would be glad to know whether Mr. Tokmakoff and his friends would advise the Planters' Association to keep on pressing the point. They had already addressed the Secretary of State, and the memorial of the Association had been forwarded through the Foreign Office to the Russian minister De Witt. A small concession had been made by the addition on the Siberian frontier of two pence, but they had asked for a reduction on the one and ten pence-half penny on the European frontier. Did they think it desirable, and likely to lead to success, if the P. A. again pressed the matter back by the Chamber of Commerce and the Russian interests in Colombo?

Mr. TOKMAKOFF said he would not be sure of success, but he was perfectly sure, that if the duty was reduced the Russian Government would not lose anything, because the consumption of tea would increase.

THE STERLING COMPANIES.

Mr. RENTON thought the people they must go for were the London sterling companies. Of the rupee companies who had agencies in Colombo, fully 80 per cent of their teas were sold in the local market, and he thought most of the independent proprietors sold their teas too. Of the large sterling companies, practically the whole of their teas went to London, simply because the London brokers and directors and the bonded warehouse men were all interested, and must have their pickings out of them. (Laughter.) They should make a special appeal, not to the Directors, and not to the Secretaries of the London Companies, but to the shareholders.

Mr. G. THOMPSON said he believed his firm represented a fairly large number of sterling companies. Of the Muir companies he had persuaded them to sell half their tea locally and half in London.

Mr. RENTON said that sterling Companies he represented also sold their teas here.

After some remarks by Mr. Walthew and the Chairman as to the cost of putting down tea in Russia from Colombo and London,

Mr. G. H. ALSTON said that he had for many years endeavoured to get sterling Companies to put the tea in the local market and it was chiefly with the object of backing up his own views on this subject, that he was so pleased to see that this meeting had been called, so that they might show that other people were interested in it.

Mr. LAMPARD said the Russian firms would not, of course, pay the same rates in Colombo as they did in London, but perhaps there might be something to divide between them, something for the planters, and something for themselves.

The Hon. Mr. CAMPBELL said he did not know whether it was worth while for him to state, but he did not mind telling them, that he put one estate's tea on the local market a year ago, with fair results, and has just got permission to put another estate's tea on the local market, which would amount to about a quarter of a million lb. per annum. (Applause.)

Mr. LANE said, he supposed that application would be made to the "Thirty Committee."

The CHAIRMAN said they had received information which must be a gratification to the Russian buyers in this market, inasmuch as what they were urging them to do, had been taken up by a good many of them. In his own small way he had succeeded in getting permission to sell certain classes of tea which were serviceable for this market, allowing the rest to go home, but so far, he could not say which way the result would work. On the other hand, they had definite information of efforts which had culminated in success, some of them quite recently, efforts which had reached the point of considerably more quantities of teas being put on the market; and no doubt, if these increased quantities met with the success, with which presumbly the previous quantities met, he did not think they need now have any fear of this market in course of time not being adequately supplied. He had been asked as regarded the address to the Planters' Association or Thirty Committee, to say that the following five gentlemen might form themselves into a sort of letter: writing committee, if they might put it in that way, viz., Messrs. Heath, Tokmakoff, Tchokoff, Thomson and Lampard.

Mr. LAMPARD said that as he was going to Calcutta he was unable to act, and suggested the name of Mr. Croll.

On the suggestion of Mr. RENTON, the CHAIRMAN said that the letter drafted by the committee might be put in such a way, that copies of it might be sent to those in Colombo who were interested in the matter, and had some influence as regarded the disposal of tea. If that could not be done, he might draw up a separate letter.

The CHAIRMAN in declaring the meeting closed expressed the obligation, that those present were under to the Russian gentlemen for coming there and laying their views before them.

Mr. THOMSON suggested the draft of the letter should be sent to the Chamber of Commerce, who should send it to the agents of the Sterling Companies here.

The CHAIRMAN.—I think I can say on behalf of the Chamber, that we should be quite willing to act in such a matter.

On the motion of Mr. Renton a vote of thanks was passed to the Chairman, and the proceedings terminated.

PRODUCE AND PLANTING.

LOW-PRICED TEA.—On the subject of low-priced tea, a correspondent of the *Grocer*, Mr. Hicks, of Leman-street, writes: "Some time since you were kind enough to insert some letters for me upon the position of the tea market and the inadvisability of pushing low-priced tea. I pointed out then that no provision was made for a rise in the market. The position to-day is one which is worth the attention of every grocer. The facts are that, with a low exchange some three years ago, and a considerable amount of over-production, tea reached a very low level, and a very uneconomic one. The rate of exchange has greatly increased, making it quite unprofitable to sell tea at the prices which ruled some time ago. At the same time, the consumption of tea abroad has largely increased. The stocks of China tea, which used to be a large factor in low prices, have been consumed, and as practically there is nothing to be seen on tea laid down under 6d in London there is no reason why for some time the market should be under that price. Up to the present time high prices have generally produced large supplies, but as parts of some tea plantations have actually been abandoned it does not seem as if there were any new inducements to put new ground to tea to any large extent, and until that is done, and the tea is ready for picking, there is not likely to be over-production. After all, the shilling canister is not one to reflect credit either to the retailer or to the wholesale man, and I think that every retailer would be studying his best interests if he threw the weight of his influence with his customers into educating them to higher things. We hear a lot of talk about cheap tea, but tea is not a particularly cheap thing. It costs a good deal to produce to place in chests and lay down ready for the grocer, and a heavy exchange adds largely to the cost; and, with so many steamers taken up for transports, freights will be exceptionally high. It is difficult to see what the advantage ever was to the retailer to have tea advertised at a price which was practically impossible to maintain. There never was any real profit in tenpenny tea, neither was there any likelihood of there ever being any; and, as most people worship the god of low prices, it would no doubt successfully divert their purchasing powers from better teas in the direction of no profit."

THE NEW REGULATIONS.—It is announced that the new regulations in regard to weighing tea by the Custom House, which it was hoped would have come into force at the beginning of October, are to commence on December 1. Under the old system producers were liable in an extreme case to a loss of 30 oz. in a chest in addition to the 1 lb. draft. Under the new regulations this possible loss in taring is reduced by 50 per cent.—*Home and Colonial Mail.*

INDIAN TEA ASSOCIATION (LONDON).

The following is an abstract of the proceedings of a meeting of the committee held on Nov. 21. Present: Messrs. D. Cruickshank (chair), R. Lyell, J. Riddell, F. A. Roberts, A. G. Stanton J. N. Stuart, W. H. Verner, C. W. Wallace, and S. A. Went. The proceedings of the last meeting held on Tuesday, 7th inst., were read by the Secretary, and confirmed.

Copies of correspondence with Calcutta, which had been previously circulated to the members of the committee, were laid upon the table.

ASSAM LABOUR BILL.

After discussion it was decided that the following gentlemen be appointed a sub-committee to consider the provisions of this Bill.

REGULATION OF SALES.

The following has been issued to the members of the Association by the secretary, Mr. Ernest Tye:—

Referring to the general meeting of importers held on July 26th last to consider this subject, I have the pleasure to inform you that definite adhesions have been received from members and others, representing over 100,000,000 lb., of Indian tea. This represents the bulk of the Indian tea imported on garden account and also a good deal of Calcutta bought tea. The scheme adopted by the general meeting of July 26th has now been in operation since the beginning of August, and has worked most satisfactorily. I am instructed by the general committee to hand you herewith copy of the report received from the regulating committee, to which I am to ask your special attention. You will observe that in the opinion of the regulating committee the work has tended to steady the market, and my committee unhesitatingly endorse this opinion.

The following is the report of the Regulating Committee referred to in the foregoing:—

The Tea Brokers' Association of London, 118, Dunster House, Mincing Lane, E.C., Oct. 20.

The Regulating Committee beg to report as follows:—

1. That in accordance with the rules agreed to by the Indian and Ceylon Importers' Sub-Committee they were elected by the General Committee of the Tea Brokers' Association to carry out the said rules, and commenced their work on August 11.

2. That up to the present time the scheme, so far as it concerns Indian Tea, has worked satisfactorily, no opposition having been shown by importers of Indian Tea to the necessary postponement of the sale of their Teas, when so decided by the committee; and buyers have in many cases expressed satisfaction at a limit being placed to the quantity offered weekly.

3. That the committee regret that so few importers of Ceylon Tea availed themselves of the opportunity of submitting particulars of their Teas for regulation at a time when it would have been advantageous to have done so.

4. That with a view of obtaining a more satisfactory result, and one fairer to the present subscribers to the agreement, this committee would urge upon the Indian and Ceylon Associations the desirability of doing all in their power to induce those importers to join who have not already done so.

(Sd.) ARTHUR THOMPSON, Chairman of the Committee. —*Home and Colonial Mail*, Nov 14.

BRITISH AND BENNINGTON'S TEA TRADING ASSOCIATION (LIMITED).

At the fourth ordinary general meeting held yesterday at the company's offices, Southwark-street Mr. John H. Moore who presided, remarked that the net profits of the year were £11,756 against £10,797 for the 12 months ended September 30 1898 and this, notwithstanding the fact that considerable disadvantages had arisen owing to the high range of prices ruling in the tea market during the greater part of the year. The actual balance on profit-and-loss account available for distribution was £8,926 against £8,378 in 1898. The whole of the preliminary expenses attending the formation of the company, amounting to £1,259, had been written off, and consequently about £450 would be available in future years either for dividend or an addition to the reserve. The average net trading profits of the first three years of the company had exceeded the certified average profits of the combined businesses for the three years immediately preceding the formation of the concern, and this notwithstanding several adverse circumstances. Neither the company nor its predecessors had ever adopted the practice of weighing tea in the wrapper, and he denied that such a practice could be called "the custom of the trade." The board in May last paid dividends upon the preference and ordinary shares at the rate of 5 per cent. per annum; they now proposed to pay the usual dividend for the half-year upon the preference shares, and they recommended a dividend at the rate of 7½ per cent. per annum upon the ordinary shares. He concluded by moving the adoption of the report. Mr. George Bennington seconded the resolution which was carried.—London *Times*, Nov 21.

DEPARTURE OF AMERICAN BOTANISTS.

The American Botanists, Messrs. D. G. Fairchild and Barbour Lathrop, of the Agricultural Deparments of Washington and Chicago, respectively, whose arrival by the "Friedrich der Grosse," we chronicled on Thursday last, left yesterday for Singapore. Their hurried departure, before they were able to pursue their tropico-agricultural investigations here to any considerable degree, was owing to the necessity they were under of pushing on to Java as quickly as possible, and the inconvenience that would arise from taking a later steamer. Mr. Fairchild writes to us expressing his regret that he was deprived of the chance of spending a few days in Kandy and other parts of the island.

THE GERMAN SCIENTISTS.

Drs. Benedict Friedlaender and August Ewers, who arrived at Colombo about a month ago on a scientific expedition to the East, left the island for Tuticorin on Saturday last. During their stay in Ceylon they were busy collecting specimens and information regarding biology and the popular belief among the natives with regard to the influence of the moon on human beings. They also travelled upcountry, where among the other places visited were Mihintale and Anuradhapura. The summit of Pidurutalagala was also ascended and they seemed pleased with everything they saw. Dr. Friedlaender took a collection of Sinhalese and Sanskrit books along with him to help him in his researches. From Tuticorin they will make a tour through India and thence will proceed to the Samoan Islands, returning home after about six months.

COCOA IN AMERICA.

The imports of cocoa show a large gain over previous years. For nine months ending September 30, 1899, they were 28,926,474 pounds—a gain of over 10,000,000 pound over the same time in 1898, and 8,000,000 pounds over 1897. In only two previons years have the imports for the entire year exceeded the imports for nine months of 1899. The cocoa industry is growing fast.—*American Grocer*.

TIMBER IN VICTORIA.—Mr. Perrin, the Victorian Conservator of Forests reports that between the years 1888-89 and 1897-98, 615,603 valuable timber trees were planted by hand in permanent sites. In addition to these some 380,000 blue gums and sugar-gums are thriving at Havelock, Majorca and You Yangs. These, however, were sown broadcast and thinned out afterwards. The number of applications for surplus stock at the Macedon nursery continues to increase year by year. Nearly 50,000 were distributed from Macedon during 1898. The three most popular trees for the northern plains are the sugar gum, pepper tree and locust tree, and to these may be added the tallow wood of New South Wales.—*Sydney Mail*, Nov. 25.

THE RUSSIAN TEA-TRADE WITH COLOMBO. —We have to remind all those concerned—and not a few firms will be interested in the occasion—of the meeting to be held at the Chamber of Commerce on Friday at 3 p.m., to discuss the possibility of increasing the quantity of tea put up for sale in Colombo. Planters are naturally unwilling to favour a move that might result in a lowering of prices; but it is pretty certain that the large Russian firms will not inundate local agents with further orders that will only tend to raise the prices in the Colombo market. It would, therefore, be advisable that a favourable consideration should be given to the requirements of Russian firms which are fully cognisant of the high quality of Ceylons, but which will probably continue to serve themselves with Chinas and Javas unless they can obtain increased supplies here at present prices. For this it is imperative that there shall be larger deliveries for the Colombo sales.

DIGALLA CEYLON TEA ESTATE CO., LD

The following is the report of the Directors to be submitted to the Third Annual Ordinary General Meeting of Shareholders, held at 20, Eastcheap E. C., on 5th Dec.:—

The Directors have the pleasure to submit the General Balance Sheet and Profit and Loss Account for the year ending 30th June 1899, duly audited.

	£	s.	d.
The net amount at Credit of Profit and Loss Account, after providing for General Expenses, Directors' Fees, Income Tax, &c., is	575	13	1
Dividends on six per cent. Preference Shares were paid for 1898-99 (less Income Tax) amounting to	348	0	0
Leaving to carry forward to next year a balance of	227	13	1
	575	13	1

The past seasons in Ceylon has not been one favourable to the production of Tea. There was a long drought in the early part of the year and too much rain at other times, and consequently the Company's crop was some 50,000 lb short of the estimate; owing to this, and to the fact that a considerable proportion of the up-keep on the 143 acres not in bearing has been charged to revenue, the Directors regret they are not in a position to pay a dividend on the Ordinary Shares.

The acreage of the Company's property is as follows:—

Tea in Bearing..	456 acres
Tea not in Bearing	143 ,,
Jungle..	152 ,,
Total ..	751 acres

The gross average price realized was 6.84d per lb, as against 6.17d per lb. last season, and the rate of exchange 1s 4½d, against 1s 3 27-32d.

The total crop amounted to 192,697 lb. plucked off 456 acres, of which 134 acres are in partial bearing, giving an average of 423 lb per acre.

Under clause No. 24 of the Articles of Association Mr. H K Rutherford retires on this occasion from the Board, and being eligible, offers himself for re-election.

The Auditor, Messrs. Harper Brothers, Chartered Accountants also retire from office and offer themselves for re-election.

TEA-BULKING IN CHINA.

A gentleman for some years in the China tea trade, has favoured us with the following description of a method for bulking tea, which he says is most simple and inexpensive. Four square wooden posts grooved on two of the adjoining sides, and several planks of (say) 18 inches in breadth are all that is required. These should be made into a large box, the posts forming the corners and the planks the sides. The box should be built, raised some four feet from the ground, the bottom being made of wood having a sliding trap-door in the centre, so made that the outlet can be enlarged or reduced according to the size of the leaf to be bulked. When the box is being filled with tea the trap-door remains closed. The tea to be bulked should be spread out in layers as thin as possible inside the box, one quality on top of another, until all the tea required to be bulked is inside the box. Now open the trap-door, and the tea will run out from the top, taking a little from each layer in its downward course, the result being *a perfect bulk*. The bottom of the box should be made slightly on a slope from the sides to the centre near the aperture, so that the tea may get away equally. By means of a zinc tube the current of the leaf can be carried direct from the box into a package or chest, standing on a lever scale. A sand-glass will illustrate the above on a small scale. Tea is bulked in China on the same principle as the above, but there, one side of the box is drawn away, and the packages filled from the tea that collects at the foot of the pile.—*Planter*, Dec. 9.

THE NILGIRI GAME ASSOCIATION.

OOTACAMUND, 11th Dec.—At the annual Meeting of the Association held on Saturday last in the Collector's Office, the following gentlemen were present:—Mr. C J Weir (President), Mr. C G Douglas (Honorary Secretary), the Hon'ble Mr. H P Hodgson, Mr. W L Edmiston, Mr. G Hadfield, Mr. E Hadfield, Mr. J E David, Mr. T J Kenna, Mr. J H Pascoe and Major T N Bagnall.

The Honorary Secretary presented the Report for the year ending 30th June, from which the following are interesting extracts:—

INCREASE OF GAME AND RESULTS OF PROTECTION.—On the whole we may consider ourselves tolerably successful in maintaining a fair head of game in most parts of the District, though the results of protection may not have made themselves everywhere apparent by increased numbers.

PROSECUTIONS.—The year's return of offences detected and punished under the Forest Act is the best on record since the Association began. This satisfactory result may be attributed to (1) a more liberal use of rewards; (2) better paid watchmen; (3) the great personal interest taken in preservation by some of our leading members. This last is simply invaluable.

THE NILGIRI GAME BAY.—In a former Report you were informed that two valuable registers were opened in the District Forest Office. One a game register and the other a register of shikaris well known to, and recommanded by local sportsmen of experience. It is greatly to be regretted that neither has proved a success.

TROUT.—Your Committee is as sanguine as ever regarding the ultimate success of this enterprise. In Major Grant, who has left the District, and whose services in trout culture have been annually recorded with due appreciation, the Association has lost an enthusiastic fisherman. The following are his notes for the season. He has only been a few months in office. I regret to say that the whole of the *Salmo Irridens* ova received this year was worthless. It had evidently been so for a long time, as in some cases it had altogeter rotted away and only the smell remained. It was clearly the fault of the people on board ship and I attribute no blame to those who conveyed it from Madras to Ootacamund.—*Madras Mail*, Dec. 13.

TEA DRINKING IN AMERICA.—In a letter (dated Oct. 21st) kindly forwarded to us by an American visitor, from Mr. Oscar Joseph (a nephew of Mr. F. C. Loos) who proceeded to America with a view to training for the Ministry, we have the following criticism from the writer, who is now at New Brunswick, New Jersey, on the quantity of tea now being drunk in the Eastern States:—"I have not yet tasted a good cup of tea in America. In the restaurants of New York, and even in private houses, where everything else is of the best, the tea is worse than what you get in any of the boutiques on the way to Anuradhapura. I have seen advertisements of Nettley's Ceylon and Indian tea. They evidently mix the teas here, and, of course, the real flavour of our superior tea is altogether lost. The Planters' Association should wake up if they desire to save the reputation of Ceylon tea in America."

DR. WATT IN THIS INDIA PLANTING DISTRICTS.

(By a Planter.)

In due time Dr. Watt will no doubt issue a valuable and instructive Report as the result of his observation during his

RECENT TOUR THROUGH COORG AND WYNAAD,

but as it will probably be some time before this Report appears, an account of his visit to Wynaad may be of some interest to planters. Dr. Watt took specimens of the canker on Ledgeriana cinchona, of the disease which kills the pepper vine, of a new blight on tea, and of the fungus on Liberian coffee. It is to be hoped he will not only name these pests, but, as he has done in the case of tea blights, recommend efficient methods of combating them. He also observed a mite preying on *Hemeleia vastatrix*, and thought this might lead to the discovery of some method of fighting this pest. Liberian coffee was found to be suffering from another fungus than Hemeleia and it is not improbable that as many planters have thought, it is this fungus that makes Liberian sickly and liable to Hemeleia, which it seems to resist when in a healthy condition. Similarly, the failure of Ledgeriana of late years may be due, not to deterioration of seed, but to a fungus which has mastered the plant. The new blight on tea is the two hundred and first to which that plant is subject; but blights are more prevalent in Assam, where plantations give 1,200 to 1,600 lb. of made tea an acre than on the Nilgiris, where tea averages only about 250 lb. an acre, and Dr. Watt thought well of the Wynaad as a tea District.

The management of tea has been so thoroughly worked out in Assam, and the results so amply recorded, that planters will be more interested in what Dr. Watt had to say on coffe. This related chiefly to the methed of pruning, to the importance of growing plants which supply nitrogen to the soil, and to the advisability of establishing a hardier type of plant than the present coffee tree. Experience has taught planters that of late years the wood most certain to resist leaf disease, and to crop well, is that found on gourmandisers and suckers, and that it is not possible to get the tree to crop as well at the bottom as at the top. Some fine all estates, therefore, have their trees in the form of umbrellas, and others in the form of a cup formed of a ring of great gourmandisers rising from short primaries on a short stem. Dr. Watt condemned both the umbrella and gourmandiser systems, on the ground that an enormous mass of old unproductive wood, often as thick as a man's arm, and full of knots, bends and dead sangs, had to be maintained in order to support a smaller extent of bearing wood. He thought quite as much bearing wood could he maintained on short primaries if the tree was trained in a pyramidal shape, such as it naturally assumes when young. In order to retain this form Dr. Watt would, as soon as the young tree has reached its proper height, cut the top pair of primaries at the joint from the stem, the next pair at two joints, the next at three, and so on till a foot from the ground is reached when he would remove all the primaries to admit a free circulation of air. From the shortened primaries young shoots should be encouraged to form a fan consisting of bearing wood and green wood for the following year the former being removed as soon as it has borne. When too much of a claw is formed, the primary is to be cut back just behind it, and when the primaries are gone, the tree is to be collar pruned that is, cut off 2 inches below the soil. The object of cutting below the soil is to prvent the formation of any dead wood as this causes decay to eat down into the stem. Dr. Watt believes that if the trees were thus kept free of all dead stumps to cause decay and bends to check the flow of sap, and relieved of the moses of old wood they now carry, they would be much less liable to blight. He thinks the high price released for "Faith" coffe this year is due to the system of pruning adopted on that estate. No doubt planters will experiment on a small scale on the lines Dr. Watt recommends; but many think the coffee tree will not stand such drastic treatment in these days of leaf disease, and condemn severe pruning and the stumping of old trees which often give only sickly suckers. The cutting under ground is, however, a new method, and may give better results than stumping at 6 or 9 inches above ground.

Dr. Watt was struck with the absence of nitrogen-forming plants amongst the weeds found in

COFFEE

and recommended the growth of dhal in open spaces, or among young coffee, and of *Albizzia stipulated* in thick coffee. He condemned the Erithrynas as nitrogen-forming shade trees on account of their liability to bug. Soil destitute of nitrogen-forming plants soon becomes sterible from the absence of nitrogen-forming bacteria. Dr. Watt took specimens of the various hybrids he saw, and was much interested in the experiment. He had some useful hints to give as to the necessity of protecting an approved hybrid from fertilisation by inferior forms, which would cause degineration in the resulting plants. It is equally necessary, however, to avoid degeneration from self-fertilisation only and good hybrids should be cross fertilised either by other good hybrids or by vigorous Arabica trees. Dr. Watt doubted if a cross with Liberian, now that this is so diseased would be likely to afford continued immunity from disease, and suggested breeding from the best Arabica trees in order to try to establish a pure blight-proof Arabica tree. The extraordinary vigour of the best Liberian-Arabica hybrids may however, preserve them from blight as all experience so far shows that such vigour is the only successful prevention of disastrous attacks of *Hemeleia vastatrix*.

Dr. Watt's visit is another proof of the

ABSOLUTE NECESSITY, NOWADAYS OF EXTENSIVE SCIENTIFIC AIDS

to agriculture being afforded by every Government which hopes to see its industries flourish. Such aid on any scale is alien to the official mind, which is mainly fixed on administrative measures. The perfection to which the Ledgeriana tree has been brought in Java is, however, entirely due to the labours of scientist in Government employment over some twenty years, and such expensive and continuous research is beyond the means of any individual or firm. The United States maintains a whole Department exclusively devoted to the discovery and prevention of blight, and to the introduction of the best manures, the best methods of cultivation, and the best varieties of plants to grow. It requires the exclusive attention over a considerable period of a man of Dr. Watt's energy, scientific attainments, and practical ability, to establish new and valuable varieties of crop bearers, and a successful system of combating pests.

SUCH A MAN IS BADLY WANTED now by the coffee industry of South India. Hard as Dr. Watt worked on his recent tour, it is impossible he could effect much in such a hurried visit. A beginning in the provision of scientific aid to agriculture by Government has been made in South India by the appointment of Dr. Lehmann to advise the Mysore Government, and of Dr. Barber to advise the Madras Government; but such appointments must be multiplied considerably before the many agricultural industries of South India can receive the attention which they require, and which would be readily afforded them in the United States.—*Madras Mail*, Dec. 14.

TEA TARING.

THE REFORM SUSPENDED.

The following letter has been addressed to the Secretaries of the Ceylon and Indian Associations in London by the Commissioners of Customs:—

Custom House, London, Nov. 30.

GENTLEMEN,—The Commissioners of Customs direct me to acquaint you, for the information of the Ceylon and Indian Tea Associations, that, to their great regret, they have felt it necessary to postpone, for a time, the coming into operation of the London Port Order 39-1899, respecting the taring of Tea to the ½ lb. and an increase in the number of tarers, referred to in Mr. Prowse's letter of the 14th instant, No. 13728-1899. The date of operation mentioned in the Order is 1st December 1899, and the Commissioners hope that the period of suspension may not be long. Due notice will be given of the new date as soon as it has been fixed.

The Board desire me to briefly explain the circumstances that have rendered a postponement necessary. Throughout the correspondence that has taken place on this subject the Board have maintained the position that no action can be safely and properly taken on their part, unless it commands the general assent of the Tea Trade, both Importers and Buyers. They felt that, subject to the rights of the Revenue they could not lead the Trade but must follow it, if any change is to be made successfully in the methods of taring. Accordingly when the Indian and Ceylon and Tea Buyers' Association submitted the following proposals, on behalf of Importers and Buyers, coupled with the continuance of the 1 lb. draft, and of the present system of gross weighing, the Board felt no hesitation in agreeing to all of them that met with general acceptance, and fell within the province of this Department.

TEA TARING.

(*a*) If tare be to an even lb.—it will be entered as such.

(*b*) If it be to an even ½ lb. or over, it will be entered at next lb. above.

(*c*) If it be to a smaller fraction than ½ lb. it will be entered at next lb. below.

(*d*) No overtakers.

(*e*) Boxes (*i.e.* packages not exceeding 23 lb.) to be weighed and tared as heretofore.

(*f*) Increased No. of Tarers according to scale.

(*g*) If Teas are bulked, each package to be tared separately.

Terms (a), (b), (c) and (f) were objected to by none, and were therefore provided for in Port Order 39-1899. Term (d) was acknowledged to relate to a matter with which the Customs could not interfere. Term (e) required no action: and (*g*) alone presented any difficulty because it in-

volved the repeal of General Order 102-1894, and a number of leading importers petitioned the Board to leave that General Order in force.

After mature consideration, the Board came to the conclusion that the Port Order dealing with terms (a), (b), (c) and (f) ought to be issued at once, as dealing with matters no longer in controversy, and that, as (g) was disputed, it would be fairer to both sides to preserve the existing option of either averaging or separately taring bulked teas.

No sooner, however, had this decision become known than the Board received a strong protest from the Tea Buyers' Association against the separation of terms (a), (b), (c) and (f) from (g), because the separate taring of bulked teas was an essential part of the compensation which the importers were to make for the concession of a ½ lb. taring on the part of the buyers. The latter also represented that the option of separate taring or not when tea is bulked, is no safeguard of liberty, because the buyers have practically no voice in its exercise, and the importers will always exercise it in their own favour. They moreover dwelt on the ease and therefore cheapness with which each case, which must be emptied in the process of bulking, might be separately weighed, as was the rule until 1894.

In the opinion of the Board it would have been inequitable to allow port order 39—1899 to come into operation in the face of this opposition. They have therefore postponed it in the hope that after further conference, the importers and buyers may either agree to adopt term (g) or make some other arrangements in common which will render that condition unnecessary.

The board have no bias towards one side rather than the other, but must always be the hearty well wishers of both. Their desire is for as accurate weighing and taring, and as just averaging, as circumstances render practicable, and their officers will spare no pains in contributing to the attainment of these ends. In the whole system of averaging tares, and of rounding weights up or down, which is no doubt ordinarily a matter of practical necessity, the Board would always wish to have the mutual consent of all parties concerned. The law in its full strictness recognises exact weights only.

I am to add that the Board earnestly trust that you will shortly be able to submit to them an agreement which will be fair to Buyers and Importers equally and will put an end to a dispute which is seriously jeopardizing the prosperity of one of the most important trades of the Empire.—I am, gentlemen, your obedient servant.

JOHN COURROUX.

W Martin Leake, Esq., Secretary to the Ceylon Association,

and Ernest Tye, Esq., Secretary to the Indian Tea Association, 61, Gracechurch Street, E C.

REFORMS ON THE TEA TRADE.

The following is the conclusion of the article from the *Produce Markets Review*, the first part of which appeared in our last issue:—

BULKING AND TARING IN INDIA.

We alluded above to the great cost inflicted upon the Indian planter through the necessity for bulking and for separately taring their teas in this country. Some progress has been made with regard to bulking abroad, but it is inconceivable here why the system has not become

universal. Years ago, we heard the old excuse about the dampness of the climate and the difficulty of keeping teas; but if the facts are as alleged, the difficulty can easily be remedied by such simple appliances as hot-water pipes. Then again, as regards the taring of the teas, the smaller gardens no doubt have to rely on rough native labour, and this is given as an excuse for the chests not being cut to scale. The excuse seems to us totally insufficient, and we can only ascribe the continuance of the existing system to ignorance. In these days when metal chests can so easily be obtained, as well as the beautifully made "Venesta" and other artificial wood chests, uneven tares seem simply inexcusable. It pays our sugar refiners to import ready-cut wood for such a cheap commodity as theirs and when a single manufacturer requires 40,000 or 50,000 cases a week of the size of a tea chest, it surely would be worth the while of Indian planters to import either the "Venesta" packages or wood cut in proper shooks from other countries, in places where the native labour and the appliances are so deficient as they appear to be in a vast number of cases. The planters also go far to necessitate re-bulking in this country by the excessive subdivision of their teas into different-sized leaves. This can only be effected by a costly system of sifting, in addition to the exposure of the tea to friction, which breaks a large portion of the leaves, and turns them into comparatively waste dust or broken leaf. We have long held that the planters would do far better to buy a reasonable-sized grocers' bulking and cutting machine, and then make much larger breaks of an average quality. The cost would be less, and, we believe in the long run, the relative price would be higher.

INCREASING PRODUCTION, LOWER PRICES, AND THE ARTIFICIAL RUPEE.

The production in India, Ceylon, and Java, is consequently increasing, for the fresh plantings are year by year coming into bearing. Even if another tea plant were not planted for the next five years, the increase would still continue from previous sowings. The consumption of tea in this country has reached its limit, and the next great consuming country—the United States—uses only something like one-sixth of what we use, and is at present greatly wedded to the flavoury China teas. The same is the case in Russia, and although we hope, and believe, that Indian and Ceylon teas will readily make their way in both these countries, the demand cannot be important for years; its progress is not quick, and the increasing supplies must therefore continue to deluge this market. The action of the Indian Government in artificially fixing the exchange value of the rupee at the rate of 1s 4d when the intrinsic value of the coin is something about 11d, is also most injurious to the Indian tea planters. In these depressing times it must to a large extent tend to ruin our own growers, or to divert the trade to the common tea of China, because China, owing to the unrestricted exchange for the dollar, enjoys an advantage of 2d in every pound of tea. While the possibilities of economies in the trade are great, we fear that the possibilities of decreasing prices are even greater, so that the question should be actively taken in hand. It is, therefore, obviously to the interest of the whole trade to take up tea reform in earnest. It is possible that the result of the coming depression will be the extension of something like the Central Factory system. If so, the small gardens would cease to manufacture tea, and would sell the green leaf to the larger operators, who can work better and more economically than the small growers. This is the system which long usage has established in China, and it is already beginning in India. These latter changes, however, are matters for the future, and the present necessity is for a simplification and modernisation of the tea trade, such as will greatly reduce the present unnecessarily high cost of distribution.

CONCLUSION.

In the above remarks we have given a short outline of the main changes required whether at home or abroad, for it matters little which section of the trade is benefited so long as expenses can be lessened. The necessity for reform must come home very forcibly to the producer, in consequence of the present great depression in values. It is true that for temporary reasons, very common teas have recently very considerably advanced, but we do not think that this can possibly last for long with the supplies coming forward. If it do so, and the price of common Indian tea is maintained, we shall shortly be swamped with common China Congou, which will bring prices once more down to a lower level. If there is no hope for a rise in the price of tea, but rather a strong prospect of a further fall in it, the only way to save the planters from ruin is economy in production and distribution. The mixture of the two branches of the trade in the above remarks is apparent and not real, for we hold that the whole tea trade is organised far too expensively, for the present scale of prices, and that economies in cost in any direction will benefit all sections alike.—*Home & Colonial Mail*, Dec. 1.

PRODUCE AND PLANTING.

RUSSIAN TEA.—The attempt at tea cultivation in the Trans-Caucasus has demonstrated that the tea-plant can be successfully grown in the country under existing climatic conditions, and further, that it is only necessary to surmount certain difficulties at present experienced in respect to the question of obtaining cheap labour in order to make tea-growing an industry of the district. A large Moscow firm erected a factory on its plantations last year, and the authorities on the estate belonging to the Imperial domains at Chakva have followed this example, and have set up a tea-making establishment of considerable dimensions. The yield of the tea crop has been good, and, comparatively speaking, fairly abundant. But the Russians like good tea, and this Trans-Caucasian tea is far below the standard of Indian, Ceylon, or China. Seeing, however, that tea can now be successfully grown in this region, writes our Consul at Batoum, in a report on Transcaucasian agriculture, "the Imperial domain authorities propose to encourage the cultivation of this plant among the peasantry, and with this object in view would gladly split up the area on their estates now planted with tea into small plots for distribution, on certain conditions, to the surrounding inhabitants to cultivate under their supervision. It is considered that a measure of this kind would induce a considerable proportion of the peasantry to cultivate tea, and as soon as it is known that fairly remunerative wages can be obtained for the collection of the leaf, a large number of women and children would willingly come forward and assist in gathering tea harvest, and by this means an important reduction in the price of labour would be likely to follow." So for the present, and for some time to come, Russia will want the usual supply from elsewhere, for our Consul takes care to point out that in the present difficult position of the labour market, owing to the absence of a good supply of labourers, it is evident that the expenses incumbent on the cultivation of tea in the Caucasus are so excessive that

if the production were to attain such figures as would enable even a small proportion of the demand to be satisfied, it could, nevertheless, not be sold at prices much below those which teas imported from abroad, and paying a heavy rate of duty, fetch in the markets of the Russian Empire.

REGULATIONS OF SUPPLIES IN SALE.

To the Editor of the *Home and Colonial Mail.*

SIR,—I have read in your last issue the report of the Indian Tea Association, in which, under the heading, "Regulation of Sales," it is stated, "that that scheme has been in operation since the beginning of August, and has worked most satisfactorily." The Regulating Committee, through their worthy chairman, Mr. Arthur Thompson, then go on to say that "no opposition had been shown by the importers of Indian tea to the necessary postponement of the sale of their teas, when so decided by the committee, and buyers had in many cases expressed satisfaction at a limit being placed to the quantity offered weekly." May I therefore ask a little space to offer a few remarks? I start with the fact that the total offerings of Indian tea in public sale in the year 1898 were 1,590,000 packages, which in round figures would average 133,000 packages a month. The contention in regard to regulating supplies has been that for month after month during every autumn the quantity put on the market bore no relation to monthly demand, but was entirely conducted on a "Devil take the hindmost" policy, thereby depressing prices by overloading buyers at one season of the year, and inducing a scarcity at another. The Regulating Committee was appointed to put this right, and it may therefore be worth while to examine the results of their labours since they started operations. The number of packages of Indian tea offered in public sale were as under:—

	unregulated. 1898.	regulated. 1899.
August ..	124,474 ..	135,556
September ..	170,762 ..	177,071
October ..	238,655 ..	232,950
November ..	198,871 ..	206,122
	732,762	751,699

These totals explain the reason why the scheme has "worked so satisfactorily," and one ceases to wonder that "no opposition was shown to the necessary postponement (?) of the sale of their teas by importers." One would also like to be introduced to the "buyers who in many cases had expressed their satisfaction that a limit was placed on the weekly offerings." Possibly had there been no regulating of supplies this season the consequences might have been disastrous. Who can say? But no one will contend that the committee has introduced any very radical change; and now that the attention of the Ceylon tea importers is drawn to the results as stated above they will surely hesitate no longer "to avail themselves of the opportunity" of being regulated. Walk up, gentlemen, there is positively no danger.

I am, &c., D. F. SHILLINGTON.

THE CALEDONIAN (CEYLON) ESTATES, LIMITED.

The second annual ordinary general meeting of the Caledonian (Ceylon) Tea Estates, Limited, was held at the offices of the company, 78, Gracechurch Street, on 30th Nov., Sir Alfred Dent, K.C.M.G., chairman of the company, presiding.

The SECRETARY having read the notice convening the meeting,

The CHAIRMAN, in moving the adoption of the report and accounts, said:—Although there is a very small number of shareholders present, other shareholders who are unable to attend the meeting will be interested to know what took place, so I will proceed to make a few remarks. In the first place I must express the regret we all feel at the absence of Mr. Alexander Ross, which owing to a rather serious illness. He always gives us most valuable advice, and I am sure we all miss him very much. The report will no doubt have been studied by all of you, and though we cannot call it a satisfactory one, still I think the shareholders will all admit that we have done as well as most of our neighbours, considering that we are only comparatively a young company. Our chief trouble this season has been the exceptional weather, which has reduced our crop to 489,687 lb. of tea, showing a deficiency of 67,8000 lb. as compared with the estimate. This, as stated in the report, is almost entirely owing to the weather, but as Mr. Stanley Ross, the manager in Ceylon, is here, he will explain to you the difficulties he has had to encounter better than I can. His report, received a short time ago, said that the rainfall for the first six months of the season was favourable to the flush of tea, but that the first three months of this year a severe drought came on, which caused the rainfall to drop to 11 in. This was followed by an unusually heavy burst of the southern monsoon, and a rainfall of 40 inches was recorded during the last three months of the season, which seriously interfered with the pruning and flushing. These alternate periods of rain and drought make tea cultivation extremely difficult. The gross prices of the tea are given in the report, and I think you will consider them fairly satisfactory. Perhaps the average cost per pound on the different estates will be of interest to you. On the Lawrence estate it was 7·13d per lb., against 7·14d for the previous season; on the Venture estate 7·17d per lb, against 7·24d; and on the Selegama estate 5·73d per lb, against 5·24d. The exchange for the year was almost the same as for the previous year, being 1s 4 7-32d, against 1s 4 3-16d, or only a difference of 1-32d. Our average price was of course affected to a certain extent by the unfortunate dispute in the tea trade. Like other companies we had an accumulation of invoices, and some of these had to be forced on the market, with the result that we lost halfpence to 1d per lb on them. One item that seems to call for attention in the accounts is that of capital expenditure. This amounts to £4,067 since the company was started, as foreshadowed in the prospectus, and the amount has been carefully laid out in cultivating and extending the estates. Only a very small portion of it has been spent on machinery. I think I am right in saying that the expenditure on capital account will be very largely reduced, if not almost nil, next year, nor do we think that anything but a very moderate expenditure will be required for extra machinery. This capital expenditure has been met to a certain extent out of moneys received from the sale of produce, the reserved shares having been kept in hand. The market being against issuing shares for the moment, the

company thought it better to borrow money from their agents than to force shares on an unwilling market. The agents are content to advance money in this way, provided that the company can give them the necessary security, and with that idea in view it will probably be necessary to create a second charge on the company's estates, which is to cover the capital outlay pending the issue of the reserved shares, and which will be cancelled as soon as that issue is made. As regards the cultivation of the estates, Mr. Stanley Ross will tell you what a high state of cultivation they are kept in, especially Lawrence and Venture, which are two of the leading estates in Ceylon.

As regards the acreage of the estates, you will see by the report that 500 acres of tea and 140 acres of cocoa are just coming into bearing, which will enable us to present a very much better report to you next year. The Wavina estate is also planted with 21,000 rubber trees, and coconuts to a considerable extent, though it will be some time before we shall derive much profit from that source. Turning to tea generally, every one present is no doubt very familiar with the Ceylon tea statistics, but I think it as well to call attention to the satisfactory figures for the last ten months ending October 31. The imports were 44,924,000 lb., against 42,094,000 lb. for 1898, 42,330,000 lb. for 1897, and 39,088,000 lb. for 1896, and the deliveries 43,638,000 lb,, against 40,865,000 lb. for 1898, 42,635,000 lb. for 1897, and 39,562, 00 lb. for 1896. The average price of last week's sales was rather under 8d gross, against 8¼d for the previous week, and 8¼d for the corresponding week in 1898. I have nothing more to say, but, with the assistance of Mr. Stanley Ross, I shall be very pleased to answer any questions any shareholder may wish to put, before putting the adoption of the report and accounts to the meeting. I now beg to move. "That the report of the directors and statement of accounts for the year ended June 30, 1899, now presented, be and are hereby approved and adopted."

The motion was seconded by Mr. GOW.

In reply to questions from one of the shareholders, Mr. STANLEY ROSS stated that there was no cinchona grown on the estates at all, it having been cut out before the company was formed. As regarded the coffee, that also had been abandoned on the only estate where it had ever been planted, viz , Venture. This resolution was then put to the meeting and carried unanimously.

The CHAIRMAN then proposed, "That a final dividend of 3 per cent (making 6 per cent for the year ended June 30th, 1899) on the paid-up Preference share capital of the company be and is hereby declared payable on and after this date."

This was seconded by Mr. W. GOW, and carried unanimously.

The next resolution was, "That a dividend of 2 per cent on the paid-up ordinary share capital of the company for the year ended June 30th be and is hereby declared payable on and after this date."

This was proposed by the CHAIRMAN, seconded by Mr. GOW, and carried unanimously.

On the proposal of Mr. W GOW, seconded by Mr. STANLEY ROSS, the retiring director, Sir Alfred Dent, K.C.M.G., was unanimously re-elected.

Mr. LOWE proposed, and Mr. HANSSEN, seconded the re-election of the auditors, Messrs. Singleton, Fabin & Co.

The motion was carried unanimously.

Mr LOWE proposed a vote of thanks to the Chairman, who in responding, said that he felt sure that they all join with him in giving a hearty vote of thanks to the manager, Mr. Stanley Ross and the staff in Ceylon.

Mr. STANLEY ROSS briefly returned thanks, and said that with 500 acres of tea and over 140 acres of cocoa coming into bearing, he had no doubt that they would be able to pay a much larger dividend next year.

This terminated the proceedings.—*H. and C. Mail*, Dec. 1.

A TRIP ON THE HAWKESBURY.

SYDNEY, Nov. 25.

One of the most enjoyable day excursions one can make from Sydney is a trip on the Hawkesbury River, a stream noted for its beauty, which Anthony Trollope declared

EXCELS THAT OF THE RHIN AND MISSISSIPPI,

and one day last week I went this trip. My view in visiting Richmond was with the object of inspecting the

HAWKESBURY AGRICULTURAL COLLEGE,

an institution founded by the Government for the training of those who are to till the soil. As this institution is one of the best, south of the line, if not in the world, a few words respecting it may be of interest. There, over a hundred students, some from other parts of the world, including a Jap, while one of the smartest in the College at present is a Frenchman from Noumea. Boarders are charged 10s a week, the inclusive charge for board and instruction being £25 a year, part of the agreement being that they help in the work of the farm three days a week. Those who live in the district pay £2 a year, with £5 for daily lunch. Each student is provided with a bed-room and takes his meals in the large dining hall. There is a fine gymnasium; and cricket, football and other games are indulged in: electric light is laid on and there are a laboratory and a lecture hall. The institution is under the charge of Mr. Valder, the principal, assisted by several masters; while each section on the large experimental farm is under the control of a practical man, not necessarily with scientific knowledge, who is assisted by the students who are first of all taught in the classroom and then are sent out into the field to gain practical knowledge. When I arrived at the College I found that Mr. Campbell, an agricultural inspector, was coming from Sydney with 40 or 50 boys, the agricultural class at the model school, the best public school in Sydney, and so I waited to go round with them. Soon after their arrival all sat down to a substantial lunch, all of which, with the exception of tea (which, in Australia, is brought on at every meal), was produced on the farm. Afterwards the principal took us round, first of all showing us the horses, and the various machinery, and the most up-to-date methods being taught the students. We saw the sheep, which were being herded, the poultry, bees, and then from there to the dairy, where each visitor was regaled with a glass of delicious milk. Here butter and cheese are made. The cows were a very nice lot of animals, while the pigs looked in good condition. It should be mentioned that the animals, &c., reared in t farm, are many of them sent to the mark and are sold as fast as they can be secure

while there is an equally ready sale for the dairy produce. In the cheese department each student is allowed a day for making a cheese, which is examined by an inspector and marked whether good or bad. The last place visited was the

FRUIT ORCHARD

where a large variety of fruit is grown, a good portion of the ground being under grapes. The fruit is preserved for the use of the College in winter. These are the principal things, which are taught in this institution, the benefit of which has already been felt in the Colony. Even in Australia the tendency is to over-populate the cities, and the Government are acting wisely in giving the younger generation the best instruction, so that they may go out to large tracts of country, which yet await cultivation, and be able by scientific methods to obtain better and quicker results than their forefathers, the pioneers in this country, did. On this farm, science is made to go hand in hand with nature, and the results obtained have not been reaped on a rich soil, but on land which no farmer would himself tackle. Visitors to the institution are always welcomed, and any one who intends starting in any branch of agriculture can obtain advice on the subject, and be told the best way of laying out the capital he has to spend.

I drove back to Richmond a quiet country town, shaded amid the trees, and caught the afternoon train to Sydney. Away in the distance one could see the Blue Mountains, but we travelled over gently undulating ground, through park like country till Paramatta, the oldest town in Australian with the old Government house, was reached. From here the suburbs begin and one was transposed in the short space of little over an hour from peaceful country scenes to the rush and bustle of city life.

LIBERIAN COFFEE ESTATES SALES.

On Dec. 13, at Messrs. Powell & Co's auction rooms in Singapore, there was held an auction of six important Liberian Coffee Estates in the Malay States, belonging to the Malay Peninsula Coffee Co., Ltd. and advertised in the *Ceylon Observer*. It is probably the most important offer of coffee estates that has ever been made in the Straits, as the estates are all well-known, and they are all more or less in bearing. There was a considerable attendance of people interested in coffee and property, and after explanation of the conditions of sales bidding was started for

Lot 1 at $1,000. It was sold for $3,600 to Mr. Tunnicliffe, Batu Kamuning Estate, Sungei Ujong, has 117 acres of coffee just coming into bearing, and has 1,435 acres of forest in reserve. Bidding commenced at $2,000 and went slowly to $5,000 and was knocked down to Mr. Jas. Millar.

Klang Lands Estate, Selangor, is of 1,341 acres of which 183 is Liberian coffee, about a third of it over four years old. There are also para rubber trees and a large nursery. The bidding for this Estate commenced at $5,000 and rose to $11,200 to Mr. W. Smith.

Welds Hill was started at $10,000 and went to $16,500 to Mr. Edlin.

Weld's Hill Estate, just outside Kuala Lumpor, is the well known old estate, with coffee varying from 17 years, and para rubber, some two years, and some ten years old.

Eveleen Estate, also near Kuala Lumpor, is 99 acres in area. The coffee is from 4 to 5 years old, and there are a number of fruit trees.

Linsum and Silian, in Sungei Ujong, are also well-known having been under cultivation twenty years. The area is 1,697 acres; coffee in bearing covers 419 acres, and there are also pepper, sago, coconuts and 100 para rubber trees in full bearing. Bidding for Linsum and Silian Estate commenced at $15,000 and closed at $25,500 to Mr. R J Gunn.

Kamuning Estate is in Perak and contains 5,973 acres, part of it being subleased for mining purposes. There are manager's quarters, live stock, &c. This estate was sold to Mr. T Scott for $40,000.

BULKING TEAS IN INDIA.—It appears that in India it would be on the whole advisable if more teas were bulked on the spot instead of in London. In Ceylon factory-bulking has also been urged, but has been met with the response that very often bulking has had to be done over again when the packages arrived in London. The remedy would seem easy enough, but, perhaps, it will be well to peruse some Indian advice on the subject. The *Planters' Gazette* writes as follows:—"Not only are better prices realised as a rule of teas that have been bulked in India, but loss of weight is very considerably avoided. Planters are aware that tea properly packed will gain, instead of lose, in value, if kept in its original package untouched, while it soon loses in flavour if it is disturbed by being turned out and re-packed. The reason why small concerns, belonging, it may be, to private proprietors who sell in Calcutta, do not bulk, is because, if they waited for sufficient tea for a large break, the quality would be likely to suffer to a degree that would nullify any benefit to be derived from bulking. The interest of the proprietor of a small garden is concerned more in offering a tea with all its aroma and fragrance at perfection in Calcutta, than in considering how his tea will keep in England, after bulking in the London warehouses. The necessity for the gardens in India bulking their teas in their own factories, is becoming more and more imperative, owing to the very large quantities that have to be sampled and tasted. The work of tasting for the sales alone has grown so much that the powers of the buyers have been heavily strained to keep pace with it. Human nature cannot do impossibilities, so unless the teas are bulked, and the size of the breaks materially increased, there will very soon come a time when the buyers will be quite unable to look at the whole of the samples, much less to taste them."

PARIS, THE CINEMATOGRAPH AND CEYLON TEA.—In our issue of the 21st October last we put forward the suggestion that the cinematograph might well, with advantage, be employed for advertising Indian tea. That lectures illustrated with "living panoramic pictures" of every operation connected with tea, from the very first start—the clearing of the heavy forest jungle or grass-land—to the time it is sold over the counter; or, in fact, drunk at the breakfast or "afternoon tea" table, would take immensely with middle classes and the proletariat, and prove one of the very best methods of advertising our teas we could possibly adopt. We are glad to note that our Ceylon brethren have promptly taken up the idea, and that the necessary steps are being taken for the representation of such views (representing *Ceylon* tea), as we suggested, at the Paris Exhibition. The Thirty Committee has, in adopting our suggestion, proved itself far more go-ahead than our Indian Tea Association in this city, which has made no move in the matter.—*Indian Planters' Gazette*, Dec. 9.

Correspondence.

To the Editor.

IRRIGATION IN CEYLON AND INDIA.

Colombo, Dec. 8.

DEAR SIR,—As one who has for many years been connected with irrigation matters in Ceylon and had opportunities both of visiting a few of the big works in India, a d of becoming familiar with a good deal of literature on the subject, I would ask for room in your columns to add the results of my experience. In the first place, I would notice the recent local references to the returns from Indian works and point out not only that the figures quoted refer to a limited number of works, but further that no satisfactory comparison can be made as regards results of irrigation between Ceylon and India as our revenue and land systems are so radically different. In Ceylon all the land is considered *private* property and is now, where irrigation is provided by Government, only liable to a water rate of R1 per acre; but Government has no claim on any share of the produce or of the increase due to improved irrigation.

In India, on the other hand, the land is all owned by *the State* and the occupier is a tenant (or at most a lessee) paying a *rent*. This is generally "settled" periodically (except in Bengal) and ordinarily considered as the equivalent to the value of half the *net* crop; but, as laid down in the "Directions for Settlement" "under Indian Governments there is practically no other limit to the demand upon the land than the power of Government to enforce payment and the ability of the people to pay," I quote further as follows:—"The principle which now obtains is that the State determines the land tax from time to time retaining power to advance it upon fresh land rendered irrigable by national works. ....In Madras especially, this has proved an additional source of income to the State which can be fairly credited to irrigation accounts." By this means the principle of a single tax is maintained and it is largely by taking credit for this increased land revenue that the Indian works can be considered as remunerative. But there are other considerations which help forward this view, for instance, "Prior to 1854 all irrigation works were constituted under a military board by military engineers and paid *from out of revenue.* It is difficult if not impossible to ascertain the exact outlay upon particular schemes or indeed upon the whole of them up to that time." So this outlay is excluded from consideration.

Again in Madras there were ancient native and British works which were utilised, to which "additions have been made at a very moderate cost, but the revenue produced cannot properly be compared with their recorded cost as they are very largely the result of the labour of years antecedent to British rule which cannot be estimated." (Strachey's famine and P.W. of India.)

Further no account is in this connection taken of the system of State advances made to tenants for the purpose of permanent improvements to their holdings under the Land Improvement Acts, in which the "first place is given to wells, tanks and other works for storage, supply and distribution of water." Under this, a land-holder can borrow to the extent of 75 per cent. of the value of his land on easy terms of interest and repayment extending in some cases over 40 years and up to a limit of R10,000. Under this system there is *annually* advanced a sum of R200,000 in *each* of the Presidencies of Madras and Bombay—of which no notice is taken in the Irrigation Department.

Again there has been a large outlay in famine relief works which, I believe, finds no place in the ordinary irrigation accounts. With these preliminary remarks I pass to an examination of the last report of the Irrigation Branch of the P. W. Department of Madras (for the year ending 30th June, 1898, but published in 1899), and add some information to the figures put forward in the newspapers, so far as they refer to this Presidency.

I find the results stated as follows:—

(*a*) The net *revenue to the State on capital outlay* (*not return* as apparently stated in the papers quoted at a recent meeting) amounted to 7·88 p.c. on *ten major* (*productive and protective*) *works*—irrigating 2¾ million of acres.

(*b*) But this is *exclusive* of the "Interest charges" amounting to over 26½ lacs, and which reduces the net *return to the State* to 4 p.c.

(*c*) Further out of these 10 works, four instead of yielding any surplus show a deficiency of about 20 lacs on current outlay. While those which pay handsomely and make up for this deficiency are the Cauvery, Godavery and Khristna delta systems. When there were old native or early British works, the capital outlay on what is unknown; and as it cannot be taken into account a deduction is made of a portion of the revenue "*assumed* to be due to old irrigation less old maintenance charges" so as to arrive at the net revenue, which it is claimed is due to the extensions and additions made under the capital expenditure shown.

(*d*) Other 25 "minor works for which capital and revenue accounts are kept," (irrigating 535,000 acres) yielded a revenue of R16,59,000, of which "old irrigation" is credited with over nine lacs, leaving 7½ lacs as surplus revenue due to outlay of Government capital. (Under this class the capital outlay on the Buckingham canal is shown at 89 lacs, though it cost the Government £2½ millions sterling to buy out the original Company.) No "interest charges" are shown under this head, and the percentage of net revenue, due to outlay of Government capital, is put at 4·44.

(*e*) The two foregoing classes account for about 3½ millions of acres, but there remain another three millions of acres served by "minor works for which neither "capital nor revenue accounts are kept P.W.D." and minor works revenue department," in which there was an expenditure during the year of over 19 lacs as against a gross revenue of 83 lacs, but it is not stated if this surplus represents any return on the original outlay on the works.

(*f*) Finally, under head of Agricultural Work, there was an outlay of R587,922 against a return of R42,185.

I have not at present access to the official reports of recent years, relating to other parts of India, and in their absence must fall back on some other sources of information, though they are not quite up to date. I find these in Mr. Deakin's Indian Irrigation (a work published about five years ago), and who wrote as follows:—"Neither in Bombay or Bengal does irrigation pay the state; but major works pay 5 per cent in Panjab, 12 per cent. in Sind, and 7 per cent. in Madras." As this last figure is very slightly

under the latest report, we may fairly infer the rest of the figures may be accepted as probably still correct for the rest of India.

In view of these figures and my general acquaintance with the subject, I am unable with due humility to give my submission to the statement that "Irrigation in India pays handsomely." That a few special selected works or class of work are made to do so, is I dare say, not to be gainsaid, but the general proposition is open to doubt. I will in a further letter discuss the Ceylon figures and will stop here for today, but I trust that I have advanced sufficient to show that there are such differences between India and Ceylon that it is not possible to make a suitable comparison between the two; especially because the figures published take account of sources of profit not available in this island, and omit sundry branches of expenditure, which are included in the returns published in Ceylon, as I will show in my next letter.

Meanwhile I would only add that there is one broad ground common to the policies of both the Indian and Ceylon Government as set out by the author already quoted in the following words:—"The gigantic works undertaken by the Indian Government and those on a smaller scale in Ceylon were not a speculation in beneficence, but forced on by the terrible famines which periodically visit portions of this great territory. * * * It pays the Hindu everywhere, for without it, millions would not live at all and millions would be decimated by famine every few years. Reckoning its influence upon the railway commerce and good Government of India its value is inestimable."

In view of these remarks, which are on a smaller scale appplicable to this island, one is almost inclined to enquire why any immediate and direct return for irrigation is required and why Government should not be content with the indirect benefits and returns which admittedly follow,—Yours faithfully,

E. ELLIOTT.

ANALYSES OF SAMPLES OF COCOA.

Kandy, Dec. 12.

SIR,—I herein enclose copy of Mr. Hughes' Report on samples of cocoa analysed by him in terms of recommendation made by the Cocoa Committee, that analyses should be made of the principal brands of cacao in order to ascertain if any adulteration exists, which might prejudice the interests of Cacao Planters.

The Report is a valuable one and will doubtless be perused with much interest.—Yours faithfully, A. PHILIP,

Secretary, Ceylon Planters' Association.

Analytical Laboratory, 79 Mark Lane. London, E.C.,
November 9th, 1899.

W. M. Leake, Esq., Ceylon Association in London, 61 and 62 Gracechurch Street, E.C.

Dear Sir,—I have now the pleasure of sending you the results of my analyses of the nine samples of Cocoa sent me respectively on the 12th and 18th October. According to your letter of the former date samples marked:

			s.	d.
Cadbury's	..	9½ ozs. for	1	4½
Army and Navy	..	8 do	1	3
Van Houten	..	8 do	1	6
Taylor's Condensed	..	8 do	1	5
Fry's Extract	..	6 do		9½
Vi-Cocoa	..	8 do	1	4½

were purchased at the Army and Navy Co-operative Association at the prices above named.

			s.	d.
Samples Suchard's	8 ozs. for		1	4½
" Rowntree's	8	do	1	4½
" Epp's Homeopathic	8	do		7

were purchased at the Civil Service Stores.

The analyses have been carried out fully according to your instructions, the results being in sufficient in detail to determine to what extent adulteration and admixture with other ingredients prevailed

I have added a few remarks which the results suggested and I trust the analyses will be of practical use both to producers and consumers of Cocoa.

Believe me, yours faithfully,

JOHN HUGHES.

ANALYSES OF SAMPLES OF COCOA.

Purchased respectively at the Army and Navy Co-operative Society, Limited, and the Civil Service Supply Association. By Mr. W. M. Leake, Secretary to the Ceylon Association in London:—

TABLE I.

SAMPLES OF COCOA ESSENCE consisting of pure cocoa from which about two-thirds of the original fat has been removed:—

	No. 1. Cadbury's.	No. 2. Fry's.	No. 3. Army and Navy.
	s. d.	s. d.	s. d.
Price per lb. ..	2 4	2 1	2 6
Water (lost at 212° F.) ..	3·99	4·30	3·10
Fat (Cocoa butter) ..	25·01	30·70	37·20
*Albuminoids and Theobromine ..	22·15	20·38	17·53
Mucilage Gum &c. ...	9·70	10·64	7·73
Glucose and Dextrine ..	4·10	1·36	5·47
Natural Starch and Digestible Fibre ..	25·91	23·76	19·04
Indigestible Fibre (Cellulose) ..	4·13	4·46	4·03
†Ash or Mineral matter ...	5·06	4·40	5·90
	100·00	100·00	100·00
Melting point of Fat ...	84° F	85° F	83° F
*Containing Nitrogen ..	3·50	3·22	2·77
†Containing Potash ..	1·66	1·56	1·50

Mechanical Condition: Fineness and state of granulation:—

Powder passed through sieve having 10,000 holes to the square inch.	72·59	81·78	76·44
Residue left on Sieve	27·41	18·22	23·56
	100·00	1000·00	100·00

TABLE II.

SAMPLES OF COCOA ESSENCE consisting of Cocoa from which about two-thirds of the original fat has been removed and some potash salts added.

	No. 4. Van-Houton's.	No. 5. Suchard's	No. 6. Rowntree's.	No. 7. Taylor's.
Price per lb.	3s.	2s 9d.	2s 9d	2s 10d.
Water (lost @ 212° F) ..	2·94	5·04	3·82	5·12
Fat (Cocoa Butter) ..	30·10	33·40	32·50	31·70
*Albuminoids and Theobromine ..	21·64	20·00	19·30	18·23
Mucilage, Gum, &c. ..	10·03	8·25	9·04	10·05
Glucose and Dextrine ..	·97	1·75	1·76	2·15
Natural Starch and Digestible Fibre ..	21·44	19·47	21·83	21·29
Indigestible Fibre (Cellulose) ..	4·26	4·93	3·83	4·26
†Ash or Mineral Matter ..	8·62	7·16	7·92	7·20
	100·00	100·00	100·00	100·00
Melting point of Fat ..	84°F	82°F	85°F	84°F
*Containing Nitrogen ..	3·42	3·16	3·05	2·88
†Containing Potash ..	4·49	3·35	4·24	3·41
Mechanical condition, Fineness and state of granulation :—				
Powder passed through sieve having 10,000 holes to the square inch	57·05	81·04	62·51	95·10
Residue left on sieve ..	42·95	18·96	37·49	4·90
	100·00	100·00	100·00	100·00

TABLE III.

SAMPLES OF COCOA mixed with other materials.

	No. 8 Tibble's.	No. 9 Epp's.
Price per lb.	s. d. 2 9	s d. 1 2
Water (lost at 212° F)	5·04	4·58
Fat (Cocoa Butter)	27·10	26·40
*Albuminoids and Theobromine	17·53	7·27
Mucilage, Gum, &c.	11·86	11·82
Sugar, Glucose and Dextrine	2·34	18·58
Starch and Digestible Fibre	24·30	28·45
Indigestible Fibre (Cellucose)	5·33	1·40
†Ash or Mineral Matter	6·50	1·50
	100·00	100·00
Melting point of fat	80° F	83° F
*Containing Nitrogen	2 77	1 15
†Containing Potash	2·68	·54
Mechanical condition, fineness and state of granulation :—		
Powder passed through sieve having 10,000 holes to the square inch	76·35	42·74
Residue left on sieve	23·65	57·26
	100·00	100·00

REMARKS.

From the above results it will be seen that in Table I., the chief variation in quality depends upon the amount of fat removed from the original cocoa, Cadbury's containing only 25·01 per cent while the sample of the Army and Navy Stores contained as much as 37·20 of fat.

Pure cocoa contains originally from 50 to 52 per cent of fat and from 2·20 to 2·35 per cent of Nitrogen.

The removal of the fat renders the essence or residue richer in Nitrogen and in the other constituents of cocoa.

How far the removal of the fat should be carried of naturally an important point to be considered with is view of rendering the material digestible and palatable.

Doubtless some person will prefer cocoa rich in fat while other persons will prefer a quality from which more of the fat has been removed, consequently the selection must be a personal matter.

In Table II., the samples consist of cocoa with a slight addition of potash salts. Why potash salts should have been added is not quite apparent, as the quantity present cannot very materially affect the solubility of the cocoa, though possibly the digestibility may be somewhat improved thereby.

The figures show that there is not very much variation in the general composition of the four samples.

Table III., represents the composition of two well known mixtures consisting of cocoa and other materials.

No. 8. Dr. Tibble's Vi-cocoa contains 27·10 per cent of fat and 2·77 per cent of Nitrogen. Microscopical examination shows that the bulk of the material consists of cocoa to which small quantities of ground kola nut, malt and hops have been added.

Whatever may be claimed for it as "a restorative and stimulating food" by the makers the actual figures brought out in the analysis indicate that there is less nitrogen and more indigestible fibre than exists in well known brands of pure cocoa.

No. 9. The last of these samples contains very much less original cocoa than any of the others. The figures for fat name 26·40 per cent are very similar to those found in the previous samples, but the exceptionally low figures for Nitrogen 1·15 at once indicate that other materials must be present in the mixture.

On making a microscopical examination it is seen that considerable quantities of arrowroot and coarsely crushed white sugar are present.

Probably one-half of the mixture consists of pure cocoa with the whole of its original fat left in, whilst the other half consists of the above named ingredients.

MECHANICAL CONDITION.

The figures given under the heading of fineness and state of granulation represent the readiness with which the respective powders can be passed through a sieve having a mesh of 10,000 holes to the square inch.

GENERAL SOLUBILITY.

The claim so frequently set up by certain makers that their cocoas are soluble, cannot be in any way supported by practical tests.

From a number of experiments recently made it was clearly demonstrated that the actual amount of cocoa rendered soluble by the action of boiling water continued for half an hour in no case exceeded 30 per cent; so that it is most undesirable that manufacturers should continue to put forth claims of superiority on the grounds of solubility. Cocoa is mixible, but certainly not completely soluble in hot water.

JOHN HUGHES, F I C.,
Agricultural Analyst
Analytical Laboratory, 79 Mark Lane, London, E. C.
November 9th 1899.

THE COCONUT INDUSTRY AT TRINCOMALEE.

A correspondent writes:—"The coconut industry, which has been much neglected, is beginning to attract attention Mr. Lushington's estate at Nilaveli is fully planted and the plants grow very rapidly. The soil is supposed to be the best of its kind and in process of time will compare favourably with any estates in the Eastern or North-Western Provinces. The timber, that was cut on the land, is now being sold for firewood with some profit to the owner. Several other lands on a small scale have been bought from Government and are now being converted into coconut estates."

CINNAMON IN LONDON.

The information, which has come to hand by a recent mail, on the quarterly auction sale of cinnamon held in London on the 27th ultimo, helps materially to modify the impression created by the intelligence, by wire, which we published on the 28th, that spice of ordinary quality fetched the previous sale's rates. A not unreasonable deduction from that brief message would be that there was nothing to distinguish the sale in November from its predecessor of August; and that prices had remained practically unchanged. The fact is that the two sales were as different as possible in almost every particular. In August, the quantity offered (959 bales) was below the average, the offerings for August 1898 having been over 1,500 bales; last month, the offerings were far above the average, if they did not constitute quite a record. In August almost all the cinnamon offered was disposed of in the sale room; in November considerably less than one-third found buyers. In August the demand was brisk and the prices were even; but last month the tone of the market was dull, and the variation in prices was most marked. The determining factor was that the market was over-stocked, cinnamon as a luxury being specially sensitive to over-production; while that, again, was caused to a great extent by the inrush of wild and coarse bark. Both quantity and quality thus conspired to unsettle the market.

In discussing weather and crops, and in interpreting the Export Tables, we pointed out, from time to time, that the severe drought which prevailed in the lowcountry, during the first quarter of this year, followed as it was by unusual rainlessness in June-July, would tell on the export of cinnamon and of the products of the coconut palm. After the second drought we felt that it would not be possible to make good, before the end of the year, the shortage in quilled cinnamon, though the exports of chips, scraped from sticks that will not peel, might show an increase. Almost immediately after, exports of quilled bark kept going up by leaps and bounds, in a most unaccountable way, until the phenomenon was explained by the announcement that wild bark was being shipped in large quantities. The Collector of Customs insisted on having a separate heading for what is not the true cinnamon bark of commerce; but it is to be feared that, before official notice was taken of the new departure, and before the Chamber of Commerce sounded a note of warning, a great deal of the wild stuff was sent away as cinnamon, both in bales and bags. On no other ground can we explain the shipments of quilled bark aggregating 2,414,035 lb. till the 19th instant, and coming so close to the shipments for the corresponding period of last year, which were 2,400.796 lb. The immense growth in the exports of chips—1,748,317 lb., against 1,321,806 lb. in 1898, and 1,021,838 lb. in 1897, may be referred to the droughts which compelled the scraping of coarse bark which would not peel off—though not if all the quilled bark that was shipped was genuine stuff. There is reason to fear that in chips, as in bales, the exceptionally high figures are due to dishonest dealing, and the shipment of spurious bark.

We should be glad to know that the trade in other than cultivated bark received its quietus at the sale of three weeks ago. It certainly received no encouragement at the auctions; for nearly all of it had to be withdrawn. It is probable that, up to the middle of this year, genuine cinnamon was adulterated with wild and low bark, and that high prices and a short supply encouraged the dishonest fraternity to attempt a new stroke. Nothing can check dishonest trade so effectually as the demonstration that it does not pay; and we should greatly rejoice if the new columns in our export tables would disappear, as a result of the last cinnamon sales. It is satisfactory to find that the old marks of cinnamon and the fine qualities were all disposed of, and at prices which were highly satisfactory—the finest showing advance. Even "unworked" cinnamon held its own, so that it only wants the elimination of wild cinnamon, for the market to revert to a healthy state.

The following report from the leading firm we generally quote, is of special interest at the present time:—

9 King William Street, London, E.C., Nov. 28.

Cinnamon.—The last quarterly auctions of the year were held yesterday, when about 4,450 bales Ceylon growth offered against 959 bales in August and 3,901 bales at this period last year.

The selection was not a good one, a very large proportion of the extensive supply comprising wild and low bark, nearly all of which sorts had to be withdrawn as the trade did not bid for this poor stuff.

The tone of the sales was dull but as importers met the Market, about 1,200 bales were cleared in the room.

"Worked" quill was in small supply and all sold, the top grades of fine and good at generally firm prices, and the lower qualities mostly at 1d. per lb. decline. "Unworked" went irregularly, at full rates for the better grades and easier for the inferior. "Worked" Firsts good and fine sold at 1s. 5d. to 1s. 8d.; seconds, 1s. 4d. to 1s. 5d.; thirds 1s. 2d. to 1s. 5d.; fourths 8d. to 12½d, "Unworked," first, 8d. to 1s. 3d.; seconds 8d. to 1s, thirds 7d. to 11½d, and fourths 6d. to 9½d. per lb.

Chips, &c.—The enormous supply of about 4,550 bags offered; mostly wild and bark that were neglected, some 300 bags only finding buyers at about late rates; cuttings, &c., 4½d. to 9d; bark and chips 1½d. to 3d. per lb.

Stocks Ceylon.—5,859 bales against 6,116 in 1898; 4384 in 1897 and 2,100 in 1896.

Chips.—6,705 bags against 1,920 in 1898; 4,096 in 1897 and 4062 in 1896.

The ss. "Duke of Norfolk" with a quantity of Cinnamon on board has not yet arrived.

The next auctions are fixed for 26th Feb. 1900.

THE GEOGRAPHY OF TEA.

This is the title of the paper on the above subject read at the International Geographical Congress, held in Berlin on Septembr 28th, by Mr. McEwan, F.R.G.S.—*Home and Colonial Mail*, Dec. 15.

PASSION FRUIT.

We are surprised to stumble upon some ignorant comments on an article on Passion Fruit, which appeared in our columns some weeks ago, in a paper which should know something above the subject. The *Fruit Grower* of November 30th has the following :—

It is notorious that we have to go from home to learn anything of ourselves. The Ceylon *Observer* in an article on passion fruit, tells us that "fairly successful" trial shipments of this fruit have been made from Australia to the London markets, "some of the samples being sold as high as 1s a dozen." We would like to have some particulars as to the "success" of these shipments. The *Observer* much more correctly sums up the situation with regard to passion fruit by saying that it is an excellent fruit for "local consumption."

In view of this extraordinary and ill-informed effusion we have been at the pains to refer to facts. Corroborating our statements, the following from the *Daily Telegraph* early this year and from the *Melbourne Leader* of March 3rd will be sufficient :—

Whatever may be done as regards oranges in New South Wales, it may be considered certain that an attempt will be made this season to send a good supply of passion fruit to the London market. This is a fruit in connection with which Australian growers need fear no rivalry. The obstacles to overcome are the ignorance of English people to the merits of the fruit, and the unaccountable prejudice some of the London fruit importers have against it. Why this prejudice should exist is a mystery, but that it does is evident from the published letters of Mr. F H Dangar. He was led to write owing to one firm going so far as to say that passion fruit had "no commercial value" in the London market, and he pointed out that this could only be from the fact that it was almost everywhere an untried novelty The main fact remained that it carried well, hardly a pod going wrong in a large consignment, and that by many buyers the fruit was pronounced delicious wherever sampled. The loss to exporters of passion fruit last year was occasioned chiefly by London agents not thinking it worth their while to make sales. The time will come when to be agent and salesman for Australian fruit in London will require more than a mere mechanical conveyance of the cases to a sales room and an offer there to the highest bidder.—*Daily Telegraph.*

Some time back a trial shipment of passion-fruit was sent from Pennant Hills, New South Wales to London. It was a failure, the account sales showing the disposal of thirteen cases each at one shilling per case. Some later consignments, however, fared better; and Mr. F H Dangar, of Sydney, who is now in a letter to Mr. C B Cairnes, of Parramatta, remarks :—"I am inclined to think that as the fruit was not known, the waste has been unnecessarily enlarged, and fruit rejected which was perhaps slightly shrivelled. Englishmen who used to stay with me in Sydney used to call it 'heavenly fruit,' and I am certain when this is better known higher prices will be obtained. I fear that but few Australians here knew of the shipment." Mr. Dangar mentions that when he went to England last year he took a case containing 20 dozen with him from Sydney. They were carried in the vessel's cool chamber, and when opened in London not more than six pods were found to be damaged. It seems pretty certain that a few more Australian consuls like Mr. Dangar would be invaluable to our growers (says the "Daily Telegraph"), and that it is simply absurd to ship fruit to British fruiterers who have never seen it before, and who condemn passion fruit as worthless because the skin is a little wrinkled. English business people are the most conservative men on earth in many respects, and a small consignment of unknown fruit, with some shrivelled up, could not be recognised by them as the first fruits of a new and possibly great trade. The pity of it—for the Pennant Hills people—is that Mr. Dangar did not meet Mr. Cooper when the latter was selling fruit at a shilling a case, while Mr. Dangar was giving a *shilling a dozen for all he could get*, and thinking it would be ridiculously cheap. It is quite evident that great as was the failure of the first trial the passion fruit export trade has possibilities which are in some ways greater than that of oranges, if only for the fact that they will leave the market to themselves.—*Melbourne Leader*, March 3.

PRODUCE AND PLANTING.

The Tea Market in November.—"During November the offerings at public auctions of Indian teas were 220,000 packages, against 210,000 packages in the same month of 1898. Some inferiority in quality was apparent as compared with earlier arrivals," say Messrs. McMeekin and Co., in their report, "and this was most marked in the case of some of the Darjeeling teas. The strong tone and active market noticed during October continued till the middle of the month, but after that buyers showed some unwillingness to purchase, and a material decline in the value of all descriptions took place. The average price for the month was 8½d per lb, as against 8¼d per lb. for the corresponding month of last year. The imports were 20,471,000lb, and the deliveries 13,689,000lb, leaving in stock on November 30, 52,985,000lb. The present position of tea generally is in marked contrast of twelve months ago, when attention was pointedly called to the manner in which both the home and the export demand were running ahead of the importations. For the eleven months expired of the present calendar year, the imports from all sources shown in the figures of the Tea Brokers' Association have increased by 5,700,000 lb. while the total deliveries only show an increase of 1,600,000 lb. and the stock shows an increase of 3,270,000 lb. on that of Nov. 30, 1898. The period of higher prices for common grades, which set in early in 1899, appears to have checked the increase in the rate of home and foreign consumption, which had been proceeding previously in a most satisfactory manner. It is probable that during 1899, the total increase in shipments, as compared with 1898, of Indian and Ceylon teas to countries other than the United Kingdom (including re exports from there) will be about 4,000,000 lb. while the increase in home consumption may be comparatively small. The increased crop for the Indian season will probably exceed 12,000,000 lb. and Ceylon is likely to finish up with some 5,000,000 lb. of increased yield for 1899. There is, therefore, little fear of an inadequate supply unless there is a sudden large development in the demand. The regulation of the supplies printed in auction is working well from the buyers' point of view, and so long as large unoffered first-hand stocks remain in the warehouses, there can be little inducement to run the risks and incur the expenses of buying ahead of immediate requirements especially in a declining market. Of Ceylon tea the offerings were 98,000 packages, against 100,000 packages in the same month of 1898. The quality generally showed a falling off, and really fine liquoring teas were strongly competed for throughout the month."

The Nyassaland Coffee Crop.—Advices from Blantyre say : "Seasonable rains have fallen in the Shire Highlands. The coffee crop amounts to 1,000 tons. It is expected that there will be an excellent crop next season, largely exceeding any in the past."

Reminders are Necessary.—The war absorbs so much space in the newspapers, that there is apparently no room for the insertion of the occasional paragraphs about the planters and tea planting, which at one time served to advertise Indian and Ceylon teas. It may be thought that the product of British enterprise is so popular with consumers that there is no fear of any decline in the demand. This is

so to a certain extent, but the public are fickle, and the more they see or hear about an article of produce, the more they feel disposed to take a practical interest in it. It may be noticed in this connection that one or two firms of wholesale and retail dealers, who do not make a speciality of Indian and Ceylon teas, have recently opened tea rooms in various parts of the country, where the sale of tea in the cup is combined with the sale of tea in packets. These rooms are tastefully decorated in Chinese or Japanese fashion, and ornaments from the Far East are also offered for sale. There is thus some inducement to the purchaser to try the teas of China and Japan. So long as this idea is limited in practice its effect on the Indian and Ceylon tea trade will be little or nothing. It is strange, however, that whereas shops for the sale of Chinese and Japanese articles as well as tea are not uncommon, especially at the more prominent seaside resorts, it is not often that Indian or Ceylon tea rooms are to be found. The native ware from our own possessions does not seem to possess the same charm for the British buyer, or else it is not pushed so freely as the competing article from the Far East. We have heard of a scheme for opening tea houses in London and elsewhere after the style of those in Japan. We are aware that in a feeble way some attempt has been made to establish tea rooms at which natives from India or Ceylon were employed. But the idea has not been supported, we believe, by capital to any considerable extent. It is not to be expected that capitalist unconnected with Indian and Ceylon tea will take risks that those who are interested decline, but it seems odd that if capital can be found for kindred ventures, an object which would serve a distinctly useful purpose, so far as British-grown tea is concerned, should be deemed impracticable. We are not amongst those who believe that the majority of tea drinkers care where the product is grown; value for money is the main consideration. But if a thing is talked about, advertised, and the interest in it maintained, the public are sure to demand it. That is why the need for advertisement in some form or other is particularly useful, and why there is constant necessity for reminding the public, lest they become indifferent on the subject that British-grown tea has the first claim on their attention for several reasons.

LAST WEEK'S TEA MARKET.—Teas "for price" continued in request, and were well taken at last week's rates, the lowest market quotation being still 6½d.—*Home and Colonial Mail*, Dec. 15.

COCOA IN LONDON.

Messrs. Hamel Smith & Co., East and West India merchants, report:—The demand for this article is very strong. Yesterday 20 bags of defective and very inferior were sold at 59s, and some thin and broken mixed with dust at 56s. A few weeks back such cocoa was unsaleable. Fine Ceylons would command fancy rates just now, but there are none offering. Some of the makers of cocoa and chocolate hope to have a good Christmas, as they expect the public will follow the Queen's example, and make chocolates their Christmas present.

It is expected that the Government will be buyers again next week, but if so I expect it will be mainly Guayaquils as at present there are only two sales advertised. No sales were held this week, the trade preferring to buy privately. Today's prices for Ceylon are:—56s to 59s for inferior and defective, 65s for ordinary, 68s to 76s for low middling to middling, and 87s for fine red; but prices are sure to go higher. The present stock is 6,390 bags, against 9,080 bags last year.

THE DETERIORATION OF GROUND NUTS.

The Madras Government, like the French Administration of Pondicherry, is, says the *Times of India*, addressing itself to the task of investigating the remarkable decline in the groundnut trade of the Presidency. The rapid decay of this industry has almost spelt ruin to Pondicherry, which, in addition to the great deficiency caused by the deterioration of the crop, has had to suffer the diversion of a considerable export trade to the neighbouring port of Cuddalore. The French Administration are seeking for a remedy in the direction of improving the quality of the seed, and certain superficial advantages have been obtained by the distribution of seed nuts from Mozambique and Mauritius. But although the deterioration of the seed is a factor in the decay of the industry, it is not the main one; bad farming is undoubtedly at the root of the evil. The Madras cultivator crops the same land with nuts year after year, removes all vegetation from the land, and neglects even to replenish the soil by means of fertilisers. That exhaustion of the land lies at the base of the depression is still further established by the circumstances that exotic seeds, after a year or two, suffer equally with the indigenous variety. On the suggestion of Dr. Leather, the Madras Department of Agriculture is arranging for a series of analyses to determine whether the local nut is as poor as it is commonly reputed to be. The information, no doubt, will be useful, but we should be glad to see some more practical measure in progress to conserve an industry which is well worth preserving. This is not a case of good groundnut oil being elbowed aside by inferior substitutes. The Marseilles soap boiling firms "await with impatience" the moment when groundnut oil shall again be procurable. It ought not to be beyond the powers of the Agricultural Department to direct the ryot to supply that demand.

SPRING VALLEY COFFEE COMPANY, LIMITED.

The following report was to be presented to the thirty-fifth ordinary general meeting of the Company held at No. 5, Dowgate Hill, London, on Thursday, the 21st December.

The crop of tea for the past season amounted to 396,800 lb., and this, together with 90,782 lb. bought from neighbouring estates and manufactured at Spring Valley, sold for £15,711 17s 10d, the average selling price being 7·73 pence against 8·24 pence obtained last year.

The crop from the few remaining coffee trees amounted to 234 cwts. 3 qrs. 8 lb., and realized £738 6s 1d, being at the rate of 62s 10d per cwt., against 96s 5d obtained for the 1897-1898 crop.

The total proceeds from the sales of produce amounted to £16,450 3s 11d, and expenditure in Ceylon and London to £14,314 13s 11d, leaving a profit on the year's working of £2,135 10s. To this, profit has to be added a sum of £363 6s 7d, brought forward from last year, and after debiting £26 10s for Income Tax and £900 for Dividend on the Preference Share capital to 31st July, 1899, there remains a balance of £1,572 6s 7d to be now dealt with.

The Directors recommend the payment of a Dividend of 1½ per cent on the Ordinary Capital, which will absorb £1,200 of the above sum, and that the balance of £372 6s 7d be carried forward to next year.

During the past year the sum of £3,522 11s 8d has been spent on Capital Account on the extension of the tea area and factory accommodation.

The Directors have to report that the severe drought and unfavourable weather referred to in the last annual report continued almost without intermission throughout the past season. The crop of tea has in consequence been most disappointing, the yield from the 1,217 acres in bearing having fallen to 326 lb. per acre, against 375 lb. and 440 lb. secured during the two preceding years respectively.

The climatic conditions which prevailed during the past year are not usual in the Badulla district, and, with a return to normal weather, former yields may be looked for with confidence.

The Tea Factory has been successfully completed, and the whole of our available area planted with tea and fuel, the latter on steep faces unsuitable for tea.

With the large area of tea coming rapidly into bearing, and with the facilities for manufacture we now possess, it is expected that important savings in the cost of production will be effected in the future.

Our Manager is of opinion that estimates will be more easily framed and worked to, now that the property is converted into a tea garden, if the financial year were made to terminate on the 31st December in place of 31st July. Accounts for the five months ending on the 31st December next will therefore be presented to Shareholders early in 1900 in order to bring this into effect.

The area of the estate as on 31st July, 1899, was as follows:—

TEA.			
5 years old and over		1045	acres.
Planted November/December..	1894	172	,,
,, ...	1895	145	,,
,, ...	1896	159	,,
,, ...	1897	194	,,
,, ...	1898	196	,,
Total under Tea ..		1,911	,,
Total under Fuel ...		163	,,
Forest, &c. ..		257	,,
Total Area ...		2,331	acres

Mr. J G Wardrop, a member of the Board, retires on this occasion, and, being eligible, offers himself for re-election. Messrs. Deloitte, Devor, Griffiths & Co., the Auditors, also offer themselves for re-election.

TEA CORPORATION, LTD. (OF CEYLON.

Report of the Directors, and Accounts for the year ending 30th June, 1899, submitted to the annual General Meeting of Shareholders on the 19th Dec.

The Directors beg to submit herewith the Accounts of the Corporation for the year ending 30th June, 1899, which, compared with those of the previous year, must be considered satisfactory.

It will be seen by the working accounts that the gross amount of Tea produced on the estates was 1,234,442 lbs. The cost f.o.b was 26·10 cents per lb., which is nearly 6 cents or 1d. per lb. less than it was during the previous year. The average price obtained was 6⅝d. gross and 5 15-16d. nett per lb., this also being a great improvement on 1897-98. To the profit on Tea is added that on Sundry Produce, amounting to £592 14s., thus making a total of £8,867 19s. to be carried to Profit and Loss Account.

This account shows a profit of £4,327 1s. 9d., after the deduction of London Expenses and debenture Interest, etc. From this must be further deducted the loss on last year, amounting to £1,620 6s., leaving a nett profit of £2,706 15s. 9d. as shown in the Balance Sheet.

A dividend on the Preference Shares up to the end of February, 1898, was paid on 1st August last.

It is proposed to write off £393 9s. 0d. from preliminary expenses, thus reducing that account to £1,300.

The results of the year, though bearing a favourable comparison with 1897-98 do not come up to expectation; this was mainly owing to a serious drought in the early part of this year, followed by long-continued rains. In view of these circumstances, it is satisfactory that an increased crop should have been obtained, and that at the same time an evident improvement in the quality of the Tea has been shown.

Mr. Tatham hopes to secure over 1,250,000 lb. of Tea for the current year at under 27 cents per lb., and about 300 cwts. of Cocoa, and in his last letter to the Board states as follows:—

"I have no doubt that I shall procure my estimate and also realise a better price for the Teas than I did last year, owing entirely to the manure, which has enabled me to pluck finer and still increase my yield."

At Doteloya alone there is a considerable acreage of land admirably suited to the growing of tea. Mr. Tatham strongly urges that this should be planted up, and Mr. E H Hancock, who has visited the property, thoroughly endorses this opinion. The Directors therefore recommend, subject to the approval of the Shareholders, that an additional amount of £20,000 debenture stock should be raised for the purpose of developing the Company's property. Your Directors would not require the whole amount at once, as the expenditure would be spread over the next three years; they would therefore only call up this additional stock as occasion required. It is proposed that the stock should in the first instance be offered to the present Shareholders at the price of 90 per £100 stock.

For some months past negotiations have been on foot for working the Plumbago on the Company's estates, but in consequence of information received by the Board from Mr. Tatham, as to the value of the vein which has recently been found, the Directors have thought it advisable not to lease the rights, on the terms already proposed, without placing the matter before the Shareholders.

Mr. E H Hancock, on his return from Ceylon, joined the Board in place of Mr. H A Hancock.

The Directors retiring in rotation, are Mr. E H Hancock and Mr. T J Lawrance, who, being eligible offer themselves for re-election.

The Auditors, Messrs. Broads, Paterson & Co., also retire and offer themselves for re-election.

CACAO CULTURE.

IT may be true, as stated recently by an experienced London broker in the cacao trade, that the Ceylon product does not come into competition with that of Trinidad or, we suppose, with the cacao of Mexico, Nicaragua, Ecuador, &c. But it must be, nevertheless, a fact that increased production in these Western lands tends to affect the market, unless consumption keeps pace, more especially on the Continent of Europe. We have just been reading a Report on "Cacao Culture in Ecuador" (see elsewhere) which shows that production in that South American State has been increasing since 1836 and that the crop for 1899 is expected to be close on 600,000 cwt. or fifteen times the outturn of Ceylon! This, however, must either be a great exaggeration, or the quantity required for home consumption must be very large. Hitherto, judging by shipments, we have credited Ecuador and Peru with an outturn of 360,000 cwt. and a home consumption of about 90,000 cwt. There can be no doubt that Ecuador has a great deal of land, and the perfection of climate, for cacao culture; but fortunately for Ceylon,

the labour difficulty prevents any rapid extension of plantations in the 20,000 square miles of the coast provinces which are considered to be adapted to the cultivation.

Turning to another cacao-producing country —Mexico—we direct attention to the interesting letter (given on page 483) from an old Ceylon coffee planter, Mr. F. O. Darley, so long resident in the Knuckles district. Who would not hasten to Mexico if all Mr. Darley states be realisable; but how can our correspondent explain the failure of the group of hard-headed Ceylon men who visited Mexico in 1897 and 1898 to take up land or make investments? Surely they had information, such as is now offered to us, placed before them? And yet going to see the country and the plantations for themselves, they deliberately declined to make an investment And yet Mr. Darley tells us that a profit of £120 to £150 per hectare—*£50 to £60 per acre*—is to be got after an outlay of only £8 per acre for any one who will wait five years —the crops being equal to over 16 cwt. of cocoa per acre. This is, we fear, too sanguine an estimate to be at all reliable. Indeed, Mr. Darley's own figures of value of crop will scarcely allow the profit he names and surely 40 cents of a dollar (or say 10d) per lb is too high a price for Mexican cacao, being close on 90s a cwt? No doubt the United States supply a grand market for the produce of Mexico; but it must be under extremely favourable circumstances when even £50 worth of cacao per acre as the gross result is realized. So in the case of rubber; to secure £2,000 worth of rubber for an outlay of £1,600 spread over five years should be tempting enough to draw abundance of capital to Mexico; but, as we mentioned, the Ceylon visitors of 1897-8 did not see their way to recommend investments. At the same time, it may be said that if Mr. Darley's estimates are halved in their next result, they should be good enough. Sugar, it will be seen, is estimated to pay £36 an acre; and coffee is without disease. Mr. Darley must really tell us a little more about this "Paradise of the West." Let him give us his own experience—a plain unvarnished tale as a practical planter—since he first landed in Mexico. What about labour, taxes, police? Let us hear some of the drawbacks, and the reason why British and American capitalists have not long ago taken up all available land to grow products so much in request in the adjacent extensive markets of the United States.

THE SUGAR INDUSTRY.

We have received a copy of a Glasgow paper with information as to new sugar machinery prepared by a Clyde firm for the important Penang and Straits Sugar Companies, represented by the gentleman who is anxious to inspect North-Central and North-East Ceylon with reference to the location of a similar industry. It would be supposed that the further development of extensive operations in the Straits Settlements would be more than enough for the enterprise of Sir John Ramsden and his fellow-Directors and Agent; but apparently not, there being abundance of capital available for nay proposal recommended by their trusted Manager. Of course, the result of the required inspection has yet to be made manifest. But meantime we append the extract above referred to from our Glasgow contemporary; and it will be observed that Porto Rico is to receive new machinery from the Clyde, as well as the Straits Settlements:—

The well-known firm of sugar machinery engineers, Messrs. M'Onie, Harvey & Company (Limited), of this city, have just completed some specially heavy cane crushing machinery for the Penang Sugar Estates Company, of London and Penang, cf which Sir John W. Ramsden, Bart., of Huddersfield, is the proprietor. The machinery consists of two sets of regrinding sugarcane mills, the rollers being 36 inches diameter by 72 inches long; these are fitted with steel shafts of great strength, having journals 17 inches diameter by 24 inches long, and are carried on side frames of extra strength, which have through side and main top bolts of heavy section of steel, the latter so arranged as to give the narrowest possible return plate. The returner is of the Rocker type, and consists of a deep beam of cast steel supported on strong brackets from the bottom of bedplate up through the side frames. The rollers run in heavy gunmetal bearings, which are cast hollow for the purpose of water circulation, thus assisting to keep the bearings cool, which is a consideration, owing to the great pressure now exerted by these large mills so as to extract all the juice out of the canes. The mills are fitted with strong, self-acting carriers for feeding the canes into the mill, also mechanical carriers for removing the crushed cane to the steam boilers. The mills are driven by powerful horizontal engines of the Corliss Frame pattern, having piston valves, the steam cylinders being 28 in. diameter by 48 in. stroke, are fitted with link reversing motion and sensitive high speed governor. The fly-wheels are extra heavy, and built in centre. arms, and segments for shipment abroad. These engines transmit their power through strong double gearing to the mill; all the spur pinions of this gearing and the large pinions on the roller shafts are made of the best Siemens' cast steel; the main and intermediate spur-wheels are built, and the segments of these wheels are also of cast steel; the shafts of these wheels are of best forged steel and large proportions, suitable for the work required. The whole as erected in the works has a very fine appearance, and has just been inspected by Sir John Ramsden, Bart, and Mr. Underdown, Q.C., of London, along with Mr. Arnold, the secretary, and Mr. Turner, the company's administrator in Penang.

Messrs. M'Onie, Harvey & Co. (Limited) have also in progress another powerful plant, the first of several to be erected for the Straits Sugar Company (Limited), of London, in which the same gentlemen are interested, consisting of engine, mill, and gearing, being duplicates in all respects of these already described, but this plant is for the manufacture of what is called in the Straits "basket sugar," or Muscovado; but in place of the usual copper wall used generally in the manufacture of this quality of sugar Mr. Turner intends using a Harvey triple effet evaporator, which will be a saving in fuel and labour, as well as improved recovery in the sugar obtained. After the syrup is brought to a high density it is treated in a special manner by a patent process of Mr. Miller, the chemist of the above company in Penang. By the Miller process the syrup is kept at a low temperature, so that there is no danger of its being charred, as sometimes occurs in the usual copper wall. Thus all the water is taken out of the syrup at a low temperature, and is then run into another

vessel, where it is kept in motion until it granulates into a solid mass of raw sugar, and is used in this state by the natives in the East or sold to refiners and brewers.

The advantages claimed for this process are that no molasses are produced, that the sugar will give a high recovery, and with the low temperature at which the juice is treated in the triple effet and in Miller's patent granulators there will be less loss from inversion, as compared with the present system of making Muscovado sugar on the copper wall with open evaporation. Also the process is simple, as no vacuum pans nor centrifugals are required.

The late hurricane in Porto Rico caused great damage to all the sugar estates in that island, and a number of the estates were levelled to the ground. Three of these damaged estates are now being amalgamated to make a central sugar factory, and the work has been entrusted to Messrs. M'Onie, Harvey and Company, (Limited). The success of this new venture may induce other planters to do likewise.

A DAY'S WORK ON A CEYLON TEA ESTATE.

"Master, Wake! Master, Wake!" This combined with a tremendous banging, announced that another day's work was beginning and that my worthy appu (cook) was endeavouring to awake me to a sense of my many duties. Having eaten early breakfast, or rather confined myself to a slice of pineapple, as eating anything at that hour —5-30—is always to me impossible, and walked to the factory (the place where the green tea leaf is converted into the saleable article) about 200 yards from my bungalow, I found most of the coolies already assembled, and others being hurried along by the kanganis (native overseers) to the mustering ground. The first thing on these occasions is to make oneself heard, and having succeeded, with the help of the conductor (the head native overseer, usually English speaking), in this, the next thing is to tell off the different gangs to their various works. This is frequently a work of extreme difficulty, as the coolies often like some work very much better than others, and the way they can slip from one gang to another without being seen is wonderful. And then there are the ladies to contend against little kutties (native girls) of most innocent appearance, swearing hat their feet are full of thorns and that they cannot work today, or that their great uncle died in the night and they must have three days' mourning with unlimited rice that he may be properly buried so that the various devils cannot get at him.

NATIVE FUNERALS ARE IN THIS COUNTRY made an occasion of great feasting, generally ending in all parties getting very drunk and indulging in a free fight, thus paving the way for another funeral. However, after a great deal of shouting and an occasional mild use of the stick, though this is to be deprecated, all are got into working order and marched off to various parts of the estate in charge of their respective kanganies. Then there is time to light the first pipe of the day and try to remember how many mistakes you have made at the muster in sending large gangs of coolies to works that only require a few, and *vice versa.*

This train of thought leads on to another, in which the likelihood of the manager's liver being slightly out of order, and the probable consequences when he comes on his morning's round to the various works, form a leading part,

THE MANAGER'S LIVER, especially if he happens, to be an elderly gentleman who has spent some years in the East, is always a matter of considerable interest to assistants on tea estates. But there is not much time to waste, and as a gang of men are pruning a field near, we just visit them. This is rather skilled labour, and the best coolies are usually selected for it, as a great deal depends on a field being properly pruned. Each man has his line of tea bushes, and they are cut down to about 18in. above the ground. Great care must be taken to make the coolies cut the branches off so that when the bush is pruned the tops of the cut branches form a level surface, and all cross branches and small twigs are or should be taken off. Half the coolies come to us and say that their knives are useless, or their hands are hurt, and the other half are usually doing very bad work: so that we may count on a lively half hour with these gentlemen. Their excuses are wonderful and manifold. It is here that an intimate knowledge of the Tamil language is so useful, as when the first coolie comes up with some stupid complaint, and you are able to draw comparisons in proper coolie Tamil between the man addressing you and one who is useless, it serves to deter the rest to a great extent. Of course, there are often real cases where a man cannot do the work, and if so he is sent to the pluckers in the next field.

Having looked carefully over the pruning, and informed any coolie doing bad work of your opinion of himself, his father, mother, sisters, brothers, and ancestors generally, and threatened the most awful penalties if he does not mend his ways, we proceed to the next field, where the pluckers are engaged. Here is the main body of the coolies, mostly women and boys and girls who are not strong enough to do other works, but are usually far quicker and handier than men at plucking. They all have baskets on their shoulders, into which they put the leaf. Only the young shoots are taken, and all coarse leaf must be left alone.

THE KANGANIS ARE SUPPOSED TO GO constantly round to see that the baskets contain nothing but good leaf, and woe betide the unfortu- nate assistant if the manager receives a note from tea maker (the man in charge of the factory, usually a more or less educated native) to say that the day's leaf is unsatisfactory. We stay some time with these coolies, as the work has to be carefully looked after, and so we go up and down the line of pluckers, and soon, on looking into the baskets, find several faults. Some coolies are

MISSING GOOD LEAF that is, leaving a bush before they have taken all the young and good leaf from it, or putting big, coarse leaves, which have the effect of giving the made tea a rank, bitter taste, into the baskets. It is a most important thing to see that all the flush (young leaf) is taken, as if there is any left it stops the young shoots sprouting, and instead there is only big, coarse the tea maker leaf where, if previously the bush had been properly treated, there would be young stuff fit for the tea factory. A field takes from ten days to three weeks between pluckings, depending on the weather and caste of tea. The young shoots are very sensitive to climate, and too much dry or wet weather is quite enough to stop the flush coming on. I am talking, of course, of Ceylon only; it may be different in Assam.

Having lectured the kanganies and looked over the trees already plucked, and probably indulged in a little chaff at the expense of erring coolies, we proceed round the estate. About this time the manager usually makes his appearance on his morning's round before going to the office, and if there is anything wrong it is as well to draw a veil over the meeting between the senior and junior superintendents, more especially if the aforesaid manager has had a late night with some friends, and is possessed of a head, liver, &c. Coolies clearing up roads and drains—the latter most important in a mountainous country like Ceylon, where the rainfall is heavy and wash therefore very great—are seen, too, on our way to the next work, where a gang of men are making a nursery for some seed. This is done by making beds of earth about 6in. high and putting very fine soil on the top. A fence must be put round if there is jungle near, or deer, pig, &c., will make short work of the young plants as they are coming up. On our way back to the pluckers we take the opportunity to see if the weeds are being kept down. This is done usually by giving the kanganis contracts about the estate of from ten to thirty acres, at about one rupee per acre: they are then entirely responsible for that piece of land as regards weeds and if many are found there they are liable to be fined; but, as they generally manage to make money out of the weeding, it does not as a rule give much trouble.

It is now 10-30 a.m., and time to weigh up the pluckers for the morning leaf. The conductor produces pocket scales and a kangani's name is called out. We open the

PLUCKING BOOK,

and find in it written the names of all the coolies belonging to his gang, as each kangani, before being taken on by the estate, has to bring so many coolies, for which he is paid what is called head money, at about 4 cents per day for every coolie that is working in his gang. On the coolie's name being called he or she steps out, and the conductor weighs her basket and tells us how many pounds of leaf she has plucked this morning, which is put against her name. All the coolies of that kangani's gang having been weighed, we pass on to the next gang, and so on until it is finished, and the leaf, put in sacks, is carried to the factory by boys. The weighing up finished, we go to breakfast, and have two hours spell before tackling the afternoon's labours, which are much the same as the morning's, and about 4 p.m. a coolie blows a horn and we go to evening muster, when all the coolies' names are taken down who have worked through the day and the pluckers' leaf weighed up a second time. If the work of anyone is unsatisfactoy, it is usual to give the offending party what is called half name, that is, make a mark in the name book (commonly known as the check roll) against that coolie, to signify that he is only to get half pay for the day's work. Very young assistants, and sometimes older ones too, are often much too apt to do this for trifling faults; it should be only done when the offender really deserves it or otherwise it only tends to dishearten coolies and make them careless.

Having despatched the

LEAF SACKS TO THE FACTORY

and given any sick person medicine, and listened to any of the kanganis' complaints, as they generally choose this time in the day to ventilate their grievances, we retrace our steps to the bungalow, and, if there is a court near, play tennis, or cricket practice perhaps claims us. In some districts there are a number of things to do in the way of sport, cricket, football (both Rugby and Association), and hockey being played regularly, and as there are always plenty of young men of the right sort, public school or 'Varsity many of them, there is no difficulty in getting good teams together. Some of the pleasantest days I have ever had have been when playing for my district against neighbouring ones.

The salary of an assistant superintendent is small, about 125·00 rupees, or £8, per month, but living is not expensive and this with perhaps a little help from home, should be enough, as an assistant is not expected to entertain, and he will find the subscriptions, &c., to the various sports he may go in for very small. The life, if a little monotonous, is, nevertheless, a very jolly one, as you are always out of doors, and. as most of the tea estates are in the hills, the climate is usually very good; in fact, where I am, at an elevation of about 5,000ft., it is almost perfection, and fires are very often required in the evening.

A young gentleman of good family, more especially if he is a public school man, will have a very good time, as he will find plenty of good fellows round him if he goes to a big planting district, such as Dimbula or Dikoya. After he has served his time of probation, known in the island as creeperdom which is very often the hardest time he will have, and gets an assistant's billet, he will find the life on the whole a good one, though, without influence of some sort, it is not very easy to get on quickly, and for some time, he will require help from home as regards money matters.

—*Field*, Dec. 9. PLANTER.

THE CEYLON TEA CROP IN 1899.

THE total exports for 1899 (according to the Chamber of Commerce figures) show a greater jump forward than for any of the past four years. The increase over 1898 is more than 10 million lb., and we have to go back to 1895-6 for a similar ratio of advance. We need scarcely say, too, that the outturn is decidedly in advance of the estimate of the Planters' Association as framed in the early part of 1899, and confirmed in September last. The comparison between estimates and results may be seen from the following:—

ESTIMATE.

	lb.
P. A. Estimate of Total Crop (1899) ..	126,500,000
Local Consumption ...	1,500,000
Total shipments ...	125,000,000
of which to United Kingdom ..	93,000,000
Leaving for other Countries ..	32,000,000

ACTUAL RESULT.

	lb.
Total Export 1899 (Chamber of Commerce)	129,894,156
To United Kingdom ...	103,948,124
Other Countries ..	25,946,032
For 1898 Total ..	119,769,071
To United Kingdom ..	96,133,833
Other Countries ...	23,635,238
Increase to other Countries ...	2,310,794

It will be observed that the United Kingdom got well-nigh 11 million lb, more tea than

was estimated, while the shipments to "other countries" did not reach anticipations by 6 million lb. "Thank heaven for the London market" being able to take off so much, one is inclined to say, in the face of such figures. Of course, if by increasing the offerings in the Colombo market, more tea could be diverted to "other countries," and especially to Russia, not a day should be lost on the part of proprietors or their agents—where free to make the change—in supporting "Colombo" and testing the statement that such tea would be bought at profitable rates for direct shipment. Meantime, it is of interest to note the distribution, and comparison between the two years, for "other countries." In the first place it is difficult to understand how the P. A. Committee came to estimate less for 1899 to the United Kingdom than was actually delivered in 1898; and in the second place, the total to other countries only showing an advance of 2,310,780 lb. is distinctly disappointing. From the details given by the Chamber, it will be seen that there has been a comparative decrease to Austria, France, Germany, Spain "India" (for Persian Gulf, etc.) and Africa; while to America and Australia the increase is by no means equal to expectations. To Russia the direct shipments compare as follows:—

1899	...	.. 3,949,740 lb.
1898	...	.. 2,714,003 ,,
Increase	..	.. 1,235,737 lb.

It is said that if a larger quantity of tea had been sold in Colombo, more would have gone to Russia; but it must be remembered that 37½ million lb. were offered in Colombo in 1899, of which only 31 million were sold; and as shown, only 26 million sent to other countries than the United Kingdom. Let us hope that 1900 may show a much better result, more especially in regard to America and the Continent of Europe. The Chamber's comparison is as follows:—

EXPORTS OF CEYLON TEA TO OTHER COUNTRIES,

January 1st to December 31st, 1899.

	1869. lb.	1898. lb.	Increase lb.	Decrease lb.
Austria	8,231	14,873	—	6,642
Belgium	14,424	13,590	834	—
France	98,952	100,001	—	1,049
Germany	346,959	352,252	—	5,293
Holland	30,211	26,351	3,860	—
Italy	13,521	6,730	6,791	—
Russia	3,949,740	2,714,003	1,235,737	—
Spain	18,700	44,650	—	25,950
Sweden	78,088	42,471	35,617	—
Turkey	18,733	73,974	—	55,241
India	567,616	1,091,559	—	523,943
Australia	15,606,833	15,126,891	479,942	—
America	3,080,002	2,180,188	899,814	—
Africa	288,239	372,242	—	84,003
China	1,384,490	1,185,445	199,045	—
Singapore	83,813	59,867	23,946	—
Mauritius	100,248	33,299	66,949	—
Malta	257,232	196,852	60,380	—
Total	25,946,032	23,635,238	3,012,915	702,121

Increase	3,012,915 lb.
Deduct Decrease	702,121 ,,
Net Increase	2,310,794 lb.

Refering to past year's estimates and results, we take over the following from our Handbook and Directory as of interest at this time:—

CEYLON TEA EXPORTS.

	Estimated by Planters' Association. lb.	Estimated by Messrs. Forbes & Walker. lb.	Exports as per Chamber of Commerce Returns. lb.	Exports according to Customs Returns. lb.
1899	125,000,000	125,000,000	129,894,156	—
1898	120,000,000	124 000,000	119,769,071	122,113,573
1897	119,000,000	120,000,000	110,054,567	114,466,318
1896	101,000,000	105,000,000	108 141,412	110,095,358
1895	90,000,000	89,000,000	97,939 871	98,581,060
1894	88,000,000	90,000,000	84,591,714	85,376,322
1893	77,000,000	78,000,000	84,406,064	82,269,353
	"Observer" Office Estimates.			
1892	80 000,000*		71,153,657	72 279,984
1891	68 000,000		68,274,429	67,719,371
1890	46,500,000		46,901,554	45,799,512
1889	32,000,000		34,048,085	34,345,859

It may be explained that the Customs enter the exports as each shipment is put on board a vessel in the harbour: while the Chamber only takes cognizance of the vessels and cargoes as they clear from the port.

A NEW INDUSTRY.

A Cityman writes under date London, 15th December:—"Talking to a man down Mincing Lane, with whom I have been connected in the Indian Bird, Bristle and Cow Tail Hair trades, for a good many years, the idea struck me that perhaps Ceylon might find it to her interest to do a trade in these articles. So I send you a report of each to show the prices realised at the last sales. The Bristle report is hardly a fair one as it does not give any description, but I can say Bristles are now selling very high. They must be stiff, and well washed, the different lengths tied up in bundles with strings of about 1½ to 2 inches in diameter. It is a large trade and pays well as the demand for fine Bristles exceeds the supply. They come over in cases of about 100 lb. Cow Tail Hair is sent press packed in bales of 3,400 lb. Anyone wanting to see if they can do anything with these articles, had better send a sample per sample post, which I will get valued free of charge with pleasure; then they send a small trial shipment, if the valuation seems satisfactory. In this way no one can lose much even if the experiment does not pay." The report is as follows:—

"I enclose Hale and Son's, Bird and Bristle report of prices obtained at public sale for these articles from India and elsewhere. Could not your people do something in these lines to their advantage? Cow Tail Hair well washed and free of skin sells at 10d lb. which I believe leaves the Indian trader a large profit, as they were content with 5d not long ago. If your readers want any further information I shall be pleased to send it, and will get any samples they care to send, valued and reported on free of charge."

* Planters and merchants whom we consulted were greatly out in their anticipations for 1892: in consequence of the very large increase of 22 million lb. between 1890 and 1891, it was felt to be quite safe to put on another increase of 12 million between 1891 and 1892: but the result only showed 4½ million lb. of increase by the Customs figures.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees. R. N. Lyne, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price according to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Sterculia Acuminata.—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, Eucalyptus various varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—MESSRS. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address:
WILLIAM, VEYANGODA, CEYLON.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
HENARATGODA, CEYLON.

THE HEAVIEST-YIELDING TEA PLANTATION IN CEYLON—IF NOT IN THE WORLD?

Mariawatte plantation near Gampola—opened originally in tea by the late Mr. David Reid with Messrs. Rutherford, Tod and Mackay as partners and now owned by the Ceylon Tea Plantation Company, Limited—has brought much credit to the Tea Enterprise of Ceylon as well as much profit to its fortunate proprietors. It covers a considerable portion of the site of Royal Gardens belonging to the Kandyan Kings, which came into possession of the Byrde family, and by them was cultivated by coffee, but never with much success. This is explained by the easy undulating, almost flat, character of most of the fields, which does not at all suit a fruit crop like coffee; while tea revels in flats where the soil is fairly good or well-manured. In the assets of the late firm of Messrs. Byrde & Co., het Gampola lands were put down for a mere trifle, so little did the experienced coffee planting valuators anticipate that they would ever include the richest tea plantation in Ceylon. But such a few years later proved to be the case, and it will be seen from the interesting return appended—which we owe to the Company's Manager—that tea reaching now to 20 years old shows no sign of falling off, but rather gave an increase of crop during the past year. Mariawatte began to be a show-place for visitors interested in tea about 1885-1888, and we can recall Assam proprietors (of whom we had many calling in those days) declaring to us, after an inspection of the estate and of other upcountry places, that they were quite satisfied *tea could not last in Ceylon*—that 8 or 10 years more would see both the bushes and the soil exhausted! Twelve and fourteen years have already passed and yet Mariawatte continues to flourish exceedingly; while we have heard of no abatement of vigour in the tea of Loolecondura, Hewaheta, which includes one of the oldest fields in regular cultivation in Ceylon, namely 30 to 32 years of age. This is very satisfactory in reference to the permanence of the industry, which, indeed, is based on a shrub, regarded by the Kandyans as a regular jungle plant, and not a temporary visitor like coffee. Meantime here is the return which has just come to hand and which will, as usual, be embodied in our *Handbook*:—

MARIAWATTE ESTATE.

Yield of old Tea, 101A. 1R. 0P.

Year.	Made Tea lb.	Yield per acre lb.
1884	109,230	1,078
1885	117,842	1,163
1886	105,925	1,046
1887	115,996	1,145
1888	106,410	1,050
1889	113,834	1,124
1890	140,144	1,384
1891	120,366	1,188
1892	119,909	1,184
1893	115,440	1,140
1894	110,448	1,090
1895	118,560	1,170
1896	113,360	1,119
1897	105,729	1,044
1898	108,423	1,073
1899	111,987	1,108

Yield for the whole Estate, 458A. 1R. 17P.

Year.	lb.	Rainfall.
1892	643	95·74
1893	817	86·22
1894	750	72·00
1895	886	100·28
1896	896	115·41
1897	926	111·25
1898	738	79·90
1899	749	106·81

Mariawatte Estate, Gampola, 1st Jan., 1900.

D. M. SALMOND. Superintendent.

CACAO AND THE AGRICULTURAL SOCIETY OF TRINIDAD.

Botanical Department, Trinidad.

E. Tripp, Esq., Secretary, Agricultural Society, Port of Spain.

Sir.—I beg to forward herewith a report upon a portion of diseased Cacao recently forwarded to this Department by a prominent planter, who reports that many trees are affected.

The Fungus now reported upon is quite distinct from those formerly described as phytopthora omnivora and nectria bainii—but is a species of the latter genus, which is thought to be identical with that attacking the Cacao trees in Ceylon.

The treatment recommended by Mr. Massee is simple and I would strongly urge that it should be followed by our planters wherever the disease is seen. I should be glad to have the report laid before the Society.—I am, yours truly, J. H. HART, F.L.S.

DISEASED CACAO BARK FROM TRINIDAD.

The bark is killed by a parasitic fungus, a species of Nectria. The sketch in the letter that acompanied the bark represents the conidial-Fusarium stage, and the densely clustered, bright red spots-on the outside of the bark are the ascigerous condition. These latter, which appear after the conidial stage, had probably developed during the journey.

The symptoms appear to be absolutely identical with the Cacao disease in Ceylon, but as no scientific report has yet appeared, it is impossible to state whether the West Indian Nectria is specifically identical with the one causing damage in Ceylon.

Damp, stuffy, conditions favour the disease, and as Nectrias are wound fungi, care should be taken to minimise the number of bark wounds.

Cut out diseased portions and wash the wound with corrosive sublimate in methylated spirit, afterwards cover with tar or other suitable material. The conidial form which appears under the form of small white patches, should be sought for, and destroyed as above,

G. M.

2-11-99.

The above is—Mr. Massee's report.

Received from Director Royal Gardens Kew, November 29th, 1899.

J. H. H.

(*Port-of-Spain Gazette*, Dec. 7, 1899.)

CORROSIVE SUBLIMATE FOR CACAO BARK DISEASES.

TO THE EDITOR OF THE PORT-OF-SPAIN "GAZETTE."

Sir,—Mr. Massee's report accompanying Mr. Hart's letter, published by Mr. Tripp in today's *Gazette* will be read and welcomed by the cacao proprietors of Trinidad.

It is satisfactory to know, on the authority of Kew Gardens, to which we owe so much, that the cacao-bark disease is due to the parasitic fungus "nectria" and that corrosive sublimate will eradicate it, and planters will gladly turn to the remedy.

It is well, however, that directions should be given for the use of such a powerful disinfectant and poison; and pending such directions from the Botanical authorities, it should be generally known that corrosive sublimate corrodes metals, and can only be used in glass, porcelain, or vulcanite vessels—In solu-

tion, one in 1,000,000 will hinder the growth of anthrax bacilli, while one grain in five gallons of water will entirely prevent their growth. A solution of one in 500 is irritating to hands and skin, and probably one in 5,000 is quite strong enough for ordinary solutions.—I am, Sir, Your Obedient Servant,

FITZGERALD PROCTOR, M.R.C.S., England.

Port-of-Spain, Dec. 6th, 1899.

TEA CORPORATION LIMITED (OF CEYLON.)

The annual general meeting of the Tea Corporation, Limited (of Ceylon), was held at Winchester House, Old Broad-street, on Tuesday, the chairman (Mr. Cyril Gurney) presiding.

The SECRETARY (Mr. E. T. Bartlett) having read the notice convening the meeting,

The CHAIRMAN said: Gentlemen, you have all received the accounts for the year ended June 30 last, and I think that I shall best explain the results of the year's working by going shortly through them. With regard to the working account, you will see that the gross amount of tea produced on our estates for the year under review was 1,234,442 lb. This was by no means so large a crop as we had hoped to secure, the shortage being mainly due to the long drought and subsequent exceptionally heavy rains which greatly interfered with the cultivation in the latter part of the year; it is satisfactory, however, to find that we have an increase of quite 100,000 lb. on the crop of the previous year. With regard to the price the tea sold for—it fetched an average of 6⅝d. per pound gross, or just under 6d. per pound net, after deducting all the usual expenses, which amounted to less than 1d. per pound. The net price of just under 6d. was a great improvement on the previous year, and we are pleased to be able to say that we have—after much trouble—been successful in effecting a great change for the better in the quality and make of the tea. As you will have seen from the report, Mr. Tatham hopes to show a further improvement in quality this year, from being able to pluck finer, while at the same time increasing the quantity; we hope, therefore, with favourable markets, to show a continued improvement this year in the price our tea fetches. With regerd to this I should like to emphasise what has already been referred to in the report—viz., the increased return that may be looked for as the result of manuring. As soon as your directors got possession of the estates they instructed Mr. Tatham to apply manure where it was most needed, and though this is, of course, responsible to some extent for the improved quality of the tea plucked this year, we have not yet experienced the full benefit of this expenditure. During the year covered by these accounts we have spent a considerable sum in manuring other parts of the estates, the results of which will continue to be felt for the next two or three years. The whole of this expense has been charged to profit and loss account. The total profit carried to profit and loss account is £8,867 19s, from which must be deducted rent, office expenses, salaries, directors' and trustees' fees, &c., amounting to £1,057 4s 4d, also interest, £3,356 18s 8d, &c., leaving a balance of £4,327 1s 9d carried to the balance-sheet. With this sum we have written off the loss of last year, amounting to £1,620 6s, paid £1,950 preference interest, and propose to write off £393 9s, from preliminary expenses, carrying forward £363 6s 9d. With regard to the year beginning on June 30 last, we expect to obtain fully 1,250,000 lb. of tea. At present, in spite of bad pluckings in July and August, which was due to previous heavy rains, we have an increase on 1898-99 crop, and Mr. Tatham is quite sanguine that the estimate will be fully obtained—indeed, unless something unexpected happens there seems little doubt that we shall have an increase over last year. The cost of production is estimated a trifle higher than last year, but this includes a liberal expenditure for manure, which, as I have already said, your directors consider a profitable expenditure; but we have sent out instructions that every economy is to be exercised consistently with good cultivation and management. Sales of this year's tea during the last three months show that on an average a higher price has been obtained than in the same period of last year, though there has been no corresponding increase in the average price of Ceylon teas. In view of these figures, your directors have reason to take a much more hopeful view than they could this time last year, and think the shareholders may look forward to still better results being shown in the future. You will remember that at the last meeting we said that we hoped to be able to arrange for some reduction in our agents' charges; we are pleased to say both they and Mr. Tatham have agreed to a reduction of the terms upon which they undertook the business, which will decrease the expenditure in this and future years. I think our best thanks are due to Messrs. A. Gibbs and Sons. and our agents and manager in Ceylon, for their liberality in meeting us in this matter. With regard to the proposal to raise £20,000 additional debenture stock, we think that this would prove of great value to the company's property. I should like to explain, however, that we do not propose to raise the whole of this at once, and so increase the fixed charges of the company by £1,000 a year; but we think it is of great importance to the future of the company that their property should be fully developed. At present there is a considerable acreage, especially at Doteloya—about 800 acres—which is entirely unproductive. This, if planted up, would, we think, prove of considerable value to the company and add materially to the capital value of the estates, besides enhancing profits, which would benefit the shareholders. Mr. Hancock, who has lately returned from Ceylon, can give you further information with regard to this. If the shareholders respond, the directors are prepared to do their full share in subscribing for the money. You will probably remember that in the report last year, and also in the more recent circular which was sent to shareholders, mention was made of indications of valuable deposits of plumbago on some of the estates. We instructed our manager to take in hand prospecting on the estates which it was thought contained veins which it might prove profitable to work, with the result that on three estates plumbago was found. On one of these—viz., Nahaveena—the outturn was very small, and only paid the expenses of working it; but on the two others—viz., Springwood and Lauderdale—plumbago was found of good quality and in fair quantities. These estates were worked, and resulted in a profit of about £250 on an output of 35 tons. It is impossible, however, to go on working these veins without some capital expenditure. Your directors were approached by parties on the spot and by responsible people in London with a view to their leasing the mineral rights over the company's

estates. There was, however, considerable difficulty in arranging terms with the latter. The company who wished to lease the rights were, we are given to understand, prepared to lay out considerable sums in systematically developing plumbago on the various properties; but they naturally required a long lease of the mineral rights, so that they might have some chance of recouping themselves tor their initial outlay. A lease of twenty-one years, with the option of renewal for another twenty-one years, was the period they required. I did not think your directors would be justified in leasing the mining rights of the company for so long a period without putting the matter before the shareholders. We, however, arranged a provisional agreement, by which this company would receive certain royalities on the gross output of the mines, which we were prepared to submit for the shareholder's approval. We have, however, lately received from Mr. Tatham advices that the main vein, consisting of very good plumbago, which was always believed to exist on Springwood Estate, had been found, and we therefore, told the company we had been in negotiation with, that in view of these later advices, we could not conscientiously recommend the shareholders to confirm the agreement we thad provisionally made with them, and we asked them if they would give more liberal erms which we could put before you. They declined, however, to amend their offer, and the negotiations have therefore recently come to an end. We have every reason to believe that valuable veins of plumbago do exist on the Company's estate, which will prove a valuable asset. The question is, What is the best way of dealing with them? Having stated so much, we should like to take the sense of the meeting as to whether it would be advisable to lease the mining rights, or whether we should endeavour to work the veins ourselves. In conclusion, I should like to say that I think the thanks of the shareholders are due to Mr. Tatham for having so energetically carried out the wishes of the board, and he has constantly succeeded during the last year in much improving the position of the Company, and also Mr. Low, the manager of Springwood and Barra, to whom the discovery of the plumbago is mainly due. I beg to move the adoption of the report and accounts.

MR. E. H. HANCOCK seconded the motion. He said he was on the Springwood property in July last, where the plumbago was found. It was of good quality and indicated some larger veins in the neighbourhood. It would put this company, he thought, in a very different position in the future. Judging from the telegram just received, it should encourage them to work the plumbago themselves. There was always a certain amount of risk in mining, but at present this mine did not run very deep. It was only 60 ft. from the surface when he was there. The only thing that prevented their working it very much quicker was that they had no pumps, and were baling out in buckest. It had never been worked scientifically at all, but he thought that after a little outlay by making a moderately deep shaft and erecting pumps they could keep it free from water and that such a valuable vein they had better work themselves. He did not think that plumbago had ever been scientifically mined in Ceylon. There was only one place he knew of where they were attempting to do it and that was upon one of Lipton's estates; but what they were doing he did not know, because Liptons kept the matter very quiet. He believed they had spent a lot of money, but he did not know the return. With regard to the other estate in the neighbourhood, Landerdale, the indications there of plumbago were the best he had ever seen anywhere, and he had no doubt they would find a good and valuable vein. Seeing that they had this good vein, he had come to the conclusion that they ought to work it themselves, and not to part with it unless they could get a very tempting offer. The chairman had said that Doteloya they had about 800 acres. He did not say that all that would be valuable for planting out, but he had no doubt they could pick out some 600 acres. If they were to plant that they could do it much cheaper than other people, because they had the labour on the spot, and could practically make a new estate of 600 acres at small expense, which would add considerably to the capital value of the company. It was virgin land, and they would have an estate of 600 acres adjoining their other estate, which would give them good value without using manure. There was no doubt that their proper course would be to open up that land, although he did say that they could do it all at once. They could do it, perhaps, at the rate of 200 acres per annum, according to the amount of labour they could spare from the other estate, and in a few years that land would place the Company in a very sound position.

MR. LEWENZ asked how many acres of the whole property were under cultivation.

The CHAIRMAN: About 3,000.

MR. HANCOCK added that he was quite satisfied that on those estates where manure was required it paid. He had tested that.

The motion for the adoption of the report and accounts was then carried.

The CHAIRMAN invited an expression of opinion as to the development of the plumbago—whether the shareholders were in favour of developing the property themselves or leasing it.

After a long discussion, in which Mr. Mozley, Mr. Lewenz, Mr. Shand, Mr. Preston, Mr. A Bull, and others joined,

The CHAIRMAN said that for the last few days they had been getting it about half a ton a day. The average had been about £25 a ton. Of course, they had to take from that the cost of getting it out. For this year they had had to write off the loss of last year, and it was that that had handicapped them, otherwise they had earned sufficient to cover the whole of the preference interest. A certain amount of preference interest had been paid this year. As to the prospectus, they had made the tea very much at the same price as mentioned in the prospectus, and sold it at the same price, and the difference between the year's working and what the prospectus put forward was a fall of about 2d. in exchange. The difference in exchange had made a loss to this Company of £2,500.

On the motion of Mr. Foss, seconded by Mr. Preston, the following resolution was carried: "That the board be authorised to spend a sum not exceeding £500 upon working the plumbago, provided that they be advised by a mining expert that it is advisable to do so."

The CHAIRMAN then moved: "That the board be authorised to issue, subject to the debenture trustees' consent, an additional amount of debenture stock, not exceeding £20,000."

Mr. HANCOCK seconded the motion.

Sir C LAWSON submitted a direct negative: "That the board be not authorised to issue any more debenture stock."

Upon a show of hands, the motion of the Chairman was carried by 12 to 6.

The retiring directors (Mr. E H Hancock and Mr. T J Lawrence) having been re-elected, the auditors were reappointed.

A vote of thanks to Mr. F. Tham (the managing director in Ceylon) and to the agents (Messrs. Anthony Gibbs and Sons) terminated the proceedings.—*H. and C. Mail*, Dec. 22nd.

THE INDIAN TEA ASSOCIATION (LONDON.)

The following is an abstract of the proceedings of a meeting of the committee held on Tuesday, December 19th, 1899.

Present: Messrs. D Cruickshank (in the chair), C C McLeod, J Riddell, F A Roberts, A G Stanton, J N Stuart, W H Verner, and S A Went.

The minutes of the last meeting, held on Tuesday, December 5th, were read by the Secretary and confirmed.

Correspondence with Calcutta, which been previously circulated to the members, was laid upon the table.

The revised estimates, showing available crop (140 millions for London) and also the quantity of tea entered for export to the United Kingdom, taken from the Calcutta Customs daily entries, for first half of December, 11,200,000 lb., against same period last year, 5,710,000 lb., making a total from April 1st, 1899, to December 15th, 1899, of 129,792,000 lb., compared with 116,757,000 lb. for same period last year were noted.

WAREHOUSE CHARGES.—The Secretary and Mr. McLeod reported having seen Mr. Poock, who was unable to say that any definite decision had been come to by the Tea Clearing House Committee. He had promised, however, to write to the Association as soon as it had been approved by the Chairman.

CONDITIONS OF SALES.—It was noted that a meeting had been fixed to take place this week between the buyers and Special Sub-Committee of India and Ceylon to discuss this question.

SCHEME FOR A DOCK TRUST FOR THE PORT OF LONDON.—A letter was read from the Secretary of the London Chamber of Commerce inviting the Association, in conjunction with the Ceylon Association and the Tea Buyers' Association, to nominate two members to jointly represent the tea trade on the sub-committee that has been formed to consider this question. It was decided to request the Chamber to allow a nominee to be appointed for each section.

WORK IN AMERICA.—A cheque was signed for £159 19s 11d, being remittance to New York in payment of India's share of advertising British grown teas in the United States for the month of November.

At the close of the meeting of the General Committee a meeting of the Paris Exhibition Committee was held to meet Mr. Langdale and a gentleman from the India Office, in order to discuss plans and arrangements for finishing the Indian Tea Courts in preparation for the opening of the Paris Exhibition on April 15th, 1900.

ERNEST TYE, Secretary.

—*Home & Colonial Mail*, Dec. 22nd.

PRODUCE AND PLANTING.

TEA IN THE UNITED STATES.—The imports of tea for the first ten months of 1899 were 68,913,718 lb., against 54,887,062 lb. for the same time in 1898, and 79,310,181 lb. in 1897. Of the total imports Japan furnished 29,782,657 lb., or 43½ per cent.; China, 32,840,467 lb., or 47·8 per cent. of the total imports. From these figures it will be seen that British tea-growers have a big task if they are to displace China and Japan teas in the United States. In the first place, as the New York correspondent of the "Grocer" points out, Americans are not partial to the beverage, and probably because of climatic influences. In the next place, nine out of ten consumers care little for niceties of flavour, and are satisfied with a hot beverage so long as there is no objectionable feature. The Americans are yet to be educated up to an appreciation of fine flavour; and to some extent this is true of coffee.

THE RUSSIAN TEA EXPERIMENTS.—An expert points out with reference to the tea growing experiments in Russia that tea production there on a commercial basis is an impossibility. It cannot be produced in the Caucasus to sell at such a low figure in Russia as imported Indian and Ceylon teas do, even after paying the import duty of 1s 10½d per lb, which the local production entirely escapes. In addition to that fact there is no comparison in point of quality.

NEW FIBRE IN BRAZIL.—A correspondent of the "Jornal do Commercio," of Rio de Janeiro, draws attention to the fibre of the guaxima, which grows wild everywhere, but is found in large quantities on the low lands near the sea. It is believed that this fibre would prove an excellent substitute for jute, which is all imported, and when cultivated prove the basis of an important industry. The threads are long and very strong, and will resist the action of water, the fibre being used by fishermen on the coast for their nets, which last for years if soaked in a tincture of aroeira bark. The process of elaboration of the guaxima fibre does not require long maceration in vessels, as is the case with jute; immersion for a few days in running water being sufficient to loosen the green outer bark with the hands, after which the rods are exposed to the sun in order to dry the woody part; this then contracts and allows the fibres to be easily separated. A sample was to be sent to England to be spun and woven, and its uses and application thoroughly investigated.—*Home and Colonial Mail*, Dec. 22.

TEA IN AMERICA IN 1899 AND PROSPECTS.—The correspondent of the London *Grocer*, writing from New York on November 29th, has the following rather discouraging deliverance in reference to our staple and its prospect of being more largely consumed:—

The imports of tea for the first ten months of 1899 were 68,913,718 lb., against 54,887,062 lb. for the same time in 1898, and 79,310,181 lb. in 1897. Of the total imports Japan furnished 29,782,657 lb., or 43½ per cent.; China, 32,840,467 lb., or 47·8 per cent. of the total imports. From these figures it will be seen that British tea-growers have a big task if they are to displace China and Japan teas in the United States. In the first place Americans are not partial to the beverage, and probably because of climatic influences. In the next place, nine out of ten consumers care little for niceties of flavour, and are satisfied with a hot beverage so long as there is no objectionable feature. The Americans are yet to be educated up to an appreciation of fine flavour; and to some extent this is true of coffee. It is a significant fact that in the older settled sections and wherever wealth abounds such articles are bought on their merits, while in the newer sections anything seems to go. New England pays the highest price for coffee; so do the Middle States; while the West and South are the large consumers of low-priced coffee. The great field for British growers of tea to exploit is in the large cities. The consumption of tea is about 95,000,000 lb. per annum, or 1·28 lb. *per capita*, that of beer 15 gallons, coffee 18·4 gallons.

A VISIT TO HAKGALA GARDENS.

(By a Newcomer.)

Such a visit must be always a treat to any lover of plants, and especially so when shown round by the courteous Superintendent. The weather on our visit was perfect: the sky cloudy to temper the sun, but no clouds over the vast Uva amphitheatre of hills except to wreathe the Namunukula peak. The grassy platform in the Gardens, from which this view is obtained, has been enlarged and a fitting wooden pavilion built where visitors can sit to a table to partake of their refreshment in face of the panorama—thanks to Mr. Nock's thoughtful attention.

Among the plants there is a new species of lily which Mr. Nock has named after Lady Ridgeway: the flower is cream-coloured. The wedding flower ("Morea Robinsonia" after Lady Robinson), has been, I regret to learn, nearly eaten out by porcupines. The fern, of which the natives make a curry, is interesting economically and the successful growth of the "selaginella," picked up near Horton Plains, is interesting to Botanists. The new scientifically arranged plots, when fully carried out, will afford further interest. I need not refer to the gratification afforded by a walk under the giant pines, eucalypts and "cupressus" and amongst the 30,000 plants of all degrees from the lycopodiums to the tree ferns, among which that peculiar to Ceylon (Alsophyla crinita) still is queen. On account of climate as well as interesting and beautiful surroundings, surely nowhere in Ceylon is a walk more enjoyable than in the Hakgala Gardens under the magnificent masses of rocky cliff towering 2,000 feet above the visitors. Long may Mr. Nock live, to superintend and preside over Hakgala!

[Mr. Nock, we suspect, will sympathise with the young lady—was it Miss Canning?—who, helping her brother to canvass the electors of Liverpool, so won their regard, that they all shouted as she appeared on the hustings:—"Miss Canning for ever"—only, however, to be answered with a smile and a bow,—"No thank you—I don't want to be *Miss Canning* for ever"! So, our correspondent must know that Mr. Nock can scarcely desire to be at Hakgala for ever, unless, indeed, his good services are recognised by a corresponding increment of salary.—ED. *T.A.*]

TEA PLANTING AND LABOUR PROSPECTS.

ONE of the most competent authorities in the island writes to us:—

"Tea has been doing wonderfully well in the last few months and blights have all but disappeared. They will be showing up again, however, when the dry weather sets in unless the manure which has been freely applied of late keeps them in check. Heavy manuring is all very well if one can be certain of the necessary labour to reap the benefits thereof, but risky otherwise and there is a feeling that with so much Railway Construction on hand coolies may become scarce. Advances are already rising."

With two or three millions of people suffering from famine in India, it does seem strange that there should be any scarcity of labour in Ceylon. The time has surely come for opening fresh districts of supply, and it is possible that the pioneers in this direction would not only benefit themselves, but local industry generally. The Railway contractors (including the Government) will certainly be bound to do something in this direction.

TEA IN AMERICA.

New York, Jan. 6.

It will be noted that last month's deliveries are up to the normal consumptive requirements of the country, being on a basis of 100,000,000 pounds annual consumption. There is not much life to invoice trading. Jobbing demand fair. Market steady. The following table shows, among other items, the stock of tea on hand in the United States on June 1st, 1899, and the estimated stock on June, 1st, 1900, together with the amount of visible supply on December 1st, 1899, and the total tea exports from China, Japan, Ceylon and India to North America during the season of 1899-1900:—

		Pounds.
Stock of tea on hand in the United States on the 1st of June, 1899 ...		28,200,000
Estimated total export from all China, Japan and Ceylon and India season 1899-1900, to North America	Pounds	
Green tea	15,000,000	
Japan	42,000,000	
Formosa	15,000,000	
Foochow and Amoy ...	4,500,000	
Congou, Shanghai ...	5,500,000	
Congou, Foochow ...	5,500,000	
India and Ceylon ...	12,000,000	
		99,500,000
		127,700,000
Withdrawals, June to Oct. 31.	36,935,456	
Withdrawals, est., for November	8,064,544	
		44,000,000
		83,700,000
Deduct direct shipments to Canada	22,000,000	
Deduct re-exports and rejections	1,700,000	
		23,700,000
Visible supply for United States, December 1st. 1899		60,000,000
Six months' consumption to June 1st, 1900, at 7,000,000 pounds per month, estimated		42,000,000
Stock of tea in the United States June 1, 1900, estimated		18,000,000

—*American Grocer*, Dec. 6.

A COFFEE-PLANTING CONTRACTOR on a plantation near Jaboticabal, São Paulo, met with a very disheartening experience a few days ago. He had managed to save 6,000$, which he deposited in a glass jar and then concealed it in the chimney of an unused stove in his house. One day while he was out in the fields, a black woman from a neighboring house asked his wife for permission to use the stove to make soap, and with the result that when the husband returned he found his precious savings in ashes. It was hard luck, but he should have found a better savings bank.—*Rio News.*

Correspondence.

To the Editor.

MEXICO AND ITS PRODUCTS BY A CEYLON PLANTER: CACAO; RUBBER; SUGAR AND COFFEE.

TABASCO, MEXICO.

DEAR SIR,—As promised you some months ago, I now send you a general description of this part of Mexico and its products. From San Juan Bautista, the principal trading town and Port for this district, to the Grijalva Coy.'s land, some 45 leagues, the land is chiefly level and slightly rolling with a very deep loam soil and there are many very fine cacao and sugar plantations to be seen along the road, owned by Mexicans and Spaniards and some few rubber plantations of small size also. The states of Tabasco and Chiapas are noted as being the home of cacao—"theobroma cacao"—the soil and climate being particularly adapted to its culture and I have found many trees growing wild and bearing a good crop in this land. The local method of planting is to clear the land, plant the cacao madre 20 by 15 feet or thereabouts and maize the first year, and the second year, or so soon as the shade from the madre is sufficient to plant cacao plants 15 feet apart between the row of madre. The only cultivation it then gets is two weedings a year with machetes and the greater part of the year there is a heavy carpet of weeds three feet high, which shuts out all ventilation and in consequence there is great deal of moss on the cacao trees. The cacao bears in five years, and the pods are gathered in the roughest manner, being torn off the tree by a blunt hook or forked pole generally destroying the eye at base of stalk and consequently much future blossom. The shrub is never pruned, but notwithstanding all this, it bears good and paying crops, about 50 pods per tree. Of course, there are some few plantations where better care is taken and on these the yield is larger: on some trees in the district of Macuspana 200 pods have been gathered from trees.

The cost of land, clearing, planting and weeding for five years, if properly done, is about $200 (two hundred dollars silver) say £20 for each hectare (2½ acres). The cost of gathering, curing and sacking the crop is about $4·00 (four dollars) per carga (60 lb.) say 4,500 to 5,000 lb. per hectare; value of crop on the plantation 40 cents per pound leaving a net profit of some $1,250 to $1,500 per hectare. Besides this, vanilla can be grown on same land as a side crop which makes quite an addition to the profits.

RUBBER (CASTILLOA ELASTICA), like cacao, is indigenous to the soil and is found growing wild here and when cultivated there is no more profitable tropical product or one so easily and cheaply produced; and some attention is now being paid to its its cultivation by Mexicans and Americans. It may be planted in the open clearing or under shade: it appears to thrive and grow equally well, under both conditions. Seed may be planted at stake, plants, or stumps, all have done equally well, planted by me. The cheapest way to form a plantation is to clear out the underbrush and any decaying trees likely to fall, and plant through the jungle 12 ft. apart Another way is to clear and burn off and then sow maize, planting rubber seed at stake 12 by 12 or 15 by 15 ft. Maize can be grown for two years making four crops which will pay for keeping the land clear. A plantation of 100,000 rubber trees so planted will cost at end of five years, including price of land, some $15,000 or $16,000—say £1,600. The fifth year a tree here, if *properly* taken care of and *properly tapped*, will yield from five to six lb. of juice equal to two lb.: pure rubber which at $1 per pound is worth at least $200,000 from 100.000 trees. I have seen trees that have been tapped for 2) years still yielding and the tapping had been done most barbarously. The cost of upkeep and production is small: one man will tap 20 trees per day. The juice is then put in a barrel and a solution of five oz. of sub-carbonate of sodium in water sufficient to cover the whole mass, which is churned up with a paddle every once in a while, and after 36 hours the water is run off: this is repeated until the rubber becomes white. This certainly is the enterprise for the small capitalist in Mexico.

SUGAR CANE.—There are many fine plantations on this river. The yield on some is 60 tons per acre. I have seen some cane-fields which I was assured by their owners were 35 years old, still yielding handsome returns, and they had had little or no cultivation all those years. From the best information I can get the average yielding here about is 50 tons cane per acre, which yields 70 per cent. juice in cane, 15 per cent. of sugar in juice, besides the molasses which is made into rum, white sugar is worth eight cents. per pound, molasses one cent per pound. 750 lb. molasses make one barrel rum worth $10. So that taking the product at only 45 tons per acre and upkeep and expenses of making sugar and rum at $20,000 for 100 acres, it leaves a profit of some $36,000 per 100 acres. The cost of machinery is considerable and for that reason the small capitalist cannot enter the field as he can in rubber and cacao.

COFFEE produces heavily and there is no leaf disease, or any other so far as I can see. There are also many other products that can be grown with profit, as side crops on cacao or rubber plantations; but I will not enter into them in this letter, as I feel I have already trespassed too much on your valuable space —Yours very truly,

E. O. DARLEY.

CEYLON GREEN TEAS.

Toronto, Dec. 8.

DEAR SIR,—We note your comments in reference to our letter to you, in the weekly issue of the *Overland Observer* of Nov. 6th; and we beg to say that Ceylon is exporting Green Teas today, we have them on hand, we have sold a considerable lot, and we have more close to hand and still more on order for regular shipments from Messrs. Whittall & Co., of Colombo, who will be glad to give you any information, we have no doubt, about what is being exported in Ceylon Green Teas.

We believe there is a big market here for those teas, otherwise we would not have commenced a campaign in their favor. We believe the Ceylon Greens are well-worthy of the planters' attention. —Yours truly,

P. C. LARKIN & Co,

SPURIOUS OR WILD CINNAMON.

Colombo, Jan. 6.

SIR,—In support of the action originally undertaken by the Chamber of Commerce, I beg to enclose copy of letter from Messrs. Darley, Butler & Co. to the London Produce Brokers' Association. At foot of letter I append particulars of the result of effort to sell the wild cinnamon shipped.—Yours, &c.,

R. W. NUNN,—Secretary.

RESULTS OF SALE REFERRED TO.

2,280 bales offered, none sold, stuff valued before sale at 4d to 5½d per lb., vainly sought buyers after at 2½d. Principal marks offered were:—

H. M. S. & Co.	...	325 bales
D. B. C.	...	920 ,,
M. D. J.	...	214 ,,

M. A. K., D. S. S. and U. L. M.

Later news quotes ½d per lb. offered for some of the above.

The Chairman, General Produce Brokers' Association of London, Commercial Sale Room.

SPURIOUS OR WILD CINNAMON.

London, Dec. 1st, 1899.

DEAR SIR,—As importers of Ceylon Cinnamon we wish to call the attention of the General Produce Brokers' Association of London to the importation of various kinds of bark not in fact cinnamon under the classification of cinnamon, and to ask that the Association will, if possible, take up the matter with a view to preventing such bark, whether imported as quills in bales or as chips in bags being included in the imports, deliveries and stocks of cinnamon and cinnamon chips.

There is no doubt that the shipments of this spurious cinnamon from Colombo have done much injury to the trader in genuine cinnamon, and we commend the following facts to your consideration:—

(a) It is estimated that some 3,000 bales of quills of spurious cinnamon have been shipped from Colombo during the present year, the bulk of which has come to London and appears in the imports of cinnamon; probably the bulk at the present time remaining in stock.

(b) Though some of the barks so shipped as cinnamon are of a genus belonging to the same family (Lauraecae or laurel family) as genuine cinnamon, they are not of the same genus making them in fact quite distinct from genuine cinnamon, while some belong to an entirely different family altogether—in the one case the difference in genus differentiates the bark entirely from genuine cinnamon, in the other there is no connection at all.

(c) The use of such bark, if it is used at all, must be for the purpose of adulteration. In this connection we would ask you to ascertain from those who are selling this spurious cinnamon the relative value compared with geuuine cinnamon. In order to give you all the information we can, on the subject we enclose herewith:—

(1) Copies of correspondence in Ceylon including a report from Mr. A Schulze to the Chamber of Commerce.

(2) Letter from the Secretary, H M Customs, to the Secretary of the Ceylon Association in London, in reference to action which the Customs' authorities may take here.

We are indebted to the Secretary of the Ceylon Association in London, for these documents, and are assured of the support of the Association in any steps that it may be desirable to take to protect the Cinnamon Trade of Ceylon.—We are, &c. DARLEY & BUTLER.

CACAO CULTURE AND DISEASE: PRICES AND PROSPECTS.

LONDON, Dec. 22, 1899.

DEAR SIR,—I enclose two cuttings out of the "Port of Spain Gazette" (Trinidad, W.I) *re* diseased cacao bark from which the Trinidad planters seem to be having a good deal of trouble just now. As the remedy seems highly poisonous, I consider Dr Proctor's (who is also a cacao planter) letter very *apropos.** If, as Mr. Massee says, the disease is caused by damp, stuffy conditions, this strengthens my idea that many people grow their cacao under much too damp circumstances; under the idea that the damp humid banks of the Brazilian rivers are the habitat of the original trees, many seem to think cacao cannot be too damp and hot. It is a great mistake, which, however, the Ceylon planters seem fully allive to. I also enclose my notes on the London Cocoa Market.

One of my cacao planting friends in Trinidad writes me that, judging from all the estates he has visited, there will be practically no cocoa about for Christmas; except, perhaps, a little, small proprietors scrape together; the promising pods that were coming on a little time back having turned black. Another reliable authority bears this out by saying he does not expect London will see any appreciable quantity of Trinidad cocoa until the middle or end of February, so evidently the crop will be a full month late." The weather, when the mail left was showery and generally more promising for agriculturists.

The Government not being buyers, no sales were held last week, and I don't think we should have had any this week, but for the desire of one broker to realise some cocoa belonging to a Guayaquil house who is in difficulties; but prices are firm to 1s higher all round, and considering it is Christmas week, it has been a busy one.

Privately a fair quantity of Ceylons have been sold, anything at all decent being quickly taken up, and even inferior stuff sells better. Prices privately have ranged from 63s 6d to 68s for common to fair native, up to 76s for good red. Fine red still commands fancy rates, and at this week's sale some good bold, rather dark break sold at 85s, good small 60s to 65s, and fair red 75s, 73 bags good dull red Java, very whitish in break also fetched 85s, which I consider a high price. There is no doubt any falling-off in production this year, which in the face of 1899's bumper crops, is not unlikely, will cause some excitement among buyers, especially if the war continues, and the Government are steady buyers, which seems likely to be, for I see by the press, every soldier carries 4oz. cocoa paste as "emergency rations," besides what is given out in lieu of tea and coffee.—Yours truly, H. H. S.

WILD OR SPURIOUS CINNAMON.—With reference to the correspondence in the other column sent us by the Chamber of Commerce, surely no one, after this exposure of the pecuniary as well as intrinsic value of the stuff shipped as wild cinnamon, will repeat the operation? We suppose 2d a lb. is required to cover cost of shipping, freight, charges, &c.—so that to get only ½d must mean a heavy loss. Such a trade should surely die out at once?

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* See page 478.—ED. *T. A.*

BANDA NUTMEGS AND MACE.

By O. KAMERLINGH ONNES.

BEING AN ACCOUNT OF THEIR HISTORY, CULTIVATION, TRADE AND USE.

(Compiled with the aid of data placed at our disposal by the Crediet-en Handelsvereeniging "Banda" *Amsterdam*.)

I. HISTORY.

INTRODUCTION.

Oh, it will not take you long, we do not ask many hours to bring the gracious reader out to the Moluccan Archipelago 300 years back, and ship him safely home instanter.

We perfectly understand any man's eagerness to use his time well, and we won't make him grumble. So any one even in the busiest moment of his life, may feel safe and commence to read.

But he must bear in mind one thing. He should be fully aware that he has to know somewhat more about Banda produce than he knows just at present, in order that he may pass the rest of his days all the happier for it.

For whoever, clearly realizing that he may have in great abundance at penny price what others longed for, wrote poetry on and even shed blood for, what man would he be that, remembering the *History of Spices* and, enjoying exquisite dishes, should not feel happy that he lives in the present time?

In fact though we admit the possibility of any type, there is no such man, and whilst we agree with the rest, let them agree with us and give their best and kind attention to what we have to say about Banda nutmegs and mace.

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300 YEARS BACK IN HOT HASTE.

Spices had come to Europe long before the Dutch dared to open a direct trade with the Indies. We do not know exactly how many years it is since the trade of spices commenced, but we may take it that the Arabs were amongst the first to value nutmegs and mace either at the beginning or near the middle of the Ninth Century. Their learned doctors mention them. History even goes so far as to show that one of them Ibn Amran, highly esteeming the *Nux Moschata* for its medicinal properties, loses his head by a too liberal use of his spice-box,

Some hundred years later we find the *Karoun Aromatikon* having made its way into the pharmacopoeia of Europe, and since then it soon spread over different markets. Its price remains excessively high on account of the charges incurred by the route used in those days for all Indian produce.

Carried from the Moluccas to Aden, crossing the desert land-route and following the Nile down to Alexandria, it is easily understood that heavy charges enhanced the price of a product which had to change hands so often before it could so much as reach one of the European gates of Eastern trade, whilst these themselves were not at all reluctant to make money out of every *open door monopoly*, which by chance or cunning had fallen into their hands.

About 1400 Genoa and Barcelona are the principal markets for spices. But the attention of the North of Europe as well has been directed —though on a lesser scale—to those far-away countries, visited by Marco Polo. Others follow him, describing the marvels of their visits to Asia, in colours to bewitch even the most sceptic. A rage for spices springs up in Europe and continues through the century.* Direct shipping trade with India begins here.

To the Portuguese falls the honour of having first traded into the Far East. In 1511 Albuquerque visited Banda. A few years later the Spaniards under Charles V. went out to the Moluccan Archipelago. The interests of the two nationalities collide. Then follows war, which ceases however for the moment, when the Spice Islands are sold by the Spaniards to Portugal. Columbus discovers the New World and the Holy Father settles everything in peace, reserving the West to the Spaniards and the East to the Portuguese. Under the reign of Philip Portugal being united with Spain, the world might have come to peace for ever, but for the excluded North interposing its veto. The rage for spices kindles a fire which will last for centuries, dividing Europe and bringing war as well here as in the unhappy Indian territory, endowed by Nature with the trees that bear gold.†

Profit had been heaped up, and continued pouring into the lap of the daring Portuguese and Spaniards, but profit won so freely, soon called opponents into the field. Rivalry, the ever watchful stimulus of trade had opened the eyes of the North. Yet what most of all caused these Nations, especially the Dutch, to compete with the Portuguese and Spaniards in India, was the unlucky move by which the latter closed Lisbon against the Dutch mercantile navy.

Seeing its usual store of supply cut off and its second-hand profit endangered, Dutch Commerce took the alarm and at once made efforts to meet its opponents on an equality.

In 1595 the first Dutch vessels are sent out under Corn. Houtman, to trace the unknown path to India, risking their poor ships round the Cape of Good Hope. Their enterprise is crowned with success. Corn. v. Neck, Warwyk, and v. d. Hagen. follow. In 1599 Banda is visited by Jacob Heemskerk.

The *Oost-Indische Compagnie* famous for its rapid development and unprecedented display, commences its operations in Indian Waters. Soon the love of monopoly excludes all others from the field of commerce. India like Europe is disturbed by war amongst the Nations, trading in those days sword in hand and the guns loaded on board their merchant-ships.

In the Moluccan Archipelago the foes of the Hollanders generally make common cause with the natives, who are shut out from the profitable trade of spices themselves. This constant struggle however does not disturb the Company's sphere of influence, on the contrary it leads to a

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* St. Johns.
† Lans.

permanent form of administration, which reaches its highest pinacle when Coen, one of the boldest and most clear sighted governors that ever served the Company's cause in the East Indies, proclaims Batavia the centre of the Dutch forces.

Holland had become one of the first powers in Europe; but the wonderful possessions of the Dutch East-India Company in India are of a strictly private character, governed by officials controlled by the Company only, and the State itself has not the slightest intention to join the distant isles to the Mother-country. Monopoly in the Moluccan Archipelago is all that is desired, and the Company's officials know perfectly well how to safe-guard its interest in this respect.

We need not enter into the Company's struggle for self-preservation which on many occasions might have been deemed entirely hopeless, if the opponents in Europe had been fully possessed of the facts which have since been brought to our knowledge. If however we may pass in silence the details of war between the Dutch and other European nations, we may not wholly do so with regard to the struggle between the natives and the Dutch in India, which fills many an inglorious page in the history of those days.

As a rule writers of the present century have criticised the policy of the *Oost Indische Compagnie* in a most severe way, especially with regard to the hard measures carried out in the Banda islands, and we shall certainly not defend any of these unscrupulous acts which were forced upon the Bandanese in order to maintain the Monopoly of spices in Indian Waters.

It is clear however that in judging of past times, the critic has to bear in mind first of all that in the beginning of the 17th century the ideas about humanity in war were radically different from what they are now. Secondly, equity should allow for many an act of bloodshed provoked by the constant treachery of the Asiatic tribes, seemingly eager to grant any amount of privileges, solemnly pledged when they considered themselves compelled to submit, but as eagerly scouted, as soon as they thought the moment fit to do so, either on instigation or by instinct.

No doubt the self-evident want of understanding of two races so different in character, religion and tradition, must be taken into account when judging any shortcomings on either side which, originating in the slaughter of the isolated Dutch forces and constant mutinies, ended in a complete submission of the monopolised islands and almost wholesale massacre of the Bandanese in 1622.

Whatever we may have to say in these matters and wherever our sympathies lie, there is this testimony which speaks clearly in favour of the Dutch rulers, that when in later years the political fall of Holland caused the nation to neglect the Indian Archipelago, the natives complained about their being left to themselves and protested for fear of being wholly abandoned by those whom they had learned to consider their regular masters.

When in 1796 the Spice Islands became English for the first time (they were brought under the English flag for another short period once more in 1810), the natives still continued to consider themselves as subjects of the Dutch and they hoisted even then the Dutch flag on all festive occasions.*

This single fact appeals to every impartial critic. It exonerates neither the rash acts of cruelty nor the merciless despotism exercised by the Conquerors, but it goes far towards excusing them.

What we needs must blame looking back over so many years is the general blindness of those who, pretending to govern India on sound commercial principles, did not even see that the miserable Monopoly was the cause of endless war and should in the end drain Indian resources.

As unwise as the man in the fable who killed the goose with the golden eggs to get all the profit at once, the rulers of India, alarmed at the number of trees "*that bear gold*," rashly cut down so many that they drove the people away and wealth with them.

By restricting the cultivation of nutmegs and mace to *Banda Neira*, *Lonthoir* and *Ay*, the monopoly caused a great deal of injury to the Moluccan Archipelago. By compelling all the produce—nutmegs and mace—to come to Europe, it crippled the trade, which had ever found its natural outlets in Asia. Severe control and constant vigilance of course could do something to maintain the monopoly in the days of the Company's utmost glory, but it is easily understood that against the unnatural law, smuggling was ever on the alert for an opportunity to detract the much cherished spices from the Company's stores either with or without the connivance of the Company's own officials.

Though estimates differ it is not at all inadmissible that over one-fifth† of the yearly Banda produce of nutmegs and mace was diverted by smuggling in Indian waters, and such notwithstanding the excessive punishment inflicted upon the offenders.

Besides the regular loss caused by smuggling, there was another which very often swallowed the profit for years, viz., the *volcanic eruptions* alternating with storms or parching drought, causing heavy loss of full-bearing trees, whilst moreover the scarcity of hands in years of abundant crops is met with in nearly each of the volumes, which deal with this part of the Company's arduous administration.

If we could separate the Moluccan administration from the complex of the Company's extensive household reaching South as far as Australia, and Eastward as far as Japan, including the stations at the Cape, in Ceylon and on the Coast of Malabar, a deficit would be shown by many years, that were considered extremely profitable by the shareholders in former days.

Leaving aside the years of enormous profit in the Indian trade, which may be reckoned to have lasted till 1693, there remains a period of more than one Century when the returns hardly cover the expenses, nay even entail a loss, and we may safely state that the Moluccas were for a good deal the cause of the disastrous end of a management, commenced under the auspices of inexhaustible wealth.

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* George Windsor Earl.

† La Perouse, Crawford.

With a staff of a good many more than 19,000 Europeans in India(1770) of which nearly 3,300 in the Moluccas, the Company's Administration must no doubt have been far too intricate to allow many, either to appreciate its real state, or to foretell its future career but for grave blunders on its part.

Involved in every war which threatened Holland, bound to assist the State either with saltpeter and ships or money or both, the *O. I. Compagnie* had of course more to do than simply to administer the Indian territory. Her greatest fault was the waste of produce ordered to be burnt in Amsterdam, or destroyed in the Moluccas, conforming to strict orders from the Company's headquarters. Their eyes were closed against everything that should have been taken as a warning to break with the cutting down of trees (*hongi-expeditions*) and slavery. They were wilfully closed against everything that savoured of free labour and free trade, and they would remain so even for many and many years in favour of the old prejudices. When in 1798 the Company's bankrupt household showing a deficit of 120 millions was handed over to the State, the government did not know how to act better than to continue the Monopoly of Spices, which even managed to drag on its miserable life till 1870.

We need not wonder that, whilst in Europe at the end of the 18th Century the Revolution changed everything, the ideas in India moved very slowly only. Of course there were some persons in India and even amonst the highest officials that pleaded for a complete opening up of the islands for trade, but the advice they sent home did not find much favour. Under the administration of Holland as well as under that of England, proposals concerning the Banda Isles to this effect met in the Mother country with too little knowledge of India's wants.

When in the second period of English possession of the Banda-group (1810—1816) Governor Raffles declared himself an absolute foe of monopoly and asked the English government to sanction a change, he complained that the Bandanese knew just as little of England as the English knew of the Banda-group. If on commercial principles—Raffles wrote—it may be deemed advisable that the spices shall be collected into few hands, let the gardens or their produce be farmed out. Let the East-India Company or any Association of Europeans enter into the speculations, but let the British government preside,

This advice was quietly passed by. England did not take any real interest in the Banda-group itself, except that its produce should be directed to England instead of to Holland as before. When the *Treaty of Breda* in 1816, once more restored the Banda possessions to Holland, no material change whatever had been made in their administration.

Mercus, the Dutch Governor-General, after his visit to Banda pleaded for the abolition of the Monopoly. Van den Capellen, who visited Banda after him in 1824, though much impressed with the desolate state of the impoverished islands, did not dare to abandon the venerable monopoly system sanctioned by a usage of 200 years.

Some change however had been introduced. In 1819 slavery [slaves had been emancipated nominally in 1812 under the English] had been definitely abolished in the Moluccas by the Hollanders, and though for the moment the difference between slaves and "adscripti glebœ" (*perkhoorigen*) is still less essential than it pretended to be, this first reorganisation was to smooth the way for broader views of lawful trade also.

In 1853 the port of Banda was opened to the flag of every friendly nation. However as the produce was still monopolized by the government, merchantmen knowing that they would not find any cargo, of course did not call.

In 1862 the expeditions of extermination (*Hongitochten*) were abolished, and for the future the young nutmeg trees are allowed to thrive in any of the islands of the Moluccas. Very likely the unforeseen rise of Penang and Singapore as Spice-markets, supplied by the produce cultivated on English territory (Malacca) helped to open the eyes at last. Only three years later the first parcel was sold in Banda Neira in free auction.

The destruction of the nutmeg by disease in the Straits in 1866, which made prices go up till 1871, fortunately did not alter the liberal policy of the Dutch government. On the contrary the government now fully convinced that the Moluccas wanted the stimulus of free trade, urged the estate owners (*perkeniers*) to make themselves independent from the monopoly system. At first few of them seemed to appreciate the change, being far more willing to continue their improfitable connection with a buyer as the government, instead of being thrown upon the open market. With the prices ruling very high just then, the energy pent up so long, seizes from a few examples the profit which can be made. One after the other of the planters made himself free, and on the 1st of October 1873 at last every vestige of the monopoly of spices had been buried in the past.

Applications for opening up *Rhun* and *Rosengain* reached the government.

Already the next year the *Colonial Reports* of Netherlands India stated that the abolition of the Monopoly of Spices had proved a boon, having awaked more interest iu the cultivation, both labour and money being supplied on a larger scale than before by the planters in the Banda Islands.

Since then the free cultivation of nutmegs has not always been so profitable, and especially of late years competition in every part of the globe, combined with low prices have put the energy of the planters to a severe test.

It may be safely asserted, however, that as the Banda nutmeg and mace still enjoy the highest reputation in the market, the care bestowed upon their cultivation as well as the large sums spent on it, must ensure a reasonable profit. In fact there are signs that prices will improve, cultivation having nearly reached its maximum in Banda. The days may be over when the produce of Banda was synonymous with the "trees that bear gold"; its gardens still bear the promise of wealth ready to fall into the hands of those who know to cultivate well this part of the wonderful East Indian Archipelago.

II.—CULTIVATION.

NUTMEGS AND MACE IN THE BANDA-GROUP.

A glimpse at the map of the Banda-group makes it clear that the islands are remnants of

a volcano, one-half of which has sunk beneath the surface of the water. Of this volcanic formation there still remains one active crater the *Goenong Api*, literally Fire-mountain, which ever keeps its neighbourhood in awe of new eruptions, though fortunately the days of destruction which marked the 16th and 17th Century have been great exceptions in the latter part of this century. The Bay of Banda itself is part of an extinct crater; over the whole Archipelago we meet with the same geological formation. Nevertheless, danger has always been overlooked in the Moluccas by the Natives as well as by the Conquerors, owing first of all to the much-prized spices, with which Nature gifted the islands, but no doubt also to the charming impression which the islands, and especially *Banda Neira* and *Lonthoir* leave upon everyone who visits them. The aspect of the islands simply surpasses everything which tropical vegetation offers in the usual way. In the *Guide through the Archipelago* issued by the Royal Mail Packets Co. of the Netherlands India, the pages 186 etc.* give a most picturesque description of the voyage from Amboina to the Banda-group as follows:—

"As a crowning effect of the trip to the Moluccas, as a finale of all the incomparable natural phenomenae between which the steamer smoothly conveys its passengers every night, the silhouette of the Banda islands with the high Goenong Api rises above the brilliant easterly horizon on the morning after the departure from Ambon. Everything is delicate and fine in this enchanting group of islands, which reminds us of nothing so much as of scenic decorations on a gigantic scale. The sea is more intensely blue, the green is deeper and more brilliant, the yellow and grey stripes on the smooth slopes of the ash-cone are more marked, the clouds of morning are more etherial than anywhere else.

"It is still early in the morning when the steamer runs past the islands of *Rhun* and *Ay* on starboard, whilst on the notherly horizon the rocky masses of Swangi loom up, but by the time the steamer reaches the harbour, we are well on in the morning. The rapture which the lover of nature experiences on entering this unique bay baffles all description. On passing between the steep cliffs the steamer skirts the coast so closely that one can almost grasp the impending branches of the dense forest, when suddenly we find ourselves in a glassy lake enclosed by high precipices, from which with hardly any shore at its foot the Goenong Api rises its gigantic cone. But even more striking than this threatening volcanic funnel is the view straight ahead of us, where we discover a little town built against the slopes of a verdant rocky island, above whose white houses and terraces a mediæval castle towers high."

The European dwellings in Banda testify by size and condition to the welfare which the cultivation of nutmegs has spread amongst the planters. They are however far from making an impression of luxury. All tho large houses are built of bricks, but very low, reminding us of the danger of eruptions [the one of 1852 caused serious damage to all the buildings].

According to the same authorities the aspect of the nutmeg gardens is perfectly unique, yea we may fancy ourselves in the holy woods of which the poets sang.

"Not a trace of wilderness and yet everything grand and luxuriant. The eye glances along an unintercepted view of the magnificent nutmeg trees with their crowns of foliage of shiny dark green leaves between which the dead-yellow fruit are hanging in abundant profusion. The dark red mace glows in the recesses of the opening fruit. And over these dense orchards huge *canary-trees* move their dark green crowns in one interwoven protecting leafy roof, borne as on columns by trunks of a girth such as hardly ever seen in Java."

The interior arrangement of an estate house is extremely simple: a front-gallery, inner-gallery or hall, into which open all the private rooms, and a backroom which is practically the sitting-room. Society life in Banda is of course rather monotonous, one of the principal diversions of the colonist and his family being the tropical sky-gazing (*klimaatschieten*). Meanwhile a reception-day on the estate is a very pleasant event. The invited guests meet at noon at the profusely provided rice-table, which is followed by the siesta. After the usual Indian ablutions, the guests meet in full dress, pumps and gloves being "de rigueur." Supper follows at 7 o'clock and the well-spent day is finished up with a dance, varied by theatrical or musical entertainment. Families are usually very large, ten to sixteen or more children being no exception. In religious matters the colonist is exemplary tolerant. A special trait of the colonist's character is his pronounced love of the House of Orange, chiefly dating from the festive visit of the late Prince Henry, the happy memory of which is revived on every occasion.*

Another Indian specialist† describing the nutmeg gardens in Banda says: "The agreeable scent which is wafted from the wood invites us irrisistibly. The high canary-, warringin-, and teak-trees act as a protection against heavy showers and gales for the conical nutmeg trees, whose foliage is formed by pointed leaves hanging down from branches shooting out regularly. Between the shiny foliage sparkles the ripe open fruit of which the dark brown nut is the kernel, whilst the bright-red mace envelopes the nut as an elegant network. Occasionally we meet in the wood with bamboo bushes and other jungle vegetation. Sweetly blows the cool air, invigorating and bracing is the scent of the nutmeg, whilst the wood echoes with the merry voices of men and women gathering nutmegs, and children picking canary-nuts, mingled with the various sounds of the cooing nut-pigeons (*manoek faloer*), parrots, the Indian nightingale (*baikolie*), the canary-yellow *karajamoe*."

A peculiarity of the nut-pigeon inhabiting the Archipelago is that they swallow the fruit bodily and discharge the nut whole and undigested. This curiosity, which no doubt leads to the distribution of the plant, was formerly connected

* Dr. D. F. v. Bemmelen and G. B. Hooyer.

* v. d. Linden.

† Prof. v. d. Lith.

even with its sex as shown in Vogels' remarkable passage*: "If the bird that drops the nut is a male, the tree growing from it will be a male too; if the bird is a female, the tree will be a female as well, whilst if the bird happens to be still a virgin, the tree that grows from the swallowed nut will be one of the best in the woods.

Whilst nature produces 100 male against 100 to 200 female trees, it is a fact that only the females yield fruit. On the whole the latter bear fruit when ten years old, but their produce at that age is still small. In the years immediately following, the produce increases rapidly, gradually again more slowly, until the highest point of production is reached between the 20th and 25th year, continuing, undiminished during 25 years. Only then, about its 60th year a decrease may be noticed. Many trees however reach a much greater age, some of them are said to complete a century.

The nutmeg trees bear blossom and fruit without intermission, in every stage of ripeness, and so the nuts may be gathered all the year round. The greatest abundance however falls during the months of July and August.

The nutmeg itself is the kernel of the fruit, which is pearshaped, of the colour of a peach and consists of four parts; the outer fleshy part, then the membranous substances, covering the shell of the nutmeg and known to Commerce as mace, then the shell, and finally the kernel or actual nutmeg.

The greatest care is required in gathering and handling the fruit. Twenty-four hours after the opening of the fruit, a sure sign of its ripeness, the nut will drop to the ground, thus injuring the mace-network and deteriorating its proper quality as its lying on the soil makes it apt to become wormy. On the other hand the closed fruit may be still unripe, and knocking these down would be highly unjudicious.

Work commences at 5 o'clock in the morning at the ringing of a bell, when men, women and boys and girls over 16 years, go out into the woods, armed with the *gaai-gaai*, a long stick with a prong at the end to break off the ripe fruit and a basket to carry the collected nuts.

The wood is the all in all to the labourers. It is his place for work and recreation. It is his club and even the spot where the young man seeks his future wife when the overseer is out of the way, notice of whose approach is kindly given by the friends of the young couples imitating the call of the nut-pigeon as a danger-signal.

Apart from the romantic side of these proceedings, the practical advantage becomes evident when we know that love-making contributes greatly towards the rapid filling of the basket, the boys helping all the pretty girls most assiduously, in order to secure for them the premium awarded for extra-diligence, (a practise which has followed up the rottan used in the days of Monopoly).

While the owner may thus be profiting by the romantic disposition of his young staff, it is quiet on the cards that his overseers are not overanxious to intrude where the voice of the *manock faloer* is heard. The only drawback of this arrangement is that the boys do not regard the boundary of the estates too scrupulously, thus filling with the produce of one estate the baskets of the other. We cannot vouch for the veracity of the statement, but it is asserted, says Mr. v. d. Linden, that an estate-owner who one year happened to engage an unusually attractive female staff, thus saw himself unexpectedly rewarded with a superabundant crop, whilst on the neighbouring estates many complaints were heard about the scarcity of fruit.

* Warburg.
† v. d. Linden.

Work in the woods finishes at three in the afternoon when the collected fruit is delivered at the *pagger* where the warehouse, drying-house and other out-houses are located. On entering, all the pickers, males as well as females, squat down in the open gallery to separate the ripe fruit from the unripe (*kerangs*) and portion them out in little heaps. After the inspecting and sorting of the fruit, the nuts are taken to the drying-shed (*rookkombuis*) where a low fire is constantly kept smouldering. Here the nuts are spread out and dried on a second flooring of split bamboo (*para-para*) constructed at not less than 12 feet* above the fire on the floor. After about 6 weeks, during which time the nuts are repeatedly turned over, they may be considered dry, which is heard when they begin to rattle.

In the drying-sheds the nuts should not be overheated, merely to accelerate the process of drying them, as they are very rich in oil (35%) which would ooze out. The temperature in the drying-sheds varies as a rule between 35° and 40° C. (95° till 104° Fah.), care being taken to avoid fluctuation, a precaution which explains why the walls of the drying-sheds should be so thick. A temperature above 45° C. is considered injurious by Dr. Janse, the eminent scholar who was sent out in 1897 by the Dutch Government to institute a special inquiry into the growth of nutmegs and its requirements.

The smoke which formerly was looked upon as necessary, is not essential; the smouldering fire being preferred because it assures the best, *i.e.*, a slow process of drying. A change in the venerable, old proceeding was repeatedly urged. Meanwhile, Dr. J. remarks that the use of machinery is not free from objections, the nutmeg being an article which is valued according to its "*face*" value, necessitating the greatest care for the preservation of its outward appearance.

When dried too quickly the nut cracks, when exposed to an excessive temperature it shows spots in consequence of the oil finding its way out.

When the nuts have been sorted they are limed, which is not done to rob the nut of its productive power as people used to think in the days of monopoly, in order to prevent cultivation elsewhere, but only to safeguard the nut against getting worm-eaten, or in case a worm should have got in already, to fill up its hole and kill it.

There are two systems of liming, the wet and the dry. In the dry process the nuts are treated

* Van Gorcum (*Colonial Museum*, Harlem.)

with dry lime-powder either by rubbing them between the hands or shaking them in barrels. In the wet process the nuts are thrown into the newly slaked lime upon which they are spread over the floor to dry. Dr. Janse mentions having seen on his visit to Banda that small basketfuls of nuts were dipped into the slaked lime and the nuts heaped into little piles.

In order to ensure the best appearance for the mace, a careful treatment is equally required. It loses of course when dried the bright purple hue, which it possesses in its natural state, but the orange colour should be as vivid as possible.

In contrast with the nut, mace contains only 7 to 9 per cent of etherial oil, but it holds an abundance (23 per cent) of aromatic balm.

Immediately when the mace is loosened from the nut, the fresh substance is spread out during the night on matting or flat wickerwork. When the weather is fine it is cured in the sun in a few days. During the process of drying it is trodden flat in order to facilitate the packing and avoid its breaking when in a perfectly dry state.

The only work on the estates now remaining is the packing and forwarding.

We might now pass to a review of the nutmeg and mace trade, taken into Europe and its principal emporiums Amsterdam and Rotterdam, but we consider it necessary first to refer to the places of inferior produce and the diseases to which the plant is subject outside Banda.

ATTEMPTS TO ACCLIMATIZE NUTMEGS OUTSIDE BANDA.

When in 1839 the Government gave its sanction and assistance to transplant the nutmeg trees from Banda and Amboina to the other parts of the Dutch Archipelago, cultivation began to spread and the plant was also introduced into *Minahassa* (North Celebes). What the natives produce in *Ambon* is of less importance than that in Minahassa. Its cultivation dates especially from the great destruction caused in the Banda Islands by the gale of 1778. Cultivation of nutmegs in *Ceylon* dates from 1798, that around Singapore from 1819.

In the French *Mascarenes*, off Madagascar, nutmegs were imported about 1770. Though at one time the cultivation raised favorable expectations, it has since dwindled into nothing, the cyclones having been the chief obstacle.

Even poorer results were achieved on the plantations in *Madagascar* and in *Zanzibar*.

Lately an attempt has been made to acclamatize the nutmeg tree in *German West Africa*, but thus far in the botanical gardens only.

In South America, *French Guyana*, where the plant was introduced by the French in 1772, it did not flourish. From there it was brought to *Brazil* in 1809, where it is found even now in solitary specimens only. Also in *Dutch Guyana*, *Venezuela*, *Mexico*, the *West Indies* and on the *West Coast of South America*, the nutmeg trees have never yielded a produce of any importance. Though during a short period the English plantations in *Trinidad* seemed likely to thrive, the ultimate success was poor.

POOR RESULTS OUTSIDE BANDA.

Everywhere in these regions, either the winds or the unforeseen continual droughts have disillusionised the planters there, and after all the naturally appointed place for the nutmeg produce of the world remains in Asia, and especially in the Moluccan Archipelago, where it has found for hundreds of years, together with the soil suitable for the plant, the favourable climatic dispositions without which the "trees that bear gold" cannot be expected to yield ever-abundant crops.

DISEASES OF THE NUTMEG TREE.

Like every other plant of tropical culture the nutmeg tree is subject to many diseases. Of these we may name:

1. *The Bark-disease* which without any previous symptom destroys part of a plant, sometimes in a day. Such a tree may be saved by cutting away the affected parts. The disease generally attacks the stems, it being a great exception that the branches alone are attacked. However great the ravages may have been elsewhere even destroying the gardens entirely, as in 1860 round Singapore and Penang, the bark-disease has never shown itself in the Banda islands.

What is indeed bark-disease says Dr. Janse, but what Dr. Warburg has treated as a separate malady, is the *white ant-plague*. White ants are not injurious to sound trees, but on the least symptom of decay in a tree, they muster in their thousands and the affected tree is hopelessly doomed. They seem to have a particular aversion to hog-dung, but to have rather a predilection for cow-dung.

As another case of bark-disease Dr. Janse mentions the *root fungus*, which is practically the same disease only appearing below the surface.

2. *The Premature Opening of the Fruit.*—Of the losses which a planter suffers regularly every year, the premature opening of the fruit may be considered the principal cause. In this case the nutmeg is either totally unfit for the market or it gets wrinkled. In bad years the loss owing to this cause amounts to half or even three-quarters of the crop. It is known either as *boeka poetih*, *boeka moeda*, *pala reboes*, *boeka massaq* or "*Kerang*," when the premature opening is caused by a fungus.

3. *Star-spotted fruits.*—This disease also brought about by kind of fungus according to Dr. Janse, is classified by Dr. Warburg as *nutmeg cancer*. It is rarely met with in Singapore but raged severely in Penang.

4. *White thread cancer* (Benang poetih), *Black thread cancer* (Benang hitam) are diseases which specially attack the leaves and branches.

5. *Parasite plants* (kajoe menoempang) and *Animal Parasites* (Boor-boor, gaai, etc.) as well as *Blight* and *Fieldmice* are amongst the plagues to which weak trees are more or less exposed.

Though we cannot enter into further details which would ask a good many pages, this condensed enumeration of plagues and diseases easily accounts for the disastrous results that have overtaken sooner or latter the cultivation of nutmegs outside the Indian Archipelago.

ESTIMATE OF THE WORLD'S PRODUCE OF NUTMEGS.*

IN TONS (1000 K.G.)

I. *Netherl. East-Indies.*	1815	1817-19	1820-29	1830-39	1840-49	1850-59	1860	1865-74	1875-84	1885-94	% of Total.
Bandagroup ...	241	195	244	220	297	317	536	470	580	600	37·4
Moluccas ...	—	—	3	12	12	45	62	70	140	160	10·—
Celebes ...	—	—	—	—	—	—	—	48	180	150	9·4
Sumatra ...	—	50	50	20	15	37	43	150	240	340	19·6
Java	—	—	—	—	—	—	30	30	60	80	4·9
Total Neth. East Indies ...	241	245	297	252	324	399	671	768	1200	1304	81·3
II. *Others.* ..											
Penang ...	—	—	—	26	86	263	391	—	140	} 200	12·5
Singapore ...	—	—	—	—	15	120	200	—	—		
eylon ...	—	—	—	—	—	—	—	—	25	—	—
West-Indies ...	—	—	—	—	—	—	—	10	10	100	6·2
Total Outside Neth. E. Indies	—	—	—	26	101	383	591	10	175	300	18·7
Total World's Produce ...	241	245	297	278	425	782	1262	778	1375	1604	100 %

* According to statistical data compiled by Dr. Warburg.

GOOD AND BAD YEARS ALTERNATING.

Banda-Crop: According to Valentijn the total produce reached in 1634, 666,747 lb. (Amsterdam) *nutmegs* and 183,720 lb. *mace*. During the decade 1662—72 the yearly produce is estimated: 458,951 lb. *nutmegs* and 117,229 lb. *mace*. In 1710 Siberg puts it at 704,000 lb. *nutmegs* and 176,000 lb. *mace*. In 1778 the total produce sinks as low as 30,000 lb. *nutmegs* on account of a disatrous gale. The years 1785—1792 give poor results 22,459 lb. *nutmegs* and 7,504 lb. *mace*. In 1809 Daendels shows better results again 350,000 lb. (first estimate) 475,000 lb. (final estimate) *nutmegs*. In 1816 volcanic eruptions bring the figures according to Dr. Bleeker down to 127,239 lb. *nutmegs* and 31,809 lb. *mace*. The following years show better results, Especially 1860 proved a very good year, the produce being then estimated at 1,072,765 lb. *nutmegs* and 275,586 lb. *mace*. In 1867 the yield is only half of that in 1860. The next years show rather abundant crops and especially 1876 with 1,341,000 lb. *nutmegs* and 382,000 lb. *mace*. But in 1878 on account of excessive drought the crop is vevy poor once more, the yield being 464,000 lb. *nutmegs* and 164,000 lb. *mace*. Next year the results are much better, and 1881 is again a year with a very large crop 1,322,000 lb. *nutmegs*. In the following years the crop is good and repeatedly (1887, 1888) even abundant. In 1889 the crop is poor again 566,000 lb. *nutmegs*; whilst from the years after that up to 1895, that of 1893 beats the record with the large crop of 1,400,000 lb. *nutmegs* and 352,000 lb. *mace*.

The fact that good and bad years alternate at unforeseen intervals on account of drought or territorial (volcanic) disturbances, is shown by the foregoing list of figures.

(*To be continued.*)

THE GOLD MINES OF INDIA.

It was stated in a previous number of *British Indian Commerce* that coal and iron were not, by any means, the only minerals which abnnded in India. The next to them in practical valne is gold, and as the India Government has finally decided to adopt a gold currency and standard, the Indian gold mining industry has acquired greatly increased importance. At what historical period the searching for gold was first attempted in India is a matter of some interest. The gathering of this precious metal at and near the surface was doubtless begun in India, as in other countries, at a very early period. It was stated by Mr. S. U. Syed Ali Birgrami, a distinguished native metallurgist, in his essay on the "Iron Industry," that a human skull was found, in the Wundli Gold Mine in the Deccan, 210 feet below the surface. The ancient native miners in India did like the Romans in Spain, most skilfully work out the surface gold, but were stopped from going deeper by the influx of water. In the recently published book on "The Gold Mines of the World," written by Mr. J. H. Curle, who has visited nearly all the mines of every country, the author says: "In regard to India, several of the world's greatest mines are found here." This is very high testimony. As the mines in India which are now being chiefly worked are those of Mysore, some of which have proved to be extraordinorily prolific, and those in the Nizam's territories, namely, Wundali and Raichore, Mr. Crule appears to have been greatly impressed with their richness. The former working of the Mysore mines was doubtless profitably carried on by Tippoo Sultan and his predecessors who, it has been historically recorded, had a vast aconmnlation of golden treasure which had been extracted from the Mysore mines when he ruled the conntry. A great portion of the treasure doubtless fell into the hands of his captors when he was defeated by the English forces. These mines were probably then worked by slaves, but up to abont 1870-71 they appear to have laid dormant or nearly so. Previous to that time there were always native searchers for gold, in and near the Wynaad. There were the "Pannirs" and "Korumbars," two native

races, who washed and dug for gold, obtaining about four annas worth each per head a day. In other parts of India, as well as Mysore, there were always searchers after precious metals. In most of the streams on the western coast of India, gold is found associated with black magnetic iron sand. The iron sand is used in native iron furnaces, or as dust for spreading on written documents to dry the ink instead of using bloting paper. On the seaside, near Beypore and Calicut, there is always an accumulation of this precious black sand, and with it are particles of Gold. The chloride of sodium in the sea water decomposes the impurities with which the gold is associated. In Queensland, Australia, on the sea coast, where the large rivers empty themselves into the sea, after heavy floods which cover the low swampy lands, a similar muddy, black sand accumulates, and is very carefully collected, with profitable results, in the shape of fine gold in considerable quantities, and of the highest value because of its purity. Between the coast of Beypore and the Wynaad Hills on the low lying ground there are many traces and remains of ancient gold mines once worked, but now abandoned for no other apparent reason than the want of enterprise. The native minors could only go down to the water-bearing strata, where they would be drowned out for want of drainage appliances, which is no longer a difficulty. The searching for gold mines, though no exact rules can possibly be laid down, is not, however, so very complicated or mysterious an occupation as may by some be supposed. There are certain geological and mineralogical, as well as topographical rules, which, if carefully followed, will indicate the possibility of gold being discovered. Such were the data which enabled the late Sir Rhoderick Murchiston to indicate that gold would probably be found in certain parts of Australia and South Africa, though its existence was very well known beforehand in both cases, but the technical rules upon which Sir Rhoderick built his theory were strictly correct.

As regards the Indian gold mines, the late Sir Richard Owen, Director-General of the Natural History Museum, owned a coffee estate in the Wynaad, which, during the ten years of his owner-ship, had cost him a thousand a year. Getting tired of his bad bargain, and his canny Scotch manager having retired and set up an estate of his own on his accumulated savings, the Professor wished to sell the property, and on transferring it to the buyer, he said: "If you will examine the rivers on the estate you will find gold"; and gold was actually found; but when the samples were shown to the leading merchants in Madras they attached no importance whatever to the discovery. That was in 1862, and it was not until 1875-76, when the India gold mining mania raged, that there was a rush for mining properties, and fancy almost fabulous—prices were offered for mining rights in the Wynaad. Unfortunately, too often and too freely were such prices paid, without any guarantee that the properties contained paying gold. Amongst other properties was that of Sir Richard Owen, for which £1,500 was originally paid to him; for this the modest sum of £100,000 was asked, but not obtained. The surface outcrop of the lodes of quartz did, neverthless, yield 11 dwts. of gold per ton, worth 40s. From 1875 to 1885 a great number of Indian gold mining companies were started, with an aggregate capital of many millions sterling, and very exorbitant prices were asked and paid for mining rights. Large fortunes were acquired by promoters and speculators, but when the boom was over most of these companies fell into the hands of "wreckers," and were wound-up. One company, for example, which had bought its rights for £40,000 cash and some fully paid-up shares, had no more money to send out a competent agent to test or work the mine, and it had, therefore, to be wound-up, and the right abandoned. Yet there was clearly traceable on that estate six or eight good quartz reefs, which assayed 10 to 12 dwts. of gold per ton, worth 40s.

This was a capital period for retired Indian Army officers and civilians, who rushed to the front as directors, managers, and experts, with about as much knowledge of gold mining as a cow (or say a calf) knows about the differential calculus.

There are very few gold mines put upon the market which could not yield a good return for capital actually expended in working them, but when two-thirds of the capital is taken as purchase price for the same, the returns must be very poor indeed, except in very exceptional cases. A gold or any other mine should never yield less than from 10 to 20 per cent., for, of course, as the mine is worked, it becomes of less and less value till exhausted. The original cause of the *furore* in the Indian gold mines was that one of them, the "Alpha," which belonging to a large mercantile firm in Bombay, which failed with debts of over £2,000,000 sterling and ruined a Glasgow bank, was as extravagantly over valued by the liquidators, who declared the mine in India would return all that was due to the creditors and the bank as well. On the strength of this statement there was a rush of Indian gold mines.

It is a remarkable fact that 80 per cent. of the gold of the world is obtained from the beds of gravel, which contain small particles of fine gold, worth not more than 10d. to 2s. 6d. per ton of stuff. These gravel beds exist in many countries, but Russia, California and Australia are the most famous. Such deposits fromerly existed in Spin, whence the Romans obtained one million sterling's worth of gold annually. The remains of their stupendous mining which still exist show that they were worked by hydraulicing, as in Calfornia, and they surpass anything done in that country at the present day. There are doubtless, similar deposits in some part of India which are as yet unexploited. The most certain indication of the existence of gold is when it is found in the gravel of the various streams, as in the Wynaad; and the quartz veins, which exists in the Silurian schists, in the same locality precisely as gold exists in North Wales. It has, however, been well ascertained that the presence of "Trap Dykes," such as occur on the western Coast of India, when they are sound traversing the schistose rocks, that *dislocation* or contact apparently creates the quartz lodes which contain gold. These lodes almost invariably run north-east and south-west, the gold being secreted in small veins and pockets, sometimes visible, but more frequently not. This gold is often very pure, but is more generally associated with silver, copper, zinc and iron pyrites; and it requires considerable experience and familiarity with mineralogy, as well as chemical knowledge, in order to determine not only the presence of the gold, but also the value of the ores. Very poor ores can now be profitably reduced.

The gold at and near to the surface in India has, of course, long since been gathered. Deep mining has been limited by the accumulation of water in the pits, but in many parts of India gold has been, and is still, obtained in some of the rivers, as from the Sona river (Gold River), which comes out of the Himalayas in Northern India. The gravel is still washed for gold to a very limited extent. Much of the fine gold work done in Delhi by the sonars (gold smiths) is made from gold brought across the Hiamalayas from Thibet, in the shape of smal ingots about the size of the finger. Traders bring this over with goat's wool and borax, which they exchange for wheat and warm woollen clothing.

It is a curious fact that true granite has never yet been found in India. Trap and schistose rocks are plentiful, some of them like stratified granite, and frequently so called, which is a misnomer. It is in those schistose rocks where gold is found, and these are plentiful enough from the Himalayas to Cape Comorin. Were these gold mines properly and inexpensively worked, they would yield a fair profit, if they were not overweighted with capital, too often the custom nowadays. To carry on a gold mine from an establishment in London 7,000 miles distant, reliance

must be entirely placed upon the energy, skill, and integrity of an agent. India is not the country for enterprising and energetic Colonists in the usual acceptance of that term. As to the best mode of dealing with the mines, it has been suggested that they should be worked by convict labour. This was the custom with the Romans in Spain, where the descendants of these people still exist as a separate race, and still wash the rivers for gold after 2,000 years. The difficulty of dealing with convict labour would be the setting of task work, one of the best stimulants to Indian as well as other workmen. One the other hand, finding occupation for convicts without encroaching prejudicially upon the legitimate tradesman has been a question in India as well as other countries. Gold-mining would not compete with the ordinary tradesman prejudiciously. Gold-mining is not, as a rule, a profitable occupation. In California and Australia, in the best of times there, if the results abtained were divided equally amongst the successful and the falures, it would not give a fair day's pay for the labour, and if all the gold mines of the world belonged to one syndicate or compauy the balance on the year would be on the debit side of the accuut, hence the almost nominal intrinsic value of gold, and, therefore, its suitableness as a staudard. The same, howeaer, acnnot be said of silver, the cost obtaining which fluctuates greatly between *nothing* and twentypence per once, while gold remains at £3 17s. 6d.—*Indian Agriculturist.*

CACAO CULTURE IN ECUADOR.

The history of Ecuador does not record when the cacao plant was introduced into the country, but it is stated that the production in 1741 was from 35,000 to 40,000 "cargas" of 81 lbs. each. It is believed that cacao came originally from Mexico, where it was cultivated by the Aztecs long prior to the Spanish conquest. In Mexico it was called "cacri" or "cascara quahuitl," and the product was called "chocolatl," from which the word chocolate is derived. It is produced in five provinces of the coast of Ecuador, Los Rios, El Gro, Ouayas, Manavi, and Esmeraldas. The soil best adapted for cacao plantations is one that is deep and moist, the root of the tree growing vertically downward to a considerable depth. Silicious clay is especially preferred on account of the phosphoric acid and potash required by the bean. Banks of navigable rivers are selected generally because of the transportation facilities, but important plantations are found at considerable distances from waterways. Cacao is planted from fresh seeds. Four or five are put in each hole, which are five yards apart, in rows. Formerly they were two or three yards apart, but experience has shown that this method does not give the plant sufficient air, light, and nourishment. The United States Consul-General at Guayaquil says that the cultivation of cacao in Ecuador is limited to caring for the plant until it reaches maturity, then cleaning and weeding once a year. In the first few years the plant is pruned occasionally, in order that it may "run to fruit" more quickly. Manures have never been used, even when the ground has been cultivated over a century, and no irrigation is practised. The sediment, spread over the lands by the rains during the rainy season, and the decaying vegetation, appear to afford sufficient nutriment. In some haciendas, however, the proprietors pile up leaves and other vegetable matter found in the vicinity of the tree at its foot, and also rub down the bark with coarse cloth to destroy the adhering parasites. In the primitive manner in which it is grown and harvested, cacao yields a good return on the capital invested, but if scieutific methods were adopted there is no doubt that the increase in production would be large. In the sixth or seventh year the tree commences to bear, but the pods at this time are very small and scarcely repay the effort to gather them. In the tenth year the tree reaches full maturity. It then produces on an average 1 lb. of dry cocoa of good *quality.* There are many trees which produce more, especially those which are isolated, some of which have yielded at one picking as much as 7 or 8 lb. In the province of Oro (Machala), 1½ to 2 lb. per tree is the estimated yield. The tree is in bloom during the entire year, but most of the blossoms fall before fructification, which occurs twice a year, the time varying with the locality. The cacao tree grows to a height of 20 or 30 feet; its leaves are evergreen and lanceolated in form; the base of the main trunk attains a thickness of 8 to 10 inches; the bark is hard and of greenish coffee colour. The blossom is very small, pinkish white and wax-like in appearance. It grows directly out of the main trunk and branches. If it fructifies, the petals fall off, and from the stamens, in the course of from fifty to seventy days, an oblong pod is developed. This pod is of golden colour, and contains some twenty to thirty-five grains of cacao, enveloped in a gummy liquid which coagulates on exposure to air. The outer rind of this pod is dark or golden yellow in colour, and very hard, a sharp instrument being necesssary to cut it open. Its size varies acoording to the kind of cacao, from 8 to 15 inches long by 2 to 6 in. thick. The outer rind is marked by longitudinal furrows, more or less pronounced, which indicate the interior arrangement of the seeds. Both the outer rind and the gummy contents of the pod are porous, and blacken in colour as soon as picked, and in Ecuador are of use only to fertilise the soil upon which they are cast. As soon as the pods begin to ripen, they are removed with pruning knives, very sharp, and attached to the ends of long poles, which are lengthened by joints as often as required. As the twigs are very tough, the blow with this instrument must be strong and well aimed, and the labourers must be experienced on account of the particular skill that is required and the fatigue that attends handling heavy poles sometimes 30 feet high, with the face continually upturned. Whenever they can be reached the pods are cut off with a machete. A good deal of cacao is lost by the carelessness of the labourer, and his disinclination to deal with the pods in the upper branches. The pods are heaped in piles by one set of labourers, while another cuts them open and extracts the contents. A sharp pruning knife is used, and the seeds are often damagedthrough carelessness. For extracting the gummy substance and the seeds, an implement made of an ox rib is used. The drying is done on open platforms made of split bamboo and palms, where the cacao is exposed to the sun during three or four days, and in order that it may dry uniformly and well, labourers are employed to tread it out with bare feet. If not well dried the bean is apt to ferment; and if excessively dried it shrinks and finally turns black. The dryers are provided with covers for protection against rain. Attempts have been made to introduce drying machinery (steam), but at present not one plantation in Eucador uses it. When dried in the primitive fashion stated, a great deal of pulp yet adhering to the grain, the cacao is put into sacks and sent to Guay quil to be sold in its natural state. Some merchants, it is said, attempt to deceive the buyer by washiug an inferior bean in achiote, which gives the skin the appearance of first-class cacao, but this practice is severely condemned by honest merchants, and is seldom followed,nor is reddish earth used in Ecuador as it is elsewhere for the purpose of preserving the grain from decomposition, and of increasing its weight. Reaching Guayaquil, the cacao is subjected to the cleaning process. Splinters, dirt, and defective beans are eliminated, and the adhering clusters of beans broken apart and dried several times before shipment. During this process the cacao loses 4 to 5 per cent, in weight. The sacks for foreign shipment contains from 60 to 70 kilogrammes (132 to 154 lb. net. The largest portion of the crop is bought in advance by Guayaquil merchants engaged in this business, who lend considerable sums of money during the year for current expenses of cacao estates. Large capital is necessary, and the number of merchants engaged in the business is limited. The profits of a plantation depend chiefly on the quality of

the land, management and proximity to market but; it may be reckoned approximately at from 40 to 50 per cent. per annum on the capital invested which will continue for an indefinite period, cacao trees lasting for several generations. The price of land varies greatly, and depends on the caprice or need of the seller. Land adapted to cacao cultivation covers an area of some 19,600 square miles in the coast provinces of Ecuador. A very small proportion of available land is now under cultivation, although there are large tracts adjoining important estates. The chief impediment to the rapid development of cacao plantations in Ecuador is the system of "peonage conciertos," or slavery in all but name, which is in vogue, whereby labourers are bought and sold openly for debts. The production of cacao in Ecuador has been increasing since 1836, and the crop in 1899 is expected to be nearly 30,000 tons, the chief producing province being Los Rios, these following in their order of their importance: Guazas, El Oro, Manvi and Esmeralds.—*Journal of the Society of Arts.*

GAME AND FISH ON THE NILGIRIS.

There is always a good deal of general interest to be found in the pages of the annual reports of the Nilgiri Goverment Fish Preservation, Association which held its annual general meeting at Ooty, on Friday. The year is said to have been a very successful one in the way of the preservation of these two sources of sport that yields "supplies" for the table. The first article in the report describes what has been done during the year in the way of the "destructian of vermin"; but the word "vermin" here is used in a very special sense. For instance, the creature that is primarily set down as vermin is the otter; and it is so called because the otter is the great enemy of trout—a species of fish which the Association have long been trying to cultivate in Nilgiri streams. But the Nilgiri streams—in the words of the reports—"swarm with the pest, and our promise of trout greatly depends on the destruction of the vermin." Something was done during the past year: for seven otters were killed, which is the second best record. Of other "vermin," 11 wild dogs, 141 wild cats, and 62 mongoose were accounted for, which was a record in every case.

The report regrets that, in spite of protection, immature game not unfrequently falls a victim to the "chapter of accidents" or; worse still, is killed by inexperienced sportsmen, who trust entirely to their shikaries, and are unlucky enough to get hold of unscrupulous men who only care to secure meat add trade on the inexperience of their employers and urge them to kill game that should be left for another day. The report represents that if the Association can but succeed in making things too hot for the careless or unscrupulous shootist, and especially for the worst class of shikari, it will be possible to write more definitely and satisfactorily of the results of protection. Actul poaching by the Badaga population has undoubtedly been checked; and at the presnt moment the most confirmed poachers are Kurumbers from Malabar, who make raids on the Kundahs and manage to evade detection, and wonder, no doubt, why they shouldn't be allowed to capture the game as freely and unrestrainedly as their father and forefathers did before them!

As for the culture of trout, Major Grant, v. c., who was an enthusiastic fisherman, has gone; but in Major T. N. Bagnall the Association has found "a keen all-round sportsman, who has gone *con amore* into the business of trout culture in a workmanlike fashion, which promises great things for the future." Hitherto the importation of trout ova has not been very successful, and Major Bagnall reports, in amusing fashion, that the whole supply received during the year was worthless, the fact being that in some cases "it had altogether rotted away, and only the smell remained." For the rest, he reports that Burnfoot Lake unquestionably contains trout though he has never seen one himself. Some have been seen in Avalanche river; but still they have never appeared to Major Bagnall. In Emerald Valley river, on the 23rd of June, Major Bagnall caught a male trout weighing 4 lbs.—"he fought well, and was in good condition." Others have been caught at the same spot. There is no certain evidence of trout having been seen in Pykara river, but Captain Campbell, R. A., who was fishing above the bridge in July, thinks a small trout came at his fly. Carp seen to be thriving there. Captain Beadnell has had most success, as he caught 15 lbs. weight of fish in tree hours one day. Major Bagnall believes these fish to be Mahseer and wants opinions.

Apart from fish, the "Nilgiri Game Bag" shows that all sorts of animals have fallen victims to the guns of different shikaris during the past five years, namely ibex, sambur, panthers, bisons, bears, and tigers. The last bear was shot at Kullakombay, in September last; and in 1899 there have been as many as nine tigers shot. the largest of which measured 6ft. 6 inches.

Certain rules were fixed at the meetig in regard to the preservation.—*M. Times*

PUBLIC SALES OF TEA IN COLOMBO

DURING THE YEAR 1899

	Offered	Sold	Avg.	Exchauge Demand Drafts. 1899.	1898.
	lb.	lb.	c.	s. d.	s. d.
Jan. 11	626,680	562,674	36	1 4 1-8	1 4
,, 18	911,981	767,907	35	1 4 1-8	1 3 31-32
,, 25	852,419	760,805	34	1 4 3-32	1 3 15-16
Feb. 1	502,405	462,147	36	1 4 3-32	1 3 7-8
,, 8	521,541	480,362	38	1 4 3-32	1 3 15-16
,, 15	717,348	639,171	38	1 4 1-32	1 3 7-8
,, 22	685,113	651,223	40	1 4 1 16	1 3 31 32
Mar. 1	642,595	590,740	42	1 4 1-32	1 4
,, 8	582,808	521,913	42	1 4	1 4
,, 15	722,156	631,788	42	1 4	1 3 31-32
,, 22	868,240	743,492	42	1 4	1 3 13 16
,, 28	606,301	499,2[illegible]9	43	1 4	1 3 13-16
Apr. 12	1,159,307	1,037,992	44	1 4	1 4
,, 19	872,706	672,060	43	1 3 15-16	1 4 1-16
,, 26	666,187	506,052	43	1 4	1 4 1-16
May 3	685,345	487,540	39	1 4	1 3 15-16
,, 10	859,797	673,360	38	1 4	1 3 31-32
,, 17	1,080,296	912,283	36	1 3 31-32	1 4 1-8
,, 24	846,336	751,891	37	—	1 4
,, 31	891,325	797,155	37	1 3 31-32	1 4 1-32
June 7	682,239	585,644	37	1 3 31-32	1 3 31-32
,, 14	936,119	846,169	37	1 4	1 3 31-32
,, 21	871,993	745,658	37	1 4	1 3 29-32
,, 28	762,845	679,995	36	1 4 1-32	1 3 3-4
July 5	714.012	618,643	38	1 4 1 32	1 3 21-32
,, 12	651,941	566,198	36	1 4 1-32	1 3 11-16
,, 19	1,027,345	809,368	36	1 4 1-32	1 3 15-16
,, 26	894,271	735,708	35	1 4	1 3 13-16
Aug. 2	446.516	348,521	37	1 3 31 32	1 3 27-32
,, 9	730,189	576,352	37	1 4	1 3 29-32
,, 16	709 623	563,242	36	1 4	1 3 29-32
,, 23	727,824	732,068	37	1 4	1 3 31 32
,, 30	779,117	690,039	40	1 4	1 4
Sept. 6	585,206	507,701	38	1 4	1 4
,, 13	668,769	625,950	40	1 4 3-32	1 3 15-16
,, 20	891,490	853,840	40	1 4 3-32	1 4
,, 27	739,242	696,767	43	1 4 3-32	1 3 15-16
Oct. 4	582,724	501,144	41	1 4 5 32	1 3 31-32
,, 11	734,160	560,688	43	1 4 1 8	1 3 31-32
,, 18	765.446	630,912	40	1 4 1 8	1 3 31 32
,, 25	784,427	594,483	38	1 4 1-8	1 4
Nov. 1	563,676	496,304	40	1 4 3-32	1 4
,, 8	632,286	541,472	39	1 4 5-32	1 3 15-16
,, 15	678,871	506,3[illegible]3	38	1 4 5-32	1 3 15-16
,, 22	926,087	635,403	38	1 4 1-8	1 3 31-32
,, 29	819,343	717,697	37	1 4 1-8	1 4
Dec. 6	900,065	735,777	36	1 4 1-8	1 4
,, 13	851,546	688,126	37	1 4 1-8	1 4 1-32
,, 19*	1,130,000	930,000	37	1 4 1-8	1 4 1-16
Total f r 1899—	37,488,258	31,870,236	38½	1 4½	1 3 7-8
Total for 1898—	35,928,262	28,831,747	35	——	——

* Approximate.

PUBLIC SALES OF TEA IN LONDON.

DURING THE YEAR 1899.

		Packages Offered.	Packages Sold.	Reuter's Average. 1899	Gow. Wilsons and Stanton's Average. 1899.	1898.
Jan.	5	20,000	18,000	8	8	$8\frac{1}{4}$
,,	12	28,000	26,000	$8\frac{1}{8}$	8	$8\frac{1}{4}$
,,	19	17,000	15,000	$8\frac{1}{8}$	8	$8\frac{1}{4}$
,,	26	21,000	20,000	$8\frac{1}{4}$	$8\frac{1}{4}$	$8\frac{1}{4}$
Feb.	2	27,000	26,000	$8\frac{1}{8}$	8	$7\frac{3}{4}$
,,	9	24,000	23,000	$8\frac{1}{8}$	8	$7\frac{1}{2}$
,,	16	15,000	14,000	$8\frac{1}{2}$	$8\frac{1}{2}$	$7\frac{1}{2}$
,,	23	15,000	14,000	$8\frac{3}{4}$	$8\frac{3}{4}$	$7\frac{1}{4}$
Mar.	2	21,000	20,000	$8\frac{5}{8}$	$8\frac{1}{2}$	7
,,	9	28,000	27,000	$8\frac{3}{4}$	$8\frac{3}{4}$	$7\frac{1}{4}$
,,	16	26,000	25,000	$8\frac{3}{4}$	$8\frac{1}{2}$	7
,,	23	21,000	20,000	$8\frac{7}{8}$	$8\frac{3}{4}$	$7\frac{1}{4}$
Apr.	13	30,000	25,000	9	9	
,,	20	27,000	21,000	$8\frac{5}{8}$	$8\frac{1}{2}$	$7\frac{1}{2}$
,,	27	18,000	15,000	$8\frac{1}{2}$	$8\frac{1}{2}$	$7\frac{3}{4}$
May	4	21,000	20,000	$8\frac{1}{4}$	$8\frac{1}{2}$	$7\frac{3}{4}$
,,	11	21,000	20,000	$8\frac{1}{8}$	$8\frac{1}{4}$	$7\frac{3}{4}$
,,	18	30,000	27,000	8	$8\frac{1}{4}$	$7\frac{3}{4}$
,,	25	—	—	—	—	—
June.	1	25,000	24,000	8	8	$7\frac{3}{4}$
,,	8	35,000	32,000	$7\frac{3}{4}$	$7\frac{3}{4}$	$7\frac{3}{4}$
,,	15	26,000	24,000	$7\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$
,,	22	19,000	18,000	$7\frac{3}{4}$	$7\frac{1}{2}$	$7\frac{1}{2}$
,,	29	26,000	25,000	$7\frac{1}{4}$	$7\frac{1}{4}$	$7\frac{1}{2}$
July.	6	—	—	—	—	—
,,	13	—	—	—	—	—
,,	20	16,000	15,000	$7\frac{1}{4}$	$7\frac{1}{8}$	$7\frac{3}{8}$
,,	27	8,000	7,000	$7\frac{1}{4}$	$7\frac{3}{8}$	$7\frac{1}{4}$
Aug.	3	13,000	13,000	$7\frac{7}{8}$	—	$7\frac{1}{2}$
,,	10	17,000	16,000	—	—	$7\frac{3}{4}$
,,	17	43,000	36,000	$7\frac{1}{4}$	$7\frac{1}{8}$	$7\frac{3}{4}$
,,	24	41,000	38,000	7	$6\frac{3}{4}$	$7\frac{7}{8}$
,,	31	38,000	32,000	$7\frac{1}{8}$	7	$8\frac{1}{4}$
Sept.	7	31,000	30,000	$7\frac{1}{2}$	$7\frac{3}{8}$	$8\frac{1}{4}$
,,	14	29,000	28,000	$7\frac{3}{4}$	$7\frac{5}{8}$	$8\frac{1}{4}$
,,	21	27,000	26,000	$8\frac{1}{8}$	$8\frac{1}{8}$	$8\frac{1}{4}$
,,	28	28,000	26,000	$8\frac{1}{4}$	$8\frac{1}{4}$	$8\frac{1}{4}$
Oct.	5	31,000	29,000	$8\frac{3}{8}$	$8\frac{1}{4}$	$8\frac{1}{2}$
,,	12	29,000	28,000	8	8	$8\frac{3}{4}$
,,	19	25,000	23,000	8	$7\frac{7}{8}$	$8\frac{1}{2}$
,,	26	22,000	21,000	8	8	$8\frac{1}{2}$
Nov.	2	23,000	22,000	$8\frac{1}{2}$	$8\frac{3}{8}$	$8\frac{1}{2}$
,,	9	29,000	26,000	$8\frac{1}{4}$	$8\frac{1}{4}$	$8\frac{1}{2}$
,,	17	23,000	22,000	$8\frac{1}{4}$	$8\frac{1}{8}$	$8\frac{1}{2}$
,,	23	26,000	22,000	8	$7\frac{7}{8}$	$8\frac{1}{4}$
,,	30	20,000	19,000	$7\frac{3}{4}$	$7\frac{5}{8}$	$8\frac{1}{4}$
Dec.	7	23,000	21,000	$7\frac{3}{4}$	$7\frac{5}{8}$	$8\frac{1}{4}$
,,	14	22,000	19,000	$7\frac{3}{4}$	$7\frac{3}{4}$	8
,,	21	12,000	12,000	$7\frac{3}{4}$	$7\frac{7}{8}$	8
Total for 1899		1,117,000	1,030,000	8	8	$7\frac{7}{8}$
Total for 1898		1,139,000	1,092,000	—	—	—

OUT FOR A SHOOT IN BRITISH CENTRAL AFRICA.

(BY AN EX-CEYLON PLANTER.)

HIPPOS—ANTELOPE—ZEBRAS—ELEPHANTS, &C.

To relieve the monotony of the regular routine of daily work on the plantation, a run out now and again for a bit of camp life does one a power of good.

On 8th October I called my negro boy to send for my "Kapatu" (conductor in Ceylon) to get ten men for "machella," hammock slung to a strong bamboo pole, and ten men for loads to start at 6 a.m. tomorrow. To see the happy grin on the "Kapatu's"' face at the prospect of "Nyama" (meat) is amusing. Without a word off he runs to execute the order, for he well knows for such an outing there will be no lack of volunteers.

Before daylight machella team and men for loads are ready. Cook, plate-washer and boy are also ready with baskets of grub, cooking utensils, tent, &c., &c. By 7 o'clock off goes the caravan, after being directed to make for the Ruo—Portuguese boundary.

After giving instructions about estate work during my absence, I tumble into my "machella," manned by two sturdy negroes, one at each end of the pole; and off they trot like a pair of tandem ponies at the rate of about five miles an hour. These men are relieved by others belonging to the team as we jaunt along. After two hours the Ruo is reached: here is a good-sized stream about 80 yards wide, with little water, however, at present, the weather at this season of the year being very dry. We easily crossed.

Now having reached the wilds or

COUNTRY OF THE WILD BEASTS

—"cherombo," as the natives call it—my team of machella men are returned as there are no village paths ahead to run on comfortably. After a cold roast fowl and some curry and rice, washed down with a cup of delicious Ceylon tea, a start is made through the bush—a straight line is made for "Chiperone" mountain seen in the far distance through a hazy sky. We had not gone far when we came upon elephant tracks running in every direction. Some of the tracks bore evidence of large herds having been on the march during the rainy season. Elephants arrive in this "Malolo" country about March and leave when the bush fires begin in July and August, during which time the grass is high and the rivers are flooded, so that people cannot easily get about to disturb the noble beasts as they roam freely during those months. Confident of safety, although quite near to native villages on the opposite bank of the Ruo—the river being seldom fordable, and there are no boats as the people have no use for them—I had not gone far before a man arrived in great haste to say

THREE HIPPOS

were in a large pool in the river and we must go back and have a shot at them. The hippos are somewhat like your rogue elephants, take any number of bullets, and unless struck on the vertebra or right on the brain-pan itself, one need not expect to get them. Upon arrival at the river bank the strictest silence had to be maintained, for when a noise is made the beasts disappear and walk away under water, for goodness knows how far, and by creeping over the shallows to the next deep pool, which may be a mile or more away, escape unobserved. Upon peeping through the bushes three grand pig-like heads were seen, every one turned towards us, only eyes, nose and ears showing above water. A steady aim at the nearest one's ear and bang went a solid Lee-Metford bullet into the head somewhere, for it didn't hit the water. All three heads disappear, only leaving the ripple on the surface where they had been, and all is still as death again. Silently waiting with the rifle ready, silently watching the water, for another shot, is rather monotonous; about 20 minutes later, however, two heads appear about 80 yards down the river and commence blowing and grunting, making a thundering noise—too far off to shoot, however; so I had to make tracks for the spot,

but too late, of course. After about five minutes' waiting one solitary head appears and bang goes a bullet into his eye; down goes my game again only to re-appear; this time done for, floundering heels overhead. "Hit this time" shouts the nigger: "Nyama, nyama" (beef, beef) and the greatest excitement prevails amongst my men. I was meantime not idle, for I charged and fired, as fast as I could, altogether eight shots, and still the beast went on turning over and over; for about 10 minutes this performance went on, till the pangs of death overtook the monster and he sank to the bottom to rise no more. Although I waited fully two hours, I never saw the other two again. How long they can remain under water I cannot say, but the natives say they can sleep lying on the bottom of a pool like the "crocks."

Next morning at daybreak all were astir and we soon made tracks for the river to find at the bottom of the pool, floating against the rapids in shallow water, the carcass of our hippo: the huge beast looked in the distance like a floating whale. All hands were soon at work, skinning and cutting up, great sport going on amongst the willing workers at this job, much to the amusement of onlookers who had congregated from the near villages on the prospect of a piece of meat, for there is nothing the African loves or worships more than "Nyama." No matter what the quality is, the savage eagerly seizes any scrap as the work progresses, skewers it on a stick and roasts it very slightly before a fire or on the smoke and ashes, tearing it to pieces with his horney fingers and devouring it with the greatest relish. The whole day was occupied skinning, butchering and despatching loads of meat to friends and relations in the villages. By evening there was hardly a vestige left except

MY TROPHY

—the head which was slung on a pole and despatched to the estate. Next time I go hippo shooting, I shall try what effect a dynamite cartridge has, thrown into the pool, to rouse the sleeping hippo who won't rise when wanted to. At day light next morning all were active. By way of experiment I tried a stick of hippo meat, but found it too rank in flavour, stringy and porky for my taste. We struck camp and marched in the same direction as yesterday. After two hours' tramp through the forest,—something like your Park country, but instead of the short lawn grass so easy to walk upon, we have a burnt off guinea grass field intermixed with scrub,—we got into a long dambo, that is a damp hollow with short tufty grass like the Uva Patanas.

ANTELOPE.

In the distance, about half a mile off, a herd of "sable" were visible. Skirting along the edge of the forest, I got to within 100 yards, when I could see they were on the alert fidgeting about all in a heap with the leaders of the herd always facing me. No delay now, my only chance, and bang right into the finest bull's chest; a stampede, of course, resulted upon the report of the rifle and there was just time for another couple of shots before they were out of sight. Upon examination of the spoor, we found two were wounded. A party of men started on the track of each. I followed the biggest and had not gone far, before I heard a grunt or a fierce snorting noise: a plunge forward and out bounded my wounded bull, full in view, head erect, with magnificent horns sweeping over his majestic neck. One bullet well forward on the shoulder-blade laid him low with a forward bound. The other "sable" was tracked for a long distance, but the wound must have only been a flesh one for we never came up to the beast; so we gave up the hunt and camped near the water about a quarter of a mile distant.

THE SABLE ANTELOPE

is in my opinion the handsomest buck we have in Nyassaland: some may fancy the more rare Kudu, but there are so few here and only usually individual bucks to be found, that I should think they are emigrants from the large river or lake region. Upon having a look round next morning, I discovered spoor of Zebra, Hartbeest and other game, so I decided to make a stay at my present camp. During a tour in the evening I suddenly rounded a corner upon about 20 zebras and bagged one with a bullet in the neck and another went off badly wounded, for I could see he was not able to keep up with the herd but forged ahead very leisurely at about 100 yards in the rear. My men gave chase and I soon followed. After tracking for about half-a-mile, one of my men pointed out the wounded beauty standing behind a rock doing a bit of an amble on all fours. It was such an amusing performance that I hesitated about firing till my feelings got the better of me, so I put him out of pain with a bullet in the neck. I found he was shot before through the stomach. It always seems to me a shame to shoot such pretty harmless, and might be useful creatures; but the skins make a handsome trophy when set up in a museum. This was my sole reason for shooting the two which fell to my rifle on this occasion. I am sure the zebra could be easily kraaled, and tamed to be a useful and docile beast of burden to mankind. They are to be found in large herds all over Nyassaland.

The following two days were occupied tracking a herd of buffaloes and four elephants which passed through the country: the latter I was very anxious to get a shot at, but I could not come up on them; they seemed to travel at a great rate and evidently on the march to some other part of the country. After a trudge of some 10 to 15 miles I returned dead beat.

Next day I had better luck and managed to knock over

A WART HOG

—not by any means common game in these parts. The other pig is common enough and a very destructive brute in native gardens, but neither is so numerous in Africa, as the wild pig of Ceylon is in the lowcountry about the tanks, being only found in pairs or at the most in herds of three and four. I have never seen more than four together.

The following two or three days I had no luck although I saw and fired at some hartbeests, so I decided to return, meantime dispatching a man for my Machella and men to meet me at the Ruo.

On my way home I shot a Bush-buck and a Nyema; the latter was to my surprise standing by the water taking no notice of us. When examined I found that he had some severe wounds on the neck and head, doubtless clawed by a lion, whom hunger had roused to approach too near before his noble lord had finished his meat.

"SENTIMENTAL" RISES IN COFFEE.

Says the London *Grocer* of Dec. 16 :- In their circular of the 14th ultimo, Messrs. W. H. Crossman & Bro., of New York, make it appear that the recent advance, principally in Brazil coffee, has been entirely "sentimental"—that is, not based on sound and cogent reasons. They, in effect, declare that the higher prices established were engineered on the reports of bubonic plague in the Brazil which, however, was not epidemic, simply sporadic; and though it did not interfere with receipts or shipments of coffee, yet, for "sentimental" purposes, the word "plague" was deemed sufficient in the absence of actual facts, to produce a rallying power in favour of rising markets. A further manœuvre to foster speculation in the article was to publish reports about "Italian labourers leaving the Brazils in large numbers," which, as those know who are familiar with their ways, is no more than they usually do after "the picking of the crop" is over. It also often happens that just as many and even more labourers of the same class return to the work again when the time comes round. Again, the statement that there was a "shortage of labour" is easily disproved by the bare fact that as many as 3,600,000 bags of Santos coffee were moved and marketed this season with four months. In Mincing-lane, likewise, a leading firm of brokers last month described the feeling in favour of dearer coffee as merely one of "sentiment." It must be owned that some idea of this sort has had a good deal to do with the strong upward movement that has sprung up in every branch of the coffee trade since September, when prices were at their lowest. The firm added—"We cannot forget when Brazil coffee was sold from 80s. to 90s., and that only two or three years ago 50s. was looked upon as a very low figure; 32s. 6d. for good average Santos now cannot therefore be assessed as anything but a very low price, even if it has been current under exceptional circumstances, at some few shillings lower." The phrase "some few shillings lower" refers undoubtedly to the period when a similar kind of coffee was disposed of in London for September delivery at about 25s. per cwt., a point at which the most discontented of "bears," we should think, would be satisfied to see the downward tendency cease. Since, then, however, it cannot be denied that the rise in prices has made good progress, being equal to at least 7s. per cwt., and it is not improbable that, considering the highly speculative character of the business in this class of coffee, a fresh start forward will be made ere long. Still, it should be borne in mind that there is another side to the question as to whether the value of coffee is likely to advance or decline, and of that we are reminded by Messrs. W H Crossman & Brother, who tells that—"The low value of coffee results from over-production. The only real help for genuine better prices for coffee is diminished production. Up to now prospects of the growing crop in Brazil are reported favourable. Not a single exporter of good standing in Brazil reports the slightest doubt of this. On the weight of supplies alone coffee values declined to the lowest point, but sentiment (say they) soon put them up, and this in the face of indications of larger supplies next September than ever known before, with the 1900-1901 crop, if anything, in excess of the present—which shows positively that over-production is in full swing. The trade must remember 'bull' sentiment does not consume coffee, but higher prices so created stimulate production. Values finally are not decided by 'sentiment,' but entirely by supply and demand, and it is probable the present sentimental rise will bring the same experience that has attended the different attempts to lift values artificially during the past three years."

PLANTING REVIEW FOR 1889.

(Special.)

TEA.—Considerably more tea has been secured than the amount estimated by the Planters' Association in February, 1899. We have exported 5,000,100 lb. more than estimated to all parts of the world, and we have sent about 10,000,000 lb. more to United Kingdom than last year. The Planters' Association over-estimated the exports of tea to Russia by two and Australia by one and a half millions. In this they erred in good company. Messrs. Forbes & Walker made the same estimate, and there were well-known and smart Colombo merchants on the P.A. Committee who made up the estimate of exports of tea to other parts than the United Kingdom. There are two or three reasons given for the Planters' Association under-estimating the output of 1899.

Manuring.—Doubtless a large sum of money has been spent in the last eighteen months on manure; and if manure is really to do us much good, it was bound to increase the exports in the last few months of 1899, and it will be wise in the Committee of the Planters' Association to take into account a still greater increase to our exports by manuring in 1900, for a second application of manure has always a more potent effect on the bearing than the first.

1899 was, taking it all round, a wetter season than 1898, and there can be no doubt that a good rainfall exerts a very strong influence on the flushing of tea bushes.

Prices.—A terrible dead level has been noticeable in 1899—lowcountry and medium levelling up and high country levelling down. There are only a few stand-out teas, and the outside public cannot judge if these stand-out teas result from finer plucking and lower yields, or disposing of low grades under another mark. Of this we may be certain: manure will force out more leaf where the trees naturally flush more freely, and that is where teas are low priced, being wanting in strength and flavour. I do not lose sight of the fact that manure will also help the bushes to give more leaf in months when the tea bushes do not flush freely and yield good class teas. However, all this extra flush in tea will necessitate tea estates having plenty of withering room in their factories, and also machinery. Is there much inducement to planters plucking finer and sending high grades of tea to the market? The first market wire advice received from London in 1900 was: "Prices firm and steady demand for tea except for fine broken pekoes and fine pekoes." What are the *con's* to much increase of tea shipments in 1900?

Labour.—Plumbago mining and extension of railways no doubt will shorten the supply of labour. You hear already well-known

sensible planters say:—"What is the good of manuring, if we have not the labour to secure the increased flush?"

Tea Blights.—Well, we had these *galore* in May and June of last year, but they have had no effect on the flushing; but they may eventually handicap us, and do away with the probable increase high cultivation naturally encourages us to expect. One who has passed through the *Hemileia vastatrix* experience, remembers only too well an exceptionally good coffee crop after the deadly pest had begun to undermine the strength of our trees. Often and often in the papers and visiting agents' quarterly reports, you would find: "Never saw the estate looking better. The bushes have a splendid cover of leaf and coffee blossom; spike showing up well." Three months after, what a change would come over the spirit of the dream:—"I never saw a more virulent attack of leaf disease. The spike that promised so well has left us only a few berries on leafless branches," &c., &c. However, grey and brown blights are very mild ones as compared with *Hemileia vastatrix*, and present scientific and tea farmers' opinions are that they will be kept in hand by judicious manuring and that they will only be very troublesome when seasons are abnormal.

CACAO.—The exports are decidedly higher than last year, viz. by 5,000 cwt., but that is generally attributed to a large area coming into cultivation. Great attention is paid to dealing with the fungus on its first appearance, but there is the difficulty to be faced of barking the trees so much as to ring the trees, with fatal results to the tree operated on.

CINCHONA.—Notwithstanding better prices, the exports have diminished 30 per cent. under 1898. There is no cinchona to speak of in the island. I have heard men talking of commencing to plant; but I have not seen any such planting. [Certainly, there has been some planting in 1898 and 1899.—ED. *C.O.*]

CARDAMOMS.—The export is less by 40,000 lb. Clearings have been planted in 1899, and some clearings, planted two or three years ago, must be coming into bearing. It is what you may call a "pocket cultivation," and only in the hands of a favoured few.

COCONUTS.—Under all the headings, except "desiccated coconuts", there is a decrease in 1899 under 1898: why or wherefore the writer cannot say.

COFFEE has made a dying spurt in the way of exports, so far as 'plantation' and is concerned. I should think the future crops will barely satisfy the local consumption.

THE TRADE OF CEYLON IN 1899.

No. I: EXPORTS.

(By a mercantile authority.)

The export trade of 1899 has exhibited a good deal of fluctuation both as regards volume and value. But, generally speaking it may be said to have resulted in what may be termed a prosperous year.

TEA.—Our staple product has contributed largely in this direction. The excess for 1898 being about 10 million lb., three-fourths of the excess going to the United Kingdom. At the same time native products, such as produce of the coconut palm, copra, cinnamon, coir stuffs, plumbago, &c., have all to a greater or less degree, participated.

A steady exchange has helped exporters, and this in itself has contributed to promote business in the minimising of risk which had for a long time previously hampered mercantile transactions.

CARDAMOMS.—Exports are slightly under those of last year, but there is extension of cultivation going on in a few suitable localities; the result of this, however, will not be felt for some years to come. Indian demand fell off during the latter part of the year, and prices have declined to about R1 80 for first and second qualities.

CINNAMON.—There has been a good export both of quills and chips and good prices have prevailed throughout the year. The price of ordinary assortment being now about 58 cts per lb. The novel feature in connection with this article is the large export there has been of "wild" description, as much as 195,008 lb. having been exported, chiefly to London, but the value has fallen so low, that the collection of spurious sorts is not likely to be encouraged.

CINCHONA continues to fall off in quantity. About 30 per cent less having been exported last year than in the previous year.

COCONUT OIL shows a decline of about 35,000 cwts. less than in the previous year, the demand for India and Singapore having been much curtailed. On the other hand the export to London and America has gone on briskly. The aggregate for the year is a little over 20,000 tons. The present value is R312·50 to R315 per ton f.o.b., as compared with 317·50 a year ago.

COFFEE.—The year has been a little more favourable, and plantation shows an excess of 6,400 cwt., whereas native seems to have been extinguished altogether, the export being returned as nil.

COCOA.—This has continued in good demand throughout the year, and there is a steady inquiry for bright colory sorts. The value being about 45 to 47 rupees per cwt.

DESICCATED COCONUT.—This industry continues to expand. The quantity exported during the last year being 13½ million lbs., or roughly speaking, ½ a million lb. more than in the previous year.

COIR YARN AND FIBRE continue to meet with a steady inquiry. The quantity sent away being about the same as in the previous year.

PALMYRA AND KITUL FIBRES show some falling-off, the values having declined considerably in the home markets.

PLUMBAGO.—This article has excited the greatest interest during the past year. In the early part of the year, it was supposed that there would be an over-supply and a great decline in prices, and this did take place to some extent, but, it was succeeded by a renewal of inquiry, and prices were driven up to a level beyond all previous experience. There has since been some subsidence of values, but there is still a fairly good off-take at prices which must well repay the pit-owners, if not the middle-men or contractors. The digging of plumbago has attracted all classes of natives, and many must have been reaping a rich harvest, although doubtless there has been disappointment amongst the

less lucky ones. Mining on scientific principles, and by Europeans, is now being attempted in a number of directions, and if successful, this will invest the trade with an interest it has never possessed before. The exports in 1899 were over 30,000 tons, against about 24,000 tons in the previous year.

CITRONELLA OIL shows an increase, and cinnamon oil a decrease in the quantities sent away, but the export keeps very steady from year to year.

PLANTING NOTES.

TEA CORPORATION, LIMITED.—At the annual meeting of this Ceylon Company reported in our daily and *Tropical Agriculturist*, an interesting speech was made by the Chairman (Mr. Cyril Gurney) explaining the working of the concern during the year ended 30th June last. Although so much tea was not produced as was expected still the quantity was in advance of the crop of the previous year by 100,000 lb. There had also been a great improvement in the net price realisd and in the quality, and make of the tea. Favourable reference was also made to the results of manuring and a generally hopeful view taken of the prospects of the concern which is being worked as economically as possible consistently with good cultivation, and management. A good deal was said about the mining of plumbago on the Company's properties, and the directors were authorised to spend up to £500 on this work provided they were advised by a mining expert that it was advisable to undertake it. The directors have also been authorised to issue additional debenture stock for the purpose of developing the property.

INDIARUBBER.—It is hardly necessary to explain the importance of the rubber industry or the great trade in rubber which has now developed with all countries supplying the raw material, and the growing need there is forsupplementing such supplies by cultivating the more suitable kinds of rubber-yielding trees, more especially in the West Indies, some parts of Africa, Ceylon, Southern India and the Straits Settlements. Readers of *Commercial Intelligence*, however, will keenly appreciate the value of a work dealing fully and authoritatively with the whole question, and that is just what we have in "All about Rubber and Gutta-Purcha," a manual compiled by Mr. J Ferguson, editor of the *Ceylon Observer and Tropical Agriculturist*. The first compilation of an India-rubber Planters' Manuel was prepared sixteen years ago, a second edition considerably enlarged appeared in 1887, and in response to numerous enquiries Mr. Fergnson has now published a third edition. In it the author has brought together all the available information in the latest authorities on rubber. [Then follow extracts from the book.] Space does not permit of our dealing at greater length with this admirable work. In upwards of 350 closely printed pages everything of interest in the industry is fully dealt with, and the author has taken great pains to present to his readers just the things they want to know, and in the most lucid and practical manner. Certainly no one interested in rubber should be without a copy of the book —*Commercial Intelligence*, Dec. 21.

Correspondence.

To the Editor.

PLANTING IN PERU.

Peru, S. A.

DEAR SIR,—By chance I became possessed of your valuable "Coffee Planter's Manual, 1898", and I prize it much. There cannot be a place so destitute of conveniences, of information on any subject and especially on the cultivation of coffee, as Peru. This industry, so to speak, has lived and died here several times, but the introduction of pulpers three years ago, more especially last year, (but mark the majority are wooden pulpers) has revived the interest in coffee cultivation, as the coffee can now be exported (although there is a six days' journey on mule back to the nearest railway station). I am ignorant on such subjects as the different kinds of weeds, so detrimental—Hulantala, Spanish needle, Mana grass, Lau-la, etc. We have many weeds here, and I only know them in Spanish, as also bad moths by the thousand. Beetles are not so numerous, and are very highly coloured. I should like to know of any book with coloured plates of the coffee plant in its various stages of growth, also of the weeds and insects (cockchafers) we may have here, but I would require to see their form to distinguish them. Unfortunately planting here has been in the old style, seven and eight feet apart; there is, therefore, necessity to fill up gaps by some other plant that will pay to cultivate. We are somewhere about 4,000 feet or higher, with a fine climate, except when it rains heavily in the months of Dec., Jan., Feb., March; it may rain lightly throughout the other months, and *no winds* to contend with. I would like to receive "The *Tropical Agriculturist*" which, I think, may just furnish the information we most require here and especially in my individual case.—Yours respectfully, P. H. M.

"INDIAN GARDENING."

Calcutta, Jan. 4, 1900.

DEAR SIR,—I beg to draw your attention to the current issue (today's date) of "Indian Gardening," which enters upon a new phase of its existence, by the addition of a Planting and Agricultural Section.—Yours faithfully,

THE EDITOR.

["Indian Gardening" continues steadily to improve: the new section leads off with a sensible article on the Imperial tea duty, showing that 2d reduction is preferable to abolition; but in a time of war like the present, the less said on the subject the better.—ED. *T.A.*]

RUBBER IN BORNEO.—A correspondent of the *China Overland Trade Report*, writing from Sandakan, December 18th, reports that Mr. De Nije, a rubber planter on the Labuk River, has discovered a rubber tree which he believes has been entirely unknown to botanists hitherto, and which is, moreover, indigenous to this country. Its colour is whitish, but the rubber darkens on exposure to the atmosphere, ultimately going perfectly black. Its quality is very good, and the Chinese here are willing to pay $100 per picul for as much of it as they can get. Samples have been sent to Singapore and Colombo Botanical Gardens for classification, and it is hoped the discovery will prove a valuable one.

EXPORT OF PALM PRODUCE IN 1899:

FROM 350 TO 400 MILLION COCONUTS REPRESENTED IN THE EXPORTS.

WE follow the practice of the last few years in drawing special attention to the total annual exports of the products of the coconut palm, in which an increasing number of colonists are becoming interested, in addition to the thousands of Ceylonese of all classes who are embarked in the enterprise. The European merchant as manufacturer and buyer of coconut oil, has since early days of British rule, been connected with the coconut industry. —the first cargo of coconut oil from Ceylon is said to have been taken to England by Capt. Boyd in 1820,—but European planters of the palm have been comparatively few and far between,until of recent years. Unfortunately, too, the earlier investors chiefly affected districts in the Northern and Eastern Provinces—probably because on the seaborde of these coconuts had long flourished —the distance of which from the capital added to the cost of transport to an extent which reduced profits disastrously. Freights have latterly have cheapened, and experience has taught during the past three or four decades, that proximity to the sea is not essential to the successful and profitable cultivation of the palm; and we have European planters now interested in the product in all parts of the Island, from Point Pedro to Dondra Head, from Batticaloa and Trincomalee to Chilaw and Puttalam. A Ceylonese proprietor advertising in our columns, has made us acquainted with the fact that he had sold seed nuts for inland districts like Yatiyantota, Kurunegala, Kadugannawa, Gampola, Matale, Pallegama, Kandy, Wattegama, &c.; while some of the seed-nuts have travelled as far as Lemesuriyagama in the Nuwara Eliya district! In most cases, these coconuts were to be planted with tea; and European planters express themselves very hopefully in regard to this (to them) new product, as a safe second or third string to their agricultural bow.

While last year saw a continuance of palm extensions, the out-turn of crop for 1899 has not been particularly satisfactory. We expressed our fears for the year's crop after the severe drought of the first quarter; and when a second drought was experienced in June-July, we ventured to indicate our conviction that the year's out-turn would be short of that for 1898. So far as the Chamber of Commerce Export Tables are a test, that forecast has unhappily been justified. In Oil there has been a falling-off from 435,935 cwt. in 1898 and 409,600 in 1897 to 400,979; of Copra 325,401 cwt. were exported, against 506,277 in 1898; in Desiccated Coconut, in which there has been steady progression since the trade started in 1891 with 1,416,330 lb., there has been a slight increase from 13 million lb. to 13½ million lb.; Poonac shows a falling off, in sympathy with Oil of which it is a bye-product, from 216,620 cwt. to 174,786 cwt.; and so with coconuts in the shell, a decrease is shown from 12,027,714 nuts (and that figure has been exceeded at least twice) to 11,723,392. There has thus been a falling back in every product of the Coconut palm, save in the Desiccated kernel, the increase in which, however, has not kept pace with that recorded in previous years. It is fair to say that this comparatively new industry of ten years' standing, has probably come to the end of its tether, and that no appreciable increase on the figures just quoted can be reasonably expected. Desiccated coconut is mainly used for confectionery; and as a luxury the demand for it, is incapable of indefinite expansion. Another point to be borne in mind in connection with the palm industry is that it differs from others like tea, coffee, cacao, cinnamon, &c., of which practically the whole crop is exported. The local consumption of coconuts is immense; and, in a prosperous year like the last, cannot fall far short of the number represented by the exports. The exports of the products of the Coconut palm, therefore, represent the total outturn of crop in a far less degree than the exports of our other agricultural products; and to a great extent the exports are regulated by the demand and by prices. Thus both the manufacture and the exportation of Oil, which is the chief product, are regulated by the ruling prices in London and America and the profits realisable from business.

Dealing with the figures for 1898, which were about the largest on record as a whole, we calculated that the exports represented about 400 million nuts as follows:—

		Nuts.
435,933 cwt. Oil represent	..	217,966,500
596,277 cwt. Copra	...	121,506,480
13,040,534 lb. Desiccated	...	39,121,602
Coconuts in shell	...	12,027,714
Total...		390,622,296

The figures for last year, on the same system of computation, taking 500 nuts as averaging 1 cwt. Oil, 240 nuts a cwt. of Copra and 3 nuts a lb. of Desiccated Kernel, the total works out as follows:—

		Nuts,
400,979 cwt. Oil	..	200,489,500
325,401 cwt. Copra	...	78,096,240
13,571,084 lb. Desiccated	...	40,713,252
Coconuts in shell	...	11,723,392
Total...		331,022,384

The difference in exports between the two years is thus represented by about 59 million nuts of the value, at R30 a thousand, of R1,770,000. We have omitted reference in the above tables to Poonac, as it is the refuse after the extraction of the oil from the kernel, and we have credited oil with full 500 nuts. The poonac weighs half the oil; and on that reckoning all the poonac obtained from the extraction of the oil sent away was not shipped—there being a deficit of about 25,000 cwt. That is not matter for regret, as our stock and soil will be all the better for the retention in the island of all the poonac produced. The quantities of coir shipped were much the same as in 1898; but, of course, manufacture and shipments are guided by the demand. We might ship ten times the quantity we do, if only prices were more attractive. The Distribution of Coconut Products is also of interest, and we may have something to say of this in another issue.

COFFEE AND TEA.

It is always a pleasure to see Mr. Fairhurst, of Shanghai, on one of his periodical visits to Ceylon, where he has held estate property for many years. It was in 1877—when "coffee" in Dimbula was supposed to be at the height of its prosperity—that Mr. Fairhurst became proprietor of Ferham plantation with over 240 acres of coffee. Proprietors at that time reckoned their wealth—by counting young coffee in bearing as worth from £60 to £80 per acre in the favourite districts—at many thousands of pounds sterling, but only a few years later, many found themselves ruined. Mr. Fairhurst was fortunate enough to have in Ferham an exceptionally good place where coffee continued to give crops longer than on most places; but still the change in 20 years may be represented by 1,350 cwt. of a coffee crop dwindling down year by year until now it is but 50 *bushels*! Still, tea more than makes up the deficiency, and Mr. Fairhurst sees no reason to dread "blights" so long as cultivation is carefully and liberally attended to. Low-country tea has been scoring for prices lately—just as in the case of China tea, 6d a lb. is given by the large blenders and dealers for tea intrinsically worth 4d, while really good teas do not fetch within 3d of their actual value—but in the long run, Mr. Fairhurst has faith in tea from the higher elevations. He recalls the time when it was said that Ceylon teas at a lower average than 1s or 10d a lb. would never pay, and here we are with more tea than ever at less than eight pence average! The first effect of an advance in the imperial tea duty—say from 4d to 6d a lb.—must inevitably be to check consumption as well as to bother the blending dealers: whether that would give a good chance for independent retailers to cut in, it is difficult to say. Undoubtedly, it was urged during the extra Parliamentary Session that the cost of the war should be provided as soon as possible, and this can only mean a rise in income-tax as well as in tea duty; but it would only be temporary, and allowing for the amount to be levied in South Africa itself, if, as most people expect, the war is over by April or May next, the outlay should speedily be covered.

Mr. Fairhurst leaves for Europe by the Japanese steamer "Awa Maru" on or about Tuesday next.

CEYLON AND INDIAN TEA SHARES—THE MARKET FOR 1899.

The unfavourable features which characterised the year 1898, so far as tea property was concerned, became intensified at the close of that year, and with restricted business in the shares, values—with some few exceptions—dropped and closed at about the lowest point. With the opening of the New Year, 1899, a reaction took place. A belief that the 1898-99 crop would prove short of requirements, owing to the large deficiency, especially in Cachar and Sylhet, caused a smart rise in values of all common teas during the spring, and this resulted in a rebound, upward, in most of the shares. When, however, accounts came to be balanced up it was found that, in many cases, results were much less favourable than had been expected. A few of the larger Assam companies did as well as, or better than 1897-98; but the Assam Company and others panned out much worse. The Dooars district gave satisfactory results; but the Cachar and Sylhet concerns, notwithstanding the help they got from the rise in price at the end of the season, made, for the most part, a very disappointing showing, and the Darjeeling gardens likewise. Owing, however, to certain economies which had been effected, and to a considerable curtailment in extension programmes, the overhead results were not so very much behind those of 1897-98, though very little surplus was carried to reserve. As a consequence, values of shares, from the middle of the year onwards, had a dull and drooping tendency, and the market for them was restricted. In the late autumn a more cheerful feeling supervened, helped by a fairly good market for the produce, and by a smart recovery in the output from the Cachar and Sylhet districts—*the stricken field* of the past two years!

A feature of the year was the dispute between buyers and sellers in July last regarding the conditions of sale, full particulars of which have appeared in our columns. Though the smooth working of the trade has been interfered with, it is believed that benefit will eventually result to all concerned by the ventilation of abuses, and that means may ultimately be found to abolish some of the evils connected both with the warehousing and Customs systems.

The opening up of new fields of consumption of Indian and Ceylon tea progresses slowly, but steadily, Russia and the European continent generally now, at last, showing an advance in this respect in addition to the Australasian, American, and African continents.

The Indian rupee question has, in great measure, ceased to trouble the minds of tea planters, and the decision of the Indian Government to adopt a gold standard has been tacitly acquiesced in. There are indications that the tea industry will be able to adapt itself to the altered currency conditions.

There has been no further flotation of new companies, but some minor additions to already existing capitals. The Consolidated Tea and Lands Company, besides making an issue in August of £550,000 of 4 per cent. Debentures, called £2 per share from its shareholders, amounting to £120,000, and the Amalgamated Company obtained £95,000 by a similar call on its ordinary capital. The Ceylon Land and Produce Company made a call of 10s. per preference part paid share, amounting to £3,200, and also issued £10,750 of new fully-paid 6 per cent preference capital, while the New Dimbula Company reconstructed its old complicated £86,000 of capital by an issue of £79,000 of new £1 shares (a slight reduction!)

A marked feature in the Share Market has been the disfavour into which the issues of the two large Glasgow companies have fallen, owing to the fresh issues and calls (above alluded to) being made at an inopportune moment, when shareholders did not wish to increase their commitments in tea.

Another feature has been the great restriction in dealings in the shares of a large number of the Ceylon companies, other than the bare dozen of leading ones.

Closing prices of shares show, for the most part, a moderate rise from the lowest point, though, as compared with a year ago, they show some irregularity. The financially strong companies and the Sylhet concerns show the most recovery.

CEYLON SHARES (for comparison).

Year 1899.

Company.	Jan.	Top.	Bot.	Dec.	Rise.	Fall.
Ceylon T Plant Ord.	24	27	23½	25	1	..
Ceylon T Plant Pref.	16¾	18	16¼	17	¼	..
Dimbula Valley Ord.	5½	6½	5	5¾	¼	..
Eastern Produce Co.	5⅞	6⅝	5¾	5¾	..	⅛
Standard £6 pd	12	12¾	11	11½	..	½

PRODUCE AND PLANTING.

THIBETAN TRADE.—The report for the past year of the Commissioner of Chinese Customs at Yatung, in the Chumbi Valley, the town opened to Indian trade with Thibet, shows the growth of trade at the place for the four years it has been opened, no duties of any kind being levied during that period. The Commissioner doubts whether, when the duty is imposed, the trade will be able to bear it, and whether it will not take some other route.

DEVELOPMENTS IN TRANS-CAUCASIA.—In addition to the cultivation of tea, the Russian Imperial authorities have introduced viticulture. Last year the area under the vine in all Trans-Caucasia was 250,675 acres, from which over 17 millions of gallons of wine were obtained, besides grapes sold in the local markets and used for distillation, the total of which amounts to about 108,000 tons. Most of the wine is consumed locally, and is of inferior quality, for the growers are poor, and cannot afford to keep it in stock to mature. Cotton of good quality is growing in great abundance both in Trans-Caucasia and Central Asia, and finds its way to the Russian markets. The silk industry, also, is growing, but it is affected by the poverty of those engaged in rearing the worms, so that last year more than half the latter had to be destroyed in the second and third stages of their growth, as their owners were unable to buy leaves for their food. The cultivation of liquorice, which was an important industry in certain districts, is giving place to cotton and rice, so that the factory-owners last year had to pay higher prices.

CHINA AND THE PARIS EXHIBITION.—The Chinese section of the Paris Exhibition is under the control of Sir Robert Hart and the Maritime Customs, there being only one private exhibitor, a well known curio dealer from Pekin. Special efforts will be made to make the section especially interesting, and the tea industry will be to the fore. An officer of the Customs, M. Vapereau, has been in Paris for some months past getting the section into order. The position is not a central one, for it is in the gardens near the end of the eastern wing of the Trocadero, but the slope of the ground and the large trees afford an opportunity for effect. There will be a four-storeyed pavilion, sixty feet high, covering about 400 square yards, and with a lake in front. One of the floors of the pavilion will contain a Chinese theatre and restaurant, while the exhibits will take up two of the floors. There are to be three smaller pavilions, and a row of Chinese shops with men at work.

CHANGES IN MAURITIUS.—The report of Sir Graham Bower, Colonial Secretary of Mauritius, which has recently been issued, draws attention to "a steady but absolutely sure change" that is taking place in the population of the island, which is likely to have important social, political, and economic results. Thirty years ago Port Louis, the capital, was a European town to all intents and purposes: now the greater part of it has passed into the hands of either Indians or Chinese. The change does not stop with the town, for a process of morcellement is going on in the sugar estates, many of the old French sugar planters parting with their lands to Indians, who last year, in spite of the general financial depression of the colony, purchased nearly 15,000 acres for over two millions of rupees. The purchasers numbered 1,427, of whom 485 were originally immigrants, introduced at the expense of the colony. During the last four years East Indians spent over seven millions of rupees in purchasing land, and it is estimated that about a third of the total sugar crop is grown by these small proprietors. The economic effects of this change, say Sir Graham Bower, have yet to be ascertained; a peasant proprietor is, as a rule, less able to bear the vicissitudes incidental to agriculture than a capitalist proprietor employing labourers at fixed wages. When disaster comes, it is more widespread with peasant proprietors, and disaster is always possible in a country so frequently visited by hurricanes. Besides the financial supporters of a peasant proprietary are usually a small and unscrupulous money-lender class. "But, whatever the economical problem may be, the political and social consequences are apparent."

COFFEE & TOBACCO CULTIVATION IN QUEENSLAND.—In the Treasury annual report it is mentioned that the laying down of plantations is gradually increasing, with a tendency to develop rather within the tropics than in the semi-tropical regions. The products that have been sent home, though from first crops and dressed with, in many cases, makeshift appliances, have met with encouraging encomiums from merchants in London. An instructor in coffee culture has been appointed, and with his advice and assistance it is thought that before long Queensland-grown coffee will have a place in the London markets. According to the Registrar-General's statistics there were under coffee in 1896, 138 acres; 1897, 311 acres; 1898, 432 acres. The actual area planted has been ascertained to be considerably larger, but of the area under crop 199 acres only were in full bearing, the production from which was 56,552 lb. Our imports of raw and roasted coffee totalled 179,681 lb., of the value of £7,304, so that there is yet a considerable margin for local wants to be supplied before the export trade can be commercially reached. The appointment of an instructor in the art of cultivating tobacco has been well justified by the renewed attention that has been paid to this crop during the year; and it is intended—should this harvest be a favourable one—to test the London market upon a scale that will command the attention of the European merchants.—*H. and C. Mail*, Dec. 29.

WYNAAD PLANTING NOTES.

NILGIRI-WYNAAD, Jan. 8—The past two months, with the exception of a slight drizzle in December, have been quite rainless. Water is said to be getting scarce in some parts, and springs and rivers are all very low. It is safe to say that no one can remember them having been lower.

The picking of coffee crops will soon be almost over. What the quality will turn out to be, we do not yet know, but the bean runs larger, whatever its actual weight may turn out. With abnormal seasons it seems scarcely reasonable to expect a uniform good average quality, although some estates, as was so conspicuously the case last season, may be quite up to standard. Estimates will mostly be reached, and in some cases exceeded, especially in the Ouchterlony Valley, where a few estates are picking up to 35 and 50 per cent. of their big crops of last year.

The proposal of the Director of the Government Cinchona Plantations, to fell a large block of forest at the head of the Ouchterlony Valley, owing to the appeal of the proprietors of property in the valley to His Excellency the Governor strongly protesting against it, is not likely to be carried out. It is understood that His Excellency will give the matter his sympathetic consideration, and it is rumoured that the proposal has been dropped.

I believe there are now five European miners resident in Devala and Pundalur—a beginning at least of a revival of gold mining. The whole of the District is without any hospital accommodation for Europeans.—*Madras Mail*, Jan. 12.

THE VANILLA CROPS.

Mr. J. S. Simon, of Paris, has issued his annual report on the vanilla-crops for 1898-99, and, as foreseen by him, the returns have been—

		Kilos
Seychelles	.. ..	24,500
Madagascar, &c.	.. ..	13,000
Bourbon	.. ..	77,500
Total	..	115,000

In 1897-98 the crops amounted to 180,000 kilos. (including 125,000 from Bourbon), so that there has been a shortage of 6,500 kilos. As to the 1899-1900 crop, competent judges are not agreed, and it is difficult to say anything with regard to Bourbon before the end of the year. The persistent drought of last year has had a bad effect upon the vanilla plantations, and the cyclone in March has much modified the expected production after the dropping and death of the trees. Some planters say that the production will not exceed that of last year; others fore see a crop of from 90,000 to 110,000 kilos., but an average figure would be 100,000 kilos. The Seychelles Islands are estimated to produce 5,000 kilos. less than last year. On the other hand, Comores is expected to yield a better return. In admitting 100,000 kilos from Bourbon, there will be an increase of only 2,000 kilos. on the total production. In Mexico the crop has been good, but quality is not satisfactory. In Europe, Mexican beans are of little account, first quality being quoted from 150f. to 200f. per kilo., according to quality. The last crop from Tahiti has been very large, and prices have declined owing to the special flavour that can be used only by a limited number of buyers. The actual stocks in Paris and Bordeaux of Bourbon beans are 20,000 kilos. against 45,000 kilos. at the same time last year. The selection offered is not complete, and the cheap, short, common, and split sorts are not to be had. Hamburg has an insignificant stock, and London has very little. Prices have been advancing throughout the year from 55f. to 75f. net per kilo. for first quality, middle length 17 cm. The first lots prepared were sold at 60f. for Bourbon, and a few days since 62·50f. was paid, representing the parity of the net quotations in Europe. Seychelles vanilla is inquired for more than ever, and has reached hitherto unknown prices. The present stocks are not sufficient to last until the end of the year, and the first arrivals of the new crop will be quickly dealt with. At the London auctions prices have been constantly advancing and the demand has been good. Concluding, present quotations are likely to be well maintained, the prospects for the second part of the season depending on the amount of the Bourbon crop, prospects on the future crop, and, lastly, the general demand for consumption. The flowering of Seychelles vanilla is very short, and as already tated, the next crop will be a small ones.—*Planting Opinion.*

COFFEE-GROWING ON THE CLARENCE.

Mr. John Bale, of the Chatsworth experimental station, Clarence River, has supplied me with some interesting notes on coffee-growing. Mr. Bale says; —"I was very much interested in the notes on coffee in Queensland which appeared in the special number of the 'Mail,' October 21. I have taken some interest in the subject for some 15 years past. Coffee was grown on the Clarence in 1848, but very little was planted prior to 1894. Some was manufactured in 1898, and sold at 1s 6d per lb. In that year we collected 5,500 lb. of berries, and made 900 lb. of coffee. This season we have to date 310,080 lb., and the dried berries are very good as compared with those of last season, doubtless because both rain and sun have been in our favour. The roasted coffee is now first-class. The output will be treated at the farm, and will all be disposed of on the Clarence, in fact, a much larger quantity could be sold locally. I observe that the cost of picking the berries in Queensland is very different to that usually ruling on the Clarence. A boy 12 years of age, can pick 100 lb to 120 lb. of berries in a day. Take the average to be 110 lb. This should give 23 lb. of coffee-beans, or about 138 lb. coffee-beans for a week's work at a cost of 12s per week, or 1d per lb. A boy and a girl will pick all my present crop of two acres, and the picking will last into next month. We do all the pulping with a wooden roller turned in a trough on an incline, so that the berries keep a peel by rolling under the roller as it revolves. The coffee is dried, and the parchment work is completed with a U.S.A. No. 750 bean mill, which cost £1 10s. The revolving roaster was made on the farm from a large oil drum. A Coffee mill which costs £2 will grind 2 lb. per minute. With regard to the question as to whether the industry will pay, a great deal depends on whether the State is prepared to assist the small growers so that the capitalist shall not have too large a share of the profits. Coffee at 1s per lb. should pay well, provided the growers obtained their fair proportion of the proceeds, but the exactions of the middleman retard development in this as in all other industries which have to grow from very small beginnings."—*Sydney Mail.*

THE LONDON COCOA MARKET.

[BY HAROLD HAMEL SMITH.]

Noticing several piles of Trinidads of late were being sold from "redrawn samples," as well as the original ones taken by the docks when the cocoa was first landed, I made enquiries to try and find out why the second samples had been drawn and were being shown together with the original samples on the counter. The reason given was that this year, owing to the spell of heat we had from the beginning of June to the end of August some of the Trinidad cocoa showed signs of becoming "wormy"; a very unusual thing with this growth; and so buyers wishing to bid for a pile that had lain at the Docks since May, that is during the hot weather, asked for redrawn samples so as to be able to judge whether the cocoa showed signs of becoming wormy or not. This precaution it seems is not only taken by the buyers, but by the sellers and manufacturers as well, all being anxious to ascertain from time to time how the weather has affected their stock.

I was unable to make out what is the real cause of this "worminess." The actual cause is "eggs." But then where do the eggs come from, and are they always there, or only during the hot spells of weather. Some seem to think they come over in the Cocoa, and only hatch out with very warm weather. Another very reliable authority believes it to be due to insufficient air, or other causes, on the voyage; and gave as a proof that a pile of a well-known brand of Trinidad cocoa was shipped in two lots, and though on landing, the Cocoa to all appearances was identically the same, the first lot soon showed signs of becoming "wormy," whilst the last lot receivvd remained sound to the end. Another reason given was that perhaps the beans not being as well washed and free of mucilage as they might be, owing to the heat fermentation set in, and attracted the insect that lays the eggs, and it is for this reason that Guayaquil, which always has a good deal of dried mucilage attached to the skins, is very liable to become wormy, more so in fact than any other growth, whilst Grenadas are almost, if not entirely free from the nuisance. On the other hand, dealers in Ceylon tell you that they have known the same thing happen with Ceylon Cocoa, which is the driest and cleanest of all Cocoas, so that the cause of the mischief has yet to be discovered, and the sooner this is done the better, for it causes the grower to lose money, and the merchant or buyer much anxiety to know how the cocoa is being affected by the weather; and I am told the Government will

have nothing to do with any Cocoa that shows the least sign of becoming "wormy," and not to alienate such a good customer is in itself worthy of all the attention that can be given to the matter.

The Government not being buyers this week, and the trade still being reluctant to buy publicly, no Cocoa Sales were held to-day; however, from all reports this has been by no means an idle fortnight, over 7,000 bags are reported as having changed hands, besides "several hundred" bags, particulars of which were not published. The following figures will show the rate at which Cocoa is going into consumption during October—1899-1898.

	1899		1898
Imported	... 1,163 tons	...	1,273 tons.
Delivered	... 2,127 ,,	...	1,806 tons.

So that this year the deliveries during October alone exceeded the Imports by 964 tons, against only 503 tons last year.

On seeing the rate of increase in the consumption of Europe one is not surprised at the rapidity with which cocoa is being taken up; here are the figures showing the increase in the consumption during the last five years.

England consumed 15,530 tons in 1898-99, against 10,445 tons in 1894-95, increase about 50 %; France consumed 17,230 tons in 1898-99, against 14,630 tons in 1894-95, increase about 20 %; Germany consumed 18,656 tons in 1898-99, against 9,447 tons in 1894-97, increase about 100 %; Holland consnmed in 1898-99; 15,132 tons, against 8,664 tons in 1894-95, increase about 80 %; and even Spain, hard up as she is, consumed 6,424 tons this year, against 4,481 tons in 1897-98.

Mr. Edward Kynaston sums up the position very accurately when he says:—"The home consumption of Cocoa as indicated by the Board of Trade returns, continues to show a steady expansion. On the Continent also the consumption is known to be extending, and the large production everywhere has met with a ready outlet, and has not entailed any undue accumulation of stocks. We shall commence next year with reasonable stocks, and if it is quite possible, crops do not turn out phenomenally large, as they have done this season, present prices, satisfactory as they are, may well become subject to a further increase. A cold winter following two mild ones will make a great difference in the consumption of Cocoa a s a beverage, and estate owners may look forward with confidence to the coming season.

The following are the stocks at the undermentioned ports:—

	1898.			1899.	
London	108,313	bags	..	97,618	bags
Liverpool	1,735	,,	..	2,733	,,
Havre	95,729	,,	..	123,209	,,

The Havre stock includes 23,107 bags of Trinidads. —*Port of Spain Gazette.*

PLANTING NOTES.

THE EARTH ONION.—Both the *Geographical Journal* and he *Scottish Geographical Magazine* for October publish Sir John Murray's presidential address on Oceanography, delivered to the Geographical section of the British Association, says the *Review of Reviews*. From the results i t appears that considerably more than half of t sea-floor lies at a depth exceeding 2,000 fatho or over two geographical miles. A good deal o f geology is packed up in the following paragraph and its homely comparisons:—

When we regard our globe with the mind's eye, it appears at the present time to be formed of concentric spheres, very like, and still very unlike, the successive coats of an onion. Within is situated the vast nucleus or *centrosphere*; surrounding this is what may be called the *tektosphere*, a shell of materials in a state bordering on fusion, upon which rests and creeps the *lithosphere*. Then follow *hydrosphere* and *atmosphere*, with the inoluded *biosphere*. To the interaction of these six geospheres, through energy derived from internal and external sources, may be referred all the existing superficial phenomena of the planet.

TEA PLANTING IN THE MATALE VALLEY—has long been known to be very profitable and several favoured estates have, in some years, run the far-famed Gampola Valley premier plantation very close in respect of yield. Mr. H. Storey, of Warakamure, has in this way placed on record in our "Handbook and Directory" that he has got up 993 lb. and 1,066 lb. per acre of made tea, *without manure*—a wonderful result. In answer to an appeal, Mr. Storey has now supplied our contemporary with a full return for 8 years—curiously enough since manuring set in, the yield has fallen, owing to unfavourable seasons with droughts:—

Year.	Plucking Aver'ge.	Yield per Acre.	Rainfall.	Remarks.
1892	80	688	76·90	
1893	194	695	59·78	No manure.
1894	194	702	60·89	No manure.
1895	194¾	812	87·24	No manure.
1896	198	99	104·06	No manure.
1897	204¾	1066	98·95	No manure.
1898	206	720	64·31	manured 60 ac.
1899	213	907	88·31	,, other 60 acres.

The very serious droughts of 1898 did a great deal of damage to crop and to the tea also, and it has taken the whole of the last year, with very careful treatment, to bring the tea round again. I am glad to be able to say, however, that now I have never seen the tea looking better. A very unusual drought during the height of the S. W. monsoon last year, and a very unsatisfactory December, affected my yield considerably as I had confidently expected 1,000 lb. per acre. Two of my neighbours run me very close in yield, and I believe several other estates, north of Matale, can show very fine yield returns.

RAINFALL RETURN FOR COLOMBO.

(*Supplied by the Surveyor-General.*)

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897	1898	1899	Av of 29yrs.	1900
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch	Inch	Inch	Inch.	Inch.	Inch.
January ..	0·81	1·45	7·39	5·42	0·62	5·00	2·92	3·81	2·32	6·98	3·09	0·16*
February ..	4·36	2·81	5·32	2·36	0·52	0·81	0·35	1·68	1·98	2·78	1·90	
March ..	5·34	9·43	1·52	5·15	7·44	1·84	5·64	3·66	4·21	0·88	4·92	
April ..	14·27	5.93	13·92	20·39	12·51	9·34	5·93	10·97	22·81	6·66	11·47	
May ..	6·48	17·65	3·00	10·32	3·00	10·09	9·31	8·30	5·80	17·73	11·89	
June ..	1·87	9.79	6·62	11·01	11·32	13·99	8·37	10·14	10·94	9·23	8·34	
July ..	3·32	4·59	1·10	2·20	1·72	0·52	2·85	5·24	6·15	1·11	4·49	
August ..	0·73	1·65	1·86	1·01	0·86	0·92	6·35	9·09	0·97	0·62	3·77	
September	1·50	4·42	1·14	1 99	0·78	4·09	10·99	4·58	6·90	1·48	5·13	
October ..	13·33	35·28	12·24	5·59	20·81	30·36	16·78	4·71	20·60	12 99	14·57	
November..	12·32	18·37	5·86	18·10	14·63	5·83	19.81	11·66	17·38	8·58	12·80	
December..	8·47	7·66	0·86	6·13	3·25	9·44	11·76	8·89	3·05	4·44	6·45	
Total..	72·80	119·03	60·83	89·67	77·46	92·23	101·06	82·73	103·11	73·48	88·82	0·16

From 1st to 9th Jan. 0·16 inch, that is up to 9·30 a.m. 10th Jan.—ED. *C.O.*

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS FOR Nov. 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Allai in the Eastern Province, 50·30 inches and the lowest at Mylapitiya in the Central Province 2·65 inches.

WESTERN PROVINCE.

Negombo, Mr. Bucknall (6) ... 8·68
Kalutara Mr. Gregson (36) ... 11·33
Labugama, Mr. Bond (369) ... 15·59
Henaratgoda, Mr. Silva (33) .. 16·18

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,500) ... 5·59
New Valley, (Dikoya) Mr. Ward (3,700) .. 6·05
Yarrow Estate, Mr. Peto (3,400) ... 8·06
Peradeniya Mr. MacMillan (1,540) ... 3·90
Duckwari, Mr. Edwin (3,300) ... 7·25
Caledonia, Mr Goork (4,273) .. 4·27
Pussellawa, Mr. Powell (3,000) .. 4·94
Hakgala, Mr. Nock (5,581) ... 8·84
S. Wanarajah Estate, Mr. Tatham (3,700) .. 5·30
St. Andrew's (Maskeliya), Not received (4,200) .. —
Padupola, Mr. Ward .. (1,638) ... 5·11
Mylapitiya, Mr. Rowland (1,707) ... 2·65

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) .. 20·68
Jaffna Mr. MacDonnell (8) 9·37
Mankulam, (N. Road) Mr. Walker (167) ... 22·83
Elephant Pass, Mr Silva (7) .. 31·01
Vaugalachettykulam, Mr. Oorloff (179) .. 11·80
Point Pedro, Not received (24) .. —
Jaffna College, Mr. Cooke (9) .. 18·59
Kayts, Mr. Kretser (8) .. 16·28
Kankesanturai, Mr. Adams (10) ... 11·91
Pallai, Mr. Silva (24) .. 8·55
Murikandy, (North-Central Road) Mr. Silva — 19·10
Nedunkeni, Mr. Sanmukam (122) ... 35·20
Chavakachcheri, Mr. Silva (16) ... 12·33
Udupiddi, Mr. Hastings (35) .. 14·18
Marichchukaddi, (14) Mr. Thamotharampillay 10·65
Murungan, Mr. Blechingberg (52) 13·49
Vavuniya Mr. Walker (318) 14·11

SOUTHERN PROVINCE.

Ella Vella (262) Mr. Smith 9·66
Kekanadura, (150) do 2·81
Denagama, (286) do 9·15
Udukiriwila Mr. Lourensz (235) .. 4·85
Kirama, Not received (260) —
Hali-ela (200) Mr. Smith 17·10
Tissamaharama, Mr. Peries (75) .. 3·79
Matara (15) Mr. Smith 6·32
Dandeniya, (157) do 8·89

Urubokka, Mr. Smith (890) .. 8·60
Elagala, Not received (121) —
Taugalla, (94) Mr. Barttlet .. 5·81
Mamadola, Mr. Cade (56) .. 3·77

EASTERN PROVINCE.

Irrakkamam, (42) Mr. Bower ... 14·35
Devilana, Mr. Vauderstraaten (136) 16·40
Sagamata, Mr. Bower (40) ... 8·15
Ambare, do (65) 15·68
Kanthalai, Mr. Carte (150) 6·50
Allai, Mr. Carte (95) 50·30
Rukam, Mr. Vanderstraaten (120) ... 13·40
Periyakulam, Mr. Carte (20) ... 11·15
Chadaiyautalawa, Mr. Edge (57) .. 16·27
Kalmunai, do (12) 1·31
Rotewewa, do (30) 10·35
Lahugala, do (70) 6·50
Naulla, do (39) 6·30
Andankulam, Mr. Carte (41) ... 11·95
Manalpuddy, Mr. Vanderstraaten (21) 11·25
Maha-Oya-Tank, Mr. Vanderstraaten (190) 18·10

N.-W. PROVINCE.

Magalawewa, Mr. Gunaratna (176) .. 4·20
Maha Uswewa tank, Mr. Crabb (160) .. 3·79
Tenepitiya, Mr. Churchill (8) ... 6·12
Batalagoda, Mr. Fonseka — 3·41

N.-C. PROVINCE.

Kalawewa, (268) Mr. Carson 8·36
Maradankadawala, Mr. Carson (443) ... 9·83
Mihintale, Mr MacBride (354) .. 11·83
Horowapotana, Mr. MacBride (217) .. 22·30
Madawachchiya, Mr. MacBride (285) .. 11·05
Topare, (200) Mr. Jayewardane .. 12·61
Miuneriya — Mr. Eves 13·05

UVA PROVINCE.

Bandarawela, Mr. Tocke (4,000) ... 4·47
Haldummulla, Not received (3,160) .. —
Kumbukan, (446) Mr. Emerson ... 6·01
Koslanda, (2,258) Mr. Emerson ... 13·71
Tanamalwila, Not received (550) .. —
Bibile, Mr. Silva (680) 10·56
Taldena, Mr. Fernaudo (1,100) .. 11·94
Allutnuwara—Mr. Leembruggen 19·10

SABARAGAMUWA.

Ambanpitiya, Mr. Caldicott (729) 3·88
Pelmadulla, Mr. Clarke (408) 5·91
Kolonna Korale (Hulanda-oya) (203) Not received —
Avisawella, Mr. Jeffery (105) 10·65

S. G. O. METEOROLOGICAL OBSERVATIONS FOR JULY, 1899.

The following is the return of the total fall of rain for July, from which it will be seen that the highest fall was at Labookellie, Ramboda, 32·95 inches, and the lowest at Batticaloa. 0·10 inches.

Colombo (40) 0·38
Ratnapura (84) 5·27
Puttalam (27) 0
Anuradhapura (295) 1·72
Mannar (12) 0
Jaffna 9 0
Trincomalee (12) 2·08
Batticaloa (26) *0·10*
Hambantota (50) 0·50
Galle (48) 4·85
Kandy (1,654) 5·06
Nuwara Eliya (6,188) 8·43
Hakgala, Nuwara Eliya (5,581) 6·00
Badulla (2,225) 0·51
Vavuniya (317) instruments removed
Kurunegala (381) 1·29
Maligakanda, Colombo Mr. Johnson (70) 1·26
Agricultural School Colombo, Mr. Rodrigo 0·66
Welhelmina Puttalam, Mr. Ratnayeke (131) —
Horakele Estate, Chilaw, Mr. Beven (50) 0·88
Chilaw Kachcheri Chilaw, Mr Koch (10) 0
Franklands Estate —
Veyangoda, Mr. Beven 4·10
Orange Hill, Ragama Mr. Bury (50) 1·15
Henaratgoda Gardens, Henaratgoda, Mr. de Silva (33) 0·97
Kotua Godella, Rambukana Mr. Windus (580) —
Eadella or Liberia Estate Polgahawela Mr. Craighead (425) 3·02
Geekianakanda, Neboda Mr. Towgood (200) —
Polgahakanda, Neboda Mr. Wight (300) 3·56
Labugama, Hanwella, Mr. Bond (369) 5·37
Rayigam, Horana, Mr. Dawson, (300) 3·95
Kanangma, Avissawella Mr. Cooke (200) 8·29
Dunedin Estate, Avissawella, Mr. Bayley, (400) 5·37
Digalla Avisawella, Mr. Tottenham, (400) 8·81
Pambagama, Avisawella, Mr. Bridgman (600) 7·71
Avisawella Estate Avisawella Mr. Byrde (250) 6·53
Yatideriya, Kegalla, Mr. Fairweather — 8·06
Mahawalatenna, Balangoda Mahawalatenna R. M. — 1·38
Agarsland Estate Balangoda Mr. Boyd (2,515) —
Maduwanwala, Rakwana, Maduwanwela R.M. (750) 1·40
Anninkauda, Morawaka, Mr. Anderson, (1,400) 7·07
Panilkauda, Morawaka, Mr. Davidson (1,900) 5·75
St. John Del Rey, Bogawantalawa Mr. Glanville (4,300) 9·45
Friedland, Bogawantalawa Mr. Rammell (5,200) 8·29
Campion, Bogawantalawa. Mr. Gidden, (4,840) 9·29
Blair Athol, Dikoya, Mr. Lane (3,641) 20·14
Annfield, Dikoya, Mr. Knight (4,300) 15·66
Maskeliya Hospital, Maskeliya Mr. Bulner (4,200) 15·91
Hope Estate, Hewaheta, Mr. Bagot (5,500) 8·24
Coldstream Estate, Watawala Mr. Speeding (3,800) 24·38
Holmwood Est., Agrapatana, Mr. Gray (5,249) 11·51
Sandringham, Agrapatana Mr. Orchard (5,200) 8·01
Gingran-oya, Kotmale, Mr. Cox (3,800) 17·75
Labookelle, Ramboda, Mr. Stone (5,000) *32·95*
Dunsinane, Pundalu-oya, Mr. Metcalfe 4,800 16·95
Sogama, Pusselawa, Mr. Eustace (3,500) 6·94
Kurundu-oya, Maturata, Mr. Corbetta (5,150) 2·50
Kabaragalla, Maturata, Mr. Maclean (4,200) 13·27
Maragalla Estate, Moopana, Mr. Betts, (2,200) 2·50
Moopana, Hospital, Moopana (Mr. Sela) (600) 0·95
Madulsima Hospital Lunugala Dr. Vethecan (2,400) 2·90
Meeriabedda, Haputale, Mr. Dupuis (3,600) 2·90
Udahena Estate, Haputale, Mr. Bisset, (4,500) 1·72
Post Office, Bandarawela, Mr. Mendis (4,035) 0·21
Callander, Ohiya Mr. Green (5,125) —
Mariawatte, Gampola Mr. Salmond (1,600) 5·26
Orwell Estate, Gampola Mr. Taylor (1,800) 4·98
New Forest, Deltota, Mr. Wardrop (3,500) 4·94
Rajawella, Estate, Telleniya Mr. Miller, (1,500) 2·65
Lower Spring Valley, Badulla Mr. Rettie (3,650) 2·45
Gourakele Estate, Badulla Mr. Hope (4,200) 3·97
Monsagala Estate, Badulla, Mr. Deaker (4,500) 2·59
Ledgerwatte, Badulla Mr. Rettie (4,000) 1·56
Dea Ella Estate, M'walatenna Mr. Vanderslott (800) 4·80
Sembawatte Estate, N'pitiya Mr. Roe (1,600) 21·52
Gammaduwa, Estate, Rattota Mr. Westland (2,400) 4·34
Kobonella Estate, Rangala, Mr. Pole (3,300) 6·73
St. Martins, Rangala, Mr. Wyllie (3,600) —
Crystal Hill, Matale, Mr. Van Sfrex (1,400) 8·21
Vicarton Estate, Matale Mr. Carrie (3,250) 6·70
Matale Mr. Tisseverasinghe (1,208) —
Warlapolla, Matale, Mr. Dickenson (1,200) 3·83
Dambulla, Mr. Sinnetamby (400) 0·41
Kotta Estate, Pallai, Mr. Todd (13) 7·14
Mantota Hospital, Mannar. Mr. Adams (17) 0
Buttala Hospital, Buttala, Mr. Somasundrum — 0·60
Police Station, Hatton Police Constable Miskin (4,141) 21·59
Medway Estate Nilaveli, Mr. Abraham, .. 4·31
Delwita, Kurunegala Mr. Neame (490) 2·69
Woodside, Uragalla Mr. MacMahon (3,000) 2·52
Gillardstown, Wattegama Mr. Hardy (2,500) 4·84

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Agra Ouvah Estates Co., Ltd.	500	900	1000	—
Ceylon Tea and Coconut Estates	500	—	500 n'l	..
Castlereagh Tea Co., Ltd.	100	..	95	95
Ceylon Hills Estates Co., Ltd.	100	—	30	..
Ceylon Provincial Estates Co.	500	..	500	..
Claremont Estates Co., Ltd.	100	..	25	—
Clunes Tea Co., Ltd.	100	—	100	—
Clyde Estates Co., Ltd.	100	—	70	—
Doomoo Tea Co., Ltd.	100	60	—	—
Drayton Estate Co., Ltd.	100	150	—	
Eila Tea Co., of Ceylon, Ltd.	100	62·50	—	...
Estates Co., of Uva, Ltd.	500	—	300	280
Gangawatta	500	—	..	—
Glasgow Estate Co., Ltd.	500	925	..	—
Great Western Tea Co.,	500	—	640	640
Hapugabalande Tea Estate Co.	200	—	275	..
High Forests Estates Co., Ltd	500	—	570	570
Do part paid	350	—	..	410
Horekelly Estates Co., Ltd.	100	—	—	..
Kalutara Co., Ltd.	500	390	..	—
Kandyan Hills Co., Ltd.	100	—	70	
Kanapediwatte Ltd.	100	..	95	95
Kelani Tea Garden Co., Ltd.	100	40	50	40
Kirklees Estates Co., Ltd.	100	—	145	—
Knavesmire Estates Co., Ltd.	100	—	—	—
Maha Uva Estates Co., Ltd	500	—	500	
Mocha Tea Co., of Ceylon, Ltd.	500	625	—	..
Nahavilla Estate Co., Ltd.	500	—	475	475
Neboda Tea., Co. Ltd	500	500	..	—
Nyassaland Coffee Co. Ltd.	100	—	..	..
Ottery Estate Co., Ltd.	100	..	—	—
Palmerston Tea Co., Ltd.	500	—	400	
Penrhos Estates Co., Ltd.	100	—	100	..
Pine Hill Estate Co., Ltd.	60	—	50	..
Pitakanda Tea Company	500	1,000	—	..
Putupaula Tea Co., Ltd.	100	—	120	.
Ratwatte Cocoa Co., Ltd.	500	—	–	..
Rayigam Tea Co., Ltd.	100	—	70	—
Roeberry Tea Co., Ltd.	100	45	50	—
Rnanwella Tea Co., Ltd.	100	—	70	..
St. Heliers Tea Co., Ltd.	500	500	—	500
Talgaswela Tea Co., Ltd.	100	25	—	...
Do 7 per cent. Prefs.	100	...	..	..
Tonacombe Estate Co., Ltd.	500	—	450	—
Udabage Estate Co., Ltd.	100	..	—	—
Udugama Tea & Timber Co., Ltd.	50	5	10	..
Union Estate Co., Ltd.	500	—	300	—
Upper Maskeliya Estate Co., Ltd.	500	..	500	—
Uvakellie Tea Co., of Ceylon, Ltd.	100	...	70	...
Vogan Tea Co., Ltd.	100	90	92½	90
Wanarajab Tea Co., Ltd.	500	—	1145	..
Yataderiya Tea Co., Ltd.	100	—	400	400

CEYLON COMMERCIAL COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Adam's Peak Hotel Co., Ltd.	100	40	50	—
Bristol Hotel Co., Ltd.	100	—	87½	87½
Do 7 per cent Debts.	100	105	—	
Ceylon Gen. Steam Navgt. Co., Ltd.	100	..	205	.
Colombo Apothecaries Co., Ltd	100	137½	—	135
Colombo Assembly Rooms Co., Ltd.	20	12 50	..	—
Do prefs.	20	—	..	..
Colombo Fort Land and Building Co., Ltd.	100	..	90	..
Colombo Hotels Company	100	300	303	—
Galle Face Hotel Co., Ltd.	100	—	..	..
Kandy Hotels Co., Ltd.	100	..	112½	112½
Kandy Stations Hotels Co.	100	..	30	—
Mount Lavinia Hotels Co., Ltd.	500	—	300	..
New Colombo Ice Co., Ltd.	100	—	172½	172½
Nuwara Eliya Hotels Co., Ltd.	100	25	27½	—
Public Hall Co., Ltd.	20	15	—	—
Petroleum Storage Co.	100	—	—	—
Do 10 % prefs.	100	—	...	—

* LONDON COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Alliance Tea Co., of Ceylon,	10	8–9	—	..
Anglo Ceylon General Estates Co.	100	—	45·50	..
Associated Estates Co., of Ceylon	10	—	..	—
Do. 6 per cent prefs.	10	—	7½	..
Ceylon Proprietary Co.	1	—	12·6–17 6	.
Ceylon Tea Plantation Co.,	10	—	25–26	..
Dimbula Valley Co.,	5	—	5½–5¾	..
Do prefs.	5	—	..	—
Eastern Produce and Estates Co.,	5	—	6¼	..
Ederapolla Tea Co.,	10	—	7–8	..
Imperial Tea Estates	10	—	5–6	..
Kelani Valley Tea Asson.,	5	—	5–6	..
Kintyre Estates Co.,	10	—	..	—
Lanka Plantation Co.,	10	4½	5–6	..
Nahalma Estates Co.,	1	—	¼–¾	..
New Dimbula Co.,	1	—	2½–3	..
Nuwara Eliya Tea Estate Co.	10	9¼	—	—
Ouvah Coffee Co.,	10	7	—	..
Ragalla Tea Estates Co.,	10	—	10	..
Scottish Ceylon Tea Co.,	10	—	14–16	.
Spring Valley Tea Co.,	10	3	4–5	..
Standard Tea Co.,	6	—	..	—
The Shell Transport and Trading Company,	100	—	250	227
Yatiyantota Ceylon Tea Co.,	10	—	8–9	..
Yatiyantota pref. 6 o/o	10	—	9¾–10¼	..

BY ORDER OF THE COMMITTEE

Colombo, January 12th, 1900.

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, Jan. 16th, 1900.

COFFEE:—	
Estate Parchment per bushel	Nil
Chetty do do	Nil
Native Coffee per cwt.	Nil
do F. O. B per cwt.	Nil
Liberian coffee:—per bushel	Nil
do cleaned coffee:—per cwt	Nil
Cocoa unpicked:—per cwt	R40·00 to 44·00
do cleaned do	R43·00 to 48·00
Cardamoms Malabar per lb	R1·00 to 1·10
do Mysore do	R1·65 to 1·90
RICE:—	
Soolai per bag of 164 lb. nett	R8·25 to 8·75
Slate or 1st quality:—per bushel	R3·30 to 3·35
Soolai 2 & 3rd. do do do	R3·20 to 3·30
Coast Calunda	R3·75 to 3·87
Coast Kara	R3·50 to 3·75
Kazala	R3·15 to 3·20
Muttusamba Ordinary	R4·25 to 4·50
Cinnamon. per lb No 1 to 4	R00·58 scarce
do do 1 to 2	Nil
do Chips per candy	R95 00 to 97·50 scarce
Coconuts Ordinary per thousand	R35·00 to 37·00
do Selected do	R36·00 to 38·50
Coconut Oil per cwt	R13·62½ to 13·75
do do F. O. B. per ton	R272·50 to 275·00
POONAC:—	
Gingelly per ton	R97·50 to 100·00
Coconut Chekku do	R75·00 to 77·50
do Mill (retail) do	R77·50 to 80·00
Cotton Seed per ton	R80·00
Copra per candy	
Kalpitiya do	R41·00 to 42·50
Marawila do	R40·00 to 41·50
Cart Copra do	R39 00 to 40·00
Satinwood per cubic feet	R2 00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	28 00 to R30·00
Palmyra do do	R4·50 to 15·50
Jaffna Black Clean per cwt	R14·50
do mixed do	R12·00 to 13·25
Indian do	R4·50 to 13·50
do Cleaned do	R6·00 to 14·50
Sapanwood per ton	R55·00 to 60·00
Kerosine oil American per case	R7·75 to 8·00
do bulk Russian per tin	R3·20 to 3·30
do Russian per case	R6·75 to 7·00
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R30·00
Kapok cleaned f o b per cwt	R24·50
do uncleaned do	R6·00
Plumbago per ton, according to grade: Large lumps	R700·00 to 1150·00
do do	R400·00 to 1125·00
do Chips	R200·00 to 800·00
do Dust	R100·00 to 600·00

* Latest London Prices.

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo, 15th Jan. 1900.

CARDAMOMS:—

All round parcel, well bleached per lb R1·70
Do. dull medium do. 1·50
Special assortment, 0 and 1 only do. 2·30
Seeds do. 1·40 Sellers

CINCHONA BARK:—

Per unit of Sulphate of Quinine 11c. 1 o/o to 4 o/o

CINNAMON :—

Ordinary assortment per lb. 59c.
Nos. 1 and 2 only per lb, 65c.
Nos. 3 and 4 only per lb. 51c.—Unchanged

CINNAMON CHIPS :—

Per candy of 560 lb R95—Supply scarce.

COCOA :—

Finest estate red; unpicked per cwt R47·50
Medium do do per cwt R40.
Bright native, unpicked and undried per cwt } None
Ordinary do do do } None offering.

COCONUTS—(husked).

Selected per thousand R46·00
Ordinary „ R38·00
Smalls „ R29·00

COCONUT CAKE—

Poonac in robins f. o. b. per ton R77·50
Do. in bags none

COCONUT (Dessicated).

Assorted all grades per lb. 13½c

COCONUT OIL—

Dealers' Oil per cwt. R14·25
Coconut Oil in ordinary packages, f. o. b. per ton R320 00 Large transactions at R320/00

COFFEE—

Plantation Estate Parchment on the spot per bus. R9 50
Plantation Estate Coffee f.o.b. (ready) per cwt. R65
Native Coffee, f.o.b. per cwt none offering

COPRA—

Boat Copra	per candy	of 560 lb.		R43
Calpentyn Copra	do	do		R43·25
Cart	do	do	do	R40
Estate	do	do	do	R43 25

CROTON SEED per cwt R30

EBONY—

Sound per ton at Govt. depot R175, Inferior R120, As per Govt. sales of 15th November.

FIBRES—

Coconut Bristle	No. 1	per cwt	R11
Do	„ 2	„	8
Coconut mattress	„ 1	„	2·75
Do	„ 2	„	2
Coir Yarn Kogalla	„ 1 to 8		17·25
Do Colombo	„ 1 to 8		16
Kitool all sizes			38
Palmyrah			14

PEPPER—Black per lb 28c.

PLUMBAGO—

Large lumps	„	per ton	R1000
Ordinary lumps	„	„	1050
Chips	„	„	750
Dust	„	„	550
Do (Flying)			200

SAPANWOOD— per ton R57 50
SATINWOOD (ordinary) per cubic ft R2 40

TEA—		High Grown.	Medium.	Low Grown.
		cts	cts	cts
Broken Pekoe	per lb	38 to 76	31 to 48	33 to 38
Orange Pekoe	do	42 to 63	35 to 47	34 to 37
Pekoe	do	36 to 50	32 to 39	32 to 36
Pekoe Souchong	do	34 to 42	31 to 37	27 to 31
Pekoe Fannings	do	28 to 34	26 to 34	26 to 33
Broken mixed—dust, &c.	per lb	25 to 28	24 to 31	23 to 27

CEYLON EXPORTS AND DISTRIBUTION.

1900-1899.

COUNTRIES	Tea. 1900 lbs.	Tea. 1899 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.	Coconut Oil. 1900 cwts.	Coconut Oil. 1899 cwts.	Copra cwts.	Desiccated Coconut lb.	Poonac cwts.	Coconuts. No.	Plumbago. 1900 cwts.	Plumbago. 1899 cwts.	Ebony. cwts.	Sapanwood cwts.
To U. K.	1312737	753954	..	..	..	337	..	..	...	...	..	..	..	..	[illegible]0050	..	98	...	..
„ Austria	100	150	..	..	..	..	...	..	..	1616	851	..	..	...	..	..	..	..	240
„ Belgium		..	..	..	..	63	...	5000	...	..	..	..	...	...	...	450	..	...	..
„ France	12559	..	..	...	..	..	...	500	...	...	...	...	...	...	..	..	...	...	..
„ Germany	10395	..	..	..	..	..	8395	11300	22400	905	..	7998	..	1999	10050	3866	..	...	...
„ Holland	..	..	..	..	..	..	...	..	..	..	..	..	...	.	...	—	...	...	...
„ Italy		..	..	..	..	...	...	8500	...	..	205	...	..	..	...	...	.	..	...
„ Russia	..	..	..	..	..	...	..	..	...	..	..	7002	..	...	..	...	..	..	..
„ Spain	..	..	..	...	..	..	..	1300	..	..	..	..	...	...	..	..	...	..	..
„ Sweden	1900	..	..	..	..	...	..	...	..	...	..	..	...	..	..	...	..	...	...
„ Turkey	1400	60	..	..	..	..	...	...	..	...	..	..	...	..	..	...	..	...	...
„ India	32077	22265	..	..	..	..	645	..	..	..	87	..	..	..	..	..	..	..	..
„ Australia	210272	3-4934	204	...	204	..	..	...	...	...	..	..	12000	..	..	..	27	...	..
„ America	234916	136326	..	..	..	..	...	..	...	6001	55 3	..	...	...	..	9920	11695	..	...
„ Africa	...	..	..	..	..	..	..	..	...	...	..	..	..	...	149260	..	..	..	...
„ China	..	85578	..	...	..	...	..	...	...	..	604	..	.	...	..	..		..	...
„ Singapore	..	7862	..	..	..	..	..	..	..	...	7839	..	...	..	..	...	..	...	..
„ Mauritius	...	.	..	..	..	..	...	...	..	..	..	..	...	..	...	..	...	..	...
„ Malta	2102	..	..	...		..	..	...	.	...	...	...	..	..	..	..	..	..	...
Total export from 1st Jan. to 15th Jan. 1900	1837376	1391129	204	..	204	400	9040	26800	22400	8522	15099	15000	12000	1999	209360	14236	11820	..	240

MARKET RATES FOR OLD AND NEW PRODUCTS

(From Lewis & Peat's Fortnightly Prices Current, London, December 13th, 1899.

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ..	44s a 100s
Zanzibar & Hepatic ,,	Common to good ..	20s a 60s
BEES' WAX, ,,		
Zanzibar & Bombay White ,,	Good to fine	£6 a £7 10s
Zanzibar & Bombay Yellow ,,	Fair ,,	£5 5s a £6 10s
Madagascar ,,	Dark to good palish	£6 5s a £6 12s 6d
CAMPHOR, China ,,	Fair average quality	160s
Japan ,,	,, ,, ,,	170s
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 7d a 2s
Ceylon.—Mysore ,,	Fair to fine plump	3s 5d a 4s 1d
	Seeds .	1s 6d a 2s 6d
,, Tellicherry ,,	Good to fine ..	2s 11d a 3s
	Brownish .	2s 6d
,, Long ,,	Shelly to good ..	2s 6d a 3s 6d
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4¼d
Madras ,,	..	3½d a 3¾d
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	40s a 47s 6d
CINCHONA BARK.—		
Ceylon lb.	Crown, Renewed	5d a 7d
	Org. Stem	3¾d a 5½d
	Red Org. Stem	2½d a 4¼d
	Renewed	3⅜d
	Root	½d a 3¾d
CINNAMON, Ceylon 1sts per lb.	Ordinary to fine quill	10d a 1s 8d
2nds	,, ,,	9½d a 1s 6d
3rds	,, ,,	8½d a 1s 4d
4ths	,, ,,	8d a 11½d
Chips	,, ,,	2¼d a 8d
CLOVES, Penang lb.	Dull to fine bright bold	4d a 9d
Amboyna ..	Dull to fine	4d a 5¼d
Zanzibar and Pemba	Good and fine bright	3⅞d a 4¼d
	Common dull to fair	3 1-16d a 3 5-16d
Stems ..	Fair	1¾d
COCCULUS INDICUS cwt.	Fair	9s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	100s a 115s
	Middling to fine mid .	85s a 95s
	Low mid. and low grown	75s a 82s 6d
	Smalls	55s a 75s
Native	Good ordinary	30s a 70s
Liberian ,,	Small to bold	25s a 35s
COCOA, Ceylon ,,	Bold to fine bold	80s a 90s
	Medium and fair	65s a 77s 6d
	Triage to ordinary	50s a 62s 6d
COLOMBO ROOT ,,	Fair to good	32s 6d a 39s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair	£19 a £23
FIBRE, Brush ,,	Ord. to fine long straight	£19 a £21
Cochin ,,	Ordinary to good clean	£18 a £22
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	.. .. very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	40s a 55s
CUTCH ,, ,,	Fair to fine dry	28s a 42s
GINGER, Bengal, rough ,,	Fair	23s
Calicut, Cut A ,,	Good to fine bold	87s 6d a 92s 6d
B & C ,,	Small and medium	35s a 72s 6d
Cochin Rough ,,	Common to fine bold	24s a 30s
	Small and D's	20s a 25s
Japan ,,	Unsplit	21s 6d
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £20
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 2/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ..	£4 8s a £8
	.. ,, red ..	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 55s
Turkey sorts ,,		67s 6d a 85s
Ghatti ,,	Pickings to fine pale ..	12s 6d a 35s
Kurrachee ,,	Good and fine pale ..	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras ,,	Dark to fine pale ..	23s a 35s
ASSAFŒTIDA ,,	Clean fr to gd. almonds	40s a 80s
	Ord. stony and blocky	12s 6d a 35s
KINO ,,	Fine bright	2s a 3s
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	7s a 20s
siftings ,,	Slightly foul to fino	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 4d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 2d
	Common to fine	1s a 2s 4d

	QUALITY.	QUOTATIONS
INDIARUBBER, (Contd).		
Java, Sing. & Penang lb.	Foul to good clean .	8d a 3s 3½d
Mozambique ,,	Good to fine Ball	2s 8d a 3s 7d
	Ordinary to fair Ball.	2s a 2s 10¾d
	Low sandy Ball ..	1s 3d a 1s 7d
	Sausage fair to good	3s 2d a 3s 6d
	Liver and livery Ball	2s 4d a 3s 2½d
Madagascar ,,	Fr to fine pinky & white	3s a 3s 4½d
	Fair to good black	2s a 2s 3d
	Niggers, low to fine .	1s a 2s 6d
INDIGO, E.I. ,,	Bengal—	
	Shipping mid to gd violet	[illegible]s 9d a 4s 6d
	Consuming mid. to gd.	3s 6d a 3s [illegible]d
	Ordinary to mid.	3s 2d a 3s 5d
	Mid. to good Kurpah	2s 2d a 2s 8d
	Low to ordinary	1s 11d a 2s 1d
	Mid. to good Madras	1s 5d a 2s 6d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 5½d a 1s 11d
	Pickings	1s 4d a 1s 4½d
MYRABOLANES, Madras cwt	Dark to fine pale UG	6s a 7s
	Fair Coast	5s 6d a 6s
Bombay ,,	Jubblepore	4s 3d a 7s
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	1s a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 21s
NUX VOMICA, Bombay per cwt.	Ordinary to middling	4s a 5s 6d
Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	6s 2d
CASSIA ,,	According to analysis	3s 11d a 5s 6d
LEMONGRASS ,,	Good flavour & colour	3¼d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3¼d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1s 1/0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	5¾d a 5⅞d
Singapore	Fair	5⅝d
Acheen & W. C. Penang	Dull to fine ...	4⅞d a 5⅜d
PLUMBAGO, lump cwt.	Fair to fine bright bold	64s a 72s
	Middling to good small	25s a 50s
chips ,,	Dull to fine bright ..	23s a 57s 6d
dust ,,	Ordinary to fine bright	12s a 35s
SAFFLOWER ,,	Good to fine pinky .	60s a 65s
	Inferior and pickings	40s a 57s 6d
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £50
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay ,,	Lean to good ..	£4 a £5
Madras ,,	Good average .	£4 a £5 nom.
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth ..	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	53s a 60s
SENNA, Tinnevelly lb	Good to fine bold green	5d a 8d
	Fair middling medium	4d a 5¼d
	Common dark and small	3d a 3¾d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's	£4 a £5 5s
	D's and B's	
	Small ...	
Mergui ,,	Small to bold ..	£6 a £8 10s
Mussel ,,	Small to bold ..	[illegible]1 a £2 15s
TAMARINDS, Calcutta per cwt.	Mid. to fine bl'k not stony	15s a 16s
Madras	Stony and inferior ..	7s 6d a 11s
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	15s a 23s 6d
TURMERIC, Bengal cwt.	Fair	26s
Madras ,,	Finger fair to fine bold bright	[illegible]5s a 42s 6d
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger .	21s
	Bulbs ..	[illegible]s a 12s
VANILLOES— lb.		
Mauritius and Bourbon 1sts	Gd. crysallized 3½ a 9 in	17s 6d a 27s
2nds	Foxy & reddish 4½ a 8 ,	17s a 24s
Seychelles 3rds	Lean and inferior ...	[illegible]s a 15s
VERMILION lb.	Fine, pure, bright ...	[illegible]s 8d
WAX, Japan, squares cwt	Good white hard ...	[illegible]0s 6d a 31s

Sir Græme H. Elphinstone, Bart.

The TROPICAL AGRICULTURIST MONTHLY.

Vol. XIX. COLOMBO, FEBRUARY 1st, 1900. No. 8.

"PIONEERS OF THE PLANTING ENTERPRISE IN CEYLON."

(Third Series.)

THE LATE SIR JAMES D. ELPHINSTONE, BART.

AND

SIR GRÆME H. D. ELPHINSTONE, BART.

NO one acquainted with the history of Coconut, Coffee, Cinchona and Tea Planting in Ceylon, can for a moment deny the right of the two gentlemen at the head of our column—the late and the living Baronets—to be included in the list of PLANTING PIONEERS OF CEYLON. Sir James Elphinstone was connected with Ceylon from 1837 till his death in 1886—close on 50 years. He was one of the first Europeans to go in for Coconut planting in the Jaffna peninsula. He became a Ceylon Coffee Estate proprietor at the very beginning of the enterprise in the early "forties." He was at the time Commander of an "East Indiaman," and, visiting the island, he traversed the hill-country when there was no road beyond Gampola, and, penetrating into the Kotmale Valley, selected the Baharundrah block, having for his neighbours Capt. Forbes and Capt. Payne-Gallwey.

Much might be said of general interest about nearly-related and distinguished members of the families of Elphinstone and Dalrymple; but such records would unduly swell our memoir, and we must content ourselves with "one leaf out of the past," referring to the notable lady who was mother of Sir James, and grandmother of Sir Graeme,—after whom indeed he was called "DAME GRÆME DALRYMPLE HORN ELPHINSTONE,"—born May 10th, 1782, died, aged 88, on January 28th, 1870; and we give the following reference published at the time of her death:—

THE LATE DOWAGER LADY DALRYMPLE HORN ELPHINSTONE.

(From the "Aberdeen Journal," February 9, 1870.)

Our obituaries of the past week have chronicled the death of a venerated lady, of the last century, one of a generation now fast passing away, and in her instance claiming something more than an ordinary notification.

The Dowager Lady Dalrymple Horn Elphinstone entered on the duties of the House she has so mnch dignified and adorned for the last threescore and ten years in the first of the century, then a yonny bride of eighteen, and a wide circle of relatives and a very wide one of friends in all ranks of life now mourn for "one removed" of no ordinary dignity of character and personal bearing; endeared to, and reverenced by all around her far beyond the happy lot of most who die. Of her, indeed, it might almost be said, "to see her was to love her." Those who knew her will readily echo this.

Her character was of the most engaging kind. To the writer of these lines—whose happy recollection of this, his elevated, earliest, *beau ideal* of a *lady* reaches beyond half a century back—she seemed to

embody what the poet has so finely, if quaintly, pictured of

> That sweet attractive kind of grace,
> A full assurance given in looks,
> Continual comfort of a face
> The lineament of gospel-books;
> For sure that countenance cannot lie,
> Whose mind is written in the eye.

She must have appeared in some sort thus to all who were privileged to know her. Those who knew her more intimately found in Lady Elphinstone a humble, earnest Christian, exhibiting a life remarkable for its consistency—marked by unostentatious benevolence and kindness—with a liberality as considerate as it was untiring; and the warmth of her heart, her affection and friendship towards persons of all classes, endured with her life. Single-mindedness; utter scorn of meanness; an almost fiery indignation at the sight of wrong or injustice—withal a grand simplicity, a noble pureness of nature that was manifested even in her outward appearance, inspired those who came under her influence with an affection and reverence not easy to describe. With her everything was in earnest; all around her felt it. Her rule of life was 'Duty." She might, herself, have written the pregnant words, "But my guiding-star was, *and will be*, 'Duty,' and pleasure and desire of the heart must wait, even for ever, if necessary, when Duty calls."

Her personal appearance was very striking. To the refined beauty of countenance and expression (which marked her even in old age), and the sweet graceful dignity of figure and bearing which distinguished her in youth, were added, as years increased, a certain stateliness of demeanour, which, tempered as it was by warm-hearted kindness, impressed themselves on all who approached her. Her mental and personal qualities combined, in truth, to form a personage of no ordinary stamp. She was, all in all, one the like of whom we but rarely meet with in the pilgrimage of life. In some of her characteristics, indeed, she belonged to a class of which few representatives remain; such as are embalmed in the pages of the "Lives of the Lindsays,"—the highest form of Scottish character: bright examples of what a Scottish training could be in our fathers' days.

Græme Hepburn, who became "Our Lady Dalrymple Horn Elphinstone," was born on the 10th of May, 1782. Her father, Colonel David Hepburn, was descended in the male line from the ancient family of Congalton of Congalton, or "of that Ilk," in East Lothian, which held considerable possessions in that country as early as the 13th century. (See Chalmers's "Caledonia," and Douglass's "Baronage of Scotland.") In the reign of Charles II., William Congalton of that Ilk, through his marriage with the niece and eventual heiress of Sir Robert Hepburn of Keith-Marischal, assumed the name of that family, a branch of the Hepburns of Hailes, ancestors of the Earls Both well (Douglas's "Peerage of Scotland.") His son, Robert Congalton Hepburn, succeeded him, who, with his three sons, joined the insurrection of 1715. (Some interesting facts connected with the family during that "affair" are given by Sir Walter Scott in "The Tales of a Grandfather," 3rd series). Robert Hepburn's youngest son, James, eventually succeeded him. He went "out" a second time in 1745, being the first gentleman who tendered his allegiance to Prince Charles Edward at Holyrood. James Hepburn was a man of most amiable qualities and varied powers and accomplishments. He is described by John Home in his "History of the Rebellion" as a model of ancient manliness, simplicity, and honour, who sacrificed himself to a visionary idea of the independence of his country. Dr. Carlyle, in his Memoirs, also highly eulogises his character. Mr. Hepburn married Katherine Rickart, heiress of Rickartoun, in Kincardineshire, and assumed her surname additionally. By her, besides one daughter, Katherine, wife of General Græme of Braco (private Secretary to Queen Charlotte, and Equerry to King George III.) by whom she had an only child, Katherine, Viscountess Hampden, he left two sons: 1st, Colonel Robert Rickart-Hepburn, long M.P. for Kincardineshire, father of Colonel William R. Hepburn, of Rickartoun, whose son, William R. Hepburn, now possesses the estate; and, 2nd, Colonel David Hepburn, who married Bethia Graham, descended of the family Inchbraikie, a branch of the House of Montrose, and left, besides one surviving daughter, Græme, the subject of this memoir, two sons; James, who married Louise, daughter of the Count de la Martilliere (both deceased without surviving issue); and Francis, Colonel, 3rd Foot Guards, Major-General and C.B., a distinguished Peninsular and Waterloo officer, who, by his wife Henrietta, eldest daughter and co-heiress of Sir Henry Poole, Bart. of Poole Hall, Cheshire, and The Hooke, Sussex, left issue, Colonel Henry Pool Hepburn, C.B., now commanding the 1st Battalion, Scots Fusilier Guards, Francis Robert, Rector of Chailey, Sussex, and one daughter, Charlotte Frances Anne Hepburn.

Miss Græme Hepburn married in 1800, at the age of 18, Robert Dalrymple Horn Elphinstone of Horn and Logie-Elphinstone, Lieut.-Colonel 3rd Foot Guards, son of General Robert Dalrymple Horn of Horn and Westhall, by his wife Mary, daughter and heiress of Sir James Elphinstone, Bart. of Logie-Elphinstone; and who had lately succeeded to the family estates by the death of his elder brother without issue. By him, who was created a Baronet in 1828, in consideration of his being, through his mother, the representative of the Elphinstone family and who died in 1848, aged 82, she had issue fifteen children, ten sons and five daughters, of whom eight remain, the eldest surviving son being Sir James Dalrymple Horn Elphinstone, Bart. of Logie-Elphinstone, M.P.

Although instances of more advanced age not unfrequently occur, this venerable lady formed an interesting link with a byegone time. Belonging to a family that cherished the traditions of still earlier days, she passed much of her youth in Edinburgh, and, besides the information she had inherited from a former generation, her own recollections of Scottish society, seventy years ago, were very picturesque and striking. She spoke from personal knowledge of many whose names have now passed into the regions of history; men who had fought at Prestonpans and Culloden; ladies who danced at the balls at Holyrood during Charles Stuart's six weeks' reign; veterans who had served at Fontenoy and Dettingen and Minden; men of letters, of whom Scotland could then boast a brilliant circle; of the emigrant French *noblesse*, who clustered round their exiled Princes, then resident, at Hoolyrood. Of all these, and of the leaders of Scottish society at the close of the last century, her anecdotes were full of character and interest, even in the latest years of her life, which were mercifully and blessedly free from any clouding of the spirit or mind.

But, though she cheerfully drew from her memory reminiscences like the above, it was not in such things that her heart rested. She was continually looking above and beyond this world, which she felt was not her abiding place. She lived from day to day, awaiting the summons of her Lord, and shedding to the last a grace on those around her. She has left a bright example and a blessed memory, never to be forgotten by those who knew her.

Another very notable member of the family was General John Hamilton Elphinstone Dalrymple, C.B., a brother of Sir James Elphinstone, and who greatly distinguished himself in the Crimea as Lieut.-Colonel in the Scots Fusilier Guards. We now come to the generations and personalities

immediately under notice, and we are fortunate enough to have a graphic account from a gentleman who was intimately acquainted with "Logie" and its inmates in its early days. The following speaks for itself:—

MONEO ET MUNIO. *

(Notes by Old Colonist.)

"TWO BOYS" was the brief news brought to Captain———not yet *Sir* James—as he patrolled the lawn in front of West Hall house one fine morning in 1841.

The bearer of the news was Lady Elphinstone, his mother, and the brusque Captain laconically replied "*Two!*"—adding *sotto voce*, "One too many for a poor man."

The Elphinstone family have a tremendous long pedigree, deservedly honoured in the Garioch for the past two-and-a-half centuries. Albeit a fruitful race, Lady Elphinstone herself—one of the noblest and most beautiful of her sex—contributing 15, of whom James was the eldest alive, somehow the acres did not multiply in proportion to the members of the family. Yet Logie and West Hall were amongst the most valuable properties in the "Granary of Aberdeenshire" and might with care have sustained a very large retinue.

West Hall, the loveliest in the locality, a beautiful brae-side with grand old ivy-clad house picturesquely situated amongst its old umbrageous trees. Logie, more home-like, stands on sheltered terrace within sound of the ripple of the river Gadie, where in a wooded nook it meets the Ury—as if by tryst. The house—an ideal "*Auld House*"—was built about 180 years ago and has undergone but few alterations. In front of both stands Benachie, around the foot of which wimples the Gadie of sweetest song.

There are few more hallowed spots in Scotland than the banks of the Gadie, none to which exiles look back with greater affection, or sing its praises with more pathos. A poor little rivulet—a mere burn, in which two can scarcely paddle abreast and yet, says a traveller, while lying on the banks of the greatest river in the world, surrounded by threatening savages, my inmost thoughts found expression in :—

"O! gin I were whaur Gadie rins
At the foot o' Benachie."

There are at least a dozen versions of this very pathetic song, but always with the same refrain. I well remember accompanying the eminent antiquarian, Chas. Dalrymple, on an expedition through the district, the object of which was partly to open up some ancient mounds and partly to collect from the oldest residents, such words of the local song as they could recollect. It was amusing to hear an old crone with cracked voice singing :—

"I never had but ae richt lad,
But ae richt lad, but ae richt lad,
The teen was killed at Lourin fair,
The tither was drooned i' the Dee"

Or more pathetically the old widower's :—

"O! gin I were whaur Gadie rins,
Whaur Gadie rins, whaur Gadie rins
Or she that dwalt where Gadie rins,
O! gin she were wi' me!

It's no the hill, though it be brave
It's no the sowp o' Gadie's wave—
But she that bloomed o'er a' the lave
And gae her heart to me.

Tho' few to welcom me remain
Tho' a I lo'ed be deid and gane,
Ill back tho' I should live alane,
To the foot o' Benachie."

Many are the associations connected with Logie, the most hospitable of houses. The family was Jacobite in its sympathies, as indicated by the frequency of the name *James*, but not being over-demonstrative partisans, they escaped notice, and were able to render hospitality to the less fortunate, whose lands were confiscated. A story is told of the attainted Lord Pitsligo occasionally leaving his hiding-place on Benachie to spend a jolly night with the Elphinstones. Lady Elphinstone commented upon the *hard* drinking into which the friends would fall on a safe night, but was answered by the humorous refugee that "if she was sitten upon a cauld bare stane up on Benachie, we naething but burn water, she micht ca *that* hard drinking."

The neighbouring townships of Inverurie and Port Elphinstone were much indebted to the Elphinstone family—the latter indeed for its name and the 16-mile canal which connected it with Aberdeen; while the North of Scotland Railway may be said to have been initiated and carried through by the public spirit of the late Sir James. In reading up the old records of Inverurie I find, by the way, that the Clan Ferguson is very largely represented, the name being the most common in the annals of the village and in a solitary Tytler—"the last of the portioners"—I trace the father of our own R.B.T.

The grandfather of the late Sir James, General Robt. Dalrymple, was an officer of long and distinguished service which began actively in the expedition to Carthagena as aide-de-camp to his relative, Lord Cathcart. The celebrated Tobias Smollet was a surgeon in this expedition and describes it in "Rodrick Random." The first Sir James Elphinstone of Logie acquired the lands in 1670. He was a Writer to the Signet and unfortunately subscribed largely to the disastrous Darien Scheme by which so many of the Scottish gentry were severely bitten. Probably the next tropical investment was in Ceylon. When the late Sir James was Commander of an East Indian, he visited the island and, as he told us at the Kadienlena dinner, explored the valley of Kotmalie in the early forties, reached the patana on the opposite side of the oya and looking towards the S.W., saw a ridge to shelter him from the monsoon and then resolved to anchor.

It is now high time to return to our boys of whom the ever-cheery father soon got very fond and proud ; named one after his grandfather Robert; the other after the *grandmother*, *Græme*. The boys grew and flourished ; early developing their individual idiosyncrasies, showing in a marked manner how the child "is father of the man." Bob,

* The motto of the family "I warn and guard."

the eldest by 15 minutes, was perhaps the greatest favourite in the nursery. Græme, open, guileless and unsophisticated, ever fond of a yarn, would repeat everything he heard; while Bob showed a diplomacy which better suited the aims of the servant maids. At the same time the old nurse predicted that 'Græme would make money and Bob would spend it.' The very fact of their being in some things so much unlike, seemed to draw them closer together: as boys they were inseparable, and ever the most affectionate of brothers. When the time came for schooling they were sent to England—Harrow, I believe; and Logie saw little of them for some years. When they did ultimately return the boys had grown into stalwart youths, the peculiar characteristics however being unaltered: Bob, the sportsman and lady's-man; Græme, the plodding working-man, he too was an adept at sport; shooting, fishing, cricket and football came natural enough to him, but his tastes lay chiefly in putting his hand and shoulder to some useful industry.

The old gardener had a peculiar penchant for attending all the funerals far and near. Master Græme, nothing loth, would take his place in the garden. One day the two youths went out after lunch. Bob seized his fishing-rod and sauntered down the Gadie, while Græme, seeing the gravel in front of the house required doing up, threw off his coat, went to the tool-house for a rake and started work as if to the manner born. Presently up drives Lord Kintore with a bevy of ladies, who, seeing the young gardener in shirt sleeves, called out, "Are the young gentlemen at home?" "Yes," said Græme, touching his straw hat, "there is one down there fishing." So Bob, to his chagrin, was called up, while Græme slipped away raking along the shady walks and was lost for the afternoon.

The time was now approaching when a future career must be chosen and Græme, whose greatest ambition was to be a bread-winner, turned his thoughts towards Baharundrah in Ceylon. The estate had hitherto been always a disappointment, leaving year after year only a further loss. Yet other coffee estates were doing well—Poengalla, for instance, the property of his relative, Patrick Boyle, returning a handsome profit—and peradventure he thought Baharundrah with careful, energetic and judicious management might show equally good results. So, to Ceylon he went and as everybody knows literally put his shoulder to the wheel. First impressions were not encouraging. After walking once over the estate he returned to the bungalow almost in despair, and had thoughts of leaving the island at once, to try his luck farther East. On second thought he however resolved to try the effects of manure and careful cultivation. With what excellent results we now all know. For fifteen years there was no more active or prosperous man in Ceylon than "Logie." A planter amongst planters, a chief amongst men, and no one ever better deserved a continuance of prosperity. But *Hemileia* was a leveller, the blow fell upon the just and unjust alike; the carefully cultivated estate and garden of the sluggard alike suffered. The transition from coffee to tea had to be faced, and no one faced it more bravely than Logie, who indeed was amongst the first to show the way; and had his good friends at home been but well enough advised to continue their support through this critical period, Sir Græme Hepburn Dalrymple Elphinstone would unquestionably have been amongst the wealthiest men in Ceylon or the Garivels today.

To the above graphic narrative we can only add, in the first place, a statistical record, noting the connection with Ceylon and the rapid extension of interests, until the present Baronet, then universally known as "Logie," became one of the biggest "lairds" among the planting community of Ceylon. We find that, so far back as the "forties," Sir James Elphinstone owned, in Kotmale district, Baharundrah and Reillagalla estates; while in 1853, they are entered in an official list as belonging to "Sir James Dalrymple"—his original name before "Elphinstone was added to it." In the same year four Coconut plantations in the Northern Province are given as follows:—

Name of Estate.	*Proprietors.*
Victoria	G. E. Dalrymple
Klaly..	H. E. Dalrymple
Nungavil	Sir J. D. Elphinstone
Tattovenkotty.. ...	Heirs of Sir E. D. Elphinstone

—all members of the same family.

In our Directory for 1859, we find no change; but in the issue for 1864-65, the name of the son "Mr. G. D. Elphinstone" appears for the first time as Manager of the Kotmale estates. Then in 1869 we get the area in coffee on Baharundrah and Westhall as 900 acres; while Donside (a new estate owned by Mr. G. Elphinstone and Mr. MacLeod) had 200 acres coffee; and for the first time "Logie" and "Belgravia" appear in Lower Dimbula with 450 acres of coffee between them, Mr. Elphinstone having a half-share in each. We may now go on a decade, during which our old staple "coffee" continued to flourish and rise in estimation, notwithstanding that an "insidious defunction" was at work, in the leaf fungus all this time. In the Directory for 1876-78—when coffee had reached its maximum of prosperity—the names of Sir James Elphinstone and his son, as whole or part owners, were found opposite 32 properties in the districts of Ambagamuwa, Dimbula, Dolosbage, Kotmale, Matale East, Nuwara Eliya, Sabaragamuwa, Walapane Lower, and Yakdessa. The total acreage included was 14,468, while the planted portion covered 8,639 acres. This must have represented a money value of nearly half-a-million sterling at the time! By 1883-84, the return made a total of 12,124 acres; planted 7,714 acres. But by 1887-88, it had fallen to less than a dozen properties, aggregating total 8,010 acres; planted 3,665 acres; and in our volume for 1898-99, the name of Sir G. H. D.

Sir James Elphinstone amongst the Planters.

Elphinstone, Bart., occurs opposite the Westhall Group of three estates, 2,587 acres, of which 1,170 are cultivated, all in tea; and of Lady Elphinstone for Logie, Dimbula, 300 acres, with 282 in tea.

Sir James Elphinstone re-visited Ceylon in 1869-70 when his son was in full flow as Manager of the old properties, besides opening estates of his own. From the *Observer* of January, 1870, we quote a graphic description (also by "Old Colonist"), which carries its own story:—

THE GREAT HARVEST HOME BANQUET AT KADIANLENA.

One afternoon some eight years ago a knot of burly farmers might have heen seen gathering aronnd the quiet country inn of Pitcaple in Aherdeenshire, their ohject being to meet and bid farewell to the son of a distingnished neighbour, who was about to proceed to and push his fortnne in a foreign country. G. Dalrymple Elphinstone was, we helieve, withont one dissentient voice, the acknowledged favourite of the parish, his "weel faart" face ever beaming with fun and kindness as familiar in the panper's cot as in the Ha' and while always adding to the scanty stores of the auld widow wives, he never failed to increase his own stores of racy anecdote with which he has ever since been brimful. Great were the lamentations when it became known that "Graemie," as he was familiarly called, had made up his mind to go to Ceylon, and many a lonely auld wifie at the "fit o' Bennochie" felt that she was losing her best friend. The farmers in Aberdeenshire are hy no means very demonstrative in the respect they show for their "betters," but even they were not blind to the worth of young Graeme, and determined, before allowing him to leave, to invite him to a dinner at the inn—many a hearty shake did his hand get and many a sage advice did he receive. The chairman, we rememher, waxed eloquent, and told him that.

"The rank was but the guinea stamp" not to rely anything on the mere stamp, but on his own energy and the blessing of Heaven.

Five weeks after this our athletic young friend found himself in the Central Province of Ceylon, his huoyant spirits somewhat damped by the first impressions. Coffee Estates, even in those latter days, were very differently worked from what they are now. Agents, like attorneys in the West, had not yet begun to discover that the interests of their constituents were identical with their own, and consequently it too often happened, as in this case, that valuable Estates, instead of being a source of profit to the owner, were only a source of annoyance and loss.

Mr. Elphinstone was not long to be discouraged, he saw the cause and discovered the remedy. Fignratively and *practically* he put his shoulder to the wheel, and the result we now see to-day in old Baharundrah, which has tripled in value and productiveness, while by mere dint of hard work, prndence and economy he has added field to field and estate to estate till he is now one of the largest and most prosperous proprietors in the country. The coffee on "West Hall" now shows as deep a green as the sombre ivy on the turreted old castle of its namesake—"Logie" as much the centre of a highly prolific district as the family mansion in the centre of the Aberdeen Granary, while "Donside" smiles sweetly amongst the beautiful river-side patnas. These promising young properties have this year given their bumper crop, which having heen successfully stored, the event has been celebrated in a manner never before attemped in the jungles of Ceylon.

THE DINNER.

It was only on New Year's day that it occurred to the worthy proprietors of Logie and Donside, Messrs. Elphinstone and McLeod, to celebrate tbe snccessfnl storing of a good crop by a Harvest Home after tbe good old Scottish style, and no sooner did it occnr than it was settled for the 7th and set about with their characteristic energy. 100 invitations were set afloat, and the services of that veteran purveyor, Mr. Hudson, enlisted, as well as the king of appoos, old Francis of Kandy—both of whom did their respective dnties in the most creditable manner. The dinner was laid in the Upper Flat of the Kadianlena Store, richly decorated for the occasion by the ingenuity and taste of Mr. Allan, surveyor. "Wellcome all" in large capitals was capitally painted over the entrance, while snch mottoes as "We are a hand of brothers," Let Kotmalie & Dimboola flonrish," "Lanka for ever!" &c. &c. adorned the walls. At eight o'clock, some seventy gentlemen sat down to dinner, the chair being occupied by Sir James Elphinstone, on a visit to his son. Amongst those present we ohserved the whole of Kotmalie and Dimhoola; Mr. Dawson, O. B. C. Kandy; Mr. Sinclair; Mr, H. L. Forbes; Mr. Charles Grant, &c. &c., and amongst the clans represented in the Highland costume we observed conspicuons the "Forbes" and McLellan." The hosts sat at either end of the table: to those who know *Kotmalie*, the hospitahility of Messrs. McLeod and Elphinstone and what the Ceylon Hotels company *can* do, it is needless to speak of the entertainment. The table literally groaned with a superabundance of the good things of this life, while "Mum's" flowed as freely as if drawn from yonder sparkling waterfall.

Before the covers or viands were removed, the CHAIRMAN, in accordance with the good old cnstom, proposed the nsual loyal toasts, followed by "God save the Queen," "God bless the Prince of Wales" and "Rule Britannia," which were rendered with snch spirit and effectiveness as we have never hefore heard equalled in Ceylon. The following toasts were then proposed and most enthusiastically responded to:—

"Sir Hercules Robinson" hy the CHAIRMAN.

"The Army and Navy" by the CHAIRMAN. Captain OLDFIELD replied.

"The Coffee Enterprise in Kotmalie and Dimboola," hy Mr. MCLEOD. Excellent original song hy Mr. Allan, Mr. HOOD replied.

"Our Joint Host" Mr. McLeod by Mr. SMITH.

"Our Joint Host" Mr. Elphinstone, hy Mr. MORRISON.

"The Mercantile Interest by the CHAIRMAN. Mr. DAWSON replied.

"The Chairman" by Mr. TYNDALL.

'The Ladies" by Mr. McLeod. Mr. ANDERSON replied.

We regret much not being able to give the speeches in detail, all of which were above mediocrity. In Sir James we of course had a great acquisition;—looking the very picture of health and soul of happiness himself he threw a geniality over the whole company which was reflected on every countenance. He gave a very graphic and interesting account of his first acquaintance with central Ceylon, now 24 years ago: hcw he wended his way np from Colombo, got as far a Passhagey, how he met a blnff looking European whom he accosted with the hope of getting some information regarding the locality of his land, "I don't know where the d—l your land may be," was the reply, "but if yon go up yonder hill you'll find an Elephant track—keep along it over the hill and down the other side you'll he somewhere near it." "Following these very definite directions," continued Sir James, "I plodded on, arrived at the ridge of the mountain and had just got into the Elephant track I remember when, out shot an Elk (here Craigy Lea hecame intensely interested). I scrambled down through the Forest and arrived at the patna knoll below ns. There I looked hack and saw I had got a good ridge to shelter me from the S. W. So I set to work there and then and built me a hut. I lived chiefly on jaggery and fungi and I did not relish or long remain in Kotmalie then, simply because I could

not get enough to eat, and had any one told me them that 24 years hence I would see some 70 intelligent-looking gentlemen sit down to dinner in this spot I would have simply said, "You're a fool!" In reply to the tremendous enthusiasm with which his health was drunk, Sir James delivered a most eloquent speech, in which he pictured a bright future for Ceylon, he repeated his views on the Galle Harbour question and urged that the cosmopolitan spirit be carried out. "Why," he says, "we are not a colony of paupers, let us pay our way as gentlemen and demand that we be treated as such." As to the Coffee Enterprise, he was delighted to see it was now in so good hands; he admired the energy, the prudence, the honourable feeling which prevailed, exhorted all present to continue in the same well-directed course—when the result could be no other than honour and independence. As for himself, he said, he was now becoming an old fellow, in all human probability within a few years of the end; he could not hope to revisit Ceylon again, but so long as he did live he would retain a lively interest in the country and those whom he had met here.

Mr. McLeod made a long and excellent speech, giving his experience during the last 20 years, which was highly applauded, while Mr. Smith quite excelled himself in his oration in praise of our worthy, joint Host, for whom he entertained the highest possible respect as a planter, as a gentleman and above all as a great hunter.

Mr. Morrison, in a neat speech, remarked that it must be very gratifying to Sir James to find his son here in the splendid position he had raised himself to in so very short a time. No man ever more deserved to succeed—he had shown us all an example in energy and judicious estate management. Not only figuratively but practically he had put his shoulder to the wheel and had achieved a success which had seldom been equalled in Ceylon in so short a time; he looked upon him as a great acquisition and honour to Kotmalie.

Mr. Elphinstone's reply was a very humourous one, he said "Although I can yarn to any extent in private I am an exceedingly bad hand at a public speech. I cannot but thank you, however, for the very enthusiastic manner in which you have drunk my health, although Mr. Morrison has said far too much in my praise (cries of No, no) and made too much of the little success I have attained in Ceylon, the largest share of which ought to be awarded to those who have so well assisted me in all my undertakings. I have indeed been exceedingly fortunate in my friends. Ever since I set my foot in this country I have met with nothing but kindness. I am delighted and proud to see so many of you here to-night, and as I have just been remarking to my friend on the left I do not remember in the course of my life ever having seen so many intelligent looking faces at one table and I feel proud to think, gentlemen, as I look around that you are not merely acquaintances *but friends.* I feel that I entertain the sincerest friendship for you all individually (cheers.) Mr. Morrison has made allusion to my putting my shoulder to the wheel. I am constantly hearing of this in the newspapers and elsewhere. Well, I *did* put my shoulder to the wheel, and I'll say this much, I'll back myself against any planter in Ceylon to drive a bullock cart. (cheers!)

The Ball.

Shortly after 12 o'clock, on receiving a hint from the Chair, the company rose from the table and in five minutes the whole debris was cleared away. Mr. McLeod "blew up his chanter" and played a Highland reel with great spirit and taste. Sir James opened the Ball by dancing a reel in which he showed such agility as would be creditable to one half his years and led us to hope we would yet see him back in Ceylon after many years hence. Some half dozen excellent amateur violinists now screwed up their strings and struck up "The Reel o' Tulloch. The company became electrified and the result was something to be remembered. Seventy stalwartmen rose *en masse* and danced with such tremendous vigour that not only did

"Roof and rafters dirl"

but Mr McLood cast many a wistful look at his beams, pricked up his ears, and seemed to think the company

"Had nae other thocht than how to kill"

themselves in the shortest possible time. Gradually matters subsided a little. Still the only difference seemed to be that the company had resolved to kill themselves more orderly. Reel followed reel for three hours, varied only by a country dance and a half-hearted polka, some excellent singing then took place in which Messrs. Elphistone, Allan and Martin particularly distinguished themselves. Mr. Martin's "*Spinning Wheel*" was capitally rendered and brought down thundering applause. At half past three the company adjourned to supper which was done ample justice to, and followed up by some beautiful sentimental! songs by Messrs. Grant, Smith and others. The "Bonnie Woods o' Craigie Lea" was a great success. But all were impatient to return to the dance and dance they *did* with unabated vigour till —tell it not in Gath—*gray daylicht.* The band which discoursed such excellent music was conducted by Mr. Grant who was occasionally very ably assisted by Messrs. Smith and Martin. The whole passed off most harmoniously, every body seemed delighted with himself and everybody else, and all seemed to agree that such merry making, when prudently conducted as this had been throughout, was more conducive to unanimity and good fellowship in a district than all the meetings ever held in connection with the P. A. We had almost omitted to notice the splendid fireworks, which seemed to be a source of much amusement and wonder to the natves. These went on, or rather went off, at intervals during the night, but the grand display was reserved for morning's just before dawn.

Our first recollection of "Logie" was in 1869 when travelling round the planting districts, collecting, for the first time, the *planted* acreage of estates. We were visiting the late Mr. John Forbes MacLeod on Kadienlena estate and meeting all the men in the district; we were made specially welcome on Baharundrah where we had evidence of the untiring industry and spirited enterprise of the young Manager. Mr. Elphinstone was then the beau-ideal of a handsome young Scot: he had had a business training in the Oriental Bank before coming to Ceylon; but it was agricultural experience at home and fondness for work that stood him in good stead. To be able to check the native cartmen—usually considered at the time to be great rogues in overcharging and also in stealing or mixing coffee *en route* to Colombo—Logie made a whole trip himself as bullock-cart driver from Kotmale to Colombo *via* the Kelani Valley, living very much as the cartmen did, roughing it right through, and so got to know more than any other man in the island about the real cost and risks of cart transport. A riding party was quickly formed during our visit, by Logie and MacLeod to visit "Dimbula Felix," Wm. Smith and Craigie Lea and "the Colonel" (Mr. Hood) on Talawakele. Logie estate was then considered the *ultima thule* of the district, there being no cart road beyond Mount Vernon; unbroken forest between Forest Creek and Dikoya, and Louisa

and Nuwara Eliya; while Wm. Smith declared all beyond the Lindula patanas and towards the Agras—where now are found some of the richest plantations in Ceylon—as only fit for hunting purposes! We need not say how large a part Sir, or as he was then Mr., Græme Elphinstone had to do in "pioneering" beyond Smith's limits, or how ready he ever was to give a helping hand to a poor neighbour, or even to become partner with a friend trying to get on the ladder of proprietorship.

The career of the worthy Baronet as planter here, is but an epitome of many a similar experience in Ceylon connected with the "rise and fall" of the Coffee enterprise. The hard hing in connection with Sir Græme Elphinstone is that, while he was one of the first to foresee what was coming and to pioneer with "tea," he was not allowed to reap the reward of his foresight; and properties were taken away, even after being planted with the new product which, if they had been left in his hands, would have cleared all burdens, and become splendidly remunerative estates for the man who first planted tea.

Still it may be said of Sir Græme Elphinstone that in Ceylon he did better than achieve success —he most fully deserved it. No man ever more so: a planter among a thousand—hard-working, never idle indeed, cheery and generous and a chief among good men.

When the end of the Ceylon career came, and Sir Græme had to return to England, he, for some time, interested himself in making Ceylon tea known and in the establishment of a London distributing business. In 1894 he was elected Ceylon Planters' delegate for tea in America and was much pleased at the confidence placed in him —sending us a letter conveying his thanks to brother planters and fellow-colonists; but other business in London and the country at the time prevented his actually going to America. After a period of rest in Cheshire, the old longing tor a useful and therefore planter's life in the tropics overcame "Logie" and we have a letter before us dated "Straits of Malacca, ss. 'Khedive', 11th Dec., 1895," in which he stated the possibility of his settling down on Waterloo estate, Perak, of which he was part-proprietor. He had travelled out viâ Canada, Vancouver and Japan and the immediate purpose of his writing—characteristic of the man—was to enlist our sympathy on behalf of a young ship's officer who had fractured his leg and of whom "Logie" had heard as lying in Colombo Hospital (although he had left for home before we got the letter and called). We do not think Sir Græme has been home since 1895, so that he has now had another spell of well-nigh five years of tropica work and when last we heard from him he was going in for the cultivation of a variety of new products, sending for all our Planting Manuals in order to refresh his recollections of what had been done in Ceylon. Here again, we may not be able to chronicle a brilliant success for Logie, but that he has done his part well, there can be no doubt:—

'Tis not in mortals to command success;
But we'll do more, Sempronius; we'll deserve it.

It only remains now to notice the portraits presented with our present issue. That of Sir Græme Elphinstone is good and characteristic and will give pleasure to his numerous friends. In the other we have a veritable "leaf from the past," for Sir James Elphinstone in the centre, in contrast with two of the youngest members, one on each side, is surrounded by the company assembled at the Kadienlena Harvest Home of Jan., 1870, reported above. The group may be said to be historic including many District pioneers like J. F. MacLeod, Wm. Smith, Humphrey Humphreys, John Tyndall, John Martin, "Colonel" Hood, "scientific" and genial Heelis, "Cheetah" Morrison, Jas. Wight, John Stronach, Hugh or Wm. and James Bisset, Wm. Allan (Surveyor), F. Hudson (Purveyor),—while "Logie" and Arthur Sinclair kept in the background. This is one of the best photographs ever taken by Humphreys (who is among the few survivors, now a hearty British farmer) and well reproduced by an Aberdonian Firm. But of the great majority what can we say, alas! save in poor Charles Lamb's lines:—

The old familiar faces—
How some they have died, and some they have left us,
And some are taken from us; all are departed;
All, all are gone, the old familiar faces.

JADOO.

(To the Editor, "Tropical Agriculturist.")

EXETER, 18th Jan., 1900.

DEAR SIR,—Our attention has been called to a reply that appeared in your issue of December 1st to a letter from a correspondent at Kandy, with reference to the use of Jadoo Fibre for strawberries. Will you kindly permit us to say that it has been proved practically *impossible* to "wash out" the properties of Jadoo Fibre even when exposed to tropical rain. As to its use for strawberries it is being taken up on a large scale for use with them in the open ground in Cornwall this year. And if your correspondent will apply to Mr. Batho of d'Hautier Gardens, St. Saviour's, Jersey, he will, we know, tell him that an enormous increase in crop has gained by him last year by using Jadoo for strawberries besides getting a much better price for the fruit in the Covent Garden Market than he did for what was NOT grown in Jadoo.

With regard to what you say about Jadoo having proved a failure for use in nursery beds for Tea and Coffee, you will perhaps allow us,

to say you are entirely mistaken. We have never heard of one single instance where it has failed in being a complete success for *nursery* purposes ; in fact, its root-forming properties are invaluable for that purpose. Unfortunately planters in very many cases, overlooked the fact that its use was being recommended for *nursery purposes only*, and because it was too expensive for use with old trees, condemned it and others hearing this jumped to the conclusion that it was a failure for seed beds also.

We hope hereafter to be able to reduce the cost so as to bring it into use for manuring old trees, but at the present price it is quite within the reach of every planter for nursery purposes as the freight has been greatly reduced owing to improvement in mode of packing Jadoo for export. —Yours faithfully,

C. HALFORD THOMPSON,
Chairman, Jadoo Limited.

[Our information was entirely from practical men.—Ed. *T.A.*]

PULVERISING THE SOIL.

The value of pulversing the soil repeatedly is not generally understood by farmers who cultivate large areas of laud, but the market gardener, who has only a small space on which to make a living, shows by his methods that he realises the importance of this work. Incidentally, pulversing the soil means good culture of plants, but plants can be cultivated and the soil may not be pulverised. The finer we pulverise the soil around plants the better is the mechanical condition of the soil for making the plants grow and resisting dry weather. When we study the subject from a scientific point of view, we can understand better the effects of what is good culture. Everybody in this age understands the theory of the evaporation of water from the soil; how the water rises from the subsoil or underground springs by capillary attraction, and, if not taken up by the plants, passes off into the air. This evaporation begins on the surfaoe, and extends gradually downward. If the soil is too thick and compact the moisture has difficulty in drying up, and the top layers dry very slowly. Such land is usually wet and muddy in ordinary rainy weather, and it is unfit for crops. In order to facilitate capillary attraction, the soil must be so pulverised that the air spaces in the soil are small. This enables the soil to rise gradually and continuously. By good cultivation on the surface the plants are kept well supplied with moisture all of the time, and every fresh stirring of the top soil starts up new reservoirs of water from the subsoil.

Gardeners have what they call a dust mulch, which is simply another name for good, thorough surface cultivation. They stir the soil around the plants every week or few days, and the soil becomes so thoroughly pulverised that capillary attraction is in rapid progress all the time. It has been demonstrated that, on the right kind of soil, garden plants can in this way be brought through the driest weather imaginable, and without a drop of water artificially supplied. The dust mulch is better for the plants than an artificial one of leaves and litter, although the latter are not to be neglected where it is impossible to give the thorough pulverisation required. This stirring of the surface soil is more important when the plants are young than when they get half grown. Then they shade the ground around the roots, and form a protective moisture holder that helps them through the hot weather. After all, it is the young immature plants that we have to care for and tend, and, if we succeed in getting them started aright, the crops are pretty well assured.—A. B. Barrett, Minnesota.—*Agricultural Gazette.*

PRESERVATION OF STABLE MANURE.

In a paper read before the last annual convention of the Cheese and Butter Association of Western Ontario, Mr. Frank T. Shutt, M.A., Chemist of the Dominion Experimental Farms, Canada, took up a subject which is of the greatest importance to farmers who wish to get the best results from their stores of farm-yard manure. After showing how necessary it is that farmers should make themselves acquainted with the nature and composition of manures produced by the different classes of live stock, and the conditions and influences that increase or decrease the fertilising value of it, Mr. Shutt detailed certain experiments recently carried out at the Experimental Farm at Ottawa in connection with the rotting of manure. In this experiment or investigation the priucipal object was to learn what losses took place in nitrogen, phosphoric acid, and potash during the rotting of manure under two conditions —(*a*) manure completely protected from the weather, and (*b*) manure rotted in an open bin, using all ordinary precaution against undue leaching. Secondly, to learn the result of fermentation upon the availability of the plant-food in the manure. This is an important question, for it is quite possible to have the soil loaded or saturated with the elements of plant-food, nitrogen, phosphoric acid, and potash, but so combined that they are of comparatively little value to growing crops, that is to say, are not soluble in water. We are all aware that the nourishment crops take through their roots must be in solution. Plant-food to be available must either be in solution or soluble in the slightly acid sap which roots exude. Plant-food in other forms than these is not available for our growing crops. For instance, in various parts of Canada phosphate of lime or apatite is mind. This mineral phosphate, no matter how finely it is gronnd out, is useless (because insoluble) to growing crops. It had been tried and that conclution had been reached after several years of experimenting. But treat this mineral phosphate with sulphuric acid, and it is converted into super-phosphate, a most valuable, because soluble, source of phosphoric acid for crops. It was desired to learn therefore whether fermentation under the conditions names affected in any way the availability of the plant-food in the manure.

Eucalyptus Leaves.—A farmer in New Sout Wales claims (say the *Australasian*) to have discovered a new use for eucalyptus leaves. The discovery is certainly a valuable one if it be fonnd as effective in practice as it is stated to be. The gentleman referred to asserts that if fruit trees are mulched in the season of rest with eucalyptus leaves they will be entirely free of blight or fungi of any kind the following season. His own practice is to gather all the gum-tree leaves within reach, and if necessary, cut down eucalyptus branches, and spread them over the orchard. If this plain is regularly followed, he states that the fruit trees will be completely protected against scale of fungi of any sort. I have not seen the trees which the owner declares to be thoroughly free from the pests mentioned, while others close by, and not so treated, are almost worthless, but I have every confidence in recommending others to give the remedy a trial. The discoverer is a practical fruit-grower, and knows what he is talking about. He further advises that all orchards should be sheltered with eucalyptus instead of other deciduous trees, which act as a breeding ground and harbour for the insect pests which so annoy fruit-growers. There seems to be a good deal of reason in these suggestions. The eucalyptus trees, it has often been observed, are remarkably free of disease of any kind, and the pungent oil in their leaves very probably does contain some property that is repulsive or fatal to the insects and fungi which infest our fruit trees with such disastrous results.—*Journal of the Jamaica Agricultural Society.*

NEW AND OLD PRODUCTS IN ZANZIBAR.

(*Concluded from page 448.*)

Approximate yield per tree.—The number of clove trees at Marseilles was stated to be 5,000, but on recounting we found there were 7,500 bearing trees at Marseilles and 1,000 at Kitumba—together 8,5C0. On December 31st we had gathered, approximately, 1,300 fraslas, and might, I think, safely count upon another 300, making a total of 1,600 fraslas. This gives an average yield of over 6½ lbs. per tree. A good proportion, about one quarter, was left upon the trees ungathered through lack of labour. With sufficient labour we should, I think, easily have reached 2,000 fraslas; the approximate yield per tree is therefore brought up to over 8 lbs. The trees at Dunga were just as heavily laden with buds, but they never ripened properly; at least half the crop failed. We reached about 350 fraslas, which from 3,000 trees gives an average of 4 lbs. per tree.

Returns.—Our actual sales at the end of December amounted to 873 fraslas which realized 5,535 rupees, while we had on hand at the custom house unsold and in the plantation godown an estimated quantity of 424 fraslas which, valued at the current rate of 5½ rupees a frasla, was worth 2,332 rupees. Our gross returns up to December 31st may therefore be taken as R7,867. Our expenditure to that date was 1,725 rupees, or about 22 per cent of the gross returns, and our net profit is shewn as R6,142.

ACCOUNT STATEMENT TO DECEMBER 31st.

		R.
873 fraslas sold	..	5,535
424 „ (approx.) on hand	..	2,332
1,297 fraslas	Total ..	R7,867
Expenditure to December 31st	..	1,725
Net returns	..	6,142
	Total ..	R7,867
	Net returns ..	R6,142

This is equal to a net profit of 4 rupees 11 annas per frasla.

The amount 1,725 rupees as the actual cost of gathering 1,297 fraslas works out to 1 rupee 22 pice per frasla and differs slightly from my first estimate of 1 rupee 13 pice. This discrepancy may be accounted for by the alteration in the rating, which was at first per 300 pishi: I wanted the headmen etc. to receive a fair but not an excessive wage; but as the season advanced I found that I had underestimated the daily pick, which was about 400 instead 300 pishi, so I altered the rating accordingly. The spreaders were allowed 3 pice each per day, but at Kitumba where the quantity of cloves to handle was proportionally much less, the spreaders were paid at a higher rate. This would introduce another slight error into the first calculation. The whole of the Kitumba staff of headmen etc. should in reality have been rated differently, but this would have led to confusion in the accounts which were kept by an Arab who, admirably as he did his work, was not familiar with European methods of book-keeping. For the same reason I abandoned at Machui the idea of paying the pickers at the rate of 4 pice for every pishi picked after the first six. Where supervision is difficult as it is in clove picking, this system would most certainly have led to imposture by the people. It would, for instance, have been easy for two or three to have united their day's gatherings in order to make up the required quantity for the extra pice. At Dunga, which was I believe the only place where the system was adopted, we had not a sufficient amount of cloves to judge of its efficacy.

The net returns to December 31st are then shewn to be R6,142. Allowing now for the estimated 300 fraslas still to pick and valuing them at 5 rupees a frasla, the price to which cloves subsequently dropped, the total net returns are increased to R7,245.

ACCOUNT STATEMENT FOR THE SEASON (APPROX.)

		R.
Net returns to Dec. 31st.	..	6,142
300 fraslas at R5	..	1,500
	Total ..	R7,642
Cost of gathering 300 fras. at R, p 22.		397
Balance profit	..	7,245
	Total ..	R7,642
	Balance profit ..	R7,245

Rupees 7,245 from 8,500 trees is equal to an income of 13½ annas per tree.

The waste upon the trees which I have estimated at one quarter of the crop would, if collected, have sufficed to pay for the entire expenditure. My object here however is to compare our actual expenditure and receipts and to arrive at a fair estimate of what a clove plantation may be expected to yield. The unpicked surplus is, therefore, better left out of account. Treated thus it will help to neutralise the effect of basing our calculation upon an abnormally large crop.

Our cloves were not subjected to the usual 25 per cent export duty.

This reduces the income per tree to 9½ annas; or R54 (£3 12s.) per acre: 90 trees to the acre.

Cost of Working a Clove Plantation.—Beyond purchasing drying mats and paying the harvesting expenses, the Arab spends little or nothing upon his clove trees. He employs his available labour, for the most part, in growing manioc, sweet potatoes and bananas for food and for sale. Thus the resident Arab in charge of Marseilles, when we took over in May, was expected to make 34 rupees a month by the sale of fruit and annuals, and was in consequence compelled to keep his men cultivating the open spaces and to leave the trees alone. This is a fair sample of Arab practice; it is a policy of looking after the pence and neglecting the pounds. The weeds on this shamba were half way up the trees, in some cases climbing completoly over them; many were dying and 1000 had been killed outright. It cost us R5 per acre to clear the land reckoning 90 trees to the acre. We let out contracts giving four pice of each space between four trees. When the land has been once or twice thoroughly weeded over, the cost of cultivation will be much reduced. In addition to cleaning the land we hope this year to dig round each tree at a contract price of probably 1 or 2 pice per tree. At Dunga we are now doing this work with two mules and a plough. Drying mats cost 30 rupees per 100 and baskets 3 rupees per score; 800 of the former and 100 of the latter were purchased for use at Machui, but at least half of these will be available for use again next year. There are no other outgoings to note beyond the overseer's wages, the purchase of a few dozen hoes, and items such as thatching and repair of houses and sheds always incidental to the management of an estate.

It seems to me indeed that clove planting as an industry has been somewhat unworthily discredited. Over-production and the labour crisis have brought about the stagnation of all enterprise, but I believe that clove planting in Zanzibar would respond to European management and proper cultivation. The production of cloves must decrease as years go on, as no young plantations are being made to supply the waste among the old treos. Such a year as this must exact a heavy toll; the enormous yield, coming as it has done in a year of drought, will exhaust the trees, while the drought itself will have killed off many thousands. It will always be to the interest of Zanzibar, if not to overproduce, at least to keep the markets well stocked in order to keep out opposition and preserve the monopoly. As long as the monopoly is maintained the clove industry will never hopelessly degenerate in the way, for instance, that sugar planting has.

Maltreatment of the trees.—The rough handling which the trees receive during picking is a very serious

evil and one difficult to check. The shamba people are as bad as, if not worse than, the outsiders and seem to have been trained npon careless and destrnctive principles. To be too strict in the matter is to run the risk of yonr wageni pickers deserting to other shambas where they will not he molested. It is the buds upon the tops and the lateral extremities of the boughs that are so difficult to reach, and at Machni we were compelled to leave those. At Dnnga where we had snfficient lahonr to keep half a dozen ladders going we did not sncceed in thoroughly clearing the trees. Three men working one ladder will hring in 6 pishi a day; it would therefore have heen unprofitable to have diverted the lahour, where it was scarce as at Machni, from the accessible bnds to the ladders where three men conld only pick the equivalent of one.

Another frnitful source of trouhle is the ravages of the *maji moto* ants, which weave their nests in the branches and are sometimes so bad that pickers cannot climb the trees till they have first smoked them out by lighting a fire nnderneath. When this takes place the lower hranohes of the trees are frequently singed and the trees sometimes fired altogether. The ravages of *maji moto* ants can be kept nnder by weeding. Well-weeded shamhas are seldom tronhled much with ants.

Experimental drying of the Cloves at Dunga.—Both Mr. Robertson and myself have given a good deal of attention to olove drying. We studied the Arab methods and fonnd that they almost invariahly heaped up their green cloves in the godown the first night after they are picked. If the weather is showery, preventing drying, the heaps remain for several days, growing larger with each day's picking. Fermentation is in this way set up, the cloves emerging a rich brown colour. It occurred to us that as this colonr approached the rich tan colonr so desirahle in the dried clove that a properly controlled system of fermentation might be heneficial. But our experiments showed this idea to he erroneous; cloves shonld be spread ont immediately npon being measured in; heated cloves turn black. We trained onr people to separate the burst from the good huds while stalking. It can be done at this time with little trouhle and with no extra cost, but the invariahle custom is to let good and bad all go in together. Before finally sending to market we passed the cloves through a riddle to remove the small immature bnds. By these means, which is only the old story of attention to detail, we produced what, for Zanzibar, was a fairly good sample, though falling short in the size of the buds. This was a defect which we could not remedy most of the cloves this year have been small.

Practically no difference is made in the local market between good and ordinary, so I was induced to send a small trial lot of 140 fraslas to be sold separately in London, to test the value of our work. Early in the year I had sent home to Messrs. Gray, Dawes & Co. an experimental sample of cloves that had been dried last season, and Mr. Hugh Garden of that firm reported on them as follows:—

"As regards the cloves this is of course the finest sample of Zanzihar ever shown, and buyers who saw it valued it at seven-pence to eight-pence. There is still a considerable differenoe between this and Penang which, somehow, appear to retain their reddish brown colour. A very fine sample was bonght in at anction at eleven-pence or eleven-pence half-penny, and was heing held for one shilling. The market apparently makes the same difference between Penang and your sample—in value—as between your sample and ordinary fair Zanzihar, but this too you must understand is only for very limited quantities."

These oloves were dried under glass after having been specially picked. More depends upon the picking than npon the drying. It is impossihle for us here to pick the buds singly because of the quantity to handle; they mnst he picked in hnnches, as they grow, and the small and over-ripe buds sorted out afterwards.

In order to test the efficacy of glass we erected small house 30 feet long and 14 feet wide with galvanised iron walls and a glass roof. The heat of the snn was in this way increased 25° heyond what it was in the open air. This increased temperature did not hasten the drying prooess so mnch as we expected nnless the cloves were first raised upon shelves. The heated air was then ahle to act from helow and ahove, and cloves could he dried in two days in cloudy weather with only short intervals of snnshine. All our cloves were finished off in the glass house. I don't think that the elevated temperature to which they were exposed contrihuted so much to the improvement in quality as the sorting and riddling. We shall try and arrange next year a system of shelves to increase the drying area of the clove honse. Onr experiments have, however, shown that cloves must he exposed to the direct heat and light of the sun; if dried in the shade they tnrn hlack.

The glass house has heen the means of saving lahour as the cloves, once spread ont in it, could be left to dry. Much time is lost, at a time when every available man is required for picking, under the present system of taking the mats in and out morning and evening and in showery weather. At Marseilles this hecame most serious as we had hetween four and five hnndred mats to handle each time.

The Clove Crop generally.—The magnitude of the clove crop may be judged hy the returns for November and Decemher. In those months Pemba sent in more cloves than in any previous month of the years tabulated, while the total for the two islands for Decemher, namely 121,858 fras. exceeds all previons returns. The Zanzihar crop was late, hence the total of 60,365 fras. for the year is the lowest since 1890, though the ports for December, namely 32,399 fras., is the highest on record for Zanzihar in one month. Still a heavy loss has taken place npon the trees. The dry weather of December, the rainfall for which was the lowest on record, following npon an unusnally dry year, caused the trees, especially in the districts where the crop was very late—Dunga, Kitnmha and the north end of the island—to shed starved and immature hnds, and lahonr was diverted from picking to sweeping up the fallen cloves under the trees. A qnantity has heen gathered in this way though a far greater quantity has been lost. Picking in these districts never really got into fnll swing.

In the Machui district the crop was ahundant and well forward, hut the lahour was totally inadequate to cope with it. The trees look as heavily laden now with ripening mother of cloves as they did in the beginning of the season with hnds, and the proportion picked must he quite insignificant to that which is left. In the South Mwera country the crop was earlier and lighter and was comparatively well gathered. Pemba seems to have snffered less from the effects of the drought than Zanzibar. The soil of Pemba, having more clay than onrs, is more retentive of moisture, and therefore hetter ahle to resist the effects of dronght. The Pemha trees, too, are older and their roots will oonseqnently have reached deeper levels for their food snpply.

III. COCONUTS.

The Dnnga trees yield ahout 30 nuts per year, and the Maohni, which are older, 40 nuts. Gathering has cost with ns ahont 4 rupees per thousand nnts, and the nnts can he sold on the spot for from 20 to 22 rnpees per 1,000; there is therefore a profit of say R17 per 1,000. Now a thonsand nuts are the prodnct of 33 trees, at 30 nuts per tree. Trees are planted 35 feet apart which is 35 trees to the acre. Roughly then we may take it that 1,000 nuts are the produce of an acre of land and give a net return of R17 (£1·2·8) per acre of half a rnpee per tree. There are no other ontgoings to he charged to coconuts as the trees are not cultivated in Zanzibar. Mr. Last has more than trehled the yield of his trees at Mangapwani, which he attribntes to having dug the ground round them. We find at Dunga that digging and mulching with grass can be done for ahout 3

pice per tree; the margin of profit, therefore, as shown by Mr. Last's figures is enormons. In addition to digging and mulching with grass we scatter a little Latham island guano or lime around each tree.

The coconut industry stands well with the European markets and seems, like rubber, to have an assured future. Coconuts form a staple article of food and common utility; their cultivation must be confined to the tropical littoral, and cannot, like tea, coffee and cocoa be extended to the interiors of Africa and South America as these become opened up. I believe that the planting energies of this Island, seeking an outlet, could not be better directed than to the cultivation of this tree which is simple and inexpensive, while the profits are assured.

We have not as yet been able to make any definite experiments in copra drying. In consequence of the crude methods in vogue we have found it more profitable to sell the nuts on the spot than to make copra. We intend this year to utilise the new glass-roofed house for copra drying in the intervals of clove picking.

CHILLIES.

The small clearing on the coral of about 3 acres, which we planted two years ago, has gone through a second period of drought, and crops have been exceedingly light. All attempts to supply the gaps caused by deaths have been unsuccessful. We thought of abandoning the plantation as having shown conclusively that the cultivation of chillies will not pay here, but must be left to the Wahadimu; but in consequence of the abnormal seasons being scarcely a fair trial, we decided to keep the clearing on another year.

In August we submitted to Messrs. Gray Dawes & Co. some samples of chillies for report, and Mr. Hugh Garden wrote of them as follows:—

"I have received your letter of the 2nd inst. together with samples of chillies......Such a sample for Zanzibar has never been shown in this market, and if coming in small parcels I think they will realize ten to fifteen shillings per cwt. over ordinary Zanzibar fair. You must not forget, however, that it is only for a limited quantity that this premium would be obtainable Japan chillies, for instance, were fetching, I imagine, twenty to twenty-five shillings per cwt. more than Zanzibar at the time you were in London (1896). Last week Japans were sold as low as thirty-one shillings and sixpence, or practically the same price as the value of Zanzibar "fair," on account of increasing imports."

These chillies were dried in the ordinary way upon mats in the sun, but they were stalked and kept clean. Any native who chose to take the trouble could do as well. Chillies are often shed from the trees before being gathered, in which case they will have been weathering upon the ground and lost colour. The stalks are left on, and, in drying, the chillies get mixed up with soil and leaves, and often come in for a drenching on their way to market. The inference drawn from Mr. Hugh Garden's report is that if Zanzibar chillies received the ordinary care and attention that any white man would give them as a matter of course, they would command the highest price in the London market, instead of the lowest as at present.

BANDA NUTMEGS AND MACE.

By O. KAMERLINGH ONNES.

(*Concluded from page 491.*)

III. TRADE.

WAREHOUSING AND AUCTIONS.

When the nutmegs and mace reach the *Amsterdam* and *Rotterdam* markets by the steamers of the Dutch Steamship companies plying between Holland and the Indies, they are all warehoused in Bond, where they are gradually sorted by the sworn Spicebrokers.

Every case of nutmegs is opened, the worm-eaten nuts, if any, are thrown aside, whilst the contents are classified according to quality in Nutmegs: *Nos. 1, 2, 3, 4 and "Separate."*

Each case of mace is equally opened, the various qualities being designed Mace: *E., F., G., "Separate"* and *"Broken."*

Sales.—Every three months public sales are held in Amsterdam and Rotterdam, the first days of these sales alternating between the two markets.

Samples.—Samples may be inspected in the bonded warehouses daily during 4 or 5 days before sale.

Conditions.—The conditions of sale are: bids to be made in cents (Dutch) per ½ Kg., delivery within a fortnight discount 1½ p.ct., or within three months without any discount. Bids are only accepted through the medium of sworn brokers, who are bound to state name of buyer.

The large importers have lately sold their produce in public sale by auction, whilst a few others still adhere to the old system of selling under cover.

For each parcel of nutmegs or mace a dock-warrant is handed to the owner of the goods, which entitles him to remove the parcel at once or to leave it in Bond on the condition of 15 cents (Dutch) per 100 Kg. rent for warehousing, insurance included.

All banks will advance money on these dock-warrants.

IN THE FINANCIAL MARKET.

As nutmeg and mace, well stored, are not subject to deterioration they lend themselves easily to speculation when prices are low.

DELIVERY.

The buyer has a right to have each parcel weighed over again, but he seldom avails himself of this right. He is also entitled to have each case opened to inspect the contents, but it is customary to take the broker's description for granted.

Every buyer packs the goods in his own style and according to their destination.

TRANSIT FREE.

On leaving the bonded warehouses goods in transit are free of duty, but on parcels for home consumption duty is payable.

DUTY OFF!

With regard to the latter it has been proposed to take off the duty, which would be advisable as the amount of duty received is relatively small, and as it would conduce to an easier movement of the market if the goods could be warehoused free anywhere.

ADULTERATIONS OF BANDA AND NUTMEGS AND MACE.

Caution against Frauds.—The bad habit of our days of adulterating different articles of food, even when prices are low, has crept into the trade in nutmeg and mace far more than would be thought possible. *Fraudulent Mixtures.*—From the moment that the article was placed before the public in a ground state, under the pretext of

offering greater facilities and economy in the kitchen, unscrupulous caterers have not hesitated to mix the article with all sort of rubbish, which in many cases is decidedly injurious to the public health. *Detection of Fraud.*—Connoisseurs might detect the fraud either by the colour of the ground substance, showing a deviation in the shade, which ought to be a light brown, or by a pungent disagreeable taste instead of a pleasing aromatic flavour.

Caution against ground Substitutes.—In order to be always on the safe side the public should decidedly refuse the ground article and ask for the superior Banda nutmeg, which should be firm and more particularly round, whereas the inferior article such as the wild nutmeg and the New-Guinea and Borneo or similar lower class produce is of a long, oblong shape and entirely wanting in the exquisite flavour for which the real article is estimated so highly.

Other Frauds.—The deception practised upon the public does not even stop here, and lately *artificially moulded* nutmegs have come under our notice. The swindle of this kind may be detected by breaking the sham nut which does not show the characteristic graining of the real article, whilst the mark of the moulding always leaves some traces on the artificial nut.

Caution against other Frauds.—Repeatedly the nut has been robbed of its oil by Distillation (*sweating*), whilst the holes caused thereby have been filled up with sassafras. Buyers should beware of such fraud which may be easily detected by the light weight of the nut.

Swindle with Mace.—Lower class mace and other indifferent substitutes which are mixed with the genuine Banda, have been forced upon the public. Buyers should refuse inferior mace and flavourless dust.

SCIENCE *versus* FRAUDS.

Microscopic and Chemical Tests.—Besides the various tests mentioned, Science disposes of several means to detect frauds, and we are glad to say the sham article gets less chance every day to pass undetected.

IMPORT AND DELIVERY OF NUTMEGS AND MACE IN HOLLAND.*

NUTMEGS.

In case of 75 kg.

Year.		Import.	Delivery.
1890	...	—	—
		not	specified.
1891	...	—	—
1892	...	11149	12842
1893	...	15992	9399
1894	...	12411	12658
1895	...	13704	13693
1896	...	13377	12795
1897	...	15799	13531
1898	...	14215	11516
1899	...	*6 months*	*6 months*
half year		*6666*	*7193*

* 1890—1898 according to Brokers' circular, published by Mr. W. F. Westermann, Amsterdam.

MACE.

In case of 50 kg.

Year.		Import.	Delivery.
1890	...	—	—
		not	specified.
1891	...	—	—
1892	...	5143	5680
1893	...	8005	5114
1894	...	5616	4854
1895	...	5837	6605
1896	...	5725	5197
1897	...	5919	6366
1898	...	7702	5705
1899	...	*6 months*	*6 months*
half year		*2844**	*2348*

PRICES OF NUTMEGS AND MACE IN CENTS (DUTCH) per ½ kg.†

NUTMEGS.

Qual. 110—115 pieces per ½ kg.

Prices ruling from Jan.—Dec.

Year.				
1890	...	172	162	168
1891	...	162	153	159
1892	...	155	125	130
1893	...	125	115	110
1894	...	100	95	105
1895	...	102	105	100
1896	...	100	85	88
1897	...	86	85	86
1898	...	95	80	82
1899	*first public auction* 84			
	second " " 84			
	third " " to follow.			
	fourth " " "			

MACE.

Quality: E. F.

Prices ruling from Jan.—Dec.

Year.				
1890	...	174	163	172
1891	...	172	163	160
1892	...	150	140	130
1893	...	130	125	120
1894	...	100	115	110
1895	...	110	115	105
1896	...	100	90	95
1897	...	97	90	110
1898	...	120	115	110
1899	110—115 *first public auction* (estim.)			
	105—110 *second* " "			
	third public auction to follow.			
	fourth " " "			

Price of Nutmegs in former years:

1840—1855 highest (in 1845) 286 cents (Dutch) per ½ kg., lowest (in 1843) 120 cents.

1855—1863 prices falling; lowest (in 1863) 60 cents (Dutch) per ½ kg.

1863—1872 prices going up; (1872) 203 cents (Dutch per ½ kg.

* As a rule mace appears earlier in the market being sooner ready for shipment than nutmegs.

† 1890—1898 according to Brokers' circular, published by Mr. W. F. Westermann, Amsterdam.

1872—1885 prices falling; 118½ cents (Dutch) per ½ kg.

1885—1890 prices going up; 165 cents (Dutch) per ½ kg.

IV.—USE.

The old German and the old Flemish songs almost identical in their opening lines, singing the praises "of the two little trees standing in my love's garden," are an instance of the secret poetical charm which things oriental have always exercised on the western mind. As Camoëns sang in the *Lusiad*, Heine in his *Lieder* on the Ganges, enriching literature with the glowing picture of oriental beauty, so in a more matter of fact way the most famous cookery books of olden days are redolent with the scent of the spices of the Indies.

This predilection for spices has not left the Flemish women yet, and their excellent kitchen recipes still do credit to the numerous piquant qualities of both Banda nutmeg and mace.

In fact we could hardly suppose a list of Flemish or Dutch *Wedding Presents* to be complete without a *nutmeg box and grater*, and for years a special present on the 6¼ anniversary of the wedding day called "*the Pewter-Wedding*" in Holland, has been a pewter spice-box. Fashion during many years too much under foreign influence, has made this typical present recede into the background, but wherever a young housewife considers herself the natural mistress of the kitchen, it is still an indispensable item of her wedding-wishes.

Of late the desire of being the personal attendant to her husband's comfort as well as his spiritual companion has drawn the Dutch woman's attention especially to the kitchen-department, and this good principle has been strengthened since, by the decided success of the *Dutch Cookery Schools.*

Although the days of mediæval opulence are irretrievably past, the necessity of good feeding is becoming more evident in these days of mental and bodily strain. Had children always being fed as ours are, many of the complaints of the generation which now peoples watering places and seaside resorts, would never have arisen, so we may consider it a boon that such institutions as our *Housekeeping and Cookery Schools* accustom the female mind to the ancient truism that "a sound mind can only live in a sound body."

Though perhaps Feuerbach goes too far in saying: "Der Mensch ist was er isst," and we should consider it rather an insult to man that "the way to his heart lies through his stomach;" yet a great truth underlies these exaggerated sayings, the truth that energy depends in the first place on health, one of its principal factors being good palatable food.

Among the many institutions of the kind in Holland the Amsterdam Cookery School (*Amsterdamsche Huishoudschool*) under the management of Miss S. G. F. Meyboom is one of the best.

We have much pleasure in quoting the following recipes which we owe to the kindness of this lady, whilst the photos which appear in our text were taken in the classes under her direction. One represents the object lesson in spices, whilst the other shows the practical application of the recipes we give below.

CULINARY USE OF BANDA NUTMEG AND MACE.

Brawn.—1 calf's head; 4¼ lb. veal; 1½ oz. salt and pepper; some gherkins; 1 grated nutmeg; 20 cloves, pounded; ⅙ pint vinegar; 1 leaf of gelatine to each ⅙ pint of liquid.

Boil head 5 hrs; meat 3 hrs. Remove bones and chop all. Mix with spices and some broth. Put mixture into mould, place paper with a slit cut in it, on the top; add vinegar and leave 8—10 days.

Meat-Chopped.—1 lb. chopped meat; 2 oz. soaked bread; ⅓ oz. salt; some pepper; ¼ nutmeg, 2½ oz. butter; 1 egg.

Soak bread in egg; work it into meat and spices; flour it and bake in oven with butter 30 mins.

Crême in clear Soup.—⅙ pint bovril; 2 eggs; nutmeg, pepper, salt; chopped parsley. Beat up eggs 10 mins; add the rest whilst stirring; leave 20—30 mins. in oven or bain marie till quite stiff. Cut it up into small squares and serve in clear soup.

Potato-purée in Scallop Shells.—1 lb. mashed potatoes; ⅙ pint milk; 2 or 3 yolks of eggs; 1 oz. butter; 5 oz. ham; some nutmeg.

Mix washed potatoes with spice, yolks, melted butter and chopped ham. Fill shells, flour them; small balls of butter on it; bake in oven, brown.

Mashed Potatoes.—1 lb. boiled potatoes; 1 pint milk; 1 oz. (not quite) flour; 2 oz. butter; some nutmeg.

Mix milk, butter and flour; slice potatoes into it; leave some time in oven and grate nutmeg over it.

Asparagus.—Clean them and cut off hard points; tie 6—8 together and boil in water or steam. Add melted butter, hard boiled eggs, and grated nutmeg.

Nutmeg may be grated over various vegetables: boiled lettuce; endives, French beans, cauliflower, savoy, white cabbage, turnips, purslain, etc.

Gelantine.—½ lb. veal; ½ lb. pork; 1½ oz. smoked ox-tongue; 1 oz. fresh bacon; ¼ grated nutmeg; 1 egg; ⅓ oz. salt and pepper; 1½ oz. soaked bread; 1 glass Madeira; 4 truffles; 3½ oz. tripe.

Cut up meat raw; mince with tongue and bacon; mix it with the rest, and make it into a ball; roll tight in tripe; tie cloth round it and boil 1¼ hr. Press 24 hrs. between two dishes under weight; serve with aspic and lemon, sliced.

Indian Cake.—3 oz. flour; 6 oz. butter; 6 oz. sugar; 5 eggs; 1 grated nutmeg; ½ stick vanille; 2 teaspoonfuls cinnamon; 25 cloves, pounded.

Whip butter into cream; add yolks of eggs, sugar, flour, spices and white of eggs beaten up stiff. Make thin layer in mould, previously rubbed with butter; allow layer to go brown; rub with butter; place second layer on it; etc.

Spice-Cake.—4½ oz. butter; 4½ oz. flour; 4½ oz. moist sugar; 4½ oz. currants: 4½ oz. raisins; 3 eggs; ½ nutmeg; 1 teaspoonful cloves, pounded; 1 teaspoonful cinnamon.

Mix butter and flour; stir yolk with sugar; add currants, raisins and spices; beat up white of eggs stiff. Then lay stiff white on yolks; mixed butter and flour on top; stir all gently.

Nutmeg-Cake.—9 oz. flour; 5½ oz. sugar; 7 oz. butter; 6 eggs; 1 nutmeg; 1 teaspoonful baking powder; ⅙ pint water.

Work butter into flour; stir yolks with sugar; add water and baking-powder. Beat up white of eggs stiff; stir it all gently; bake cake in mould, rubbed with butter, well floured and sugared.

Frankfort-tablets.—5 oz. flour ; 2½ oz. potato-flour ; 3½ oz. sugar ; 3 oz. butter ; 3 eggs ; ½ nutmeg, grated ; 8 cloves, pounded.

Stir butter and sugar 10 mins.; and yolks, one by one; spices, stiff white of eggs add flour. Roll out paste thin on oven-tin ; sprinkle some chopped lemon-peel and bake it light brown. Cut up in bars.

Tapioca-dish.—1¾ pint milk ; 4½ oz. tapioca ; 2 eggs; 2 oz. sugar ; 1½ oz. butter ; some grated nutmeg.

Boil milk ; add tapioca and stir well till done. Add sugar, butter and nutmeg. Let it cool down ; add beaten yolks, and last of all white of eggs, beaten up stiff. Bake brown in baking-dish in oven.

Sausage-rolls.—4 (small) rolls ; 3½ oz. chopped beef ; 4½ oz. chopped pork ; some chopped onions ; 3 teaspoonfuls milk ; pepper, salt, nutmeg to taste ; chopped parsley.

Cut tops off rolls and hollow them out ; rub inside with butter ; fill with meat, dressed with other ingredients. Put on tops again, rub outside with butter ; bake in oven till crisp.

Rissoles.—12 oz. meat, fish or shrimps ; 2 oz. butter ; 1 oz. flour ; ⅛ pint bovril ; salt and nutmeg ; 1 egg ; chopped parsley.

Mix butter and flour well ; add warm bovril ; boil a few minutes ; add egg, chopped meat and spices. Let mixture cool down ; divide into balls or cones ; roll well in flour ; fry in hot fat till brown. Serve with sprigs of parsley, slightly fried.

Gelantine.—1 lb. scraps of meat ; nutmeg and pepper to taste ; 1 onion, chopped fine ; parsley chopped ; lemon juice ; ¼ pint water ; ½ oz. gelatine.

Chop meat fine, mix with spices and put in mould ; pour water over it in which gelatine has been dissolved ; boil all 1¼ hr. in bain marie. Gelantine may be rolled in tripe and cloth, boil 1½ hr. and press 24 hrs. between two dishes under weight. Serve with aspic.

Chopped Meat in Tripe (Old Dutch Recipe).—5 lb. beef ; 2½ lb. pork ; 1 oz. salt ; 2½ nutmegs, grated ; 35 cloves, pounded ; ⅓ oz. pepper. Wash meat and cut up into thin pieces ; mince and season with spices ; leave it one night. Soak pieces of tripe well in tepid water, clean well both sides and fill with meat, not too stiff. Sew them up and boil 2 hrs. well with salt ; prick with fork from time to time. Hang them up 1 hr. and store in earthern pots with 3 parts vinegar and 1 part water. Skim off fat after cooling and keep this for frying.

Shut pots with damp vegetable-parchment covers.

To this list we may add the following summary of the qualities of the nutmeg :—

Banda Nutmeg is indispensable in a palatable and wholesome preparation of divers vegetables, cauliflower, spinach, onions, endive, turnips, etc.

Banda Nutmeg is indispensable in all sorts of minced and chopped meats.

Banda Nutmeg is indispensable in various piquant sauces.

Banda Nutmeg is indispensable in the yolk of eggs beaten up with brandy or cognac (egg-nog, a liqueur in great favour in Holland).

Banda Nutmeg and Mace are indispensable in all soups (the mace to be boiled quickly in a little cotton bag).

Banda Nutmeg is indispensable in several articles of pastry, as English "*plum pudding*," Dutch "*Speculaas*," etc.

Banda Nutmeg is indispensable in the egg-sauce with asparagus and in mashed and stewed potatoes.

Banda Nutmeg is an excellent ingredient in the kitchen, and may be appropriately used to season vegetables, made dishes and flour-puddings.

Banda Nutmeg is invaluable in seasoning every description of preserved meats, sausages and brawn.

Banda Nutmeg gives an additional relish to the dishes.

Banda Nutmeg-Tincture.—Grate three ounces of nutmeg, put the powder into a quart bottle and fill it up with good brandy or spirits of wine, cork it, and shake it well every day for a fortnight, then pour off the liquid, leaving the sediment behind. Put the tincture into small bottles, cork these closely and store for use. Probable cost, according to the quality of the spirit. Sufficient, three drops to flavour half a pint of liquid.

Nutmeg-skin Preserve and Truffles.—The fleshy outer skin of the fruit are generally left in the gardens, they may however be used to prepare an excellent home-made jam (*maniesan pala*). Stored in shallow pits they will also produce a fine edible truffle (*djamoer pala*).

MEDICINAL PROPERTIES OF NUTMEG AND MACE.

Besides the instance of the use of this nut for its medicinal qualities, mentioned in one of the first columns, showing that it was used in Persia about 906, Paulini quoted more than 138 cases of disease in which the *myristica fragrans Houtt.* may be applied, and there exists a voluminous literature on the subject. In the Moluccan Archipelago it has of old been used in case of dysentery, headaches and other nervous disorders. With the characteristic love of Eastern nations for stimulants, they were also the first to discover that it contained pronounced aphrodisiac qualities.

For skin and hair-ointment used as an embrocation in cases of cold, against sores and eruptions but especially against stomach-colics and hemorrhoids.

Even carrying nuts about one has been found beneficial in many cases and especially against rheumatism.

We quote the following recipes :—

Banda-Nutmeg. A spoonful of it grated with brandy and sugar is a pleasant, warming and inexpensive anodyne against sudden cramps and stomach-colics.

Banda Nutmeg, pounded fine and mixed with oil, fat or ointment is an excellent embrocation against rheumatic complaints.

Banda Nutmeg, used as a condiment in the preparation of vegetables, meats and other food, promotes the digestion, and acts as a preventive against spasms and other disagreeable sensations after a meal.

Banda Nutmeg acts gently stimulating on the organs secreting saliva, bile and gastric juices,

thus causing an increased secretion of these juices in the esophagus and greatly improving the digestion.

Banda Nutmeg has a most beneficial effect on the circulation of the blood, imperatively necessary for a good digestion, thus fitting the frame for a perfect absorption in the blood of the nutritious substances in the food.

Nutmeg-paste,—Inferior nuts damaged and broken are carefully excluded from export. Stamped, steamed and pressed on the estate, they produce a solid fat, which is cut in bars and sold as nutmeg paste, which makes a delicious ointment in the pharmacopœia.

AN ENGLISH STATION FOR BOTANICAL RESEARCH IN THE TROPICS (CEYLON).

The Royal Botanic Gardens of Ceylon, under the direction of Thwaites and Trimen, to go no further back, have long been known as one of the most important centres of scientific work in systematic and economic botany. Thanks to the Brtish Association for the Advancement of Science, a small room next to the director's office was fitted up as a laboratory, in which have worked many botanists, chiefly English. Among those who have worked in Ceylon during the last decade may be mentioned Profs. Bower, Farmer, Goebel and Potter, and Messrs. Freeman, Keeble, Pearson, Parkin, and others. During the last two years the laboratory has been very much overcrowded, being used by the staff of the gardens as well as by visiting botanists. With the commencement this year of a new research laboratory, now being erected by the Department of Public Works, and to be completed probably before the end of the year, this difficulty will be overcome, and there will be ample room for several workers from abroad in addition to the members of the staff. This being so, it may not be amiss to give at this time an account of the facilities now available in Ceylon for research in the tropics. While the laboratory is primarily intended for botanical research, there is no intention of excluding workers in other lines so long as there is room for them, though of course money cannot be spent in providing special apparatus for their work.

The Royal Botanic Gardens form a department of the public service in Ceylon, under a director. The headquarters of the department are at Peradeniya, near Kandy, where the principal garden was established in 1821 by Moon. There are now smaller branch gardens in four other places in different climatic regions of the island. A brief account of these may be of interest.

The original Peradeniya garden lies within the Municipality of Kandy, about four miles from the centre of the town. It may be reached by driving in a carriage or rickshaw, or by trains which run at intervals to a station near the garden. The roads here, as almost everywhere in the island, are excellent for cycling. The garden has an area of about 150 acres, and lies in a very beautiful situation, in a loop of the Mahaweli river, and in very mountainous country. Its elevation above sea is about 1,550 feet, so that it has a much more pleasant climate than the low country. During the day the difference is but little, but the nights are very much colder than in Colombo, so that refreshing sleep can always be had; indeed, during most of the year a blanket is necessary. The mean annual temperature is 76° F., that of the hottest months (March and April) being 79°, that of the coldest (January and June) 74-75°. The highest shade temperatures ever reached are not excessive, rarely exceeding 90°, and in the present laboratory the highest in the last two years has been 82°, the lowest 65°. Work can thus be carried on with as little discomfort as in any European laboratory. The annual rainfall is about 90 inches, but owing to the great violence of tropical rain the number of rainy hours or days is very much less than in England. The number of days with rain averages 170 per annum, and it rarely rains more than four hours on any one day. Rain in the morning is also rare. The weather of the year depends on the mousoons. In the end of May the south-west monsoon begins to blow, and there is much wind and rain, the weather gradually becoming finer through the months of June and July. August and September and the first half of October are delightful months. In October the north-east monsoon begins, and until Christmas it is very wet. In January begins the "dry season," and during the next two or three months there is less rain than at any other time of year, and the weather becomes gradually very hot, though until April the nights are cold. March and April are the only really unpleasantly warm months in the year. The best time on the whole to visit Peradeniya is from October to March, but from July onwards is very nice, the objection to travelling at this time from Europe being the heat in the Red Sea, which, however, is much less formidable than is usually supposed in these days of swift boats and ice chambers.

The garden contains a splendid collection of tropical plants, and, being arranged like an English park, with wide spaces of lawn, the specimens are easily seen and photographed. In the centre lie the buildings of the museum, library, herbarium and laboratory, close together. The museum is chiefly devoted to the economic products of Ceylon, and contains a very good and interesting collection. The herbarium consists primarily of Ceylon plants; but there is also a general tropical herbarium, and a herbarium of the plants contained in the gardens. In the same building is the library, which contains about two thousand books and papers. There is an excellent collection of books relating to economic and systematic botany, and recently a large number of works on the other branches of botany have been added; a considerable number of journals is also received regularly, including such periodicals as the *Annals of Botany*, *Botanical Gazette*, *Botanische Zeitung*, *Flora*, &c.

The laboratory lies a few yards to the north of the herbarium. It consists of a one story bungalow of brick on a stone foundation, and with cement floor and tiled roof. The length of the building runs approximately east and west, and on the north and south sides there are no verandahs. At the east end is a verandah 8 feet wide, the ends of which are built up so as to form—one a lavatory, the other a dark room for photographic work, fitted with sink, &c. At the west end is also a verandah of the same size, not built up in any way.

The building has six entrances, provided with French windows, two at each end and two on the south side. The other windows stand above the ground, and open outwards. There are doors leading from each room into all the adjacent rooms, so that free ventilation can be obtained, and at the same time any room can be completely shut up if required to prevent draughts without interference with the accessiblity of the others.

The principal room, the general microscopic and morphological laboratory, lies to the north-west, and is 36 feet long 18 feet wide. It has four working windows facing north, each with table, shelves, sink, &c., and two other windows facing into the west verandah, which can also be used as microscoping windows if required. The central part of the room will contain larger tables for microtome and other apparatus, and writing table.

To the east of this room is the smaller room devoted to physiological and pharmacological investigations. Leading out of this room is a French window, which gives access to the little eastern verandah, which may be used for cultivation experiments, &c. This room has two good working windows facing north, besides the French window. It is provided with three sinks and an annual temperature of 61° F. Frost never occurs, though it is

frequent at slightly higher elevations, such as Nuwara Eliya (6,200 feet). There is, unfortunately, no accommodation for visitors at present nearer than Nuwara Eliya, six miles away; but it is hoped to erect a small laboratory in the garden, with a small living room attached, where workers may live and sleep.

A fourth garden is kept up at Badulla, the capital of the Uva province, at an elevation of 2,200 feet, on the eastern side of the mountains The chief botanical interest of this district lies in its somewhat drier climate, so that it has much more patana land than the western side of the mountains, and in the fact that its dry season comes, not in the north-east but in the south-west monsoon, so that the periodicity of the vegetation is different. Fruit, which at Peradeniya ripens in March and April, ripens at Badulla in August, and so on.

Yet another garden is maintained at the ancient capital of the island, the famous "buried city" of Anuradhapura, the capital of the North-Central province. This lies in the middle of the dry country, which makes up about three-fifths of the island, and has an Indian climate, with rain almost confined to the last three months of the year, and drought during the remainder, including the south-west monsoon. The flora of this district is therefore, as might be expected, very different from that of the rainy south-western and central provinces.

The island can show, within an area of rather less than that of Ireland, a most remarkable range of climate and flora, rendering it very interesting to the traveller and naturalist; in this respect it is unrivalled in the tropics. The working botanist or student has, further, the great advantage of having at his hand the excellent flora prepared by Dr. Trimen, and finished after his death by Sir Joseph Hooker. There are doubtless many new species still to be found in the eastern and south-western districts, as well as many unrecorded species; but the student who does not desire to specialise in this department of botany will be grateful for the useful flora, which renders the identification of his collections, or of the plants he may be experimenting with, a matter of comparative ease. The vascular cryptogams and many of the mosses have been identified, but there is much to be done at the lower forms of vegetation.

Peradeniya is easily reached from any part of the world, Colombo being one of the greatest ports of call. Direct lines of steamers run to Europe, China, Japan, Java, Queensland, Adelaide, Melbourne and Sydney, Mauritius, South Africa, and all Indian ports. Madras may be reached in thirty-eight hours by boat and rail. To England there is a very large choice of steamers. The favourite lines with Ceylon people are perhaps the Bibby and the Norddeutscher Lloyd, but the P. and O., the Orient, Messageries Maritimes, British India, and many others, are much used. The first-named is the cheapest of the large English lines, but is first-class only. First-class returns to Colombo, available for six months, are from 70*l*. to 90*l*. Second-class, which is very comfortable on the largest lines, is from 50*l*. to 60*l*. A few pounds are necessary on the voyage for tips, sports, trips on shore, &c. Banking accounts may be opened in Kandy, and money easily remitted to and from Europe. The value of the rupee is now 1*s*. 4*d*., and seems likely to remain at that figure.

Very little is necessary in the way of outfit. Drill and khaki clothes can be bought here for less than half their price in England; also topees (sun hats). At Kandy the usual dress is similar to that worn in England in summer; at Nuwara Eliya it is colder, and tweed suits are often worn. All articles of clothing can be bought here, and usually as cheaply as, or more so than, in Europe.

The usual division of the day is as follows: Rising at daylight, a light early tea of eggs and toast is taken about 6-15, after which a walk in the garden is pleasant, commencing laboratory work at 7-30, and continuing till 11, which is the breakfast hour. After breakfast follows a rest indoors, but not sleep, and work may be resumed at about 1-30 for a couple of hours or so. After tea the remaining two hours of light are given to tennis, cycling, and other forms of exercise, followed by a bath, and dinner at 7 or 7-30. The evening is devoted to amusement.

Travelling in Ceylon is easy in all but the most out-of the way or sparsely populated parts. Railways and good roads intersect the greater part of the island, and there are coach services to a great number of places not served by the railways. Rest-houses or Government inns are found in all towns that have no hotels, and at intervals of 14 miles along all main roads. The average cost of living while on tour may be put down as about R7 or 8 per diem exclusive of fares by rail or coach. Steamers run round the island, calling at all the chief ports.

There is at present no rest-house or hotel at Peradeniya itself, and visitors must live in Kandy, where arrangements have been made with some of the hotels to board persons working in the laboratory at from R5 to R7 per day. There is a convenient service of trains, but the most satisfactory way is to cycle in and out. The road is in excellent order, and the distance from the furthest hotel under five miles. It is hoped that accommodation may be provided at Peradeniya itself before long.

Assuming that six months are spent from starting to date of arrival back in Europe, the cost of the trip should not much exceed 185*l*., made up thus:

Fare (First return)	..	£85
Twenty weeks' board	..	66
Travelling ..	..	20
Sundry ..	..	12 to 20
		£191

This might be much reduced by economy, and by travelling second-class from Europe, and the proportionate cost would of course be less if the visit were of longer duration. If much travelling is to be done in the island the amount shown above will have to be increased, the 20*l*. being allowed for four weeks only. By very close economy and reduction of travelling, and by travelling second-class, the total might be reduced to perhaps 140*l*.

Trustworthy information about Ceylon may be obtained in various books. The most interesting are Sir E. Tennent's "Ceylon," which is now out of print; and to a botanist, Trimen's paper "On the Flora of Ceylon as affected by Climate," in the *Journal of Botany* for 1886. Ferguson's Handbook and Directory contains a vast mass of information and statistics, and his "Ceylon in 1893" is also of interest.

Intending visitors should communicate some time in advance with the Director, mentioning what line of work they propose to take up, and any special facilities they may require. JOHN C. WILLIS.
—*Nature.*

SUGAR IN TIRHUT.—A correspondent of the *Englishman* writes:—I hear from several sources that on account of the disturbed state of the indigo market many men are talking of starting sugar, and that several men have commenced growing cane with the idea of testing the produce of crude sugar likely to be got per acre of cane. . . . . My advice to such is to have nothing to do with growing cane themselves. Let the ryots do this and make crude stuff called goor and *raub*. This planters could buy from the ryots and refine. There are at all indigo factories engines used for indigo work which will be quite powerful enough to drive the turbines now used in the manufacture of sugar. When sugar was an industry in these districts in the early forties what brought it to grief was that factories grew their own cane, and sugar-cane, it was found, exhausted the soil, and though the cane grew the yield fell from over 40 maunds of sugar per acre to less than 2½.—*Pioneer.*

THE TRADE OF CEYLON IN 1899.

(By a Merchant.)

(Continued from page 499.)

No. II.—IMPORTS.

EXCHANGE has been steady throughout the year and this has contributed to foster regular shipments of Imports to Ceylon. Prices although steady during the earlier part of the year have been against importers during the later stages. The year closes with bills being discounted locally at eight per cent, as against seven per cent at the close of 1898.

Money in India has been easy during the greater part of the year, but a tightness is now beginning to be felt and we shall probably have higher rates of discount quoted in the near future.

COTTON GOODS.—Since the beginning of the year raw cotton has steadily increased in value, the present prices being fully 45 per cent higher than those ruling at the end of 1898. There is a diversity of opinion with regard to the American Cotton Crop as to whether it will exceed or fall short of 10,000,000 bales and this is not without its influence on the market.

There has been a great falling-off in the importation of grey cotton goods; whilst on the other hand prints and coloured goods shew a considerable increase. The quantity of white goods imported is about the same as in 1898. The prices of cotton goods in Europe have advanced since the 1st January, 1898:—

Grey Shirtings	..	18 per cent
Do Drills, America	..	26 do
White Shirtings	...	15 do

Prices locally, although on the upward grade, have not yet risen to the same extent as in Europe, but it is obvious that much higher rates will be quoted later on, when stocks are depleted, unless a great reaction sets in, in Europe.

Many manufacturers are well engaged, some having their looms filled for the next six months.

The following figures shew the importation for the first 10 months of 1899 and 1898:—

		1899.	1898.
Grey cottons, bales and cases		2,375	4,341
White do	do	2,032	2,058
Printed do	do	996	626
Dyed do	do	91	89
Coloured Woven	do	8,775	6,945
Sundry ...	...	65	90
Yarns, Plain ...	...	1	11
Do Dyed ...	..	164	178
		14,499	14,338

WOOLLEN GOODS.—During the past nine months the value of raw wool in Europe has advanced over 50 per cent. Manufacturers are consequently asking much higher prices for made-up cloth, and we are sure to see higher rates quoted locally ere long.

METALS.—A good business has been done in iron and other metals. Prices after remaining steady for the first three months of the year, suddenly took an upward tendency, and the difference between prices in Europe at the beginning of the year and now are:—

Scotch Iron	37	per cent higher
Belgian	50	do
Swedish Iron	33	do
Galvanised Iron Sheets	31	do
Hoop Iron	38	do
Tin Plates	40	do
Copper	25	do
Nails	25	do
Tea Lead	25	do

All other articles of which metal constitutes a part, have risen very considerably in value. The present situation in the iron markets of the world is, we believe, without parallel in the history of the industry. In every manufacturing country of importance the demand for pig iron has not only outrun the supply, but has so far outrun it as to make it unlikely that any country will be able to produce a surplus for export, after satisfying its own demands, for fully a year to come. The outlook then is decidedly in the direction of a continuance of the present strong demand for iron and steel, and consequently, of the presnt prices.

MATCHES have advanced some 12 per cent in value.

WINDOW GLASS has advanced some 18 per cent in value.

CEMENT—a fair quantity has been imported. Prices have been firm, but have not advanced much.

SPIRITS.—The following figures shew the importation of spirits, &c., for the first 10 months of the years 1898 and 1899, and it will be seen from these figures that the quantities of gin and whisky entered for consumption in 1899 shew a decided increase over those of 1898; brandy on the other hand shews a decrease:—

Bonded		in 1898.	in 1899.
Malt Liquor, in wood, hhds.		1,367	1,615
Do glass, cases & casks		538	545
Brandy cases	..	3,336	1,875
Gin do	..	2,676	6,623
Whisky do	...	6,168	5,167
Entered for consumption		**in 1898.**	**in 1899.**
Malt Liquor, in wood, hhds.		1,506	1,692
Do glass, cases		565	155
Brandy cases	...	2,260	1,657
Gin do	...	2,439	5,471
Whisky do	...	4,683	5,131

RICE.—The crops in Bengal are turning out well and Soolai Rice can be purchased locally at R3·10 to R3·20, against R3·55 ruling 12 months ago. Owing to the drought in Southern and Western India Calunda rice is rising in value.

COALS.—The importation of Indian coal is still increasing; this coal being used largely by the Railway Locomotive Department and a number of Steamship Companies. Cardiff coal continues to be brought in smaller volume each year.

THE NILGIRI RAILWAY AND LEASES OF COFFEE TREES.

On representations made by owners of coffee estates along the Nilgiri Railway, asking for a reconsideration of the Board of Revenue's refusal to permit the leasing of coffee trees on lands acquired for the Railway, the Madras Government has passed the following order:—His Excellency the Governor in Council is pleased to

direct that the coffee trees on lands taken up for the Nilgiri Railway may be leased [to the adjoining landholders, subject to the following conditions :—(1) That the lease shall be for the season only ; (2) that Government reserves the right of entering on such land at any time and without notice ; (3) that if the Railway authorities have occasion to cut the trees during the period of such lease a proportionate amount of the rent shall be refunded.—*Madras Mail.*

THE HATFIELD CURE FOR RED SPIDER.

Relative to the note on the above subject, which was published on the 16th instant, and the footnote appended, on the utility of sulphur as an effective antidote for this insidious pest, the following quotation from E G Lodeman's (instructor on Horticulture in the Cornell University) book on *The Spraying of Plants* may have a fitness, along with the practical experience of Mr. Norman. "Sulphur is valuable both as an insecticide and as a fungicide. Its use for the first purposé is practically confined to greenhouses and conservatories, and even there only few insects are affected by it It is most rapidly applied by evaporating in a sand bath over an oil stove, but extreme care must be given that it does not take fire, as then it will instantly destroy all the plants. Red spider and related insects are said to be destroyed by the fumes, and treatment should be made as soon as they are discovered, or even before. Sulphur may also be evaporated successfully by placing it upon the heating pipes ; it is well to mix it with an equal amount of lime, and then add water to form a thick paint, with which the pipes may be covered. When applied in a dry form directly to the plants, it possesses little value as an insecticide. A moist atmosphere in the house probably renders the fumes more effective (this latter suggestion should form a valuable adjunct to the sulphur treatment, as observation tends to show that a dry atmosphere is favourable to its development ; whilst the converse, namely, moisture is a deterrent, and spraying with water has always been advocated as a specific)." Sulphur is one of the most valuable fungicides for the treatment of surface mildews, and it has long been used for this purpose. Previous to 1880, it was almost the only fungicide used in Europe, and it did excellent service in coutrolling the European mildews which attacked the Vine and many other plants whether grown under glass or in the open. Out of doors it was commonly applied in a dry condition being blown upon the plants by means of hand bellows. Under glass it was used in three ways ; in the form of powder, when mixed with water, and when evaporated from the heating surfaces. The first method was executed in the same manner as out doors. when mixed with water both the sulphur and the water assist in destroying many pests, and it is a common practice to make such applications. The proportion of the two varies greatly. It has been recommended to use 1 ounce of sulphur to 5 gallons of water, and also as much as 1 pound to 1 gallon. The more dilute mixtures are more easily applied and if the work is thoroughly done, are on the whole, equally valuable. The fumes of sulphur for treating mildews are obtained as described above. When the powder is used out-of-doors, the value of the remedy undoubtedly rests in the fact that the sulphur gradually gives off fumes on account of the heat of the sun, and the mildews yield for the same reason that they do when the powder is evaporated under glass. One of the most valuable preparations of sulphur is known as "Grison's Liquid." Although this latter insecticide is fairly old, to give the formula may be of service to some growers. Take the following :

Flowers-of-sulphur	500 grams or 17 oz	(avoird.)
Freshly-slacked lime	500 grams or 17 oz	do
Water	,, 3 litres or $5\frac{1}{4}$ pints.	

Boil the above ingredients for ten minutes, let the mixture then settle, and draw off the clear liquid after which the liquid must be bottled to use, 100 parts of water to 1 part of liquid, and apply with a syringe (still lately the quantities of sulphur and lime have been reduced respectively to one-half). This prescription was always advocated as an excellent cure for surface mildews, and about three applications were sufficient to preserve the foliage. It seems feasible to suggest that instead of syringing, heating the inteuding wash might prove more effectual in the houses. J. O'Neill.—*Gardener's Chronicle.*

PRODUCE AND PLANTING.

CHINA TEA IN 1899.—In its review of the past year's tea trade, the *Grocer* says of China tea, "This branch of the trade has now become almost a negligeable quantity. Of late years it has only been used by the trade to reduce the cost of the low-priced blends when Indian and Ceylon leaf was high, while a certain amount of good and fine Moning will always be used by people of weak digestion or connoisseurs who drink tea as they would a glass of fine wine. Of late years the bulk of the better teas have been re-exported to Russia and the Continent when their stocks have run short, but unluckily exporters have not come to our aid the whole of this year, partly because they have imported more direct, and also on account of their using more Ceylon tea, hence the disastrous losses made between January and June on the remainder of last season's fine teas that were left.

CEYLON TEA.—Ceylon tea has been rather disappointing, more especially for the first half of the year, when Indian tea was carrying everything before it, and supplies from Ceylon were falling off in comparison with the previous year. However, it is a noteworthy fact that deliveries always improve and keep pace with each monthly increase. For the first six months of the year supplies and deliveries both showed a decrease of three million lb. Since then imports have been heavy, or, say, an increase of four million lb. for the last half of the year, thus making the total imports for the year 97 million lb., against $94\frac{1}{3}$ million lb. in 1898. Deliveries have increased at the same rate for the last half of this year, the decrease for the first half being not only wiped out, but leaving a small balance in favour for 1899, or nearly 94 million lb., against $93\frac{1}{2}$ million lb. in 1898. Stock, however, has increased, and we shall commence the new year with 20 million lb. against 17 million lb. We notice by the Board of Trade returns that the re-exports of Indian and Ceylon teas show only a very small increase for the year, whereas last year they added largely to our increased total deliveries. The reason, however, is not far to seek, as the Continent and Russia are taking so much more direct, and we are fast losing these valuable outlets for our increasing supplies. The year opened with low prices, viz., $5\frac{1}{4}$d to $5\frac{1}{2}$d for leaf, but as Indian tea improved, Ceylon leaf was carried with it, and prices rose rapidly until Easter, when good leaf teas were bringing 8d per lb, and rough, ugly, red leaf kinds about $7\frac{1}{2}$d per lb, with dusts in proportion. Better teas, however, showed only small improvements, and ordinary Broken Pekoes have offered capital value all through the year. Finest liquoring and tippy Brokens and Pekoes suitable for exports have been scarce, and have always commanded long prices, especially in the spring and autumn, when quality is at its best. For instance, there is often a difference of 6d per lb in the same well-known garden Broken Orange Pekoes, according to the time of year, when quality is good or poor. Fair ordinary to good Broken Pekoes, however, do not vary much in price all through the year, and are relatively cheaper than any other class, owing to their oversupply and limited demand, as export only takes leaf teas. After Easter leaf teas took a downward turn, and followed the trend of the Indian market, while the quality offering in medium grades in May was particularly good, with capital value

to buyers. In July and August, when quality was poor, the quotation ran down from 6¼d to 5½d, with a very weak market; but quality and prices in September began to improve. Rates for fine teas were extreme, and Broken Orange Pekoes realised 1s 3d to 1s 8d for the favourite garden marks. A good business, with improving prices, ruled up to November. Then quality fell off, and up to the end of the year there were small ups and downs in leaf teas for price, with steady trade and good deliveries. By Ceylon circulars we find that the year's crop shows an increase of over 7 million lb. America and Russia each take 1 million more, and Australia ½ million more, the surplus balance being shipped to the United Kingdom, but probably nearly a million will go overside for transhipment. The last sale of the year closes with a very strong tone for price tea, the quotation being 6½d, against 5½d last year for either Pekoe Souchong or Pekoes. Good liquoring Pekoes and Orange Pekoes, however, are, if anything, rather lower than last year, say at 7d to 8d, and Broken Pekoes look about on a par. Dusts and fannings are a good 1d. dearer, thus showing what a run there is on "price" tea.

Coffee in 1899.—The total receipts of coffee in the United Kingdon during the first eleven months of the year now closed were 974,070 cwt. in comparison with 900,850 cwt in 1898 and 720,600 cwt in 1897, and the only instances where a decrease occurred were furnished by Brazil and Central America. Although very little Brazil coffee reaches this country, most of it going to other European ports and the United States, it none the less exercises the greatest influence on the world's markets, when the crops in Rio and Santos come to be considered; and the strongest movements, which are speculative, are regulated entirely by what happens in connection with the production of coffee in the Brazils. This, in 1898, proved to be the largest on record, embracing 11,332,000 bags as contrasted with 8,942,000 bags in 1897 and 5,969,000 bags in 1896. The effect of this enormously big crop has been to overwhelm the coffee market everywhere, and almost throughout 1899 a downward tendency has existed.

Mocha Coffee.—In a recent report the American Consul at Aden discusses a statement which is frequently made, and which has been repeated quite recently, that no genuine Mocha coffee reaches the European or American markets from the Arabian ports. The Consul says this statement is quite erroneous, for the books of his own Consulate at Aden and of the Consular Agency at Hodeida show that over 5,000,000lb of Mocha coffee were invoiced from these places to the United States last year not to speak of the quantity sent to Europe. But it is said that though nominally shipped from Arabian ports, it is really coffee grown elsewhere, and then shipped to Aden to be reshipped as Mocha. This suggestion is also erroneous, as appears from a letter from the British authorities at Aden on the subject. It is true that parcels of coffee from Java, Singapore, and other places landed in Aden, but according to the official communication above mentioned, these parcels are bonded in the warehouses of the owners at Maalla, and the key lodged in the trade registration department. "When the owner desires to export, a peon of the department is sent with the key to count the bags and bring them to the wharf. As the merchant or owner can have no access to his goods unless accompanied by the peon of the department, the transfer of the inferior bean to Aden for mixing with that of Mocha or Harrar is hardly possible." The Consul adds that an examination of the Customs authorities' reports show that foreign coffees are promptly re-exported to other ports, being landed at Aden for transhipment only; while the precautions in Turkish Arabia to prevent mixing are equally stringent. No doubt Mocha coffee is mixed with inferior beans in Europe and sold as genuine Mocha, but it is hardly possible that an importer buying in an Arabian port could get anything but genuine Mocha or Harrar coffee.—*H. & C. Mail*, Jan. 5.

CEYLON PLANTERS' ASSOCIATION.

ESTIMATE OF TEA CROP 1900.

At the last meeting of the Planters' Association Committee, a large amount of business was got through, but it is not necessary here to do more than indicate the main points. The tea crop for the current year is estimated at 138,000,000 lb. of which 108 millions will go to the United Kingdom and the rest to Russia, Australia, America and other countries. A suggestion was made by the Chamber of Commerce that the grant to America should be reduced and greater attention paid to the continent, but the allocation having been already made and intimated to our Commissioner no action can be taken in this direction at present. We thoroughly agree with the Chamber that there is very large scope for our energies on the continent and we are confident that much good will remit from the labours of Mr. Renton there as well as from the Paris Exhibition where Government is to incur expenditure amounting to £3,477 on account of the tea industry. We hope Government will see its way to adopt the suggestion as to adorning the first-class railway carriages with photographs depicting the tea industry. As was to be expected a hearty vote of thanks was passed to H.E. the Governor for securing the appointment of a mycologist, and we hope that when they next meet they may have the pleasure of passing a similar compliment upon the appointment of Mr. Kelway Bamber as agricultural chemist for the Colony. Mr. Wilkinson—has been in communication with the Committee on the subject of Labour Supply and he has been informed that there is work available on estates for no fewer than 50,000 coolies. The present is considered a favourable time for recruiting from the Coast and we have no doubt employers of labour will make a note of the fact and act upon the hint. The Committee are prepared to substantiate the allegations which have been made regarding short delivery of goods on the railway. If the General Manager meets them in conference as requested, a better understanding may be arrived at and steps taken to avoid future annoyance in this respect. Other subjects considered were fire insurance rates, the prevention of cattle disease, the inadequacy of the batta allowed to witnesses attending the Supreme Court Sessions (to consider which a sub-Committee has been appointed); a proposal by Mr. Borrett (deferred at present) that an ordinance should be drafted for the purpose of checking abuses that at present prevail in connection with promissory notes; the duties and powers of hospital visitors; and the opening of the Victoria Commemoration Buildings which His Excellency the Governor has been asked to perform on the 17th February. The objects of the Society for the Prevention of Cruelty to Animals have been approved, and the Ceylon Nurses'

Association commended to the support of the Planting Community and Europeans generally. The establishing of Rural Police in the Northern districts seems to have been attended with good results, the experience of the honorary secretary being that thefts of cocoa in the field had stopped since then.

TEA MOVEMENTS FOR THE WHOLE YEAR.

IMPORTS.

	1899. lb.	1898. lb.
Indian ..	140,646,100	138,874,490
Ceylon ..	96,188,170	94,319,832
	236,834,270	233,194,322
Indian Increase		1,771,610
Ceylon do		1,868,338
Total Increase		3,639,948

DELIVERIES.

Indian ...	140,481,161	139,089,130
Ceylon ..	94,225,004	93,488,012
	234,706,165	232,577,142
Indian Increase		292,031
Ceylon do		736,992
Total Increase		1,129,023 lb.

			lb.
In 1893 Imports	exceeded	Deliveries by	6,187,414
1894 Deliveries	do	Imports by	3,389,982
1895 Imports	do	Deliveries by	4,809,479
1896 Imports	do	Deliveries by	5,302,280
1897 Imports	do	Deliveries by	5,803,183
1898 Imports	do	Deliveries by	617,180
1899 Imports	do	Deliveries by	2,128,105

LYALL ANDERSON & Co., 16, Philpot Lane, London, E.C., 2nd January, 1900.

ISSUED BY THE TEA BROKERS' ASSOCIATION OF LONDON.

3rd January, 1900.

Stock on 31st December, 1897, 1898, and 1899.

Stock.

	1897.	1898.	1899.
China Tea ...	19,056,000	17,325,000	18,980,000
Japan ...	110,000	104,000	156,000
Java ...	598,000	535,000	482,000
	19,764,000	17,964,000	19,618,000
Indian Tea ...	61,673,000	61,319,000	61,484.000
Ceylon Tea ...	16,629,000	17,224,000	19,187,000
African Tea ...	30,000	55,000	21,000
Total ...	98,096,000	96,562,000	100,310,000
Black lb. ...	95,095,000	92,921,000	97,704,000
Green ,, ...	3,001,000	3,641,000	2,606,000

SUGAR-PLANTING IN PENANG, ON ZAMBESI AND IN CEYLON.

We have had a couple of very interesting interviews lately. First, our friend Mr. Turner, of Penang (who, with Mrs. Turner and family, arrived by the "Oceana" on the 23rd ult. to give a fortnight in Ceylon) is here, as promised, to enquire about land suitable for sugar in the Northern or Eastern divisions of the island. We have been collecting information for Mr. Turner who was likely to visit Anuradhapura last week his further movements being determined by what he may see and learn.—Then the "Clan Sinclair" to Galle brought from Beira, East Africa, Mr. Hornung, of Zambesi, and two Rhodesian friends, unable to get away *via* Delagoa Bay: they had to travel northwards to Beira and take this Clan boat. Mr. Hornung has a Sugar Estate on the Zambesi, but is interested in Rubber and other products, and has had our *Tropical Agriculturist* for the past 12 years. He went home by the Orient steamer last week: and visited Heneratgoda and Peradeniya in the interval.

CEYLON PRODUCE IN LONDON.

(From *Wilson, Smithett & Co.'s Circular*, January 5th.)

COCOA.—The market has remained closed as regards auctions since December 19th, and although a firm tone bas existed throughout the interval, the volume of business on the spot is small cosequent on the paucity of supplies, while forward business is limited by advancing quotations, although some transactions were effected at higher rates. The arrivals of new crop Ceylon are increasing and this growth is likely to form an important item at the opening sales on Tuesday next, but in the meantime business is confined to 200 bags, low at 61s to 62s, fair to good at 70s to 80s per cwt.

CINCHONA BARK.—The first auctions of the year in London are fixed for January 16th. Tbose in Holland for the 11th instant, when a total of 7,540 packages is advertised. This total compares with 7,087 packages analysing 5·14 per cent at the last sales, and 8,090 packages averaging 5·29 per cent. at the first series of 1899. The shipments from Java in December are telegraphed as only 626,000 lb. (Dutch), being as much as 400,000 lb. below last year: the total for the year, given below, is only a quarter of a million pounds over 1898. During the past year the fluctuations in the market valne have been very wide, the net result at the close of tbe year being to leave prices higber by 50 per cent than at tbe commencement. The year opened at the first sales with the unit value 1d, but on the shipments from Java in January and February shewing an important falling off, prices rapidly advanced, culminating at the end of March in a unit of 2¼d, which was the highest price touched during the year; from this date onwards, under the influence of tbe larger shipments from Java, which the rise in value induced planters to make, the market gradually reacted until at the October sale the unit had fallen again to 1 1-16d to 1⅛d. In the remaining two months of the year, stimulated by an active world's demand for the manufactured producet and by the fact that notwithstanding the great pecuniary inducements held out to Java planters during the year, their shipments had only exceeded the previous year's by a little more than half a million pounds, tending to confirm tbe view held in many quarters that the normal harvest was being somewhat inflated, prices again rapidly advanced until 1½d the unit was paid at tbe December sales. Tbe market is thus shown to be exceedingly sensitive, any slight curtailment of supplies having at once an apparently abnormal effect; sbould the supplies in tbe current year be no larger than in 1899, a further enhancement in values may be expected, and stocks in London and Amsterdam

be further depleted. Now, as for several years past, the future rests with the Java planters, British possessions being unable to furnish any important quantity. At an established unit of 2d and upwards, a certain quantity of cultivated Calisaya could be imported, but it would require 3d the unit to encourage any shipments from the old districts in South America, whence the market was originally supplied.

The following are the Java shipments for December, with the totals for the past four years; the shortness of the shipments last month, and the fact that the total for the year has only exceeded the previous year by 250,000 lb. has created a great impression and strengthened the belief that the maximum output from that island has been seen:—

Java Shipments, December.

	1899. pounds.	1898 pounds.	1897. pounds.	1896. pounds.
Amsterdam	626,000	1,018,000	731,000	890,000
Java Shipments, January-December.				
Amsterdam	11,390,800	11,133,000	8,511,000	10,079,000

From the table below of the movements in London during the past year, it will be seen that the Stocks in this port have been decreased by 4,000 packages, and are now at the lowest point touched during modern memory; the deliveries during the year have been exceptionally heavy, while the imports are considerably below 1898.

Stock in London on December 31st.

	1899. Pkgs.	1898. Pkgs.	1897. Pkgs.	1896. Pkgs.
East Indian	6,620	7,440	4,450	8,310
South American	9,480	12,550	12,240	1,380
Imported in the year.				
East Indian	14,830	20,600	10,180	16,920
South American	4,580	5,470	3,410	2,770
Delivered in the year.				
East Indian	15,670	17,640	14,040	18,050
South American	7,630	4,930	5,050	6,190

SULPHATE OF QUININE.—The market has developed strength since the bark shipments for December became known, and a further advance of ½d to ¾d per oz. has taken place, spot having sold up to 1s 3½d, March up to 1s 4d, and May up to 1s 4½d per oz. Following the fluctuations of the bark market this article has experienced during the past year some sensational movements, the value rising and falling in a manner which has not been seen for many years. The volume of business has been enormus, and largely in excess of any previous year, due in great part to the attention which it has attracted as a medium for speculation. Like the raw material the price at the commencement of this year is about 50 per cent higher than at the same time last year, and unless speculation again carries the value highr than the parity in bark, its future movements must be governed by the fluctuations in that article. Commencing the year with a spot value for "second-hand" German of 10½d, the price was rapidly driven up to 1s 9d at the end of March, future months being proportionately dearer, 1s 10½d being about that time paid for October delivery; with many fluctuations the value gradually fell from this point, until the lowest point was touched at the beginning of October, viz., 10¼d. A brisk rise then followed, under the initiative of manufacturers, who raised their price successively from 11½d to 1s 3½d, and the year closed with a value for "spot" in second-hands of 1s 2¾d per oz.

A feature in the history of this article will be the commencement in Febrary of periodical public auctions in Java of Quinine manufactured in the factories there.

The landings during December exceeded the deliveries by nearly 160,000 oz., a good deal of new manufacture being imported from the factories, against an increase in December, 1898, of 70,000 oz. The stocks in London are now returned as 2,793,056 oz., against 1,795,984 oz., 1,539,264 oz., 1,407,264 oz. and 1,972,432 oz. in the four preceding years. The excess in the stock is thus one million ounces, ro equal to one month's estimated world's consumption.

The total imports into London last year were 1,973,000 oz., against 1,032,372 in 1898, 640,000 oz. in 1897, and 233,000 oz. in 1896 while the total deliveries were 976,050 oz., against 775,660 oz., 508000 oz., and 798,000 oz. in the three previous years.

PLANTING NOTES.

THE AGRICULTURAL COMMISSION'S recommendations have, to a considerable extent, already been dealt with by the Governor. The Scientific Staff, for instance, is now well-filled, the last requirement being secured by Mr. Carruthers' appointment as Deputy-Director and Mycologist; and we learn that a Departmental Committee—of the Director of Public Instruction, Conservator of Forests, Director of Botanic Gardens and Government Agent—is now looking into the feasibility of the proposed transfer of the Agricultural School to the neighbourhood of Kandy. There remains the question of appointing a Director of Agriculture or an Agricultural Board, and we believe the latter is the more likely Executive decision as the outcome of the Commission's labours.

VISITORS FROM MADAGASCAR.—Dr. Lacaze, from Madagascar, had an interview lately with His Excellency the Governor. The object of the present visit to the East of himself and colleagues—one being an administrative, and the other an agricultural officer—is to collect information in Ceylon, the Straits and Java that may be of service in the administration and development of the big island-colony now entirely under French rule. Dr. Lecaze and Messrs. Guyon and Prudhomme have been securing a large number of our island and planting publications; and they mean to visit different parts of the island, more especially the Botanic Gardens and certain select plantations of the different staple products, before going on to Java. We bespeak all possible attention to our French visitors who will be found exceptionally intelligent with a fair command of our language and who are anxious to profit by local experience.

CEYLON TEA IN AMERICA.—We are indebted to Mr. W. Mackenzie for copies of several newspapers showing what the Americans are doing in the way of pushing the allies of Ceylon tea. The Toronto *Globe* devotes almost an entire page with illustrations to a description of the work done by, and the premises of, the Blue Ribbon Tea Company which was formed in 1896 for the purpose of putting up, in the now well-known package form, the produce of the finest tea gardens in Ceylon; and "The Weekly Common-wealth" published in Covington, N.Y., has a column principally eulogising Lipton's teas; while in others "Salada" tea is prominently advertised in English and French, a good word being put in for Ceylon greens. In one of the illustrations, typical representatives of Ceylon and Japan are shown lying prostrate: the verdict of the medical man, who has his finger on the pulse of Japan, being "beyond human help." Ceylon tea is held aloft by a figure of victory and there is the inscription: "Barbarous methods disappear before civilization."

Cacao in Trinidad.—There is a curious statement in the letter of Mr. Hamel-Smith dealing with Cacao (see elsewhere). It is stated that the members of the Legislative Council of Trinidad "refused to sanction" this year's estimate of the crop, on the ground that the deficiency will be 30 (and not 25) per cent as estimated by experts! Trinidad has had a dreadful drought.

Tea in Travancore.—The Travancore correspondent of the *Madras Mail* writes:—"A whisper reaches me that the tea planting on the Higher Ranges is not likely to be quite the success that was at first expected it would be. But I shall make further enquiries. There are all kinds of difficulties, the greatest of which are a want of sufficient rain during certain months and too much frost during others, thus minimising seasonable and profitable flushes."

India-Rubber Trees.—Large tracts of forest with abundance of rubber trees are said to exist in the unexplored interior of the State of Bahia (Brazil); but, unfortunately, owing to the difficulties of transport through a country without roads, and to the fact that the forests are inhabited by different tribes of Indians, some of whom are cannibals, it is said to be unavailable. The quantity of rubber produced in the State during 1898, however, increased materially, the high prices realised inducing collectors to proceed further a field for supplies.—*British and Colonial Druggist.*

Indigo: A Threatened Industry and Sugar as a Substitute.—A long communication to the London *Times* of Dec. 26th on Indigo, winds up as follows:—

Such careful selection of land as has been indicated will of necessity leave at the factories a larger area available for the cultivation of other crops. If we were to assume even that indigo-growing were absolutely killed by chemical discoveries and were to cease to exist at some future date, then, obviously, those now engaged in that industry would be called upon to grow other crops on their land, and would be obliged to find out what crops would pay them best. In this connexion their attention may well be directed to articles which appeared in *The Times* of September 2, 8, 12, 19 and 21 on the subject of growing sugar canes, and which are full of valuable information. Canes are already produced in nearly all parts of India, and in the aggregate the production must be very large. A new kind of cane is mentioned as growing in some of the West India Islands, which yields 23 per cent of saccharose, and modern machinery is said to extract 90 per cent thereof. From such cane sugar should cost less than £5 per ton. By way of concluding these remarks a final suggestion is made to Indian indigo planters. Experiment at your factories on growing sugar canes, for the product from which there is an ample market at your own doors. Remember that the conditions of India in these days in respect of communications and otherwise are very much more favourable to the successful working of such an industry than in the days when sugar was largely exported from the country; also that modern sugar machinery is more efficacious in treating the canes; and if it can be clearly demonstrated that canes of the best kind can be grown successfully in Behar, and that a formerly existing industry can be established and extended, taking the place of indigo in that quarter if the worst should befall it, then assuredly the necessary modern factory will not fail to be established to deal with the canes.

Casuarina.—Though the Casuarinas is not of much value as a timber tree, it runs up quick enough to be a most valuable rain attractor and might with advantage be laid down on the bare jhumed slopes of the Assam midrange, wherever the rainfall does not exceed sixty inches. When the Madras Railway was first aligned the villagers along the route were induced to plant casuarina which supplied the line with fuel for many years. Presumption as it may seem to parade such an idea, floods can be controlled by reforesting denuded tracts, and now that the Assam railway is entertaining the project of throwing out feeder lines in all directions, the necessity of protecting the earthworks from breeching as much as possible is imperatively called for.—*The Planter*, Jan. 13.

Coffee in Brazil.—From the *Rio News* of December 5th we note the committee of coffee merchants estimate at 2,250,000 bags the Rio coffee crop for 1900-1901. The committee says that coffee in elevated and cool localities has suffered very little from drouth.—We see by the report of the last half-yearly meeting of the Recife and Sao Francisco Co. that coffee planting in the state of Pernambuco has been receiving considerable attention and that the product, though small as yet, is steadily increasing.—The governor of Rio de Janeiro has sanctioned the assembly resolution of the first inst. which concedes next year 0·02 of the proceeds the export duty of coffee to be applied to the expenses of a propaganda abroad in favor of Brazilian coffee. The same resolution also concedes exemption from export duties on all coffee sent abroad for propaganda purposes.—The Sao Paulo *Diario Popular* of the 27th ultimo is informed that a practical and credible planter expresses the opinion that the abundant rains lately experienced will develop the coffee produced from the extemporaneous blossoming of June last so that it will ripen in January, or in February at the latest. As it will be impossible, in the present state of the industry, to find labor for a partial gathering of the crop, he thinks that this part will be wholly lost, thus greatly reducing the reason's crop.

Tea Distribution the "Thirty Committee."—Several of the subjects discussed at the last meeting had been previously considered by the Planters' Association Committee, such as the proposal to reduce the grant for America, and are referred to in our note dealing with the proceedings of that body. The amount voted to Mr. Mackenzie is £10,000 and a similar sum will be expended by Mr. Renton in pursuing his work on the Continent of Europe where it is considered that there are larger markets to be gained than in America. An interesting report was submitted on the manufacture of green tea on Brunswick estate and it should be a guide to those who are desirous of taking to this to supply the demand from America. Another very important matter that was discussed was a scheme for the protection of Ceylon tea in packets at home and abroad, and we look forward with interest to the result of the conference to take place between the Principal Collector of Customs and the Sub-Committee on the subject. We trust that steps will be taken to obviate the complaints that have been formulated by the Russian, and other tea buyers in the local market regarding slack packing and inaccuracy in the nett and irregularity in the tare weights.

THE DISTRIBUTION OF COCONUT PRODUCTS IN 1899.

RAPID RISE IN THE "DESICCATED" TRADE.

A careful study of the Chamber of Commerce Export Table which we issue as a supplement, discloses many items of great interest; and not the least interesting particulars relate to the distribution of the products of the Coconut Palm. Without any special organisation to push them into foreign markets, such as the enterprise and pluck of the Tea Planter have devised for his great staple, the range of their distribution is steadily extending, partly through their inherent excellence, and partly through the continuance of old-fashioned mercantile methods which are by no means ineffective. Other nations have undoubtedly been taking great commercial strides—it would be strange if they did not benefit by the example of British enterprise wherever they turned; and in some respects they have, perhaps, outstripped us by their greater pliancy and readiness to adapt themselves to circumstances; but that there is any falling-off in the commercial interests and alertness of the British race, is only what the tendency of the race to be their own severest critics suggest. When we look at the Chamber of Commerce Tables we find that our palm products find their way into almost every land on the face of the earth, and into not a few which are themselves producers. Just as our Teas have been shipped to our two great rivals, China and India, so Coconut Oil, Copra, Coconuts in the shell, find a place among the imports of the Straits, India and Africa, which grow their own palms! The process of development and expansion is particularly noticeable with regard to the Desiccated Coconut which, finding a place in our tables for the first time in 1891 with less than 1½ million lb., has mounted up in eight years to more than 13½ million lb.; while the taste for it has spread from the United Kingdom until, already, 12 out of 19 countries named in our commercial table are reckoned among the consumers. Though it would be too much to expect the demand for it to continue at the rate indicated by the growth of export during the past nine years—indeed the proportional advance during the second four years is far short of that shown in the first five years—there is no reason to fear that there will not be a steady, if slow, growth, as the new markets enlarge their orders; and thus one element in the maintenance of fair prices for nuts will continue to be present.

But after all, it is the price of Oil, and the demand for it, which is the chief controlling influence in the price of coconuts; and for the simple reason that Oil manufacture takes up as many nuts, as all other processes combined. In our recent review, we showed that in 1898 Oil represented 217 million nuts out of a total export of 390 million; and last year the figures were 200 million out of 331. The destination of the Oil and the demand for it is therefore of peculiar interest. In 1897 there was a sudden and serious falling-off in the demand from the United Kingdom, which ran down from 91,710 cwt. to 72,004 cwt., and which caused some anxiety which was, however, allayed by the good offices of a customer nearer home. India nearly doubled her orders from 86,796 cwt. in 1896 to 166,238 cwt. in 1897, and placed herself at once *facile princeps* among our customers, America coming second with 88,060 cwt., and Singapore a good fourth with 64,058 cwt. The revolution that was expected in the trade from these figures did not come off; for in 1898, the United Kingdom advanced her demand to 123,316 cwt., though still leaving India with its 125,687 cwt. at the top of the list; while Singapore put in a claim for 91,893 cwt. and America contented herself with 65,800 cwt. These were the principal figures which went to make up the total of 435,933 cwt. in 1898, which, though higher than the figures for the three previous years, were exceeded in 1894 by over 50,000 cwt., and in 1892 by 115,000 cwt. The exports of Oil last year have upset all the calculations based on those of the previous two years; for Singapore's demands dwindled off to 23,336 cwt. or about one-fourth what it took off in 1898, and India was content with 66,728 cwt. or less than half the previous year's consumption. On the other hand, the United Kingdom took a mighty stride to 185,205 cwt. or not much less than half the total exports; while America took total second plaee with 102,767 cwt. What is the explanation of these violent fluctuations? The demand for Europe and America, we know, is greatly controlled by the abundance or scarcity of animal tallow; but we should be glad of information bearing on the immense variations in the figures for India and the Straits.

In Copra, there was a falling-off as compared with 1898 during which an unprecedented demand sprang up—506,277 cwt. having been sent off, or about four times the previous highest record. As we noted last year, the principal customer was Russia which had to be credited with 143,688 cwt., or considerably more than the total that had been sent away in any previous year. In 1899, too, she heads the list, but with only 104,968 cwt., little Belgium coming next, as in the previous year with 76,634, and France next with 44,232; while Germany was content with 26,454. The demand of each of these countries were much heavier in 1898, and more than double in two instances while the Mother Country, so far from coming to our rescue was content with 37,106 cwt., or about 15,000 cwt. less than in 1898. To what is this falling-off all along the line due? Was it scarcity of freight? or were the previous year's purchases pushed on through competition beyond all reasonable requirements? That is not improbable, having regard to the enormous quantities that were sent away. The fact that the quantity exported last year, though only two-thirds of that claimed for 1898, is yet far ahead of any previous year, and more than double, if not quite treble, of the best, gives hopes that the demand will continue, and that Russia will prove our best customer in the future as in the immediate past.

In the demand for Desiccated Coconut, the Mother Country takes the lead, having absorbed nearly 9½ out of the 13½ million lb. we ex-

ported, or about eight times as much as either Germany or America who were our two best customers with figures over a million. Australia comes dutifully next with 814,266 lb., the other customers being Austria, Belgium, France, Holland, Spain, Turkey, India, Africa and China. If all these countries take kindly to the new product, the demand may yet surprise and please the producer; meanwhile, we may be sure the United Kingdom does not consume all she imports, and that the secret of the profitable uses she puts the stuff to, will leak out, leading to direct brisk business with us. In Coconuts, too, the Mother Country heads the list, having imported more than 10 million nuts of the 11¾ we sent away, Africa and Germany among next with 693,385 and 652,480 respectively. Belgium and Germany continue to be the two largest of our few customers for Poonac—the former having taken nearly half our exports, and the latter 14,000—cwt. less. Coir, in the forms of rope, yarn and fibre, found their way to the old markets, the United Kingdom taking none of the first-mentioned 6-7ths of the second and over one half of the last. Singapore absorb almosts all our rope—China, Africa, India and Australia taking small supplies. It is too early to venture on a forecast of the current year, but we fear the two droughts of last year will tell on the outturn of the current year as well; so that, if the demand for Oil and Copra from all the countries which we now supply continues, prices are likely to rule high.

BLEEDING OF WOODY PLANTS.

Professor H. Molisch has made a variety of observations on the flow of sap from woody plants when wounded. In the case of palms, cocos and arenga, the bleeding, when the inflorescence is amputated, is not due to root-pressure. No sap escapes from borings at the base of the stem, though it pours out abundantly at higher parts, even at a height of 19·28 metres, when the tree is in full leaf. The spadix continues to bleed for one or two days after being amputated. The origin of the osmotic pressure appears, therefore, to be not in the root, but in the axis of the inflorescence in cocos, and in the upper part of the stem in arenga. In three woody plants, natives of Java, *Conocephalus azureus* (Moraceæ), *Laportea crenulata* (Urticaceæ and *Bambusa sp.* there is an abundant bleeding from the stem, with very considerable pressure, up to two atmospheres, even at the time when the plant is in full leaf. The temperature during (our) winter months is very high day and night, with a constantly cloudy sky and daily rains. From incisions in the stem of climbing plants there is a copious flow of sap, both in the tropics and in European species. The sap flows from the vessels, thus explaining their unusual size in climbing plants. The flow is a purely physical result of the exposure of the vessels on both sides, and shows that capillarity cannot play the part either of a water-retaining or of a water-raising force to any considerable extent. The phenomenon takes place in *Vitis* and *Climatis*, in the height of summer even in dry weather and intense heat.—*Journl. Royal Micro. Society.*

COCHIN MARKET REPORT.

COCHIN, 20th Jan.

C. N. OIL.—With a large supply of copra as usual in this part of the season coupled with the steady rise in exchange prices do not shew any improvement. Business done this week in the bazaar for ordinary white oil both for prompt and forward deliveries is at R86/4 to R86/8 per candy. Good white oil is quoted at R85/8 nett. The "Obra" which has been substituted for the "Goalpara" calls here for Rangoon probably tomorrow and removes a few hundred casks. The "Inchmona" for New York due early next month has also booked a large quantity of oil in that direction.

COIR YARN.—Supplies have fallen off considerably and the quality of yarn now arriving as usual at this season is also very poor. Prices however keep steady.

RICE.—Chittagong boiled R6/7 to R7 per bag. Rangoon white R6/12 to R6/13.—*Cochin Argus*, January 20th.

INDIAN AZALEAS.—In some of the Ghent establishments as many as 100,000 plants are grafted each year. As soon as union is effected the plants are placed in frames in the open air. In the middle of May they are lifted from the frame and planted in dried leaves. Leaf-mould is not so advantageous. Weak liquid-manure judiciously used is beneficial. An illustration in the January number of the *Revue de l' Hoticulture Belge* shows a plantation of Indian Azaleas in the open air in the nurseries of M. Ed. Pynaert.—*Gardeners' Chronicle.*

TEA-GROWING IN THE CAUCASUS.—Though the day is very far distant when Russian experiments in tea-growing near home can injuriously affect the demand for Ceylon tea in the Russian market, it is of interest to note what a St. Petersburg correspondent writes in the *Grocers' Journal* of Dec. 23rd He says :—

"The tea plantations in the Caucasus are becoming of greater significance every day, and the time may not be far distant when the Caucasian tea will play an important part upon the Russian market. The Government is paying special attention to, and energetically assists, the experiment. For the first time this year Caucasian tea has been placed upon the market, and two important Moscow tea merchants have offered to buy the whole produce for some years to come, but up to the present no agreement has been come to, owing to the difference in the price. It is hoped that one pound of Caucasian tea will be sold at 1,40 rouble similar to the quality of Chinese tea usually sold at 2 roubles. A special commission sent to Tschakwa has reported favourably upon the results already achieved, and it has been decided to pay still greater attention to the plantations. The Minister of Agriculture, however, instructed a high official to proceed to the Caucasus with the view of instituting a thorough inquiry, and to make suggestions accordingly. In his report he proposes the extension of the plantations beyond Batoum, and in order to induce small landed proprietors and peasants to take up this industry Crown lands are to be let in allotments. Further pamphlets dealing with the question are to be sent broadcast amongst the country people. All machines and tools required are to be admitted free of duty, and special credit advantages are also to be extended to those willing to engage in tea planting."

RUBBER CULTIVATION IN SOUTH INDIA.

(BY A PLANTER.)

IN VIEW OF THE EXISTING DEPRESSION IN THE COFFEE industry, and the uncertainty attending the future of the staple, as well as of tea, it would be wise policy for the planting community in Southern India to study the potential attractions of rubber cultivation. Twenty years ago, considerable attention was aroused in South India as to the possibilities of the Ceara, or Manicoba rubber (*Manihot glaziovii*) proving profitable, and this tree was grown, mainly from cuttings, on many properties in the planting districts, while it was even tried in the vicinity of Mettapollium, at the foot of the Nilgiris. But from circumstances, which it seems unnecessary to recapitulate, interest in Ceara, despite its robust and rapid growth, gradually languished, and the trees have been generally uprooted, while the venture never travelled beyond the experimental stage. Some, if not the majority, of the planting localities in Southern India are reputed to possess a more fertile and productive soil than Ceylon, though the climate of various Provinces in the island has a greater degree of continuous humidity than the general average of the Hill plateau in the Madras Presidency, Coorg, Mysore and other notable tracts; but as Para and Castilloa are said to thrive in comparatively moist and dry climates, respectively, it follows that if conditions in Ceylon have been shown to be suited to the successful growth of the Hevea (or Para) and the Mexican (or Castilloa), that South India offers a varied field for kindred enterprise.

THE WHOLE QUESTION OF RUBBER CULTIVATION has recently assumed a new aspect in consequence of the discoveries of Mr. Biffen, of Cambridge University, a qualified botanist, who investigated the method of preparation in Tropical America with much care, and such success that the loss of rubber from the latex in the manufacture has been reduced from 10, 15 and even 40, to 1 per cent. The milky fluid, or latex, which exudes from various plants when abraded, is altogether distinct from the sap, as it is stored in special receptacles, which run longitudinally within the other tissues and generally form a connected and closed system. This lactiferous tissue, though not altogether absent in the vegetation of temperate regions, is specially characteristic of tropical flora, and the latest and most approved methods of collection and treatment of the latex is a powerful factor in revolutionising the result heretofore obtained in this profitable industry. By the aid of Mr. Biffen's machine, which is on the principle of the cream separator, he can, in a few minutes, extract the pure caoutchouc from the milk of any species of rubber tree, and the product thus obtained is practically identical whether evolved from the Para, Ceara, or Castilloa species, though the most satisfactory results accrue from the latex of the *Castilloa elastica*, which can be grown in the drier parts of hill tracts, whereas Para, in its native habitat, revels in moist lands, the borders of rivers, and inundated areas, thriving rapidly from the sea level up to 3,000 feet and over in any such soil. The rubber-extracting machine is something on the principle of a churn, composed of galvanised iron, and standing between 18" and 24" in height. A quart of the rubber milk is poured into the upper compartment and diluted with water. These form a species of cream, and by revolving a handle at the side the composition is driven through an extremely fine gauze sieve, which effectively isolates the rubber from all impurities. The rubber then descends into the lower and larger partition in the vessel, (where it is further diluted with water, introduced through an orifice in this lower receptacle) washing it free of what was mingled with it, and gradually rising as the compartment is filled, when the rubber, which has risen to the surface, is easily extracted through another aperture for the purpose. The water is then drawn off by a tap, and the procedure repeated indefinitely. The rubber extract is perfectly flat and thin, totally dissimilar to the rough balls produced by the native processes, while it is practically capable of any degree of distention. The sieve in the machine is moveable, and is retained *in situ* by a firm boss of metal, so that the whole apparatus can be easily taken to pieces and cleaned. The only further treatment of the rubber consists in spreading it out for a time to dry, when any slight moisture that may be retained is dissipated.

CEARA TREES may be propagated either by seed or through the medium of cuttings. The seed coat being of remarkable thickness, its natural germination may be prolonged for months; but this result can be more speedily insured by sowing the seed in a shallow box, or brandy case, into which about three inches of fresh stable manure has been smoothly spread, the straws having been carefully removed. The seed should be thickly laid on the smoothed surface of the manure, and then covered with a similar coating to the same depth. The whole should be kept damp, and nothing more is requisite till the germination takes place, in from seven to ten days, shortly after which the plant shows above the manure, when transplanting into a nursery or seed baskets must be effected. Para seeds, which are as large as nutmegs, can be put down in a nursery, shaded and watered, and here they germinate within eight weeks. The seeds can also be planted at stake in showery weather. For inundated tracts, old plants of two years and upward are stumped and planted out two feet deep, as seed or small plants are liable to be scoured away. When planted out, they should be suitably shaded until established in the soil. Under favourable conditions, new roots are developed within a fortnight. Castilloa seed should be grown in an ordinary shaded nursery, laid out on rich soil, the seeds being put in six inches apart and one inch deep. A watering in the evening once a week suffices, under which system the seed germinates in five weeks. When the plants are half a foot high they should be removed to seed baskets, filled with the richest soil available. Subsequently, and when thoroughly established in the baskets, the latter should be placed in pits two feet square and three feet deep, cut 14 feet apart.

In considering how far the Districts in Southern India are likely to lend themselves to the profitable cultivation of PARA and CASTILLOA rubber trees, the circumstance should be noted that the yield of the latex, or rubber, extracted from supplies grown in Ceylon is considerably below that accruing from the same varieties in their natural habitat. But Ceylon contains no indigenous rubber-producing trees of any value, and even the milk of the jak, breadfruit and other introduced trees, which elsewhere contain caoutchouc, when grown there have none. Whether Southern India shares this peculiarity can only be determined by special tests; but, so far as experiments in the yield of the latex from these species have proceeded in Ceylon, the results should prove interesting and instructive to South Indian planters. Mr. J Willis, Director of the Royal Botanical Gardens, Ceylon, reports of the Para:—

"It succeeds best on flat, wet, alluvial soil, at very low elevations, but in sheltered positions will thrive at elevations of over 3,000 feet though the growth is of course slower. Best results have been obtained by planting eight or ten feet apart each way; the trees thus form their own shade, and keep down the weeds, a process of natural selection goes on, and the more weakly and dwarfed trees may be thinned out in subsequent years. Another advantage of close planting is that the trees grow up straight without forming many branches low down, and this greatly facilitates tapping. Para is a surface-feeding tree; probably the best thing would be to plant out the tree among tea or other products, at considerable distances apart, the tree will then grow to a large size in less time than if kept in plantations of rubber only, and their rubber will form a useful minor product."

After being grown for several years amongst tea fields in Ceylon, the Managers of various properties report that Para rubber, approximately two years old,

some of the trees being 18 feet high, is apparently "not injurious to the tea," and that "all our Para and Castilloa rubber, from six to two years old, is growing through the tea, with no damage to tea at present—trees 30 feet high and 27 inches girth at three feet from the ground." The statistics available as to the yield of rubber from Castilloa and Para trees in Ceylon are so far incomplete. It is, however, known that the yield of rubber in the Straits Settlements is in excess of the best returns in Ceylon, and this is mentioned in connection with Mr. Derry's Report on Government Gardens in the Straits for 1897, from which I quote the following:—

"How for this industry is deserving of attention may be inferred from the following moderate estimate. Para trees planted 14 by 14 feet equal to 225 to the acre:—

Age.	Yield per tree.	Yield per acre *e.i.* 1 tree by 225.	Gross value per acre estimated at 2s per lb.		
	oz.	lb.	£	s.	d.
6	10	140½	14	10	0
7	18	250	25	0	0
8	26	365	36	15	0
9	34	478	47	13	0
10	42	590½	59	10	0

The importance of close planting is not generally realised. Planted at 14 by 14 feet, against 25 by 25 feet, would possibly result in a difference of one year in six, in favour of close planting. I am of opinion that planted 14 by 14 the trees could be tapped in the fifth year, if not earlier. Para rubber is a remarkably adaptable tree, growing in swampy land, or dry high ground, without, so far as I have tested, any difference in the yield of rubber."

Ere long I shall probably have more complete figures as to the yield of rubber from Para and Castilloa in Ceylon, but I have heard enough to show that the cultivation of these rubber trees promises to be a very profitable venture in that island, and I believe that excellent results await the enterprise in South India. Castilloa seed appears to be difficult to procure, but fresh Para seed is now available on application to Messrs. William Bros., Henaratgoda, Ceylon, at R5 per 1,000.—*Madras Mail*, Dec. 30.

CEYLON TEA EXPORTS: ESTIMATES (1900) AND RESULTS (1899).

We have brought together below some figures which present in comparative form the estimates of our tea exports to the chief countries served, for 1899 and 1900, together with the quantities actually sent away during the past year. The estimate for Russia in 1899, it will be seen, was 50 per cent too high; but seeing how greatly the Colombo market has been cultivated by the Russians during the past twelve months, we are not surprised to see the official figure is 6 million lb. again this year. The requirements of Australia also were over-estimated, but not excessively, and the estimate this year is, therefore, reduced by a million, merely—that is, put at 400,000 lb. ahead of the quantity sent southward last year. As for America, it is no doubt a little surprising to see the estimate for this year nearly doubling the exports of last; but—and it is a point to which we have already drawn some attention—we are convinced that what is put down in the Chamber of Commerce list for 1899 as exported to China, *i.e.* 1,384,490 lb., is really (or at least the large bulk of it) intended for transhipment *via* Hongkong to San Francisco or Vancouver, for California, British Columbia and Western America, generally. Thus the exports to America in 1899 would then amount, roughly, to 4,464,492 lb. instead of 3,080,002 lb. as given in the table. Hence, perhaps, comes the justification for the extraordinary reduction of the 1900 estimate for other countries as compared with 1899, by one-half, or by 800,000 lb. on the total quantity exported last year—in the latter case the exports to China being more properly counted in with the estimate for America. The total estimate for all countries other than the United Kingdom is four millions ahead of what was sent to them last year—a fairly accurate calculation, we believe it will prove—and two millions behind the estimate for 1899. The United Kingdom, however, took 10 millions more than was expected last year, so the estimate is increased by 15,000,000—or five millions ahead of the exports in 1899. Finally, the total estimate for 1900—namely 138 millions—appears to us a rather liberal one. We have hitherto experienced that the yearly increases are alternately large and small. The increases since 1891 are roughly as follows:—

1891	...	21,300,000
1892	...	2,900,000
1893	...	13,300,000
1894	...	100,000
1895	...	13,400,000
1896	...	10,200,000
1897	...	7,900,000
1898	...	3,700,000
1899	...	10,100,000

Up to 1895 it is evident that the theory of alternation held good. In 1896 the fall is smaller owing to the quantity of fresh estates coming into bearing and to the fame that Ceylon tea was beginning to win for itself throughout the world; the figures of 1897, where we should have expected an increase, in reality balanced the smaller drop of the previous year, and in 1898 and 1899 the theory again holds good. Thus it appears to us, judging by the last 10 years, that the 1900 estimate is rather too high and that January 1901 may find us with nearer 135,000,000 lbs. exported for the last year in the century than 138,000,000. However, this remains to be seen, and with so much depending on weather, labour and even prices, it is impossible to dogmatise. Meanwhile the following from last Sunday's *Pioneer* is curiously inaccurate:—

The Exports of Indian Tea during the calendar year 1899 amounted to over 151¾ million pounds against 136 millions in 1898. The exports of tea from Ceylon rose to nearly 121 million pounds as compared with less than 111½ millions.

"121" should be 130, while "111½" should be "119." We should need to go back to 1896 to find one year's exports below 110 millions.

The following are the figures for Ceylon commented on above:—

	Estimate, 1899.	Result, 1899.	Estimate, 1900.
Russia ...	6,000,000	3,949,740	6,000,000
Australia ...	17,000,000	15,606,833	16,000,000
America ...	4,000,000	3,080,002	5,500,000
Other Countries ...	5,000,000	3,309,457	2,500,000
	32,000,000	25,946,032	30,000,000
United Kingdom ...	93,000,000	103,948,124	108,000,000
Total ...	125,000,000	129,894,156	138,000,000

THE UTILISATION OF SEWAGE.

THE improvement of agriculture, through the aid of sewage is, of course, by no means a new question; but it is of particular interest to us at the present time, when Colombo is considering a scheme for the disposal of its sewage, and the rate-payer is threatened with a burden which may prove intolerable. Nor does the fact that the Nagpur Experimental Farm lies within British territory, on the adjacent continent, lessen our interest in its experiences. On the contrary it should stimulate the desire of our Municipal authorities to make enquiries with a view to ascertain how far those experiences can be reproduced here. The matter is one affecting both sanitation and finance, with an important bearing on agriculture, which, too, has lately demanded special attention locally. The *Friend of India* writes:—

Progress in the difficult task of elucidating the complex ways of Indian agriculture continues to be slowly made at the Nagpur Experimental Farm. The report for last year shows that a complication has been introduced by what seems to be some insidious form of plant disease which affects alike wheat, *tur*, and linseed. The experiments have been persevered with steadily, however, and in more than one direction encouraging results have been obtained notably in the success which has attended the application of fresh sewage manure, on the plan devised by Lieutenant Meagher of Allahabad. The Commissioner of Settlements state that the yield of *juar* which this method gave last season on the farm was phenomenal—nearly three thousand pounds of grain to the acre; while bumper cotton crops were picked on fields that had been thus treated. He thinks that, if extended to all municipal areas, it should enable large crops to be grown in their vicinity and give Municipal Committees some income from the disposal of sewage. The same experiment, it seems, had been tried with success at Deoli, in Wardha, and steps are now to be taken, through the Central Provinces Government, to try it elsewhere also. The system is described as simplicity itself, the sewage being merely deposited in very shallow furrows and covered up lightly with earth. Another successful experiment made last year was that of treating *juar* seed with cupric sulphate before sowing, as a preventive against smut. Valuable results were also obtained with an improved variety of wheat which is being introduced through the agency of the Farm. Special attention, we learn, is now to be directed to the last-mentioned branch of the operations, the introduction of varieties superior to those already in the hands of the cultivator being one of the most promising of the means of utility open to an institution like the Nagpur Farm. The Report does not say much about experiments in the direction of the selection of seed. Such extraordinary results, however, have been obtained in Europe by this means, in the case of all sorts and descriptions of agricultural plants, that it will be of the greatest interest to see it taken up more widely in India.

VANILLA DUTY REDUCED IN FRANCE.

With the idea of fostering the vanilla trade, the French Government have resolved to reduce the present duty on the importations from Tahiti and its dependencies into France by fifty per cent. This applies to the extent of the first 10,000 kilos.—*Chemist and Druggist*, Jan. 6.

THE BALLAD OF THE RAILWAY SLEEPERS.

How do the sleepers go down to the plains?
I went to discover this once on a time:
And blessed with some leisure, I'll tell you in rhyme.
Up on the mountains so blue and so far
They are felling the cedars and stout deodar.
For yearly in Delhi the Managing Staff
Demand good sleepers, a lakh and a half,
For their metre gauge railway which via Ajmere,
Bears back the exile toward England dear.
The sawyers have shaped them with axe and saw
Six feet of length without knot or flaw,
And the coolies have borne them a mile or so
Down the steep home of the buck and doe.
Another mile round the mountain side
On a man-pushed tramway the sleepers ride.
Hence to the plain how shall they go?
For it's still six thousand feet below.
Here down the steep is a sledge-car road
Fifteen sleepers make a load.
Give them a push and away they fly
A hundred feet in the twink of an eye.
Or if you prefer it on wire of steel
They can cross a valley with even keel,
For twenty seconds flying there
Through twice seven hundred feet of air.
Now they meet an aqueduct
Neatly against the mountain tucked;
Breadth ten inches, joining strong,
Downwards ever it leads along.
So let water do its part.
Throw them in and give them a start
Sometimes swift, and sometimes slow
With the water, along they go.
Here at length, they reach the shoot.
A thousand feet from top to foot.
See the water leap and gush
Startled out by their downward rush;
Once again on a gentler grade
On they speed through the forest shade
Now they're nearing the valley bed
Stream of the Kulni watershed
Over the stage like boys at school
In they plunge to a limpid pool
Now beware of an awkward block,
Full six miles, of shallow and rock.
Line the sides with built-up sleepers
And make the channel narrow, but deeper.
Then when the rest of the Army's gone
Pull down the sentries and pass them on
Yet twice the moon must wax and wane
E're the stream assumes its wont again
And the last of the fifteen myriad hoard
Launches forth on the river Broad.
So from Kulni to Tons and Gons to Jumna
Sails the mountain's late alumna;
Past the Siwaliks and through the plains,
Till the Delhi ramparts at length it gains.
Now take it over you Railway lot;
Let the sleeper sleep in its ballast cot.
Lay it to rest, (it has travelled far)
In the permanent way of the R. M. R.

—*Indian Forester*. E. F. E. W.

COCOA BUTTER was discussed at the Society of Chemical Industry on June 5th. Dr. J Lewkowitsch pointed out that all text books stated that it could not go rancid, which was distinctly wrong, and he said that the error had arisen from confounding acidity with rancidity, while as a matter of fact they were not synonymous.—*British and Colonial Druggist*, Dec. 29.

COCOA BUTTER DEARER IN AMERICA.

Values in cocoa butter for both bulk and cake are still advancing in a manner that occasions considerable surprise to not a few. At the most recent sales in both London and Amsterdam the prices obtained were on a higher level than those of the last previous auctions. At the time of sale in the latter city our correspondent informed us by cable that the offerings were disposed of at an average price of ninety-four Dutch cents per half-kilogram, which compares well with the price of ninety-one cents at the previous auction, in November, and even more favorably with the average price recorded at the October auction, which amounted to eighty-eight Dutch cents. With largely depleted stocks in this country, the consuming demand has grown to be of considerable proportions, while the purchases to supply the large current requirements have mainly been of a hand-to-mouth character. Importers in this and other American markets are, generally speaking, in no position at present to supply cocoa butter in considerable quantities, and with the demand being what it is, the recent stiffening of values is not to be wondered at. A factor, however, has lately entered into the situation that is becoming of increasing importance. As prices have commenced to assume the high level recently prevailing, a large part of the manufacturing and consuming trade have in consequence had recourse to the purchase of what is now offered by several dealers as a substitute for cocoa butter, for confectioners' uses. The prices prevailing for this article are less than one-half of what is quoted for the regular goods, and it is reported that the demand for it has lately become quite large. It is, of course, doubtful to what extent this can figure as a future factor in the situation, but it is unquestionable that the business in the article is already large and growing. Although trade sentiment is somewhat at variance regarding future values in the real butter, and the holders' views are expressed only with the greatest diffidence, the prevailing sentiment seems inclined to the view that prices, although not likely to be seriously checked for the near future, have reached the level where any further large appreciation is not thought probable.—*Oil Paint and Drug Report.*

A NEW TEXTILE PLANT.

Some years ago, an explorer in Asia discovered a plant of silken fibre, used by the Turkomans for the manufacture of withes and cord, and by the Canagues, for woven goods. This plant, known as *Apocynum venetum*, is a sort of bush with slender cylindrical branches, sometimes 6 feet high. It grows in Europe, Siberia, Asia Minor, the north of India, Manchuria and Japan but is not cultivated, and, up to the present has been used only in the natural state. The branches die yearly, and in the spring new shoots start horizontally from the roots. It flourishes best where the land is under water during a part of the year, notably in the neighbourhood of rivers that overflow at stated periods. Under favourable conditions the *Apocynum* develops quickly, and in a short time the branches form a thick growth, almost like a miniature wood. The best fibre is obtained by cutting the branches in midsummer, when the plant has obtained its full growth. The attention of the Russian Government was called to this plant in 1891. It is there known as the *Apocynum sibericum*, because it was first seen in Siberia. It grows luxuriantly on the banks of the Amu-Darya, and the Ili, and the natives of the regions have used the fibre for many years for cord and fish nets. They value it not only for its great strength, but also because no care is required in its cultivation. In 1895 the Russian Government began to use it in the manufacture of bank notes, and since then the plant has been cultivated at Poltava. The results obtained thus far are considered excellent, and the time is doubtless near when the *Apocynum venetum* will take an important place in the textile market.—*Commercial Intelligence.*

MINOR PRODUCTS REPORT.

London, January 4.

Cinchona.—The Nederlandsche Veen cinchona bark department at Amsterdam report that the shipments from Java to Europe were as follows :—

Amsterdam lb., December—

1899	1898	1897	1896	1895
626,000	1,018,000	731,000	890,000	634,000

January-December—

1899	1898	1897	1896	1895
11,409,800	11,150,000	8,437,000	10,079,000	8,827,700

The exports from Ceylon for the week ending December 12th were 1,137 pounds only.

Citronella Oil.—At the close of last week business was done ton-lots at 10$\frac{5}{8}$d to 11d per pound, c. i. f., and at 10$\frac{3}{4}$d landed terms, in large drums.

Quinine has improved to the extent of half pence per ounce in second-hand in consequence of small bark shipments from Java during December. With the exception of sales on Tuesday, when about 150,000 ounces changed hands at 1s 3$\frac{1}{2}$d to 1s 3$\frac{3}{4}$d spot and 1s 3$\frac{3}{4}$d to 1s 4d for March, the market has been quiet, and on Wednesday prices were a shade weaker. Today a good business has been done at 1s 3$\frac{3}{4}$d to 1s 4d for March delivery.

There were no exports of Java quinine from Batavia during October; from July 1st to October 31st, 1899, the shipments have been 562 cases against 499 cases.—*Chemist and Druggist*, Jan. 6.

USES OF THE EUCALYPTUS.

Mr. L. F. Woolrych, of Cooma writes:—It has struck me that a few notes on some of the uses to which different parts of the various encalyptus trees are put would be of interest. The encalyptus family is truly to the Australian what the palm is to the Eastern peoples, spread as it is all over the continent and always within reach. In Europe it is a common belief that the trees of our forests throw no shade, but for shade and shelter purposes many of them are invaluable, as well as for their beneficial effect in connection with miasma arising from swampy ground. In New Caledonia the ti-tree (*Melaleuca*) is planted for the latter purpose. Then the young leaves may be used for poultices, or as sticking-plaster, which will only wear off. One variety (*E. obliqua*) called here stringybark, will provide the selector's fence, gates, slabs for house, and bark for the roof, as well as firewood. The fluffy part of the bark is splendid for kindling purposes, and the inner bark makes excellent ropes, ties and make-shift harness. The bark will also make good pipes for carrying water. The gum is often used as a medicine for sick fowls, and is also a good bush remedy for desentery, as old bushmen have told me frequently; and it makes a good varnish when dissolved in spirits of wine. The honey from the eucalypti is, if used in quantity, said to be a violent purgative, but if consumed in the ordinary way is a mild aperient. In fact one might go on for a long time before the list of uses to which these valueable trees can be put would be exhausted.—From the *Agricultural Gazette*, of New South Wales.

Cinchona.—In a specially translated article by Dr. L P Lotsji, Dutch Government botanist in Java, published in our issue of January 6th, on the localisation of alkaloid in cinchona plant, the conclusion was arrived at that the alkaloid was not contained in the sieve vessels but in the parenchyma; in the younger parts, in solution in the cell sap; and in the older parts in an amorphous solid condition.—*British and Colonial Druggist*, Dec. 29.

TROUT OVA FOR NUWARA ELIYA.

The N.D.L. ss. "Bayern," which arrived from Europe on January 26th, brought out a consignment of 10,000 trout *ova* for the Ceylon Fishing Club. Like the previous consignment, the present one is from the well-known trout farm of Messrs. Andrews and Andrews, Guilford, and is to be put into the hatchery at Nuwara Eliya. Another consignment of 10,000 brown trout *ova*, is expected by the middle of this month; while the third and last batch, of 10,000 rainbow trout *ova*, is expected in March.

The above reminds us that Mr. Fraser, of Abbotsford, attempted on his present voyage to convey a consignment of perch. They were duly shipped on the P. & O. ss. "Oceana" in the Thames with full instructions, as Mr. Fraser was to join at Marseilles. When he did do so, he found the perch dead, owing, it is supposed, to the effect of rough weather in the Channel and Bay of Biscay. The Commander (Capt. Crawford—one of the most obliging of P. & O. Captains) when he heard of the experience, however, and the purpose for which the perch were being taken out, offered to arrange for another consignment and to give the same the greatest possible attention so as to secure delivery in good condition. This will be on the next outward voyage of the "Oceana," and we trust the experiment will be crowned with success.

TOMATO DISEASE IN N.S.W.

Several tomato growers about Sydney have been puzzled to notice fine healthy plants suddenly collapsing and dying as if struck all of a heap by the bubonic. This week, reports the *Sydney Telegraph* by last mail, the peculiar disease has appeared on a large scale in the Gosford district. Specimens sent to the Agricultural department have been examined, and found to be infested with the "sleeping disease of tomato, a fungoid known as "Fusarium lycopersici." The entomologist states that this is a very common disease in England, where it causes great losses to market gardeners growing tomatoes. It is likely to spread, as if the plants are attacked when in full fruit, as is often the case, the fruit may ripen, and appear, even under the miscroscope, to be perfectly sound, yet the seeds from such tomatos, if planted, will produce diseased plants. As the fungus first attacks the roots, and then comes up the stem, where it discolors the tissue and causes the sudden death of the plant, there is no remedy. Plants should be destroyed, and the soil treated with quicklime to exterminate the spores and keep the disease from spreading. The disease has probably been introduced through seed.

PLANTING NOTES.

RUBBER SUBSTITUTES.—Dealing with the three elastic gums which have been suggested as substitutes for rubber, Hooper does not consider that either of them are suitable for the purpose. He gives their characteristics. The first, obtained from the stem of *Ficus bengalensis*, dissolves, without previously swelling, in ether, chloroform and carbon bisulphide; the second, from *Calotropis gigantea* and *C. procera*, contains but little caoutchouc; and the third, which is the coagulum of the milky juice of *Excœcaria azallocha*, possesses irritating properties, and contains alcohol soluble resins—*British and Colonial Druggist.*

RUBBER-TREES.—The U. S. Department of Agriculture has recently issued some valuable information on the subject of rubber-trees. Experiments in India with certain species were not successful, owing to the fact that the trees did not develop the characteristic lacteal ducts. In the light of the work of the department's experts this was due to error in selecting the variety. Unless care be taken in this direction, failure will result in securing rubber, even though the trees may apparently grow well. There are four varieties of rubber-trees, which must be utilised according to the soil and climate of the place of cultivation :—

(1) *Castilloa elastica* grows well and produces rubber in places where the climate is hot, humid, and the soil drained.

(2) *Hevea brasiliensis*, is the climate be hot, humid, and the soil swampy or covered with water.

(3) *Manihot Glaziovii*, the Ceara plant, if the climate is hot and the soil dry, sandy, or stony.

(4) *Sapium biglandulosum*, in temperate or cold climates such as Florida, Louisiana, &c.

The last variety is especially suitable for growing on coffee plantations.

COFFEE IN NEW SOUTH WALES.—A farmer on the Lower Clarence, New South Wales, who is trying coffee growing, has just harvested 5,000 lb. of beans, which will produce about 900 lb. of ground coffee. The sample is admitted by experts to be equal to the best Ceylon in strength and flavor.—*Melbourne Leader*, Jan. 6.

STATISTICS OF CINCHONA CULTIVATION in India are published by Mr. J E O'Conor, under date Calcutta, Jan. 15. We quote :—

At the end of the official year 1898-99 there were 7,591 acres of land under chinchona cultivation, of which nearly 82 per cent was situated in Southern India, the remainder (18 per cent) being in Bengal. The area in Bengal, comprising 1,373 acres, lies in and near Darjeeling. Most of the area in Southern India is in the Nilgiris (4,531 acres). There are also 1,173 acres in Travancore, and smaller areas in Mysore, Malabar, and Coorg. In Bengal the chinchona plantations. which are the property of the State, cover 1,303 acres. In the Madras Presidency, on the other hand, the industry is mainly in private hands, the State Plantations covering only 874 acres. During the thirteen years ending with 1898-99 the area under cinchona has fallen from 14,491 acres to 7,591 acres. There has been a substantial decline in Bengal as well as in Madras, and in Coorg the cultivation has been almost entirely abandoned. The number of plants in permanent plantations has fallen in the same period from 28¾ millions to about six millions. In 1898-99, a little over four millions were classed as mature and nearly two millions as immature plants. The general reason for the decline is the fall in the price of quinine. The price fluctuates, and when a temporary rise occurs it is followed by the exportation of all the bark that can be collected from plantations owned otherwise than by the State. But the manifest general tendency of the price-level for many years has been downwards.

The quantity of bark collected fluctuates with prices. Bark collected (lb. Madras 1898-99 745,472. Bengal 251,529. Total 997,001. Exports (lb.) Madras 1,361,539. Total 1,361,539.

In Bengal most of the bark collected is manufactured by Government for issue to the State medical stores and to hospitals. In 1898-99 the Government chinchona factory produced 10,335 lb. of quinine sulphate and 3,921 lb. of cinchona febrifuge. The industry generally, apart from the Government operations in the Darjeeling district, has dwindled to unimportant proportions.

CEYLON CINNAMON EXPORTS AND DISTRIBUTION IN 1899.

If our apprehensions with regard to a short out-turn of coconut products for export, as a result of the two droughts which made themselves felt last year in the lowcountry, have unhappily been justified by the event, we cannot, unfortunately, claim to have been true prophets in our forecast touching Cinnamon. We say unfortunately, not from concern for our reputation as prophets, but because a redundant cinnamon crop is a very doubtful blessing; and in the present instance the exports have been swelled by nefarious means. The supply of spices can very easily outstrip demand, and no island industry has suffered so long and so severely from over-production as the Cinnamon industry. The prices ran down from two to three shillings a lb. in the "seventies" to less than a shilling in the "eighties," involving Proprietors in much embarrassment, if not positive loss; and the sligh trecovery during the past decade was a very welcome relief. The advantage gained is again threatened by over-production—the explanation being that prices which barely leave a margin of profit to cultivated estates, satisfy small native holders who neglect cultivation and attend to the preparation of the bark themselves. There has always been more or less adulteration in garden, as distinguished from estate, spice; but last year, under the stimulus of high prices and small crops in the earlier months, a new industry developed, in the shape of "Wild Cinnamon!" We have already expressed our belief that before the Collector of Customs and the Chamber of Commerce united to demand a separate classification for wild cinnamon, some of it had already been shipped as plantation spice, and hence it is that quilled bark showed last year a falling-off of only 19,025 lb. as compared with 1898, while chips disclosed an increase of 415,000 lb. The deficiency of peelable bark is naturally made up by scraping chips from coarse sticks; but the 1898 production of 1,414,165 lb. of chips had never been approached within 400,000 lb. and an increase on that large outturn of 400,000 lb. marks a stride which cannot be due to natural causes. In 1890 the export of chips was only 441,447 lb.—a large outturn as compared with previous years; and the development since then has been steady until a little over a million lb. was shipped in 1897, since when the growth has been phenomenal. The combined outturn of quilled bark and chips last year, amounting as it did to over 4½ million lb, beats all previous records, and does not disclose a healthy state of things. The figures for wild cinnamon, which began to be compiled only during the last few weeks of the year, were 195,008 lb. quills and 628,418 lb. chips. We reiterate our hope that the reception which this stuff met with at the November auctions in London will put an end to the trade, and that the shipments which have continued to go forward since then will only add to the losses of those who are engaged in the doubtful business. Their destination was the United Kingdom and Germany, and both countries should be warned by what Messrs. Darley, Butler & Co. have already written on the subject.

Turning to the Distribution of Cinnamon which has not been described as wild, the United Kingdom heads the list, having taken 1,121,128 lb. quills and 680,038 lb. chips, a quantity which is about 200,000 lb. more than in 1898 under each head. The next largest customer is Germany with 639,039 and 650,637 lb. respectively, which is less than she took in quilled cinnamon the previous year, the falling-off being, perhaps, due to the trial she is giving wild cinnamon? In chips, however, there is an increase which brings the total up to that of 1898. No other country approaches these figures—the third, in order, being Spain with 262,100 lb. quills and 65,900 chips; but this is a great advance on her requirements of the previous year. We welcome the improvement, not only as a contribution to the island's prosperity, but also as evidence of recuperation in the commercial position of Spain. We had already noted this, in connection with her renewed orders on the London market, which have helped up the prices for our best estate marks for which she has always shown a partiality; and this is further proof that she is shaking off the effects of her disastrous contest with America. Curiously enough, America shows a corresponding falling-off in the quantities she has taken—her figures having been 146,600 lb. and 28,000 lb. for 1899, which are about the same as Spain's for 1898. Spain is thus having her revenge in commerce for military and naval disasters! Our other principal customers for cinnamon were Italy, Belgium, France and China, whose takings ranged from 117,200 lb. and 144,220 lb. of the two sorts, to 45,000 lb. of the first alone. Turkey, India, Australia and Africa took small quantities, and they complete the list.

PLANTING IN ST. HELENA:

COFFEE AND TEA.

A paper by H.E. Governor Sterndale in the "Asiatic Quarterly Review" on "St. Helena in the Present Time," gives some interesting information. The people are very inoffensive, says the Governor:—During twelve criminal sessions, over which I have presided as Chief Justice, on all except two occasions have I received white gloves. Civil litigation is common enough. They are kindly disposed one to another, showing much sympathy in sickness and trouble, and are courteous to strangers, who are generally much struck by this, and by the comparative purity of the English spoken by them. Their faults are lack of energy in overcoming difficulties, and their proneness to accept a failure as a finality—take, for instance, vine culture. I remember in years gone by

SPLENDID GRAPES IN ST. HELENA

but the vine disease was introduced and the vines perished, never to be replanted. The same thing happened in Madeira, but the people there took heart and tried again, and with success. It is a common story in St. Helena, "Oh yes, I remember such and such things when I was young, but they died out long ago." That lemons were common in the island is proved by the many places, such as Lemon Valley, Lemon-tree Gut, etc., being called after this fruit, which is now extinct and has to be imported from abroad. And with peaches, the same story of the good old days—no finer peaches to be seen anywhere, but now from ungrafted,

unpinned, in every way neglected trees, miserable, worm-infested crops of worthless fruit are gathered. Providence has been kind to the coffee-tree, which still flourishes and bears abundant crops of excellent coffee of the old Mocha stock, but for all the care that man takes, it might have gone the way of the grape and the peach. I, who have seen the care, the pruning, manuring and hoeing of

COFFEE PLANTATIONS

in India, have never ceased to wonder at the generosity of the St. Helena tree, which often bears its white starry blossoms whilst the pickers are gathering the ripe fruit. There is much land now devoted to pasturage which would yield a better return under coffee cultivation, but there is the drawback of scarce and dear labour; however, this might be overcome. I have shown that the tree does not require so much attention as in India, and the picking can be done by girls at sixpence a day, supervised by women who get a shilling. Ordinary labourers' wages have now gone up from two shillings to half a crown a day, owing to military and other works in hand. I had an idea that tea would grow well, not so much for export as for island consumption. Some years ago, whilst inspecting the Lawrence Asylum at Ootacamund, I found that the boys were drinking tea which they had grown on the estate, and had made up at a neighbouring factory for a few annas a pound (I think two annas). I saw no reason why the poor of St. Helena should not be able to buy tea at sixpence a pound, grown in the island and made up at a small central factory.

THAT TEA WILL GROW

is proved by the existence of some China plants which were introduced in the time of the East India Company. In 1896 I tried the experiment, having taken out with me a native of India who had been for nine years an overseer on a tea estate in Assam. I got some tea seed and reared a number of plants, but in the meantime I had to return to England, and whilst there to recall my tea-planter, and on my return I found that the rabbits had devoured my young tea seedlings, and so ended an experiment, which cost me nearly a hundred pounds. But still I feel inclined to try again under my personal supervision. But whatever experiments are tried in the starting of any industry, they should be tried by those who will devote the whole of their time, labour, and money to it, as a tea or coffee planter does, when he goes out to India. Land is not dear here—the average price of estates lately sold has been from £10 to £15 per acre—but as the culturable area is limited, it does not often come into the market. As I said before, much valuble land is now kept solely for pasturage, which would, if highly cultivated with coffee, yield a much better return. That island coffee is now in demand is proved by the fact that, having sent away last month a barrel of coffee from the Government House plantation as a sample to Messrs. Lewis and Peat, coffee brokers, of Mincing Lane, with a view to ascertaining its quality, I discovered that I could not purchase any island coffee from other sources, as the whole stock had been bought up by the contractors for the troops, Messrs. Solomon and Co., who kindly let me have a little for my own consumption. It was only the other day I was pointing out to some friends, who had lately arrived, some coffee-trees on an estate, which had been allowed to run up from 12 to 15 feet in height; they looked the picture of health, and were bearing freely, but ought to have been pruned down at about 4 or 5 feet. In 1869 the Government attempted to introduce

CINCHONA,

but without much success. A nursery was farmed under the supervision of a skilled gardener sent out from Kew, who raised about 10,000 plants from seed, of which about one half were put out on the slopes of Diana's Peak; but the experiment was discontinued in 1870, by Admiral Patey, who came out as Governor with instructions to reduce expenditure, and in the retrenchments which ensued, the gardener from Kew was struck off. From that time the cinchona-trees were left to shift for themselves, and now there are probably not more than 150, some of them fine ones and fairly healthy. At the present time, the cultivation on such a limited scale as could be carried out here would not be commercially profitable, as the large cinchona plantations in India, Java, and other places have brought down the price of the bark. Still, the trial has shown the wonderful capabilities of this little island, where in an area of 47 square miles, plants from all parts of the globe have been grown with success; and one remarkable feature of this adaptability of soil and climate has been the struggle between the indigenous and the imported

FLORA,

which has resulted in the former being driven back to the central mountain range, the northern edge of the vast crater, which existed in the volcanic period, the southern portion of which is now under the sea. There you will still find the ferns of the place, from the stately tree-fern and the huge *Daplazium*, with its seven-feet fronds, down to the tiny filmy fern (*Hymenophyllum capillaceum*). Here too, the foliage strikes you as being of an old-world character. The trees have a weird, unfamiliar look, such as one would associate with the megatheriam and the mylodon. Sir Joseph Hooker, in his lecture on Insular Floras, refers to that of St. Helena as being "most interesting; it resembles none other in the peculiarity of its indigenous vegetation." In another part he says, speaking of the indigenous species: "Forty of them are absolutely confied to the island. These forty are absolutely peculiar to St. Helena, and, with scarcely an exception, cannot be regarded as very close specific allies of any other plants at all." It is to be regretted that some of the most interesting species have become extinct, among them the beautiful ebony-tree (*Melhania melanoxylon*), of which no traces remain, save a few crooked bits of wood, occasionally disinterred from the soil in places where it grew, and even these are becoming very searce. Yet this was one of the most abundant trees, probably one of those which in Juan de Nova's time clad the rocks with verdure down to the cliffs overhanging the sea. It was so abundant that it was cut down to burn the lime used in the building of the fortifications. The destruction of the forests and extinction of many of the indigenous plants were due to the ravages made by goats, which in the sixteenth and seventeenth centuries existed in thousands, laying waste the country.

AN OLD ORANGE-TREE.

The oldest orange-tree in France has just died this is an item recently found in the "Press Miscellany." If true, it is interesting as showing the very great age to which an orange-tree may attain under favourable conditions. The details as published are as follow:—

It was brought to France with several others in 1421, by Queen Leonore of Castile, the wife of

Charles III. of Navarre, and in 1684 Louise XIV. ordered that it be transplanted to the orange grove in Versailles, and there it has remained ever since. During the last two centuries the tree has been known as the "Grand Bourbon," and for many years every possible care has been taken to preserve it from decay. Now it has passed away at the great age of 478 years, and many Parisians who knew it well are sorry that they will never again see this stately ornament of the Versailles Gardens.—*Queensland Agricultural Journal.*

STUDY THE TEA BUYER: BIG BREAKS WANTED.

(*To the Editor of the Home and Colonial Mail*)

Sir,—I wish to draw attention to what is becoming a very serious question for tea buyers in the London market, namely, the dividing up of a break of tea into three or four divisions and offering them all in the same week, or even on the same day. I have just been looking over this present week's catalogues and find from Salonah, three Pekoes, three Pekoe Souchongs; Dinjan, four Pekoes; Khobong, three Pekoes; Debrapar, four Pekoes and four Pekoe Souchongs; Sokerating, four Pekoes; Amo, three Pekoes No. 1 and 7 Pekoes No. 2; Carron, three Pekoes and three Pekoe Souchongs; Hapjan, three Pekoes; Greenwood, two Pekoes and three Pekoe Souchongs; Etah, two Pekoes No. 1, two Pekoes No. 2; and so on, if your space would admit of the needless multiplication of examples. Now all these gardens are presumably managed by good men of business, and yet here is plain evidence of defying the oft-expressed opinion of the market as set forth in the annual circulars of all the best informed brokers, who ever and anon have recommended the increasing the size of the breaks. Some of the breaks above referred to do not average more than twenty-four chests; the quality of each of the three or four twenty-four chest lots is so close that few experts would find ¼d per lb. between them; yet instead of bulking the three together so as to save time, buyers must taste three samples and microscopically endeavour to detect a shade of difference, thus wasting much valuable time and exasperating them besides. It is perhaps too much to hope that the pointing out of this flagrant condition of things will effect any alteration, nevertheless, in the best interests of the Indian tea industry, I think attention should be directed to it. When will sellers learn that in studying the buyer is the surest way to increase business, and in the long run get the best price? And when will they perceive the fact that the man who has accurately valued one sample will bid higher for it than the man who has hurriedly and uncertainly looked at four samples and cannot for the life of him make up his mind which is the best?—I am &c., D F SHILLINGTON.

THE INDIAN TEA ASSOCIATION (LONDON.)

The following is an abstract of the proceedings of a meeting of the general committee held on Tuesday, 9th Jan. Present: Mr. D Cruickshank, Messrs. Robert Lyell, F A Roberts, A G Stanton, (chairman), J N Stuart, W H Verner, C W Wallace, and S A Went.

THE LATE GENERAL HENRY HOPKINSON, C S I.—The following resolution was unanimously passed by the committee before proceeding to the business of the day: "This Association regrets to learn the decease of General Henry Hopkinson, C S I, who was for many years associated with the Indian Tea Association as its chairman, and begs to express its sympathy with his family."

The minutes of the last meeting of the committee, held on Tuesday, December 19, 1899, were read by the secretary and confirmed.

Correspondence with Calcutta, which had been previously circulated to members, was laid upon the table.

SCIENTIFIC OFFICER FOR THE TEA DISTRICTS.—A letter on this subject from Dr. Voelcker, addressed to Mr. Cruickshank, was read by the secretary, and at the request of the committee Mr. Cruickshank arranged to see Dr. Voelcker again and settle with him as to the engagement of a suitable man with the requisite qualifications to proceed to India and take up the appointment.

WAREHOUSE CHARGES.—Mr. Geo. W Christison's letter of October 27th last was considered and discussed by the committee, and also the minutes of the meeting of the Calcutta committee of December 5th, 1899.

TRAVANCORE STATISTICS.—After some discussion it was decided that in future it was advisable that estimates of the Travancore crop should, if procurable, be given separately by the Calcutta Association when framing their forecast of the Indian tea crop.

WORK IN AMERICA.—The secretary reported interview with Mr. Mackenzie on 8th inst. Letter from Mr. Mackenzie dated 8th idem was read, and secretary was instructed to reply confirming arrangements made.

1LB DRAFT.—Correspondence with Mr. J A Brown, Secretary Tea Buyers' Association, was read by the Secretary, and meeting of Joint Committee arranged for Thursday, 11th instant, at Ceylon office.

PARIS EXHIBITION, 1900.—It was noted that four photos of Darjeeling had been received from this exhibition from the Calcutta Association. The photos were exhibited to the committee.

PROPOSED DOCK TRUST FOR THE PORT OF LONDON.—Letter from Mr J A Brown, Secretary Tea Buyers' Association, was read, intimating that Mr. John Lacky had been appointed as their representative for the special committee of the London Chamber of Commerce. Mr F A Roberts was requested, and agreed, to act as the representative of the Indian Tea Association. ERNEST TYE, SECRETARY.—*Home and Colonial Mail*, Jan. 12.

SUGAR.—*Capital*, writing on the sugar-cane crop in Bengal, says:—The season was rather favourable to the crop at the beginning, but subsequently heavy rain adversely affected its prospects, and in some places the crop suffered from want of rain and damage by insects. The total area under sugar-cane is returned at 860,200 acres, against 861,100 acres in the previous year. Only three districts report a crop which is above the normal, and nine districts an average one; the remaining thirty-three districts expect an outturn below the normal. The forecast of the crop was a normal outturn, but it is now probably that only 84 per cent of a normal crop will be obtained. On this basis the outturn of raw sugar may be expected to be 15,896,500 cwt. against 17,428,700 cwt. in the previous year.

ON THE DETERMINATION OF THE FUNGI WHICH ATTACK FOREST TREES IN INDIA.

The study of the fungi which are found in the forests of India, either as parasities on the leaves or as causing decay of the wood, or again as saprophytic plants on the ground in the forests, is one which so far has made but little progress. Most forest officers, however, know how exceedingly important the subject is, and many of them have had opportunities of seeing what has been done in Europe to work it up, and most especially in Germany. The real pioneer in the study of forest-tree pathology was undoubtedly Prof. Robert Hartig of Munich, whose text book of the "Diseases of Trees," which is available to English students in the excellent translation of Dr. W Somerville, revised and edited by Prof. Marshall Ward, F R S (Macmillian & Co. 1894) is one of the most intersting works which a forest officer who observes the processes which are going on in the forests, inimical to forest tree-growth and development, can study. There is an excellent, if somewhat brief, account of the principal European tree fungoid diseases, by Mr. W R Fisher, in the 4th Volume of Dr. Schlich's Manual of Forestry, and another in Prof. Marshall Ward's 'Timber and some of its diseases' (Macmillan & Co. 1889). But the most important and most astonishing book on the subject is the monumental work of Dr. Karl Freiherr von Tubeuf, which has been translated into English by Dr. W G Smith of Edinburgh as 'Diseases of Plants, induced by Cryptogamic Parasites' (Longmans, Green & Co. 1897) a work which is practically a dictionary of all that is known on the subject and refers not merely to European plants, but to the plants of the world and those

OF THEIR FUNGOID DISEASES

which have been so far discovered. A mere cursory examination of Dr. von Tubeuf's great work is sufficient to open the eyes of even the most conservative and sceptical of Foresters to the importance of the subject and to the amount of information which still remains to be obtained regarding it. It is clear that there is hardly a plant among the higher order that is not affected by some, indeed often by many, parasitic and epiphytic fungi; and the wonder is that with so many foes, plants cultivated and wild and forest trees are able to maintain successfully their powers of growth and reproduction. So far as they were known at the time he wrote, Dr von Tubeuf made mention of the Indian species.

It is fortunate that, so far as observations have yet gone, the chief forest trees of the hotter parts of India have not been found to be affected by injurious fungi to the same extent as are the forest trees of Europe and their allies of the Himalaya, but in the Himalaya the fungi are often very much in evidence and even in the plains there are some of considerable importance, a few examples of which may be given.

In January 1891, I visited the

CHANGA MANGA PLANTATION

with the Forest School students who were on tour there under the supervision of the Deputy Director, Mr. Fernandez. Not far from the Forest and Canal Bungalows, in a low-lying rather damp area, many dead and dying trees were met with. On being cut into, the stems of these trees were found to be permeated in every direction by the white mycelium of a fungus. At first, we thought that possibly the fungus might be one of those species which attack only dead wood, but the presence of the mycelium in still living trees was against this, and after a considerable search, the sporophores of a large species were found, with every indication that they belonged to the mycelium in the wood. The sporophores consisted of a large, dark, red-brown, bracket, fixed to the tree at one side close to the root; the upper surface measured perhaps a foot to a foot-and-a-half in length and 6 inches or more in breadth, and showed several rings indicating its gradual growth. The spores were in tubes on the under surface in the manner characteristic of the *Polyporeæ*, and the fungus, on being sent to Kew for identification, proved to be a new species and was described by Mr. G Massee as *Polystictus egregius*. By some authors *Polystictus* is regarded as a section of *Polyporus*, that large genus of Hymenomycetous fungi which possesses so many members destructive to forest trees and timber in Europe, among which perhaps the most noticeable is *P. sulphureus*, which has sporophores very closely resembling those of the Changa Manga plant. Again, when on tour in 1889 in the Casuarina plantations of Nellore in the Madras Presidency, a similar case of dying and dead trees was observed, and the only specimen (a very young and imperfect one) which was obtained of the sporophore, was found to be very similar to the Changa Manga one and may very likely have belonged to the same species. In both cases, I remember to have very strongly urged the local officers to follow up the subject, and specially to study means for getting rid of the pest, but I have never since heard if anything store was done, and fear that *Polystictus egregius* is mill at work trying to ruin the beautiful plantations of Sissoo in the Punjab, and the Casuarina groves of the Madras coast. Of other *Polypori* the most noticeable perhaps is *Polyporus (Fomes) fomentarius*, which is everywhere conspicuous in the North-west Himalaya especially on the 'ban' oak *(Quercus incana)* and the birch *(Betula alnoides)*, the sporophores consisting of a huge, hard, grey, reversed bracket. This fungus, which thrives both on living and on dead trees, perhaps more frequently on the latter, is also common in Europe, where up to quite recently, and indeed still to some extent, the dried sporophores are used for tinder. Many of us can still remember the 'amadou' matches which used to be sold in the cities of Europe for lighting cigars, and which were made of the dried felt of the sporophores of this species.

For many years, the parties who have visited the

DEODAR FORESTS OF JAUNSAR

yearly for the instruction of the students of the Forest School, have been interested and puzzled by the groups of young dead deodar to be met with here and there, the cause of death being not at once apparent. Often have we dug up specimens, only to find what might have been expected, that the roots and the lower parts of the stems were fully permeated by the mycelium of some fungus, *but what kind of plant it was and what could be done to stop if we had no means of telling.* Last autumn, however, (1898), spring searchings having invariably failed, I was in Jaunsar and took every opportunity of hunting for the sporophores and at last was successful in finding a rather poor specimen which was unmistakeably the cause of the death of a fine young deodar near the Jako pass. It was sent to Kew and proved to be *Polyporus (Fomes) annosus*, Fries, better known by the older name of *Trametes radiciperda*, Hartig, and described by Hartig as "undoubtedly the most dangerous of all the parasites met with in coniferous woods, not only because it produces the worst kind of red-rot, but also on account of its being the most common cause of gaps in both young and old plantations." It is impossible to exaggerate the importance of this sad discovery. The Forest Department is very properly yearly spending on the reproduction of deodar large sums of money and so far the success has on the whole been considerable, better perhaps with natural than with artificial reproduction but still good in both cases. In Jaunsar and in the neighbouring leased forests of Tehri-Garhwal, the disease is, so far as my own observation goes, on the increase, and it is now time to take strong measures to stop it before it goes too far. It is propagated, as is well known and as is described by all the writers on the subject, Hartig, Marshall Ward, Fisher, von Tubeuf, chiefly by the contact, in the soil, of the roots of adjoining trees and the remedy proposed, and for long adopted in Germany, is to isolate affected trees or patches of trees by digging trenches around them sufficiently deep to prevent their roots passing beyond and communicating

the disease to neighbouring trees. Further details must, of course, be worked out on the spot, but I strongly advise early action or the spread of the enemy may be too quick and we may lose some of our finest and most promising areas of reproduction.

These few examples ought to show sufficiently clearly how very important the subject is, and if we are to utilize to the full the information obtained in, and the experience of, Europe, we must begin by searching for and finding the sporophores and obtaining their identification. The identity of the fungus which attacks the stems of the Kharshu (*Quercus semicarpifolia*) trees at Deoban in Jaunsar, requires to be investigated. From the fact that it is apparent both in the mycelial form of white threads disintegrating the wood, and in the form of long black stout rhizomorphs it is most probably the well-known *Agaricus melleus* or an allied species, but the discovery of the sporophores is necessary in order to settle the question.

In the case of Hymenomycetous fungi like those already mentioned, it is not always easy to find the sporophore and identify the enemy; but in other cases, and especially in the case of

THE LEAF-DISEASES,

it is not so difficult. Most of those who have worked in the sub-Himalayan sal forests have noticed that in some years the leaves of the trees, often over considerable areas, appear as if covered with soot. A very little examination of the effected leaves shows that the black appearance is due to a fungus, but although the spores of the fungus were readily found, its nature remained for some time in doubt. Specimens collected by myself in Dehra Dun and by Pandit Keshavanand in the forests of Oudh were sent to Dr. D D Cunningham, F.A.S., of Calcutta, and his report was that the blight was a Meliolaceous Pyrenomycete ......not parasitic but merely epiphytic and that where they do any injury to the host, it is purely due to their interfering with assimilation and respiration from the dense surface-coating which they ultimately tend to form." A note on the subject appeared in the "Indian Forester" Vol. XX, p. 156 and further specimens were sent to Kew where they were identified as *Meliola amphitricha*, Fries. Thus two investigations were satisfactory and showed that after all, unless the fungus was very bad indeed, it was not to be expected that it would cause greater injury to the sal forests than a slight retardation of growth. So is it also, generally, with the well-known conspicuous orange-coloured uredineous fungi which occur on the leaves of Himalayan conifers and which were the chief subject of the paper in the "Indian Forester," Vol. XXI, p. 126, by Mr. J. Nisbet, with pictures from photographs taken by Mr. C G Rogers. The chief of these was the yellow tassel-like fungus on the young leaves of *Picea Morinda* called by Mr. Nisbet *Æcidium Thompsoni* and identified at Kew as *Peridermium incarcerans*, Cke. and by Barclay as *P. piceæ* Barcl. This bright-looking fungus is, as Mr. Nisbet pointed out, closely allied to the *P. coruscans*, Fries, which attacks the spruce tree of Europe and is occasionally eaten by the peasants in the north, and I believe it is itself occasionally used as an article of food in the Himalaya. The damage done by it is not very great unless it happens to attack the principal leading shoot of the tree. Then there were also the Peridermia of the pines, *Pinus longifolia*, and *P. excelsa*, identified at Kew as *Peridermium orientale*, Cke. These appear as small orange-coloured sacs of spores on the needles of the trees here and there, but do little harm unless they occur, as Mr. Nisbet points out, on the branches in the form of the var. *corticola*. They have been described, in more detail, in Mr. Nisbet's paper already referred to, as well as in Dr. Cooke's paper in the "Indian Forester." Vol. III, p. 88. The *Peridermium pini* of Europe, which is found on the Scots pine, is known to be in its leaf-attacking variety the æcidial form of *Coleosporium senecionis*, a fungus which attacks the groundsel, but the corresponding alternate plant of the *P. orientale* has not yet been discovered and here there is some scope for the investigator. As regards the alternate from of the var. *corticola*, Hartig says.—'It is to be regretted that so far the plants have not been 'determined on which the teleutospores are produced. Until we discover the teleuto form, preventive measures must be confined to felling pines that are attacked." Dr. Barclay thought that the forms on *Pinus longifolia* and *Pinus excelsa* were distinct, and named them, respectively, *Æcidium complanatum*, Barcl. and *Æ. brevius*, Barcl. (see Jour. As. Soc. Beng. lix. ii. 101-102). He thought at one time, that the latter might possibly be the æcidial form of *Chrysomyxa himalayensis*, a bright orange-coloured fungus very common on the petioles of the leaves of Rhododendron trees in the hill forests, but afterwards changed his mind and considered that the alternate host of the latter would more probably be *Picea Morinda* and the fungus *Æcidium piceæ* (see Scientific Memoir of Medical Officers of the Army of India, Part VI, 1891, p. 71.)

An interesting example of alternate generations in fungi is given by Dr. Barclay in the same Scientific Memoir, Part V 1890, p. 71, where he shows that the *Gymnosporangium Cunninghamianum* which grows on *Cypressus torulosa*, Don, has its æcidial form on the wild pear *Pyrus Pashia*. The cypress fungus is that one which may be seen in abundance about Bodyar in Jaunsar, having, in wet weather, the form of gelatinous yellow masses. Nisbet in the 'Indian Forester,' XXI, 132, speaks of these as a *Nostoc* or *alga*, but this is not mentioned by Barclay.

Another example, perhaps the best known example, is that of the,

'RUSTS' OF WHEAT,

and other cereal crops and grasses. A very full account of these rusts was published in 1897 by Dr. Prain of the Royal Botanic Gardens, Calcutta, in 'Agricultural Ledger' No. 16 in which he explains how, among others, the 'Black rust' (*Puccinia graminis*) which attacks wheat, oats, barley and rye, as well as other grasses, has its æcidial stage on species of barberry (*Berberis*); the 'Brown rust' (*P. dispersa*) which attacks wheat and rye and other grasses has its æcidial stage in various species of the 'Borage' family; and the 'Crown rust' (*P. coronata*) which attacks chiefly oats and other grasses has its æcidial stage on various Buckthorns (*Rhamnus Berchemia*, etc). Dr. Prain explains how it is not yet known exactly whether the common rusts of India have their æcidial stages on other plants, and if so, what plants these are, but we *do* know that æcidia of a fungus which has at Kew been identified as *Puccinia graminis* has been found on *Berberis aristata*, that *Puccinia coronata* has been identified as attacking *Rhamnus purpureus* and *virgatus* and that a fungus described by Mr. Barclay as *Uredo ehretiæ* has been found in the Himalaya attacking the Boraginous tree *Ehretia serrata*, and may be possibly identical with *Puccinia dispersa*; so that there is every reason to think that, at any rate in the neighbourhood of the north-west Himalaya the principal rusts of the cereal crops are traceable to the leaf-fungi of Himalayan forest trees and shrubs.

The pages of the 'Indian Forester' contain several articles of interest on the subject of Indian parasitic fungi, and more especially can we draw attention to Dr. M. C. Cooke's admirable papers in Vol. II. p. 380, and Vol. III. p. 14. Dr. Cooke was also good enough to name for me some specimens collected by myself and others, and these are mentioned in Vol. IV. page 90 and page 197.

The chief workers in the field of the Indian fungoid diseases of plants have been Dr. D. D. Cunningham, F. R. S., who has lately retired from service in broken health after many years of hard work in Calcutta; and Dr. A. Barclay who died in 1891 at Simla of typhoid fever at the early age of 39, to the great regret of his many friends and correspondents, and to the great loss of Indian scientific work. A notice about him and his work will be found in the "Indian Forester," Vol. XVII. page 303.

It may be well here to mention,

A FEW OF THE SPECIES,

which attack forest trees, which were described by Dr. Barclay, chiefly in the Journal of the Bengal Asiatic Society.

1 on *Berberis aristata* the rust *Puccinia graminis* Pers.

2 on *Hypericum cernuum* the yellow *Melamspora Sanctis Johannis*, Barcl.

3 on *Rhamnus dahuricus* the rust *Puccinia coronata*, Corda.

4 on *Vitis himalayana Uredo cronartiiformis*, Barcl.

5 on *Acacia eburnea Æcidium esculentum* Barclay. The attacked twigs are eaten in the Poona District, as reported by Mr. R. C. Wroughton—see Pro. Bomb. Nat. Hist. Sec., Vol. 2.

6 on *Rosa macrophylla* *Puccinia Rosæ*, Barcl.

7 on do *moschata* *Phragmihium subcorticium*, Schrad.

8 on *Rubus lasiocarpus* *Phragmigium Rubi*, Pers.

9 on do *biflorus* do *quinqueloculare*, Barcl.

10 on *Rubus paniculatus* do *incompletum*, Barcl.

11 on *Pyrus varioloso* *Gymnosporangium clavariœforme*, Jacq.
the alternate form of this probably comes on Juniper.

12 on *Pyrus Pashia* *Gymnosporangium Cunninghamianum*, Barc
alternate form on cypress, see above.

13 on *Cotoneaster bacillaris* *Gymnoporangium Cunninghamianum*.

14 on *Astilbe rivularis* *Xenodochus Clarkianus*. Barcl.
very common—spores bright yellow on the leaves,

15 on *Deutzia corymbosa* *Uredo Deutziæ*, Barcl.

16 on *Rhododendon arboreum* *Chrysomyxa himalayensis*, Barcl.

17 on do *lepidotum* *Uredo* sp.

18 on do *campanulatum* *Æcidium* sp.
It is supposed that these latter may all be connected in some way, but the question still requires solution. But it seems more probable that the first has its alternate stage on *Picea Morinda*.

19 on *Jasminum humile* *Æcidium Jasmini*, Barcl.

20 on do *grandiflorum* *Uromyces Cunninghamianus*, Barcl.

21 on *Ichnocarpus frutescens* *Uredo ichnocarpi*, Barcl.

22 on *Ehretia serrata* *Uredo ehretiae*, Barcl.
On this see also "Indian Forester" XVIII. 21 and above.

23 on *Colebrookia oppositifolia* *Uredo Colebrookiæ*, Barcl.

24 on *Ficus Palmata* *Æcidium Mori*, Barcl.

25 on *Morus serrata* *Cœoma Mori*, Barcl.

26 on *Populus ciliata* *Melampsora ciliata*, Barcl.
This is a light yellow fungus found on the leaves, the white one which makes the leaves look as if powdered with lime being *Uncinula salicis*

27 on *Populus alba* *Melampsora œcidioides*, Barcl.

28 on *Pinus longifolia* *Æcidium complanatum*, Barcl.

29 on *Pinus excelsa* *Æcidium brevius*, Barcl.
Both these species are now united as *Æcidium orientale* as already described.

30 on *Picea Morinda* *Æcidium Thompsoni*, Barcl.

31 on do *Æcidium piceæ*, Barcl.
on these, see previous remarks.

32 on *Cedrus Deodara* *Æcidium Cedri*, Barcl.
This forms small yellow spots, and the leaves turn yellow, bend down and fall of, but the damage done is not great.

Since Dr. Barclay's work, little or no original work has been done in India on the fungi which attack forest trees, but many specimens have been collected and send to Kew for naming and the first instalment of these was published in the Kew Bulletin for June 1898. The chief of these which are parasitic on forest trees are :—(1) *Gamblcola cornuta*, Massee, which occurs as black tufts on the leaves of *Berberis nepalensis* and is very common about Chakrata, and (2) *Mclampsora cpitea* Thüm, which is found as yellow masses on the under surface of leaves of *Salix clegans*. Others have also been named and will doubtless appear described in future numbers of the Bulletin; among them may be mentioned: *Exobasidium cinnamomi* Massee, the remarkable growth on the branchlets of *Cinnamomum Tamala* referred to in Mr. Nisbet's paper ("Indian Forester," Vol. XXI. p. 133) as *Exoascus* and producing a large bushy kind of witches' broom, seriously deforming the branches of the trees. It was found near Thadyar in the Tons valley, (2) *Stereum lobatum*, Kunze, a large hard fungus found on oaks (*Quercus dilatata*) in Jaunsar; (3) *Rosellinia spadicea*, Cesati, a black fungus found on the lower part of the old culms of *Arundinaria spathiflora*; and (4) *Trichosporium aterrimum*, Massee, a curious black species which apparently does considerable damage to mulberry trees in Changa Manga. It was discovered by Mr. F. Gleadow.

Besides the parasitic species, there are many interesting.

FUNGI ATTACKING DEAD WOOD.

One of the most noticeable of these is the scarlet *Polystictus sanguineus*, Fries, so common in the sâl-forests; the prettily-shaded *Polystictus versicolor*, Fries, is also abundant in sâl forests on dead bark; *Hymenochate Mongeotii*, Cooke, is a dard red fungus, occurring in large patches on the outer bark of *Betula alnoides* in the Himalaya *Lentinus omphalomorphus*, Mont and *Dædalea Schomburgckii*, Berk. are white fungi conspicuous on sâl logs. *Hydnum Gleadovii*, Massee, is a beautiful sponge-like fungus of similar situations.

It has only been possible to mention a few of the many kinds which have been discovered of recent years. Specimens of most of them are deposited in the Museum and Herbarium at Dehra Dun, but there is much more yet to be done, and the chief object of this paper is to urge Forest Officers to collect specimens and send them for identification through the Director of the Forest School, where duplicates should always be kept, allowing the originals to be retained at Kew. I feel sure that the Director of Kew will be very glad to assist in obtaining names, and that Mr. G. Massee will be delighted to continue to publish such new species as he may find among the collections sent. The information obtained cannot fail to have an important bearing on forest management especially on that of the forests of conifers of the N.-W. Himalaya, and by degrees materials can thus be collected towards a Handbook such as it is obviously desirable that we should possess. Leaf fungi can be collected and dried like ordinary Herbarium specimens, larger species can be merely dried loose and packed in paper. It is of the utmost importance to give full information and notes, and above all, to give the name of the plant upon which the fungus is found.

—*Indian Forester* J. S. GAMBLE.

TEA CULTURE AND MANUFACTURE.—Mr. Kelway Bamber has been giving good advice and some useful practical hints to his neighbours in Dikoya and Bogawantalawa, which, as embodied in two Sub-Committee's Reports, will be found given on page 550. What is stated about all planters simultaneously dealing with grey blight, burning and burying prunings, plucking off diseased leaves from the next flush, &c., reads rather like "a counsel of perfection," and yet there can be no question that the nearer it is approached in practice, the better it will be for that particular district. As to manuring, manufacture and shade trees, Mr. Bamber is very much to the point; but in recommending a leguminous catch crop to dig in, we fear he is going beyond what is practicable in Ceylon, save in a few special cases,

A VISIT TO PERADENIYA GARDENS, CEYLON.

(By a Newcomer.)

At the entrance to the Gardens the drive on the left is bounded by a wall of rich, green foliage studded with large mauve flowers. This is the Burmese creeper, *Thunbergia laurifolia*, which hangs from the tall tree tops in massive sheets, a sight which strikes the newcomer from temperate climes where creepers are not nearly so luxuriant.

Driving round to the right, the visitor comes to the great "banyan tree," which from age and size is a worthy landmark in this garden of about 150 acres. Near by is another tree, *Brownia grandiceps*, of smaller dimension, with very handsome large red flowers, each flower-head being composed of a great many flowers and when fully open is as large as a plate.

Behind this, there is in course of construction a Merophyte House, in which a new system of glazing designed by the Curator is to be tried. Here will be accommodated the numerous cacts which are always fascinating on account of their bizarre appearance, and which resent the moist tropical climate of Ceylon. I was shown here some flowering plants which have retained through their evolution a close resemblance to ferns in the leaves so much so that even botanists may at first readily believe them to be ferns.

In the pond in front of the banyan tree, some odd examples of the adaptability of plants are seen. Thriving equally with plants of a true aquatic nature, are plants which in their native habitat are only found in dry rocky places, such as species of the pine-apple family. Here also is the *Cyprus papyrus*, of which the ancient Egyptians made their papyrus parchment by slitting the stem which is of a pithy texture, into thin slices. These they laid overlapping each other, smeared with the sticky clay of the Nile, and then pressed with great weights for a long time till they offered an even surface on which to write. Close by is a very interesting looking tree (*Pandanus larum*) with a smooth even circular stem for about ten feet. At that height it divides into three diverging branches, each again dividing exactly into three before the nine crowns of leaves are reached. At the base, to complete the extraordinary appearance of this tree the aerial roots seem to tumble out of the stem about four feet from the ground, quite thick, smooth and perfectly cylindrical. This is the "bread-fruit tree" of the Nicobar Island.

In another part of the Garden it was interesting to find numerous experimental plots of economic plants, which, however, are necessarily small in extent. It seems a pity that there should not be some larger area devoted to such a purpose close to the Gardens and under the supervision of the Director.

Incidentally as regards the complaint made by a recent correspondent in the *Observer*, about the labels, I can vouch for the system of labelling the plants here now being very satisfactory, and considering its difficulties in a tropical climate, reflects credit on those responsible for it.

The Curator has lately devised labels of a material and caste different to those hitherto in use, and, being now employed for over a year, there can be no question as to their utility, both as regards legibility and lasting qualities.

In walking over these extensive grounds, with entrancing (?) views of towering peaks in the neighbourhood, majestic avenues of palms, gigantic bamboos gracefully arching over the "Great Sandy River" (Mahaweliganga), which nearly surrounds the Garden, and trees and flowers galore to admire—one can understand why this is so often considered "the finest garden in the world." The views from both the memorials erected to Drs. Gardner and Thwaites are particularly charming, and especially so as they can be admired whilst one sits in the cool and shade of these welcome retreats. The thought naturally occurs "Where is the Trimen Monument?" Alas! there is none. But a more lasting monument than a structure of wood, stone and mortar is left by Dr. Trimen himself in his works, which, I suppose, are too advanced and scientific to require a public acknowledgment similar to that which has been afforded to the less important labours of his predecessors.

The palm avenues and giant-bamboos always strike the stranger as perhaps the chief feature of the Gardens. Possibly the handsomest of the former is the talipot avenue planted in 1881 by Dr. Trimen. A new avenue of cabbage palm (*Oreodoxa regia*) has been planted lately, which in time will have a magnificent effect—Nature's Corinthian pillars—as one is pleased to think of them—which are built of a grey stone, but not with a plumb line swelling here or there as they will and ending at the top in a frieze(?) of green leaves and supporting the vaulting of the sky.

I have no doubt numerous other trees *et hoc genus omne* are worth mentioning; but time and space forbid. One of special interest, and especially at this moment, is the wonderful cannon-ball tree, which at present bears a number of large dark-brown globular fruits extremely suggestive of their popular name. As my guide suggested, the use of these might well be considered in such emergencies as are sometimes experienced in warfare. Let the Contingent, when they get to Pretoria, remember this as a useful solution of that last nut which the authorities have to crack, viz. the fate (or head) of Kruger.

Lastly let me mention four enormous Rain Trees (*Pithecolobium saman*) of South America, which were pointed out to me as the parents of all the trees of that species in the island. They are grand old progenitors with their mighty limbs and an appearance which bespeaks age and venerableness.

In conclusion let me say how well the Gardens are maintained and gradually improving as far as the votes for them allow; and how well they repay the visitor, especially if he go early or late, when the temperature and his temper are cool.

LARGE TREES.

The largest tree in the world is to be seen at Mascali, near the foot of Mount Etna, and it is called "the Chestnut-tree of a Hundred Horses." Its name rose from the report that Queen Jane of Aragon, with her principal nobility, took refuge from a violent storm under its branches. The trunk is 204 feet in circumference. The largest tree in the United States, it is said, stands near Bear Creek, on the north fork of the Tule River, in California. It measures 140 feet in circumference. The giant redwood-tree in Nevada is 119 feet in circumference.—*Ladies' Home Journal*

CEYLON TEA MARKET REVIEW FOR 1889.

Messrs. Stenning, Inskipp and Co., in their annual report, says :—

THE COURSE OF THE MARKET.—The market opened with prices about on a par with those ruling at the close of the year, but as the month advanced quotations began to stiffen, common grades realising 6¼d to 6½d ; during February and March these grades went dearer. very little selling under 7d per lb. A further improvement took place during April, but a giving way was noticeable towards the end of the month. In May and June the demand was strong, but the quality generally being indifferent, common sorts market rather easier prices. During July the market was disorganised in consequence of the draft dispute, and very little tea was offered. In August sales were heavy owing to accumulations, and a lower range of prices ruled, common Pekoe Souchong selling at 5¾d ; fine invoices, however, realised full value. During September the demand improved, and, the quantity brought forward being moderate, prices began to harden. Very little common leaf was to be had under 6½d. From October to the end of the year prices were steady, except for medium Broken Pekoes, which showed some irregularity. All good liquoring invoices brought full value. The year closed with a brisk demand.

QUALITY on the whole has been fairly up to average ; some of the high grown teas have had distinctive character and realised satisfactory prices, and we are glad to note that the quantity of undesirable tea has not been so large as in former years. Teas with flavour always command attention, but when this cannot be obtained, a deep coloured liquor should be aimed at, as pale liquoring teas without flavour meet with but little inquiry

SMALL BREAKS.—The limit remains the same as before, viz, anything under 18 chests, 24 half-chests and 40 boxes. The large number of small breaks offering in auction every week is not only a source of trouble to all branches of the trade, but it is hardly possible for the buyers to give them proper attention ; business would be greatly facilitated if larger lots especially of the lower grades, could be sent forward.

FOREIGN TRADE.—It is satisfactory to note that the export from this country continues to increase.

OTHER MARKETS :—

The New Regulations regarding the weighing of tea, which were to have come into force on October 2nd last, but are still in abeyance, are as follows :—

1 If the package weighs the even pound, it is to be entered as such.

2 If it weighs the even half-pound or over, it is to be entered as the next pound above.

3. If it weighs below the half-pound, it is to be entered as the pound below.

LOSS IN WEIGHT.—As this occasionally gives rise to much dissatisfaction we offer the following suggestions : That the gross weight of the package should be a few ounces, say four or five, above an even number of pounds, and that the empty package, complete with lead, nails, bands, &c., be to a like extent below an even number of pounds. In weighing here the gross weight is reduced to the even number of pounds, whilst the tare is increased to an even number of pounds,

With regard to garden bulked teas, it is imperatively necessary to put an equal quantity into each package of the break, and this quantity should be four or five ounces over the desired weight of contents, viz., if the packages are invoiced to contain 100lb tea each, not less than 100lb 4oz should be weighed in ; test packages, weighing here a fraction under 100lb, are reckoned as 99lb only, or a loss of 1lb on each chest of the break.

Careful observance of the foregoing precautions will prevent loss and disappointment.

DRAFT of 1lb per package on all packages grossing 29lb and upwards is allowed to the buyer.

WEIGHT OF PACKAGES.—When a gross weight of 129lb is exceed, there is an additional charge of 5d per package up to 159lb. The following scale of charges fully explains this and deserves attention :—

Dock and Warehouse management rates, subject to an uniform discount of 10 per cent., on packages grossing as under are :—

160 to 199 lb. 2s 9d ; 130 to 159 lb. 2s 3d ; 90 to 129 lb. 1s 10d ; 80 to 89 lb. 1s 8d ; 60 to 79 lb. 1s 5d ; 45 to 59 lb. 1s 2d ; 35 to 44 lb. 1s ; 17 to 34 lb. 7d.

MARKS ON CHEST.—Nothing is wanted or is of any service here beyond (1st) garden mark ; (2) description of tea ; (3) garden numbers. Gross tare, and net are not of the least use, and should be discontinued.

METAL AND VENESTA PACKAGES.—There is practically no objection to these.

PACKING SMALL BROKENS AND DUSTS.—Special care should be taken to pack broken descriptions, which are so liable to lose in weight, in strongly made wooden packages. Dust should be placed in half chests, either of metal or of strong iron-hooped packages. Canvas coverings should in no case be used, as they disguise injury done to the packages by rough handling, and any tea retained in the canvas becomes of no value.

[Particulars are also given of the imports, deliveriess, and stocks of the past six years ; home consumption of India, Ceylon, and China teas for the past fifteen years ; the number of packages from the various districts sold on garden account since 1893, and the average prices ; Calcutta and London markets from May to December.]—*Home and Colonial Mail.* Jan. 12.

A NEW GERM-DESTROYER.—A new germicide has been discovered. Ozone when passed into water is found to kill the micro-organisms. This discovery has been made in Lille, where the water is notoriously bad, by two French gentlemen. They are taking steps to purify the water-supply of that town. Ozone is another form of oxygen which is common in the air after an electrical discharge of lightning and it is manufactured by a current of electricity being passed through air. It has been already found that heat alone up to the boiling point has not been an efficient germ-destroyer, so that this discovery will be welcomed by the medical profession. The boon to the traveller in France, who has no taste occasionally for wines or who may be a teetotaller, will be great. This discovery besides is one step nearer to that landmark of civilisation to which Pasteur called attention. "The first step is civilisation man made when he drove the wild animals from his cities, the next will be when he has banished all germs."—*Cor.*

TEA IN RUSSIA.

A large Moscow firm erected a large factory on its plantations last year, and the authorities on the estate belonging to the Imperial Domains at Chakva have followed this example, and have this year set up a tea-making establishment of considerable dimensions. The yield of the tea crop has been good and, comparatively speaking, fairly abundant. The flavour and quality of the tea does not, however, compare favourably with Chinese, Indian and Ceylon qualities, and the prices at which the small quantities obtained are being sold do not suggest that, for the present at anyrate, any alarm should be felt by the tea-growers of the East in respect to the competition which Russian grown tea is likely to afford in the markets of the Empire.—*British Consul in Caucasia.*

SUGAR CROPS OF THE WORLD.

Though for easily comprehended reasons a statement in figures of the cane sugar crop of 1899/1900 at the present moment cannot be an exact one, still for the sake of clearness we give below a compilation of the momentary, but still uncertain export estimates of the new crop for the period between September 1st, and August 31st, in the principal canc districts.

	1899/00. tons.	1898/99. tous.	1897/98. tons.
Cuba ..	300,000	315,175	199,700
Portorico ..	50,000	55,295	51,022
Trinidad ..	50,000	48,757	48,717
Barbados ..	50,000	50,872	46,960
Martinique ..	30,000	30,411	30,669
Guadeloupe ..	36,000	39,254	37,128
Demerara ..	85,000	92,940	107,362
Brazil ..	180,000	145,000	170,000
Java ..	650,000	888,605	637,141
Philippine I. ..	125,000	124,456	176,184
Mauritius ..	150,000	180,062	1 7,350
Reunion ..	39,000	39,485	35,239
Jamaica ..	30,000	30,000	35,000
Minor Antilles ..	85,000	80,000	95,000
U. States ..	370,000	275,000	358,150
Peru ..	130,000	125,000	105,463
Egypt ..	90,000	90,822	80,178
Sandwich I. ..	250,000	240,000	229,414
Total..	2,700,000	2,851,134	2,560,677

"In the some way, though they cannot be taken as final estimates either, we give the following figures of the European beet sugar production, comparing them with the preceeding campaigns as follows:—

	1899-00.	1898-99.	1897-98.	1896-97.
Germany	1,800,000	1,721,718	1,852,857	1,836,536
Austria	1,070,000	1,051.290	831,667	934,007
France	915,000	850.132	821,235	752,081
Russia	870,000	790,000	738,715	728,667
Belgium	250,000	235,000	265,397	288,009
Holland	175,000	149,763	125,658	174,206
Other countries	220,000	170,000	196,245	202,990
Total	5,300,000	4,947,903	4,831,774	4,916,586

"Thus the campaign of 1899/00 is now giving prospects of a surplus of about 352,000 tons, against the predecessor; but we remark again that exact figures for 1899/1900 cannot yet be given."—*Mr. F. O. Licht of Magdeburg.*

THE JAMAICA-ENGLAND FRUIT TRADE.

Sir Augustus Hemming, Governor of the Island of Jamaica, has made his annual report to the Colonial Office, and from it we gather the not pleasant news that there is still a deficit of general revenue amounting to over £153,000. Referring to this fact a correspondent writes:

The fruit trade with England does not so far appear to have made much progress, notwithstanding the subsidy to a fast steamboat service, of which we heard last year It is very questionable whether such a policy will be advantageous to growers, as the distance is much greater and the freights so much higher than to the United States. The price which the American will give for his tropical fruits would never suit the English consumer. Consequently we are cut out by our American cousins in this particular trade. Fruit coming from the Mediterranean, Spain, the Western Isles, and the Canaries also enters into competition with West Indian produce, against which the latter will certainly not be able to compete under existing prices and freights. From a knowledge of the island it seems incomprehensible to me how this subsidy could ever have been granted, as the people of the island do not believe in any fruit trade with the home country being a success, and the people at Pudding-lane and Covent Garden will advise anyone inquiring not to embark in such an enterprise.

"Perhaps," the correspondent adds, "the Colonial Secretary thinks he knows better, but time will tell."—*Westminster Gazette,* Jan. 8.

PLANTING NOTES:

RUBBER CULTIVATION IN SOUTHERN INDIA is the subject of a long article in the *Madras Mail,* which we reproduce on page 553. It does not contain much that is new to us in Ceylon, but it is well to note how far our neighbours have got on, or are prepared to go, with a new product.

PADDY IN BURMA.—The estimated area under paddy cultivation in the fourteen principal rice-growing Districts of Burma is reported to be 6,055,937 acres, being an increase of 44,264 acres over the area reported last month. It is now estimated that there will be available for export 2,020,881 tons of cargo rice, equivalent to 34,252,220 cwt. of cleaned rice.—*Madras Mail.*

CACAO CULTURE.—We do not know that the planter who writes on this subject (see page 548) carries us much further in information than did Mr. Carruther's final Report, a copy of which (through the *Tropical Agriculturist* or otherwise) is no doubt handy for reference with each cacao planter in the country. Still, there are certain items of experience narrated which are worth noticing and which may lead to further interesting correspondence.

COAL IN SIKKIM.—Mr W P Mason of Darjeeling has been fortunate enough to discover coal in Sikkim in apparently large quantities and of good quality. The Political Officer of Sikkim, Mr. J Claud White, has had 20 maunds extracted and sent away to be analysed. Should the coal be of good quality, in an easily accessible spot, and in workable quantities it will prove of the greatest benefit to the station of Darjeeling and to the neighbouring tea planters. Firewood is already dear in Darjeeling, and as the forests are getting out down more and more every year, the advent of call to take the place of wood will be most advantageous.—*Englishman.*

Correspondence.

To the Editor.

THE COCOA MARKET.

(*Special report.*)

London, E.C., Dec. 29th, 1899.

DEAR SIR,—This being Christmas week, and the end of the year and no business having been transacted down Mincing Lane, the usual Tea and other Circulars have not been issued. The next Cocoa sale will take place on Tuesday, 9th January, when it is hoped and expected that the Government will be buyers, if sufficient cocoa suitable for their requirements is offered.

Although nothing has been done with cocoa in London, the market is very strong, and prices are looked upon as being higher all round. The Liverpool market, which is almost entirely confined to Africans, is very firm, 36 bags having been sold this week at 63s. The present stock of cocoa in Liverpool on the 23rd December was 4,265 bags of all growths against 1,766 bags in 1898. On the same date the stock of Ceylon cocoa in London was 5,708 bags, and of all growths 83,641 bags, or 11,713 bags less than the same time last year when it was 95,354 bags.—The continental markets are very firm.—Yours very truly, HAROLD HAMEL SMITH,

THE WEST INDIES AND COCOA.

London, Jan. 5.

DEAR SIR,—It will be interesting to watch the results of the appointment of Mr. Sydney Olivier, C.M.G., as Colonial Secretary of Jamaica, for as the author of the essay on "The moral aspect of the basis of Socialism" published by the Fabian Society in 1890, he may perhaps instil some new ideas into the monotony of Colonial official ways. The essay is divided into three parts, (a) the evolution of morality, (b) property and morals, (c) the Re-integration of Society; and is provisionally described as an attempt to justify socialist ideals by the appeal to canons of moral judgment accepted generally, and supported by the results of positive ethical science. Mr. Olivier, who is a B.A. of Oxford, is best known as having been the Secretary to the West Indian Commission for 1896.

This has virtually been a holiday week for Cocoa, though several lots have changed hands privately, and the demand is very strong. It is not yet definitely known whether the Government will be in the market next week. So far as I can find out about 600 bags of Ceylon will be offered, and it is expected, will bring good prices, as the trade are bidding 60s for common stuff for which they would not give 58s for last sale. The stock of Ceylon on 30th December was 6,924 bags of which about 8 to 900 bags are available for offering. Today's quotation for dull to good red is 69s to 80s, fine bold has sold to 87s, but there is none offering now. Cadbury's are offering 65 tons of their cocoa butter for sale next Tuesday (9th)

Although 495 500 quintals of cocoa was received at Guayaquil during 1899, against 420,000 qts. in 1898, and the receipts of African at Lisbon were 223,000 bags against 166,000 bags last year, the stock of all growths in London is some 16,000 bags less than at the end of 1898, being (in round figures) 82,000 bags against 98,000 in 1898. The stock at Havre is 100,593 bags, against 72,101 bags in 1898, but in October the Havre stock was 140,000 bags, so it has considerably diminished in the last two months.

My correspondent in Trinidad writes me as follows :—"Last mail I calculated that the cocoa crop next year would be 25 per cent short, I see now the members of the Legislative Council have refused to sanction next year's estimate on the grounds that the cocoa crop will be 30 per cent. short, as estimated by experts. The drought has been something awful, the peasants will have a hard time of it next year, for their ground provisions (vegetables) started in September, got no rain and suffered terribly."—Yours truly,

HAROLD HAMELSMITH.

THE LONDON COCOA MARKET.

SIR,—According to Mr. Ed. Kynaston's West Indian Circular, the following are the cocoa statistics of London for the past four years;—

	1899 bags	1898 bags	1897 bags	1896 bags
Imports	202,000	236,000	198,0C0	204,000
Home consumption	143,000	169,000	146,000	133,000
Stock	82,000	98,000	93,000	140,000

"The apparent falling-off in Home Consumption in London is misleading, and is attributable to the increasing imports of Bahias, and Africans which pass direct to our large provincial manufacturers—chiefly through Liverpool." The deliveries of Liverpool were 90,067 bags in 1899, against 31,446 bags in 1898 and 16,380 bags in 1897 : this would make the combined total deliveries, for Home Consumption, of London and Liverpool to be 233,000 bags in 1899, against 201,000 bags in 1898, and 163,000 bags in 1897 which confirms what Mr. Kynaston says :

The sale last Tuesday went off with good competition especially for fine Ceylon which was 5s to 7s dearer, some Warriapola mark selling at 95s 6d, against a previous record of 87s 6d last month—and present prices show Ceylons to be worth 63s for mixed native, good red 75s, fine red 88s to 95s 6d. The sales include 125 bags Yattewatte at 85s 6d, 28 bags Asgeria 82s, 10 bags Allagala A1 76s, 16 bags Bandarapola at 79s 6d, 13 bags New Peradeniya 1 at 83s, 80 bags North Matale at 90s, 90 bags Warriapola at 88s and 89s and 45 bags of the same mark at 95s 6d cwt.

Generally speaking all cocoa was up 2s 6d to 3s. Trinidads selling up to 82s 6d, Grenadas to 72s 6d, Dominicas to 70s 6d. For the time of year the sale was a very small one, only 3,200 bags being offered against 11,849 bags on 10th January last year. Since the sale the firmness and high rates have been maintained, anything approaching good red in Trinidad fetching 1879 and 1880. With Ceylons all the fine red has been sold, but prices for lower grades, although not in such active demand as the finer qualities, are very firm.

About 25 tons cocoa shells were offered and sold at slightly easier rates. Cocoa butter of which 65 tons was offered and sold, also went about 1d a lb. easier, selling at 1s 5d to 1s 6¼d per lb., or on an average of 1s 5 9-16d against 1s 6⅝d in December. The average price of this article at the Dutch sales, which took place on the same day (9th) was 1s 5¼d lb.

The stock of cocoa of all growths is nearly 20,000 bags less than in 1899, being 80,256 bags, against 100,270 bags in 1899. The stock of Ceylon and Java on 6th January was 6,770 bags.

Per sample post I send you samples of San Pedro D'Abadie 119 bags Trinidad cocoa imported May 1898. L. R. C. 94 bags imported March 1898. [These can be seen at our office. —ED. *T.A.*]

The L R C mark sold after the sale at 79/ and the San Pedro are held for 80/. These cocoas have thus been here nearly tw oycars, and I send them to show how well good strong cocoa will keep, when well cured and prepared. Last year it seems was a very trying one with the three months bout of tropical heat that we had.

I also send an article on "cocoa" I am publishing this week in the "Confectioner's Union," the trade Journal of chocolate makers and confectioners.

HAROLD HAMEL SMITH.
London, E. C. Jan. 12th.

ON CACAO—AND THE DISEASE.

Jan. 25

SIR,—As there has been so much written lately in the columns of the daily papers, on subjects that are scarcely of any value to planters, such as "Do Teal settle on Trees," &c., I think it strange that more important subjects, such as the *cacao disease*, was left severely alone. During the time Mr. Carruthers was with us, we heard pretty often, but lately there has been absolute silence. It is because we are all so busy fighting the disease that we have no time to argue, or what? I for one am working hard to eradicate the disease which has affected my charge, and would be glad to hear what my fellow-planters have to say on the subject. It would do us all and the country at large a vast amount of good, to thus ventilate the subject through the medium of the press, who I have no doubt would help us to the last.

Some cacao estate superintendents are shaving off the diseased parts and cutting into the wood, till the black threads are taken out, and then left bare; others apply coal tar, margosa oil, lime, carbolic mixtures, &c., both on the diseased part, and on the shaved part. And again some places (which I think is the wisest plan) are cutting *all* trees in the least affected, right out, level with the ground, and burning them immediately. The disease seems to be very infectious, for I find it nearly always bad near pits where the cacao husk has been buried, although they have been well dusted with lime before being covered with earth.

Trees should be examined, round the stem first, for if the disease has affected the bark *right round*, there is no use, *I say*, of letting that tree remain. Whereas if you were to shave *all* the *diseased* part off seeing that the tree looks healthy (like some are doing), in the hope that it will recover, I am *quite* certain their hopes will never be realised. I say this from some experience, in marking the trees so treated, for I nearly always found that they were quite dead within four to six weeks from the time they were last seen to. The above is only a means of further spreading the disease. Some planters are trying the latter course and I am sure it is only penny-wise but pound-foolish; in trying to save a few trees they are only giving it time to spread much worse. There is no doubt about it, that many of our best tea aresste suffering very severely from the disease, although we hear so little about it I know of one place where 250 acres of cacao have been quite wiped out. And from our experience we now know that it affects only the red variety; and on very rare occasions does it affect the Forastero. You can see trees side by side, yet the red is diseased badly, and the Forastero looking quite healthy.

A few years ago, some of our *best* cacao men went in for only the red variety, and would not hear of having the Forastero, the argument being that the red-fetched better prices. They never, for one moment, thought of the hardiness of the growth and other prospects at the time. I fancy they are pretty sick now that they ever planted it.

For obvious reasons. it would not do for me to sign my name, but I enclose my card. I would be glad of correspondence from men similarly placed, as it would be of the utmost value to have such an important subject, at the present moment, discussed.
—Yours, etc., CACAO PLANTER.

THE PROSPECTS OF TEA PLANTERS.—Says the *Investors' Guardian*, Jan. 6: When the sun rose on January 1st, 1899, he found the Indian tea trade in an unhappy condition, 1898 had closed with little or no business being done in shares, and prices were sympathetically low. In the early part of 1899, however, it was widely believed that the crop would prove short of the demand, and, in consequence, the prices of common teas rose sharply, with a corresponding effect upon the value of shares. But these favourable reports had a somewhat unsubstantial foundation; the results were certainly not very much behind those of 1897-8, even in Cachar and Sylhet concerns, whose very poor results were barely compensated for by the strictest economy and cessation of all attempts at development. A few companies were as successful in 1898-9 as in 1897-8, but for the majority the former was the worse year, and, as a result, share-values drooped from the middle of the year, with few transactions. In the late autumn when the market in tea was fairly brisk, and when the output in Cachar and Sylhet recovered considerably, the market revived somewhat. Such being the condition of affairs, it is not surprising that no new companies were floated during the year. There have, however, been a few additions to the capital of old companies. In the home trade the year has been a notable one on account of the attempts which were made to abolish the pound draft and to reform the system of weighing. Harmony has now been restored, and no harm will come to the ventilation of these vexed questions. The teas of India and Ceylon continue to open up for themselves markets all over the world. It is slow work, necessarily, but even the continent of Europe is now showing unmistakable signs of yielding to the fascination of "the cup that cheers," and especially is this the case in Russia. In fact, only the other day, a meeting was held in Colombo, at the instance of Russian tea buyers, to consider the development of the Colombo market, where Russian firms found it difficult to obtain as much tea as they required. There is no need for planters to despair; far from it. Tea shares do not lend themselves to speculation just now, it is true, but the industry is a sound one, and for investment as opposed to speculation, is worthy of consideration.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees. R. N. Lyne, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price accord ng to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Sterculia Acuminata.—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees. Shade and Timber Trees, Eucalyptus various varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—MESSRS. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address:
WILLIAM, VEYANGODA, CEYLON.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
HENARATGODA, CEYLON.

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TEA CULTIVATION: MANURING, &c.

DIKOYA PLANTERS' ASSOCIATION AND MR. KELWAY BAMBER.

REPORT OF THE BOGAWANTALAWA SUB-COMMITTEE APPOINTED TO MEET MR. KELWAY BAMBER.

Mr. BAMBER has been up to Campion twice; on the second occasion, 22nd July, 1899, he was met by the Sub-Committee. Those present were Messrs. A. C. Bonner, Fred. Hadden, W. P. Barber, and H. B. Roberts. In the morning Mr. Bamber went down early to the Factory and took one or two notes of Temperature, Moisture in the air, etc. At 9 a.m. Mr. Bamber went out to the field being manured with the mixture advised by him. During the walk he was able to give some useful hints on blights, manuring, etc., and amongst other things that quick lime dusted over the bushes after pruning, not only kills all moss and lichen, but is likewise beneficial to the tea in many ways, as nearly all Ceylon soils are deficient in lime, but this must be applied while the bushes are moist from either rain or dew. Fresh wood ashes used in the same way are also very good for the above purpose.

MANURING.—Mr. Bamber pointed out that he thought manure such as the mixture now being applied on Campion, was better forked in round the trees, than put into semi-circular holes, except on steep land where holes might be necessary.

FORCING MANURES.—With a view to getting a largely increased yield, beyond what the soil is capable of doing, he thinks somewhat dangerous.

BLIGHTS.—These Mr. Bamber considers are much on the increase, and in some districts are getting serious, especially grey blight, and that where this is the case, it is advisable to burn the prunings green if possible, and also to sweep up and burn all leaves on the ground. Also when the tea comes into leaf again, as soon as any blight appears, the diseased leaves should be pulled off and burnt, and that this should be done not by *one* estate but by *all*. Unless prunings are universally burnt and done thoroughly, burning is useless.

BURYING PRUNINGS.—Prunings if buried should be limed at the same time and then covered with soil, and this although not destroying the blight *in toto*, would certainly destroy a large proportion. Grey blight is easily identified by the black specks on the diseased part. Mr. Bamber looks upon grey blight as the most serious we have and considers it should be taken in hand at once by all estates.

GREVILLEAS he thinks beneficial rather than otherwise to tea. Mr. Bamber believes that some leguminous crop might be found which would be beneficial, if grown between the rows of trees to be fterwards buried green.

MANUFACTURE.—In the afternoon Mr. Bamber made analyses of the leaf in different stages of manufacture and found that the pungency and strength lost in he process of manufacturing was less than on most estates. This shows that longer fermentation at a low temperature can be done without losing these qualities, and therefore with advantage to the teas.—(Sigd.) A. C. Bonner, Fred. Hadden, A. L. Hine-Haycock, Hugh B. Roberts, William P. Barber.

REPORT OF THE DIKOYA SUB-COMMITTEE APPOINTED TO CONFER WITH MR. KELWAY BAMBER.

Mr. Bamber has several times visited Darrawella Estate. On the last occasion, 3rd August, 1899, he was met by the Sub-Committee, those present being Messrs. H. B. Roberts, Keith Rollo, F. G. A. Lane, W. R. Tatham, R. H. Eliot, J. Anderson, and W. P. Barber.

MANURING.—The Sub-Committee learn from Mr. Bamber that the main object should be to apply such manures as will keep the bushes in health and maintain the yield, and he would deprecate forcing manures being used so as to ensure an increase of yield only. Manuring judiciously done after analyses of soils, would lead to the liberating of plant food at present in the soil which now lies insoluble. Mr Bamber recommends manuring being done immediately, before or after pruning, and being forked in wherever practicable.

MANUFACTURE.—The analyses of teas in this and higher districts point to the fact that the best and most valuable qualities in the tea, are maintained by keeping a temperature as much below 75 as possible in manufacture up to the time of firing. Mr. Bamber suggests more care should be taken to prevent the made tea absorbing moiture when lying in the Factory, as this would assist in maintaining the keeping qualities of the tea.

SHADE TREES.—In reply to enquiries as to shade trees, Mr. Bamber recommends Grevilleas, Albizzias, and Dadaps planted at distances which would not make the shade too dense, and stated that the beneficial effects of these trees were:—

(1) To encourage the tea roots to feed lower.
(2) To bring up plant food to the surface.
(3) To save wash.
(4) To equalise the temperature of the soil.
(5) To tend to help the rain water to filter through the soil and draw air to the lower depths.

Also he recommends the growth of a leguminous plant such as "Crotolaria Striata," and cutting down and digging it in at the time of flowering. This plant grows wild in Paddy fields in Badulla and elsewhere at 2,000 to 3,000 feet elevation.

TEA BLIGHTS.—The Sub-Committee desires to urge most strongly on all members to burn or bury prunings with lime so as to minimise the adverse influences of these pests, which they believe tend to largely reduce yields, and they understand from Mr Bamber that when burying purnings they should be covered with 7 to 9 inches of soil and lime or basic slag sprinkled over the prunings before covering, the quantity being 4 to 5 cwt, per acre. When burning prunings the ashes should be sprinkled over the pruned trees.

(Sid) Hugh B. Roberts W. R. Tatham
K. Rollo R. H. Eliot
F. G. A. Lane J. Anderson
Willam P. Barber.

COCHIN MARKET REPORT.

Cochin, January 27.

C. N. OIL.—With an improved demand in the market mainly for prompt deliveries, prices made a slight advance, and contracts were placed at R87 per candy.

COIR YARN.—Further contracts are reported at late prices. Regular shipments are going forward to Europe both by direct boats and via Bombay mainly against orders on c. i. f. terms.

ROPE YARN.—Ditto.

COPRAH.—Rassi R52–53 per candy.—*Cochin Argus.*

RUBBER ESTATES OF PARA, LIMITED.—The estates, consist of 284 square miles.—*India-Rubber and Gutta-Percha Trades Journal*, Jan. 8.

RUBBER.—A recent issue of the Hongkong *Telegraph* has this note: "The Goa papers announce that Captain Moraes has discovered a plant in the wilds of the Portuguese territory of Goa, a tree which yields India-rubber in considerable quantities. The tree is described as Randalfia, and it is stated that the Portuguese authorities are about to encourage its cultivation on a large scale."—*India Rubber World*, Jan. 1.

SISAL GRASS IN MEXICO.

Henequen, or sisal grass, has been in use among the inhabitants of Yucatan from the earliest times. The United States Consul at Progreso says that he has found it imbedded in the form of cord in the stucco figures that ornamented the façades of the mysterious ruined cities of Yucatan. There are two wild varieties of henequen called by the natives "cahum" and "chelem." The fibre of these wild plants is used to some extent by the natives in the making of cordage for domestic use, and some claim that hammocks made from the fibre of the cahum are the best. It is, however, the cultivated plant that furnishes commerce with the fibre known as sisal grass, Sisal being the old port from which the fibre was first exported. Like the wild plant, the cultivated one is divided into two varieties—the "zacci," or white hemp, and the "yaxci," or green hemp. The zacci is considered the finest and best, but the yaxci is a good fibre. It has been generally supposed that sisal grass, as an article of commerce, has been known only within the last fifty years, but this is a mistake. Between the years 1750-1780 quite a furore was created in commercial countries of the Old World by the discovery that the fibre of a plant found in Yucatan was good for ship's cordage. Spain sent over a Royal Commission to report upon the discovery, and in a few years many of Spain's commercial and war vessels were using cordage made from henequen. For some reason, probably because of the primitive method of preparing it, the use of silk fibre gradually declined, until at the commencement of this century the former trade had been forgotten. In 1847, Yucatan, until then a cattle-producing, cotton-growing, and logwood-exporting country, was in the throes of an Indian war. The Maya Indians had risen in rebellion, and had succeeded in driving the white race out of the most fertile portions of the peninsula, forcing them to rely for means of subsistence upon the products of a sterile rocky belt; too poor to sustain cattle in any numbers.

HENEQUEN.

was the only useful plant that would grow on such a soil. The first plantation was established in 1848, and the 50 acres planted were cleared by the use of the tonka, the primitive cleaner used by the native Maya. There was a good demand for the new fibre in ship rigging, and it gradually came into general use, until sisal grass was a well-known article of commerce. The tonka was a piece of hard wood, shaped something like a handsaw, having the end curved in. The leaf of the henequen was drawn through the sharp curve, and the fibre was stripped of the thick, pulpy covering. The leaf was subjected to this operation two or three times, until the fibre was left clean and free. This tedious process was not long tolerated. A machine was found to increase the output, but the demand again outgrew the supply. The machine known as the "Raspador," or the "Soles," from its inventor, came into use, and has held its own almost up to the present day. It consists of a large-toothed wheel, that scrapes the pulp and leaves the fibre. Its simplicity made it peculiarly fitted for use by the native servants. Plantations came to be known as plantations of one, two, or a dozen wheels. The constantly increasing trade necessitated still more rapid means of fibre cleaning. Many new machines were produced, each of which was said by its inventor to be far better than any of the others. The exportation of sisal grass during the ten years ended December 31st, 1898, amounted to 585,000,000 tons. It has been said that the best fibre-producing plant grows on the poorest and most rocky soil, but this does not accord with experiments recently made. One method of planting and cultivating is as follows :—The field is first carefully prepared and burnt. The burning produces a certain amount of ashes, and many planters set out seed corn at the same time they plant the henequen. The one does not interfere with the other in the least, and the corn crop helps to pay the cost of the henequen. The henequen plant is propagated not by seeds, but by scions, or suckers. The plant produces seeds, and in a natural state propagates itself by both seeds, and scions, but the planter uses only suckers from 18 to 20 inches high. By this method he can produce a field of henequen redy to cut within five years, whereas by seed planting he would have to wait from eight to nine years. Once planted and properly tended—that is, cleared of weeds twice a year, and not under or overcut—a field will last twenty years, and instances are not wanting of fields that have lasted longer. A leaf is ready to cut when it extends at right angles to the trunk or the plant. A healthy vigorous plant in the maturity of its growth should yield from 18 to 24 leaves. One thousand leaves should produce from 50 lb. to 60 lb. of good, clean fibre. This amount is fair average. When the plants in an old field send up a flower-stalk, it is nature's signal that the crop is finished. The old plants must then be clipped of all useful leaves and cut down, to allow the young scions (which should have been already planted between the old plants) ventilation for growth. Bad cleaning, allowing rot to be produced by the acids nascent in the plant pulp, and dampness, produce red and mould-stained fibre, of less than one-half the value of the good, clean, white fibre. This is rarely exported, but is sold at home for domestic use. There are in Yucatan nearly 1,200 henequen-producing plantations of various sizes. The largest plantation, or, rather, the plantation producing the largest output, is on the line of the broad gauge railway between Merida and Progress. It is called Ticilché, and produces about 1,000 bales, or 375,000 lb. of cleaned fibre per month.—*Journal of the Society of Arts.*

KEROSENE FOR SAN JOSE SCALE.

Some months ago a correspondent reported that, as a last hope, he had painted with kerosene direct from the tin some young trees badly infested with San José scale. He had evidently got the idea of this treatment from an article which appeared in the *Agricultural Gazette* for May, 1898. When the paragraph about the success of his experiment appeared in the *Gazette* there was much comment, but according to Bulletin 138, New Jersey Agricultural Experiment Station, Professor J. B. Smith (whose article was printed in the *Gazette*, May 1898) has during the past two years treated nearly 4,000 trees of all the ordinary orchard fruits, except cherries, with crude petroleum, either undiluted or mixed with from 60 to 75 per cent of water. The trees operated upon varied from stock just out of the nursery row to old trees in full bearing.

"Not a single case of injury to any tree treated in winter has been observed; on the contrary, in a number of cases the oil seems to have acted as a stimulant, and the sprayed trees have shown greater vigour and better foliage than those untreated. In no case has there been any injury to fruit buds, but on this point the observations are incomplete, no early winter treatments having been made in bearing orchards. Applications made after January 15th (midwinter) have in no way lessened the crop of apples and pears the year following, and applications made in March have not injured the fruit buds in peach and plum (July and September here). Crude petroleum is not suited for a summer application, either pure or diluted, because of its choking effect on foliage and its persistence. This, however, increases its value for winter work as compared with kerosene; the latter acts at once or not at all and evaporates very soon after it has been applied—in fact, to avoid injury, it must be applied in such a way as to favour rapid evaporation. Crude oil does not evaporate readily; it is penetrating, and, if applied with a brush half-way-round a branch, will often soak round the branch completely; it remains as an oily or greasy surface coating for many weeks, and no scales can set on this coating within a month of the application and live; it does not ordinarily penetrate through even the surface layer of bark; under the most unfavourable circumstances, if the outer layer is penetrated, the inner layer remains healthy and

there is no progressive injury; it does not seem to interfere with bark functions, and young trees painted with the oil increased in size quite as rapidly and freely as those untreated. Crude petroleum will kill the pernicious scale in winter whenever it comes into sufficient contact with the insect. It is a contact insecticide, and will not injure what it does not touch; but, liberally applied, it will soak thorough masses of scale no matter how densely set, as nothing else will, A minor advantage is the fact that it gives a greasy brown colour to the bark, making it easy to see exactly how thorough the application has been."

It is scarcely likely that the indiscriminate use of either crude or refined petroleum will ever be recommended, but in a young orchard a little might be applied with a brush the moment a scale is discovered. —From the *Agicultural Gazette* of New South Wales for January.

VOGAN TEA COMPANY.

DIRECTORS' REPORT.

The Directors have pleasure in submitting their report and accounts for the year ended 31st Dec., 1899, which they trust will be considered satisfactory by the shareholders.

The total crop secured for the year was as follows :—

Vogan ..	263,241 lb.	as against	227,848 lb.	in 1898
Iddagodde...	123,368 lb.	do	125,989 lb.	do
Bought Leaf	2,528 lb.	do	30,929 lb.	do
Stamford Hill and Barkindale ..	95,286 lb.	do	100,712 lb.	do
	484,423 lb.		485,478 lb.	

On actual estate account Vogan and Iddagodde have given 8,241 lb. and 3,368 lb. respectively over estimate, whilst Stamford Hill and Barkindale shew a shortfall of 4,714 lb.

The yields per acre have been as follows :-

Vogan (old tea) 611 lb. (including 78 acres young tea). 561 lb. Iddagodde old tea, 617 lb.

Total yield old and young tea, 580 lb. per acre, Barkindale and Stamford Hill (old tea) 433 lb. per acre.

The following usual table shewing the cost and average of the Company's tea in Colombo (including bought leaf) for the past two years, will be found interesting :—

Estate.	Cost 1898.	Or without Manure	Cost 1899.	Or without Manure	Nett Average 1898.	Nett Average 1899.
	Cts.	Cts.	Cts	Cts.	Cts.	Cts.
Vogan and Iddagodde	20·22	19·21	20·15	18·83	34·00	36·81
Barkindale and Stamford Hill	25·58	22·60	22·17	20·90	43 90	45·30

It must be borne in mind that the profit on manufacturing outside leaf has been deducted from the expenditure when calculating the cost of Barkindale and Stamford Hill estate teas.

Now that the young clearings on Vogan and Iddagodde estate are beginning to come into bearing, increased withering accommodation is required, and it has been decided to put up Messrs. Davidson & Co.'s patent air fans with air tight chambers at a cost of R3,000 to 4,000 instead of erecting another withering shed at an enhanced cost.

The amount spent on plumbago prospecting, namely R4,785·01, has been passed to suspense account pending the result obtained from the leasing of the Company's Mining rights to a Syndicate, in connection with which mining operations are expected to be commenced shortly, on the arrival of Machinery from England.

After paying interest on debentures, viz.: R6,195, the amount at credit of profit and loss is R76,088·41, which is equal to 10·56 per cent on the capital of the Company as against 8·40 per cent last year. Of this amount R10 500 has been applied in redeeming and cancelling 21 debentures, a further 5,000 will be required to redeem 10 more debentures contracted for, and R200 has been absorbed in paying part of the Vogan Assistant Superintendent's passage to England. The Directors recommend that the available balance, namely R60,388·41, be apportioned as follows :—

	R c.
By the payment of a dividend of 7 per cent for the year ..	50,400 00
By the payment of a bonus to the Vogan Superintendent ..	1,000 00
By placing to Depreciation Account	5,975 01
By placing to Debenture Redemption Fund	2,500 00
By carrying forward to the next account	513 40
	R60,388 41

The acreage of the Company' properties is as follows :—

VOGAN AND IDDAGODDE.	A.	R.	P.
Tea in full bearing ...	590	3	23
Tea in partial bearing ..	78	2	30
Tea not in bearing ..	119	0	10
Stamford Hill and Barkindale	220	0	0
Total in Tea Acres ..	1,008	2	23
Vogan and Iddagodde Jungle, &c.	540	2	10
Total acreage ...	1,549	0	33

Owing to a considerable portion of the jungle having been felled for firewood it has been decided to plant up 25 acres of tea in the coming season, and to follow a similar course each year, when the result of the previous season's working warrant the outlay.

In terms of the articles of Association, Mr. W B Kingsbury retires from the Board of Directors, but, being eligible, offers himself for re-election.

The Auditor, Mr. J D Forbes, also offers his services for 1900.

INDIAN COAL.

AT a time when anxiety is felt about the output of coal in the United Kingdom, through labour troubles and the enlistment of all classes of work-people for Military needs in the homeland and in South Africa, it is cheering to read of the advance which the coal trade is making in India. The Report of the Directors of the East Indian Railway for the half-year ended the 30th June last, makes us acquainted with the fact that coal contributed largely to the success of the concern, which yielded the comfortable return of 6½ per cent for the year The amount of coal despatched from the collieries upcountry amounted to 95,000 tons, while there was exported from Calcutta by sea to Bombay, Karachi, Colombo and other ports, during the six months, more than in any previous corresponding period. For Bombay and Karachi alone as much as 200,000 tons were shipped. Here is, then, another instance of how the great Dependency of India is helpful to the Mother Country, while becoming its rival in trade in some respects.

LIBERIAN-ARABIAN HYBRID COFFEE.—The seeds received from Mr H B Winterbotham, of Meppadi, Wynaad, have germinated successfully, and will be planted out in the Gardens in a suitable place when large enough.—*Agri Horticultural Society of Madras.*

INDIGO: A THREATENED INDUSTRY.

The kind of help which the Government might well be asked to give to indigo growers, must here be made. The real merits of the dye produced from the plant must first be set forth and made known to the public, and the following extracts from a little pamphlet bearing the name of Fox Brothers and Co. (Limited) will suffice to do all that is necessary in this connexion.

"The superiority of pure indigo over other dyes may be briefly summed up as follows:—

"1. Fastness of the dye.—Indigotin, the colouring principle of indigo, is insoluble in water, alcohol, ether, and dilute acids and alkalies, either hot or cold, hence its extreme fastness for all conditions of ordinary wear and tear. It is also quite fast to sunlight, and for an all-round dye there is nothing superior to it at present. There is no need to point out the advantage there is in a perfectly fast dye as compared with one which may be fast to light, but will not stand perspiration or washing, or *vice versa*.

"2. Strength and handle.—Cloth dyed pure indigo is stronger and tougher than the same cloth dyed in other ways, owing to the dye-bath being at a comparatively low temperature and the absence of any injurious chemicals or mordants. In almost all other dyes the cloth is first boiled in mordant and then in the dye, for some hours altogether; this always impoverishes the wool fibre and destroys much of its natural lustre and softness. whereas the indigo vat with its soft mellow liquor adds to the fulness and richness of the fabric. Indigo dyeing being a mechanical process rather than a chemical one actually feeds the cloth.

"Pure indigo tests.—There are so many ways of producing a blue very similar to pure indigo that it is of the first importance to make quite sure that what is called 'pure indigo' is pure indigo and nothing else. The following simple tests will give a fairly good indication whether the dye is a pure indigo or not. In carrying them out, the tests should always be compared with similar tests on a known pure dyed fabric of like quality:—

"Nitric acid test.—Put two or three drops of ordinary commercial nitric acid on the same spot of the fabric. A yellow spot with a green rim quickly appears if the dye is pure indigo.

"Sulphuric" acid and water.—Make a mixture (about half a pint) of sulphuric acid and water, and in it boil quickly for ten minutes a small piece of the cloth to be tested, say 1 1-2in. square. The acid and water must be in the proportion of one part acid to nine parts water, and care must be taken to always gently pour the acid into the water and not the water into the acid. If the cloth which has been boiled is pure indigo, the solution will remain colourless.

"Soda and water.—Dissolve about 1 oz. of common washing soda in half a pint of water, and gently boil in it for 15 minutes a small piece of the cloth about 1 1-2 in. square. If the dye is pure indigo the liquid will remain colourless.

"In conclusion.—Our motive for placing this,

LITTLE SKETCH OF PURE INDIGO DYEING,

before the public is that from long experiences and countless experiments extending over many years we believe that there is nodye in the world equal to pure indigo, and our own experience is corroborated by evidence from all parts of the world. The one important point we wish to impress upon the public is that when ordering 'pure indigo' they must be sure that they get it as an immense amount of so called pure indigo is annually placed on the market, and the term 'indigo' or, trade indigo is often applied to absolutely worthless dyes. To assist the public we have included the foregoing few simple tests, any two of which taken together, are sufficient proof as to the genuineness of the dye.

Seeing that there is no blue dye in the world equal to natural indigo, and that immense quantities of substitutes are used and sold under more or less the same name, it appears to be necessary, in the interests of (*a*) the Government of India, (*b*) the planters in that country, and (*c*) the public who wear clothing dyed with this material, to take measures to ensure that the real dye shall be used, or the fact that a substitute has been used made patent to everybody. The suggestion to be made then is that our Government, with the concurrence of the Indian Government, should be asked to legislate, if the object in view cannot be attained short of this, stating in effect that henceforward there shall be stamped upon each piece of blue cloth words guaranteeing that the dyeing material used in its production is natural indigo—or indigo from the plant grown in India—or, if with a substitute therefore that this fact and the name of the substitute shall be so stated upon such cloths. Further, no indigo substitute should be permitted to be imported into or sold in, this country bearing the name "indigo" or other similar name. This seems to be a reasonable request to make of the Government, and clauses could no doubt be drawn to secure the prime object in view.

Some remarks have still to be made addressed to the indigo planters themselves. In the first place, as to the exchange question, they must fully recognize the existing position, for they may rest assured the Government of India will not change its policy to please them. The report of the Fowler Committee and the action taken by the Government since make that perfectly evident. They should endeavour to get the Government to carry into effect the suggestion last above made, which from all points of view seems to be not only reasonable but necessary, for the reasons already set forth.

It is known that the planters, under expert chemical advice, are experimenting to discover whether a greater quantity of dyeing material cannot be extracted from the plant, without detriment to the quality, than has heretofore, under the old system of manufacture, been possible; but up till now it is believed that no real success has attended these experiments. Whether they will be successful in the near future remains to be seen. The steps taken are certainly in the right direction.

The next point has reference to production. There are good grounds for believing that the depressed state of the industry at the present time fortunately much less marked than it was only a few months ago, owing chiefly to the fact that the current year's crop from India is to be an exceedingly short one, has been brought about more by what may be called "over-production" than anything else. In any ease, over-production *plus* the discovery of "the new synthetic indigo," and the putting of it on the market for sale, which users of indigo have, of course, made the most of, in order to break down prices of the real article, have together brought about the depression.

Very probably,

OVER-PRODUCTION,

was due to a too large extension of cultivation, in combination, perhaps, with seasonable weather and consequent normal yield per acre. In growing indigo it must be kept in mind that a very large proportion of the season's outlay of money is incurred in preparing the lands for the reception of the seed, and that the preparation extend over months before a seed is put in the ground. Then the plant is perhaps the most troublesome to grow in India. Drought, too little rain, too much rain, rain at wrong times, all alike damage the crop, and little or nothing can be done by the planter in effecting savings in his expenditure. It is accordingly of very great importance to the planter to secure a full yield per acre, but not

otherwise. Therefore the planters themselves can well perform a part in preventing the ruin of a "threatened industry" by instructing their managers to see that only their very best lands are sown with indigo—that lands cropped for two seasons in succession are left fallow for a year—in short, that all land not capable of giving a yield per acre of 10 to 12 seers (20 to 24 lb.) under normal weather conditions is to be avoided. If this is done it is practically certain that a great step will have been taken in assuring the continuance of the industry with some profit to those engaged in it, for such indigo as is produced ought to be, on an average of years, moderate in cost, able to stand up against chemical competitors, and the market could not well be glutted by supplies.

Such careful selection of land as has been indicated will of necessity leave at the factories a larger area available for the cultivation of other crops. If we were to assume even that indigo growing were absolutely killed by chemical discoveries and were to cease to exist at some future date, then, obviously, those now engaged in that industry would be called upon to grow other crops on their land, and would be obliged to find out what crops would pay them best. In this connexion their attention may well be directed to articles which appeared in "The Times" of September 2, 8, 12, 19, 21 on the subject of growing sugar canes, and which are full of valuable information. Canes are already produced in nearly all parts of India, and in the aggregate the production must be very large.

A new kind of cane is mentioned as growing in some of the West India Islands, which yields 23 per cent of saccharose, and modern machinery is said to extract 90 per cent thereof. From such cane sugar should cost less than £5 per ton.

By way of concluding these remarks a final suggestion is made to Indian Indigo planters. Experiment at your factories on growing sugar canes, for the product from which there is an ample market at your own doors. Remember that the conditions of India in these days in respect to communications and otherwise are very much more favourable to the successful working of such an industry than in the days when sugar was largely exported from the country; also that modern sugar machinery is more efficacious in treating the canes; and if it can be clearly demonstrated that canes of the best kind can be grown successfully in Behar, and that a formerly existing industry can be established and extended, taking the place of indigo in that quarter if the worst should befall it, then assuredly the necessary modern factory will not fail to be established to deal with the canes. —*Bombay Gazette*, Jan. 23.

TEA IN CEYLON.

AGRA OUVAH ESTATES COMPANY, LIMITED, DIRECTORS' REPORT FOR 1899.

Acreage,

Agra Ouvah.

Tea in full bearing	..	302 acres.
Tea not in bearing	..	20 ,,
Grass and Jungle	..	9 ,,
Total Estate	..	331 acres.

Fankerton.

Tea in full bearing	..	165 acres.
Timber clearing	..	10 ,,
Grass, Patana and Scrub	...	18 ,,
Total Estate	..	193 acres.

Grand total 524 acres.

The total tea crop amounted to 293,908 lb. (or 13,708 lb. in excess of the estimate) as against 271,241 lb. in 1898.

After deducting the cost of manufacturing 131,174 lb. tea for other estates, the cost of delivering the Company's tea in Colombo was 25·18 cents per lb., which included a sum of R2,581·29 expended in additions to machinery and the building of a new watercourse, to which reference was made in the Directors' last report. The average nett prize realized for the tea was 48·90 cents per lb., against 53·82 cents per lb. in 1898. In common with other estates at the same elevation, prices in 1899 shewed a considerable fall, which was attributable to the larger demand and increased prices given for common teas. The gross income from manufacturing tea for other estates was R15,279 66.

As the amount at credit of the Deprecation Account amounted at 31st December, 1898, to over 68 per cent of the original cost of buildings and machinery, and as the cost of all alterations and additions is now charged to Working Account, the Directors have decided to pass only 2½ per cent. on original cost to the Depreciation Account for the past year.

After making this provision the amount at credit of Profit and Loss Account for the year's working is R71,536·14, equal to 19·08 per cent. on the Capital of the Company. To the above has to be added the balance brought forward from 1898 of R16,258·44, making the total balance at credit of Profit and Loss Account R87,794·58. An Interim Dividend of 7 per cent. was declared and paid on 16th August last absorbing R26,250, and the Director now recommend the payment of a final dividend of 13 per cent. making 20 per cent for the year, and that a sum of R10,000 be transferred to a Reserve Fund for the equalization of dividends and the balance R2,794·58 be carried forward to the current year's account.

The estimate for this year is 290,000 lb. Tea on an expenditure of R77,078·78, which includes an amount of R7,752 to be expended on manuring. It is also estimated that about 100,000 lb. will be manufactured for other estates, which will leave a fair profit to the Company.

During the year under review Mr. Jas. Polson was appointed by the remaining Directors to fill the vacancy caused by the retirement of Mr. J G Wardrop on his leaving the Island; the latter was re-appointed in the place of Mr. W H Figg, who resigned.

In terms of the Articles of Association Mr. J G Wardrop retires by rotation from the office of Director, but is eligible for re-election.

GLASGOW ESTATES CO., LTD.

ANNUAL REPORT.

Directors:—Messrs. G H Alston, G C Walker, J G Wardrop.

Estate Inspector:—Mr. G M Ballardie.

Estate Superintendent:—Mr. R W Kerr.

ACREAGE.

Tea in full bearing	.. ...	550 acres.
Do. partial bearing	... ...	62 ,,
Do. not in bearing	.. ..	38 ,,
Grass	... ...	2 ,,
Jungle, &c.	.. ..	62 ,,
Total Estate	...	714 ,,

The Directors have now the pleasure to submit their Annual Report and the Accounts of the Company for the past year.

The crop secured amounted to 335,708 lb. Tea (or 20,708 lb. in excess of the estimate) which cost delivered in Colombo 23·50 cents per lb. The nett average price obtained was 47·29 cents per lb against 49·71 cents in 1898, the fall being attributable to the partial neglect of good teas owing to the strong demand at high prices for the commoner kinds.

After making ample allowance for depreciation of Buildings and Machinery, the amount at credit of Profit and Loss Account for the year's working is R68,789·86, equal to 21·17 per cent on the capital of the Company, to which must be added the balance of R1,482·16 brought forward from the previous year. There is thus an available balance of R70.272·02, which the Directors recommend should be dealt with as follows:—That a sum of R5,000 be transferred to Extension Fund, making this fund R65,000; that a sum of R5,000 be transferred to a Reserve Fund for the equalization of Dividends: that a final dividend of 13 per cent be paid for 1889, making with the interim dividend of 5 per cent paid on 16th August last, a total of 18 per cent for the

year, and that after the payment of R300 extra fees to the Directors, in terms of the Resolution passed on 18th February, 1893, the balance of R1,472·02 be carried forward to the current year's account.

The estimate for this year is 335,000 lb. Tea against an expenditure on working account of R83,545, which includes a sum of R6,883 to be expended on manuring. A sum of R3,516 is estimated on capital account for additions to Machinery and the upkeep of the 38 acres not yet in bearing.

During the year under review Messrs. Jas. Forbes and W H Figg resigned their seats on the Board, and Messrs G C Walker and G H Alston were appointed to fill the vacancies.

In terms of the Articles of Association Mr G H Alston retires from the office of Directors, but is eligible for re-election.

The appointment of an Auditor will rest with the Meeting.

A GOOD COCOA BEAN AND A JUDICIOUS BLEND.

BY HAROLD HAMEL SMITH.

[Cocoa Correspondent to the *Port of Spain Gazette*, Trinidad, W.I.; the *Ceylon Observer*, Colombo; and the *Tropical Agriculturist*, Ceylon.]

To properly be able to tell a good cocoa bean, it is necessary that one should have a slight knowledge of its place of origin, and the circumstances under which it has been produced and prepared. This is especially the case with Ceylon cocoa, from which after Caraccas and Puerto Cabello cocoa the finest and most delicate flavoured chocolates are produced. Some even prefer the chocolate made only from the best Ceylon cocoa, and say that for delicacy of flavour this growth cannot be surpassed.

The reason of this is easy to understand when known, but can only be found out by reading up the history of the movements of cocoa from one country to another which will show that the finest Ceylons, with the cinnamon 'break' so much sought after by confectioners, originally came from the same kind, the 'Criollo' as the Caraccas and Puerto Cabello growths, the improvement in the flavor, if there is any, being due to a higher class cultivation and more careful preparation than is carried on in Veuezuela, whereas in Ceylon no expense or trouble is spared to produce the best results.

For all practical purposes a confectioner need only trouble about

TWO KINDS OF COCOA

known as 'Criollo' or indigenous, and 'Forastero,' or foreign. The light 'break' and delicate flavor of the Criollo cocoa is innate in the growth, being due to the cotyledons or kernels of the bean, when first taken out of the pod, being a milky white color shaded at the margin with faint pink, which when fermented and dried, turns a light brown or cinnamon color, whilst the flavor of the seed when chewed is of a pleasant, nutty, and only slightly bitter taste, with a distinct cocoa flavor, in marked contrast to the strong bitter taste of the Forastero bean, which seem to overpower any flavor of cocoa in the mouth. The original color of the Forastero seed is a deep purple, which the process of curing turns to a medium or very dark brown, according to the time expended on its curing.

During the last fifteen years cocoas from nearly 40 different countries or districts have been offered for sale in London. These I should classify under two heads as follows, placing them according to the strength or mildness of their flavor :—

STRONG FLAVOURED.	MILD FLAVOURED.
Africans, Surinams, Cayenne, Demarara, Bahias, St. Thome, Trinidads, St. Vincent, St. Lucia, Grenada, Tobago, Dominica, St. Domingo (Jeremie, Samana and Sanchez), Cuba and Para.	Ceylon, Java, Puerto Cabello, Caraccas, Fine Summer Arriba (Guayaquil), Colombian and Cauca, Carupano, Guiria, Peruvian, Mauritius, Seychelles, Madagascar, Tumaco, Esmeraldas, Madras Neilgherri and Jamaica.

The first six growths, as a rule prove too strong—that is, the bitterness even when reduced to powder, is too marked to allow them to be made up alone as cocoa essence, therefore I do not recommend their use in confectionery where delicacy of flavour is the first consideration; but when it is only a matter of price that alters the case. Even then I would rather use Para, which not only is the fattest of all cocoas except Surinam, but is of such a mild flavor that it can be made up with any growth, and for this reason is, I believe, much liked on the continent, very little of it in comparison coming here.

Opinions differ so much as to which blend is most suitable to bring out the full flavour of the cocoa, that it is difficult to know which to recommend. The nicest chocolate as far as flavor is concerned that I ever tasted was made entirely of fine Ceylons, and it is in such chocolate that the advantage of the 'Criollo' cocoa is particularly noticeable, for without extracting any of the fat, which contains the essential oil, and so all the true flavour of the bean, you can make your chocolate simply by the addition of sugar, whereas with the generality of Forastero cocoa, no matter how carefully prepared, a slightly bitter taste is sure to be noticeable, if not the cocoa would be found to be of a superior variety of Forestero (called Verugoso amarillo) which approaches very near to 'Criollo' cocoa, the interior of the seeds being originally of a violet color does not become so dark in curing, it also contains a somewhat smaller proportion of essential oil, and is therefore not so strong to the taste as the other varieties of Forastero.

AN IDEAL BLEND,

according to some, is an equal mixture of fine Trinidads and fine Ceylons, by which you get the superior and stronger flavor of the one, toned down by the delicate taste of the other, and the color is pleasing to the eye, a point which I do not consider confectioners pay enough attention to, especially in cheap chocolates, but from remarks I hear dropped by purchasers, the public pay quite as much, if not more attention to the color, than they do to the flavor.

As far as flavor is concerned good blends can be obtained by mixing almost any of the strong flavored growths of column I. with those mentioned in column II., preference being given price for price to those below the St. Thome in list I., for, as already stated, they are generally found to be milder to the taste. Cheaper qualities of chocolates can be made from the same growths as the best, but of cocoa, which, being less carefully prepared, sells at lower rates. As far as the matter of price goes, every maker of confectionery whether he grinds his beans or buys the chocolate *en bloc*, should watch the market reports in the trade journals or the daily papers, and note what changes have taken place, for prices fluctuate so tremendously that it is impossible to recommend any particular blend to be produced at a fixed price. Ceylons for instance, sold as high as 130s. per cwt. in 1893, but in 1895 the highest price was only 65s. 6d., which would put it within the reach of confectioners for 'bringing up' the color of all qualities of chocolates, which is not the case when fine Ceylon is about 80s. Fine Summer Arabia, the flavor of which is particularly mild and pleasant, even in the bean, also varies greatly in price, last year selling at 83s. to 85s. against only 56s. to 62s. in 1896.

To really find out which blends are the most suitable for one's trade, I would strongly recommend every confectioner to be constantly experimenting on his own account, no matter how excellent a recipe he may already have in his possession. Remember there are as good fish in the sea as out of it, and it would well repay the trouble if five or six pound samples of each growth and quality were ground up separately and portions blended together according to the color required, and the price at which the finished article is to be sold at. By so doing one can see exactly what are the results, and test which blend is most suitable to any particular trade; and even if some of the blends do not turn out satisfactorily, they

can always be used for 'foundations,' and so cost very little more than the trouble bestowed on them.

The characteristics of

A GOOD COCOA BEAN

varies in every growth. For instance, 'Calabacillo' cocoa, which forms the bulk of the Grenada crop is said to be unaffected by fermentation, so can never plump up like highly fermented Java. However, I am not wrong in saying good cocoa beans, no matter what the growth must be perfectly ripe and well fermented, which causes them to be more or less plump, and filled out; when broken they should be of a good even 'red' throughout; the bean should crack up easily, and the kernel and shell come apart without trouble. The ideal cocoa bean should have the shell a nice bright red, with a slight tendency to purple. Of late some of the Grenada Cocoa has wonderfully improved both in size and 'break,' so much so that if it is from the same 'Calabacillo' strain it has been improved beyond recognition by superior cultivation.

'Hardness of break' 'flintiness,' 'soapiness,' 'grey color,' etc., seen in beans all betoken insufficiency of ripeness and curing; the nearer the bean is to the even-coloured 'red' peculiar to its growth, the better prepared, and the riper will it prove to be.

Of all cocoas Guayaquils give the most trouble to distinguish one quality from another. This difference in the quality is due to the locality of the estate and the season of the year at which the cocoa is picked, and as localities run one into the other and seasons vary, so do the qualities of the produce, some Carraquez Guayaquil being very difficult to distinguish from some Arribas.

Beans of the purple or Forastero Cocoa, as Trinidads, Grenadas, Africans, etc., are naturally flatter in shape, and have a coarser shell than those of the Criollo kind, as Ceylon Java, etc. Columbian cocoa especially that grown in the Cauca district, runs very large in size, and is of an excellent quality and flavor, selling even higher than the finest Arribas of Guayaquil, which it somewhat resembles in shape, due no doubt to the two districts bordering one on the other.

The difference in the outside color and appearance of the various growths is due principally to the mode employed in the preparation. Some of the beans, as Ceylons, and some Jamaicas are regularly washed and all the mucilage removed, whilst in Guayaquils it is left on. With Trinidads and Grenadas it is more or less rubbed off by hand or other means, and with Venezuelian and other 'clayed' cocoas it is absorbed by the clay.—*Confectioner's Union*, Jan. 15.

INDIAN TEA ASSOCIATION.

The following is an abstract of proceedings of a meeting of the General Committee held on the 16th instant, present :—Messrs. H S Ashton (Chairman), H C Begg (Vice-Chairman), G G Anderson, W Brown, G A Ormiston, M R Quin, R R Toynbee and T Traill.

PARIS EXHIBITION.

Mr. Tye referred to the arrangements to be made in the Paris Exhibition to ensure prominence being given to the samples of Indian tea, photographs of tea estates, machinery, etc., and other exhibits sent from India. He stated that one or two octagonal kiosks would be constructed to display the exhibits to the greatest advantage. One of these kiosks woul probably be placed in the centre of the Tea Court. The London Committee had also had a consultation with the architect of the Indian Pavilion, and they had sanctioned arrangements for the filling up, decoration, and completion of the Tea Courts, which it was understood were to be in readiness by the 1st March 1900. The first instalment of the grant sanctioned by the Government of India had been paid to the credit of the Indian Committee of the Royal Commission; and a further instalment was to be paid on the 1st March next.

NEW MACHINERY.

Considered letter No. 2703 of 13th January, from Mr. J H Apjohn, Vice-Chairman of the Calcutta Port Commissioners, in reference to the machine invented by him for bulking and re-packing tea. This machine, which had been viewed by the members of the General Committee in March last, had been working experimentally since that time in the Port Commissioners' Tea Warehouse. Mr. Apjohn stated in his letter that the difficulties of detail at first experienced had been overcome, and that as a bulker or blender the machine now gave mathematically accurate results. He had also made arrangements for the tea to be repacked in the chests by hydraulic packing. This had, after experiment, proved successful, enabling the tea to be re-packed in as many seconds as by any other process it would take minutes. He submitted a statement showing that up to the present over 5,000 chests had been bulked with satisfactory results. The bulker would be capable of dealing with 500 chests an hour and the tea would be immediately repacked. Mr. Apjohn proposed to advise the Port Commissioners to charge four annas only per chest for bulking, grossing and taring. The rate would, therefore, be one quarter of that charged in London and in addition shippers would have the advantage of the certainty of their teas being shipped in good order. He was proposing to the Port Commissioners to erect one complete bulking and packing plant in the Tea Warehouse and another at the Kidderpore Docks; and he asked for an expression of opinion as to whether the bulking would be likely to meet a want of the trade.

The Committee discussed the letter and directed the Secretary to inform Mr. Apjohn in reply that in their opinion the proposals he made would if carried out, meet a want of the trade, more especially in the case of shippers who buy tea at Calcutta auctions, and despatch it to foreign markets.

TEA SEED CONTRACT FORM.

Considered file of correspondence, in reference to the Tea Seed Contract form, issued to members under cover of Circular No. 141-O. of 11th April 1899. After the publication of the contract certain differences of opinion were expressed by the Assam and Cachar Branches and members of the Association, as to the terms of clause 5. This clause provided that in the event of the seed when tested "proving to be 10 per cent or more under the guarantee" the buyer should have the option of cancelling the contract or of taking delivery on a scale of allowances appended to the contract. There appeared to be some conflict of opinion as to the percentage which should be allowed, and at their meeting held on the 5th September, the General Committee had decided to recommend to the Assam and Cachar Branches that a blank be left where the word "ten per cent" stand; thus leaving it open for the buyer and the seller in each transaction to come to a mutual arrangement on the point. This had accordingly been done, and a reply dated 13th September had been received from the Chairman of the Cachar Branch approving of the suggestion. The Committee had also received information through the Hon. Mr. Buckingham, that the Committee of the Assam Branch, after having submitted the point to their members, also supported the proposal.

In these circumstances the General Committee decided to reprint the contract form making the change in question; and to re-issue it with a covering letter to the members of the Association. —*Planter*, Jan. 27th.

THE RUBBER PLANTING INTEREST.

To the Editor of the *India Rubber World*: It may be a matter of some interest to your readers to know that an association has been formed in Chicago for the pupose of planting about 500,000 rubber trees on the isthmus of Tehuantepec, in the Ubero district. Incidentally, during the time required for the rubber trees to mature, it is expected that an income will be derived from cattle grazing and the growing of sugar cane. The new company is known as the Commonwealth Mexican Plantation Association. It has not been incorporated, and is operated purely on a commercial basis.

Mr. Riddle personally has had planted about 200,000 rubber trees on his private estate of La Pomona, on the isthmus of Tehuantepec.

R. P. PROBASCO.

Chicago, December 19, 1899.

THE RUBBER PROSPECT IN CUBA.

To the Editor of the *India Rubber World*: I have been much interested in an article in your journal on India-rubber in Cuba, and have sent a copy to my partner, in Manila, who will, I am sure, be equally interested in the possibility of growing rubber in the new American colonies. In a few months, in connection with some others, I hope to go into the business of planting rubber, and will thank you for some information. Would you advise planting Pará rubber or *Manihot Glaziovii* in Cuba? What is land suitable for rubber, worth in Cuba and Puerto Rico? Also what is labor worth in those islands; and what would be the probable cost of putting up necessary cheap buildings, etc.? W. W. B.

San Francisco, December 15, 1899.

[There are as yet no data available regarding the subject above referred to, which can be quoted for the guidance of intending rubber planters, beyond the fact that most attempts made hitherto to introduce the Pará rubber tree beyond its natural habitat have been unsuccessful; besides the tree requires much longer to mature than the *Castilloa elastica*, of Central America, which thrives naturally under conditions of soil and climate more nearly allied to those of Cuba and the Philippines than of the Amazon valley.—THE EDITOR.]

NOTES ON PLANTING IN MEXICO.

The Missouri Coffee and Rubber Company., capitalised at $150,000, was incorporated under the laws of Illinois, November 13, for the purpose of acquiring what is known as the "Crittenden tract," on the isthums of Tehuantepec, containing nearly 1100 acres and said to embrace some of the best rubber and coffee land in Mexico. The transfer of the estate took place November 27, it being understood that payment for the property was made in full.—*India Rubber World*, Jan. 1.

A FRENCH SCIENTIST.

Amongst recent arrivals in Ceylon is M. Emile Deschamps, an eminent French scientist, who after an interval of nearly ten years is now travelling eastwards once more, partly in the interests of commerce and partly with a view to further scientific investigations; as Monsieur Deschamps said to us in a brief conversation with us the other day "Quand on a commencé, on ne laisse jamais la science." In 1892 M. Deschamps brought out a handsome volume, *Au Pays des Veddas*, published by the "Société d' Editions Scientifiques" at Paris and illustrated by 116 reproductions of photographs taken and sketches made by the author, as well as an original map showing the route taken by him in this isle. The writer went far afield and, beside making himself fully acquainted with all that most visitors see in the island, pursued special ethnological studies among the country Sinhalese, the Veddahs and the Rodiyas. M. Deschamps' work bears marks of close and minute observation and no mean literary gifts. Our visitor spends a fortnight in Ceylon and then proceeds to Madras, before travelling further in India.

TRAVANCORE TEA SALES.

Average 8·15d. January 19th.

Garden.	Total. Quantity.	Aver. Price.	Bro. Or. Pek. or Flowery Pekoe. Quantity.	Bro. Or. Pek. or Flowery Pekoe. Price.	Pekoe and Unassorted. Quantity.	Pekoe and Unassorted. Price.	Bro. Pekoe. Quantity.	Bro. Pekoe. Price.	Pekoe Sou. Quantity.	Pekoe Sou. Price.	Broken and Souchong. Quantity.	Broken and Souchong. Price.	Fannings, Dust, and Various. Quantity.	Fannings, Dust, and Various. Price.
Travancore ...	1619	6·95												
Arienkow ...	30	6½	—	—	24	6½	—	—	5	6¼	—	—	1	5½
Ashley ...	60	6¾	—	—	36	6¾	24	7	—	—	—	—	—	—
Aichencoil ...	154½c	6¾	56½c	6¾ 7¾	47½c	6¾	—	—	43½c	6½	3½c	5½	5½c	6
Balamore ...	140½c	6½	—	—	104½c	6½	29½c	6¾	—	—	6½c	6¼	c	5½
Corrimony ...	240½c	6¾	—	—	178½c	6½6¾	53½c	7½	—	—	5½c	6	c	5¾
Ellangy ...	108	6¾	—	—	47	6¾	22	7½	31	6½	1	5¾	7	5½6½
Fairfield ...	82	7½	20	8	25	7	24	8¼	13	6¾	—	—	—	—
Invercauld ...	69 p	6¾	—	—	28	6½	24	7¼	15	6½	—	—	2½c	5¾
Kanan Dev Hill M	221½c	7½	58½c	7¾ †7¾	31½c	7¼	46½c	9¼	30½c	7	1½c	7¾	55½c	6 †7
Riviera ...	40 p	6½	—	—	21	6½	10	6¾	—	—	3	6¼	6½c	5½
Seafield ...	150½c	7¼	—	—	99½c	6¾ 7	49½c	8	—	—	1½c	6¼	1½c	5½
Travan T Est B M	211 p	7	—	—	65	†6½	124	7 7½	—	—	—	—	22½c	6
W ..	14½c	7	—	—	14½c	7	—	—	—	—	—	—	—	—
Wallardi ...	100	7	—	—	42	6¾	44	7½	3	6½	2	6½	9	6½

MANILA HEMP.—The price of Manila hemp ha gone up 400 per cent. since the Spanish American War. What about the chances of growing this fibre in the Native States? There would money in it.—*Singapore Free Press.*

PROFESSOR KOEBELE:

WHO INTRODUCED "LADY-BIRD" BEETLES TO ERADICATE FUNGI FROM CALIFORNIAN ORANGE TREES.

There arrived by the ss. "Friedrich der Grosse" last evening Mr. A. Koebele, a Professor of Entomology, who has lived in America, but has for the last five years been under the Government of Hawaii, studying the beneficial and injurious insects found in that country Questioned by an interviewer the other day, Mr. Koebele stated his stay in Ceylon would be only a fortnight as he hopes to proceed to Java by the next steamer. He has no intention of studying insect life in this colony, but his visit is in another way of interest to all connected with our tea industry as he has brought from Hawaii about a dozen varieties of insects, which he hopes may counteract the evil influences of the green scale. These he is to hand over to Mr. Green. Mr. Koebele will, however, indulge in no prophesy as to the result which will attend this effort, which at present he regards in the light of an interesting experiment. Indeed at the time of speaking he could not tell whether the insects had survived the voyage and for all he knew might be now quite useless.

During his stay here Mr. Koebele hopes to visit Peradeniya Gardens to obtain some seeds or plants. Mr. Koebele gives a glowing account of the prospects of Hawaii, especially of the planting industry, which has been attended with much success by Europeans, Americans and Japanese. Coffee occupies the first place and is very fine, there being fortunately no insects to trouble the growers, while the prices obtained are good. The same remarks apply also to sugar, which is doing well. The Government of the Americans is good and the natives are rapidly becoming accustomed to western civilization.

Mr. Koebele has spent some time in Australia, collecting insects for fruit-growers in California. Asked how that country compared with Australia as regards fruit, he said the American fruit was of better quality, as the great difficulty in Australia was the lack of water.

This is not Mr. Koebele's first visit to our colony, as he had been here five years ago and he still retains pleasant recollections of what he saw and learnt on several of our tea estates.

THE TEA TRADE SECTION OF THE MINCING LANE WAR FUND.

[TO EDITOR OF THE "HOME AND COLONIAL MAIL."]

SIR, Some short time back you were kind enough to publish a list of some of the contributors to the Tea Trade Section of the Mincing Lane branch of the Mansion House Transvaal War Fund.

Shortly after the publication of that list the Mincing Lane branch of the fund was closed, but as certain companies appeared only to be awaiting the meeting of their boards before contributing, Mr. F S Long. Mr John Lloyd and myself agreed to continue to receive donations, with the result as shown in the list sent herewith,

It does not now appear likely that any more subscriptions will come in from the appeal already made, and therefore we intend closing our list. There were a few companies which did not respond to our appeal, the reason given in nearly all cases being that the directors did not see their way to voting the company's funds to such a purpose. However, with the excellent example set by the forty-one limited liability tea producing companies who have already contributed, it is to be hoped that these remaining companies will respond doubly should any opportunity for so doing occur to them.

Again thanking you for the kind assistance you have given me in the past in making this matter public in quarters where it was most needed.—I am. Yours faithfully,

—*H. & C. Mail*, Jan. 19. W. T. WILSON.

PRODUCE AND PLANTING.

TEA AND THE REVENUE.—Tea is the only import commodity of great consequence that brings a substantial payment into the Imperial Exchequer, and for the past twelve months it was credited with £4,042,680, as contrasted with £3,923,568 and £3,856,663 in the years 1898 and 1897. The duty imposed on coffee earned £187,859, which was more than heretofore, when it averaged only £174,750; and, whilst that derived from cocoa was slightly on the wane at £189,322, the Customs impost on chicory was confined to £52,042, which was a smaller sum than that raised in either 1897 or 1898.

PRODIGIOUS.—It is interesting to note that the Mazawattee Tea Company, Limited, have paid to Her Majesty's Customs the sum of £85,862 8s. 8d., representing over 5,000,000 pounds of tea. Until some rival concern goes one better, if it can, this announcement serves as a free advertisement to the company named, as it is able to state that the sum mentioned represents the largest duty payment and clearance from bond in the history of the tea trade, &c.

MINCING LANE AND THE WAR FUND.—As will be seen from a letter from Mr. W T Wilson, (Messrs. Gow Wilson, and Stanton) which appears elsewhere, the Tea Trade Section of the Mincing Lane branch of the Mansion House War Fund has now been closed. In the list which we gave on December 1 last, 14 tea companies were included, the amount subscribed being £164 5s. The supplementary list which we now give on page ii. includes 27 companies, the amount subscribed being £310, thus showing a total of 41 companies and £474 5s. This response on the part of directors of tea companies is highly gratifying, but it may be hoped, as pointed out in Mr. Wilson's letter, that, should a continuance of the war necessitate a further appeal, the few companies who have not already contributed may see their way to respond doubly.

TEA AND PAPER.—At Newcastle Police Court, on Friday, judgment was given on a charge against the Bombay Tea Company, with which Messrs. Brooke, Bond and Co. have some connection, of having offended against the provisions of the Merchandise Marks Act by selling goods with a false trade description. The allegation was that although the packets of tea sold were of the weights represented when wrappers were included, the actual weight of tea was less. The chairman, Mr. W. R. Plummer, in giving judgment, said it was contended on the part of the prosecution that the mere handing over of the packets of tea to Langley, who had asked for two half-pounds of tea, was a tacit admission by the seller that each packet contained a half-pound of tea, and that, as the packets in fact contained less, consequently there had been an infringement of the Act. The Court

were unable to adopt this contention, and dismissed the information. Mr. Clark applied for costs on behalf of the Bombay Tea Company. Langley, he said, was a purely nominal prosecutor. Mr. Ward on the other side, had practically admitted that the prosecution was by a rival firm. The Bench granted three guineas costs and agreed to state a case.—*H. & C. Mail*, Jan. 19.

SCIENCE AND SOIL CULTIVATION.

THE DIRECT ASSIMILATION OF CARBOHYDRATES BY PLANTS.

Up to within very recent times a firm line of demarcation in the vegetable kingdom has been drawn between the higher or green plants which contain chlorophyll, and the lower or non-chlorophyll-containing plants. By means of their chlorophyll apparatus, the higher plants absorb from the sun's rays energy which enables them to decompose water and the carbon dioxide of the atmosphere into their elements, from which a fairly simple chemical substance is first constructed; and then, by a progressive series of reactions, the highly elaborate and complex materials, such as starch, gums, oils, tannins and various sugars, which are easily identified as plant-constituents. The first product is usually held to be formic aldehyde, though it has not yet been identified in the plant itself as such. Many of the complex substances, however, have been artificially prepared from formic-aldehyde by the skill of the chemist in his laboratory, so that the indirect evidence is fairly conclusive, and the theory will probably be held good until actually disproved. The lower plants, however, being without chlorophyll, are obliged to make use of complex substances already elaborated. The fungi, for example, possess a destructive energy which enables them to break down for their own use, such substances as sugar, bread, wood, leather and other organic materials upon which they are commonly found growing. These are thoroughly established views. Thus in a recent *resume* of the subject of plant assimilation entitled, "The origin and formation of organic matter in plants," which was republished in the *Journal* of the Royal Agricultural Society as late as June last, a careful and detailed account of this mode of carbon assimilation is set forth. Moreover, it is the only method which the writer considers it necessary to refer to, although he deals very fully with the latest work that has been done on the allied subject of the fixation and assimilation of atmospheric nitrogen by certain families of green plants.

Evidence is now gradually accumulating, however, that this is by no means the whole truth on the subject of carbon assimilation. Since the year 1886, when the work of Hellriegel and Willfarth and others demonstrated the extremely important part played by micro-organisms in the metabolism of leguminous plants, lines of investigation have been opened up that have shed much light on the formation of carbonaceous compounds. The final result towards which these experiments point is the possibility of green plants being able to assimilate, directly through their roots food materials that already contain complex carbon-compounds. It is only possible here to indicate the links in the chain of argument.

Winogradsky noticed that a certain lower plant, *Clostridium Pasteurianum*, was able to fix nitrogen in direct proportion to the amount of sugar supplied to it in the nutrient media. This was also found to be partly true of some common moulds, such as *Aspergillus niger* and *Penicillium Glaucum*. Mazé found that micro-organisms from a leguminous root-nodule, grown on nutritive material prepared from an infusion of haricot bean, are able to fix nitrogen when 2 per cent of sugar is added. Bouilhac has found that *Nostoc*, a green alga, in the presence of soil bacteria, fixes nitrogen in the absence of organic matter; it is true, but the yield is increased four-fold when a dilute solution of glucose is supplied, and under these conditions the organism can even grow in the dark, and form chlorophyll. Up to this point it would seem that the fixation of nitrogen is clearly connected with the presence of a carbohydrate, either specially added or present in the tissues of an associated plant, or else, to remove the cause a step further, with the presence of organisms capable of manufacturing suitable carbohydrates. Acting on the suggestion that the vigorous assimilation of nitrogen by the bacteria of leguminous root-nodules, may be due to the carbohydrates present in the legume itself, Golding has carried out pot-experiments on the effect of supplying glucose to bean, lucerne, and clover plants, and finds that a marked increase in growth is produced thereby. Further, Laurent has shown that seedling plants, such as maize, can grow, increase in weight, and form starch in the sterile solutions and in the absence of carbonic anhydride when glucose is supplied to their roots. Finally, Mazé again working with sterile water cultures, shows that vetches can be grown in the dark, at the expense only of glucose supplied to their roots. It is true that the green plants employed in these experiments belong to botanical orders that most clearly exhibit the phenomenon of nitrogen fixation through the agency of associated bacteria. Whether plants not distinguished by this property can be made to assimilate carbohydrates directly is the subject of further experiments at the present time. Should this prove possible, then a practical issue, quite apart from the extreme theoretical value of the result, may be foreseen. Sugar and other carbohydrates, though prohibited by their cost for manurial purposes on an agricultural scale, might be valuable agents for a special purpose, such as, for instance, the production of fruit, flowers and vegetables under glass and with a minimum of sunlight, at periods when they are usually obtained only with extreme difficulty.

There is also evidence in another direction that the chlorophyll theory does not explain all the facts of carbon assimilation and plant-energy. Thus, Green has published experiments from which he draws the conclusion that there exists in plants a power of absorbing and utilizing the radiant energy of light, sometimes to a considerable extent without the presence of a chlorophyll apparatus.—*Imperial Institute Journal.*

PLUMBAGO LEASES.—The new system of leasing Crown lands with plumbago seems to be working well so far as the natives are concerned. They are keen to compete for such land; and at public auction, the lease for ten years of land holding plumbago is often sold now-a-days as high as R1,000 per acre per annum! The purchaser has at once to deposit the first year's rent; but there is this proviso in his favour: that he may throw up the lease at any time, provided he has paid that particular year's rent.

CEYLON TEA IN AMERICA.

(*Communicated.*)

I am glad to see some American botanists have recently been on a visit to Ceylon, and have no doubt they will have seen much that was interesting and instructive, particularly in the matter of tea, for there can e no doubt they sadly stand in need of such information. Notwithstanding, the £57,000 or so Ceylon has spent in trying to teach our cousins it must be acknowledged our Yankee campaign has not been a success. The funny advertisements, after the style of Mother Seigel or Warner, have not been taken seriously to heart. Indeed, I understand, they have done more harm than good, and I hope Ceylon with so many real claims upon it, will soon see the wisdom of discontinuing this costly and worse than useless fad and waste. If the intrinsic merits of the article are not sufficient to recommend it and push it, as they ultimately did in Australia and elsewhere, no amount of blatant advertising will do it. Of the need of more solid information on the subject, I have been forcibly reminded by perusing a paper in one of their scientific journals by a leading savant, in which paper he tells us that the world's yearly consumption of tea is 3,000,000,000,000 lb. which means say 2,000 lb. per head for every man, woman and child in the wide world! Whereas the editor of the *Tropical Agriculturist* has evidently been under the impression that the world's yield of tea was little more than 1,100 millions annually, and the consumption from a few ounces to 10 lb. per caput.

Again, I had no conception of the dangerous nature of the article till I read this:—"In a pound of tea there are 224 grains of poison, or enough to kill 45 rabbits." What puzzles me is the recollection that I used to feed my rabbits on tea leaves—theine, tannin, and all. The rabbits got fat on the leaves, my children got fat on the rabbits, and no one was a bit the worse! Altogether, this Yankee "information for the people" seems so extraordinary and incredible, that I cut out the article and send it to you as a curiosity, worthy of a place in your Museum, or say your "T.A." as a warning to others.

TEA AND COFFEE AND THEIR EFFECTS UPON THE BODY, BY W. H. RILEY, M.D.

Tea is one of the great articles of commerce, the estimated annual consumption being three billion pounds. It is a shrub native to China, but is now grown in India and other tropical countries. The tea-shrub, in a wild state, grows to a height of twenty to thirty feet, but is limited in cultivation to five or six feet, with numerous branches, and evergreen leaves, in the axils of which are to be seen the large, white, fragrant flowers. The leaves, though evergreen, are picked only at certain seasons. The first tender leaves of early spring are gathered for the finest young hyson. The later leaves give so-called inferior qualities of tea. After gathering, the leaves are first roasted in such a way as to produce variety in flavor and odor, and then treated to give different colors. For green tea, the leaves are roasted immediately after gathering, rolled with the hands, then re-roasted. For black tea, the leaves are first exposed to the atmosphere for a few hours, then roasted a few minutes, rolled in the hands, exposed to the air again for a few hours and finally slowly dried over charcoal fires until the black color is well brought out. After this preparation, the tea is ready to ship.

The use of tea as a beverage was introduced into China from Corea, about the fourth century after Christ. From thence it extended to Japan about the ninth century, finding its way into Europe in the sixteenth century, where it met with great favor, and is to-day the favorite drink in England, Russia, and Holland.

We have already noticed that the chemical analysis reveals as a principal ingredient in both tea and coffee the narcotic alkaloid thein, or caffein. By experiments upon animals with this narcotic, it is found to be a deadly poison. Taken in a concentrated form, death speedily ensues. One seventh of a grain is sufficient to kill a frog, and five grains will kill a rabbit. In a pound of tea there are 224 grains of this poison, or enough to kill forty-five rabbits. Seven or eight grains will cause most distressing symptoms in a strong man, and a slightly larger dose causes highly dangerous symptoms. Dr. Smith, a prominent English physician, in experimenting with the effects of coffee, took, with his assistant, an infusion of two ounces of coffee; they both fell to the floor unconscious, and remained in that condition for several hours. We quote the following incident as illustrative [of the effect of tea:—

"A prominent official in the British army, now doing service in Africa, recently lost his horse in a manner that is both singular and instructive. A cook left a few pounds of tea in the sack which had contained it, which was filled with corn by a Kafir groom who knew nothing of the presence of the tea. Upon serving out the corn to a group of horses, of course the last one received the larger share of the tea, which was eaten with the corn. The result is thus described:—

"'The animal plunged and kicked, and ran backward, at intervals galloping madly around, finally falling into a donga, where it lay dashing its head upon the rocks, and was despatched by an assegai thrust through the heart. The post-mortem appearances indicated extreme cerebral congestion.'"

The action of tea and coffee as ordinarily used is not as rapid and marked in its injurious effects as seen in the above instance, as the quantity used is not so great, and the system also becomes accustomed to the narcotic; but serious derangements of the digestive and nervous system result therefrom.

"The relief obtained from tea and coffee is sudden, before the stomach has time to digest them. This shows that what the users of these stimulants call strength is only received by exciting the nerves of the stomach which convey the irritation to the brain; and this in turn is aroused to impart increased action to the heart and short-lived energy to the entire system. This is but false strength, that we are the worse off for having. They do not give a particle of natural strength." Though there is greater ease in making exertion, a greater sense of exhaustion follows than when the drink is not taken. "Under the influence of these poisons the nervous system is excited, and in some cases, for the time being, the intellect seems to be invigorated and the imagination more vivid. Because the stimulants produce for the time being, such agreeable results, many conclude that they are actually beneficial, and so continue their use. But there is always a reaction. The nervous system, having been unduly excited, borrows power for present uses from its future resources of strength. All this temporary invigoration of the system is followed by depression." The head-ache removed by a cup of tea invariably returns, and the continued use of tea serves only to aggravate and increase the difficulty, of which it is frequently the source. Those to whom tea and coffee take the place of other food are generally found with hollow cheeks and

thin faces, indicating the lack of nourishment from these beverages. And who is more tremulous than the old lady who regularly takes tea to quiet her nerves?

We see then that seeming good derived from these drinks is only the deceptive influence of this narcotic poison. We may now notice specifically the effects upon various bodily organs and functions.

First, the digestive system. One very important part in the digestion of food is the action of the saliva upon starch, converting it into a kind of sugar called maltose, whereby it is readily absorbed and assimilated. This action of the saliva upon a large per cent. of our food is prevented by tea and coffee, even in small quantities, thus producing one of the commonest forms of indigestion, viz., starch digestion. The constituent in saliva which changes starch into maltose is known as *ptyalin*. This seems to be paralyzed in its action by the presence of the poisonous thein, or caffein. The action of the saliva is not confined to the mouth, but continues in the stomach until the contents of the stomach become acid in character by the introduction of the gastric juice. Hence, as the tea or coffee is present in the stomach, the action of the saliva is interfered with here also.

The pepsin in the gastric juice of the stomach is one of the principal factors in the digestion of albuminous substances, such as meat, boiled eggs, gluten, etc. This very important agent is precipitated by the tannin in tea and coffee, thus seriously interfering with the work of the stomach. In experiments made for the purpose of determining the influence of tea and coffee upon digestion, it has been found that in a case where, under ordinary conditions, there was ninety-four per cent. of albuminous digestion upon the addition of tea, the amount of digestion was only sixty-six per cent., and with coffee, sixty-one per cent. When distilled water was added instead, there was no change in the amount of digestive work done, so that it is evident that the change was not due to the simple dilution of the digestive fluids.

Then again, the use of these beverages is injurious in taking into the stomach too large a quantity of liquid food. The effect of this is to check the secretion of saliva, and to delay the action and weaken the digestive qualities of the gastric juice. If the drink is hot, it tends to relax and weaken the stomach; if cold, it checks digestion by cooling he contents of the stomach down to a temperature at which the work of digestion cannot proceed. Hence we see that the drinking of tea and coffee is one of the causes of the dyspepsia evrywhere prevalent.

Upon the nervous system a very injurious effect is had. Upon the introduction of tea or coffee into the stomach, and the absorption of the the in the drug is at once recognized by the system as a poison, a dangerous intruder, which must be expelled at once. The whole nervous system is aroused to energetic work, stimulating the heart, lungs, and kidneys to increased activity in order to get rid of the poison. Although the nerves may have been "run down," as we say, they are now so braced up that the person supposes that he is being greatly benefited; but after this exertion, the nerves are weaker than before. It is like a man, weary with his day's labor, plodding his way homeward. He is so tired that he can hardly place one foot before the other; but as he comes in sight of his home, he sees his dwelling in flames, or a child in danger. The sense of danger causes him to forget his weariness, and he works with energy until the danger is over; but afterward comes double exhaustion. He is more tired than at first, though for a time he had no sense of fatigue. So it is when the nerves are stimulated to undue action by the presence of this poison. The relief is only temporary, while future years are sure to bring a harvest of suffering.

A SUGAR GROWING INDUSTRY FOR CEYLON.

VISIT OF MR. TURNER OF THE STRAITS SUGAR COMPANY, LIMITED.

It is possible that we may have to date a new departure in the agricultural industry of the island from the visit of Mr. J. Turner, of Penang, which has just closed. Mr. Turner was not able to do as much as he had planned in the only fortnight he could spare; because he landed suffering from the effects of an attack of influenza caught after leaving Marseilles. Still, through the courtesy of H.E. the Governor in granting him letters to several of the Provincial Agents, through calling on the Colonial Secretary—who knew and esteemed Mr. Turner's superiors during the latter's sixteen years in Demerara—through examining plans and maps with the Surveyor-General and getting the benefit of that energetic officer's acquaintance with the country, as also through having the advantage of a very instructive letter from Mr. Ievers and opinions from Mr. Fisher and others,—Mr. Turner was able to decide on a course of action before leaving our shores. A visit to Anuradhapura, even though he only gave it a limited number of hours, convinced Mr. Turner (shrewd Scottish planter and agriculturist as he is) that not in this locality, nor farther North, must he look for sugar land: but rather towards the East. Mr. Turner came to this conclusion from what he observed on the coach journey between Dambulla and the North-Central capital, so that he saw no need to linger there or to penetrate into the Northern Wanni. As a matter of fact, this opinion coincides with that offered by Mr. Ievers and Mr. F. H. Grinlinton. The best soil for sugar is to be found near the banks of the Mahaweliganga below the Minneriya tank or in the neighbourhood of the great tanks north-west of Trincomalee referred to in the Survey Reports of last year. Of course, the soil has to be practically examined and tested, the climate (with reference to monsoon floods especially) and means of transport investigated; and Mr. Turner is by no means the man to hurry to a conclusion where so much is at stake. But he saw and learned enough,—he was especially pleased to learn how mangroves flourished in the districts recommended, because it has passed into a proverb that where mangroves luxuriate, sugar-cane will succeed,—to feel justified on Saturday in sending in a letter to Government asking on what terms and conditions would his Company get a lease of 10,000 to 20,000 acres of land in one or other of two districts named, provided after further inspection, the selection proved suitable. For less than ten thousand acres, the Straits Sugar Company (which has its headquarters at 110, Cannon Street, London) would not care to come to Ceylon; and as the opening up of so large an expanse of country means a heavy local expenditure, apart from some £50,000 on a suitable factory and machinery, it is evident that the terms offered to this pioneer undertaking must be specially attractive. Of course, it will be for the Government, on the other hand, to take every precaution to guard against a merely temporary speculative enterprise, or a breach of

the conditions imposed; to ask, in fact, for such guarantees as may ensure good faith. The Ceylon Government has had a good deal of experience now of land "grants" and "leases," and must be well able to protect the Crown and the public. But, in the present instance, we confess we can see no room for suspicion or doubt. Sir John Ramsden, Bart., and his fellow-directors are known to be wealthy and enterprising capitalists, and they have ample reason to trust the judgment of their Agent and Manager, Mr. Turner, with his ten years' experience of Penang, in addition to a long spell in British Guiana. Should the answer of the Ceylon authorities to Mr. Turner's letter of enquiry be satisfactory, it is his intention to send over a competent member of his staff (they number 38 Europeans in all) during March, to traverse the Tamankaduwa and Trincomalee districts examine the soil, drainage, river—if navigable, &c., and make all other possible observations to help to a decision. Mr. Turner himself would then follow in August—the driest, hottest month of the year in the North-East—in order to see for himself how matters look at their worst. A final decision will then be arrived at, and the land be taken up, or else the scheme be abandoned.

The revival of profitable Sugar Cultivation in British Dependencies of late years is very noteworthy. Even in British Guiana, and yet there are many plantations abandoned that were once flourishing, there are others still paying their way, although the produce realizes now only £10, in place of £35, a ton. The latter marks the day when it used to be said that "a sugar estate maintained six carriages and pairs" of merchants and agents, apart from proprietor and manager! Mr. Turner passed through the days of adversity when the screw was applied all round salaries cut down, and a course of rigid economy adopted. And looking around him while in Ceylon, he told us he could not help thinking that, judging by the prevalent tone, there was still room for economy, for closer attention to supervision and to outgoings in all their detail, in regard to work on, at least, some of our tea plantations. In Penang, as we have already mentioned, it is reckoned that the return from two tons of sugar per acre is as good as from estates yielding three or four tons in Java. Of course, one great attraction to his Company, in thinking of taking up land in Ceylon, would be a cheap and abundant labour supply. We have pointed out to him, however, that our tea planters would be up in arms if their cooly districts were interfered with; but that he ought to have the full support of both the Ceylon and Indian Governments, if he applied for the transfer of a large number of labourers from points adjacent to the famine districts in India, to a country and climate so like their own as that of North-East Ceylon. He and his staff would also be very glad to utilise any local labour of Sinhalese or Moormen, giving them land and advances on easy terms, in order to grow canes in their gardens, for which there would be a ready purchase at the Central Factory. We have said enough to show that Mr. Turner and his Company are in earnest in approaching the Ceylon Government; that there is much reason for encouraging any well-considered proposal to open up unoccupied territory in North-East Ceylon; and that the addition of successful sugar-growing on a large scale to our list of agricultural industries, could not fail to benefit the native community and general revenue. Fortunately, the Governor has at this juncture an adviser in Sir Edward Walker who is very familiar with the subject of Sugar Cultivation in the West Indies and Guiana, and who will be able, therefore, to see that Mr. Turner and his Company are dealt with prudently as well as generously and with a due regard to all the interests at stake.

INDIAN COMMON TEAS.

HOW TO PUSH A SALE IN THE COUNTRY.

The field which is open to pushing our common Indian teas throughout the country is one which might engage the attention of the Tea Association. It is many years since we advocated this, and as yet no steps have been taken beyond the Indian Snpply Tea Company. The progress of the Company has been but slow, but last year's report reads as if it was coming on a bit now, and we hope it may. There are of course a great many difficulties to face, but we believe, if vigorously pushed, there is money in it. A few years ago, we suggested asking the different inland river companies to allow their staff to undertake the sale on the steamers on commission, and we have do doubt but that they could be approached with successs on the subject, and we commend the idea to the Indian Tea Supply Company. It seems rather a disgrace to our mercantile push that nothing but Lipton's Ceylon tea can be obtained to drink on board those inland steamers. Here are the tea-planters, almost the backbone of the India General Steam Navigation and River Steam Navigation Companies, being ousted in the matter of supplying tea to drink at their very doors. Who is accountable for this? In addition to this, why are not teashops opened at the gates of the large jute mills? The jute coolies is by no means above wanting his morning cup of tea, as might be seen by any one walking out in the morning in the vicinity of our very oldest jute factories; but it is not general, although it ought to be. We suppose it is the old story, what is so many peoples' business is no one's in particular. On our great Indian railways we understand a good deal of revenue is derived from selling the right to deal in sweetmeats, *pan*, &c. Why should not tea be treated in the same way? How much better for the traveller to have a cup of tea in the hot weather to quench the thirst than water, which, to say the least, looks far from clean, and the look of which, at any rate, viewed from an European standard, is revolting. We feel certain that many an outbreak of cholera would be prevented were the system put on its trial. Water, however dirty, is looked upon as safe to drink if it has been boiled, and we think that our idea might commend itself to a Government striving after sanitation. The amount of tea that is annually stolen from factories (the amount it is difficult even to estimate) shows that the native is by no means avers to the cherry cup, and if this is the case, how much more so is it in the North-West, Tirhoot, and Behar. The writer of this in the Behar Famine of 1875, had occasion to tra-

vel through those districts, and on several occasions was obliged to fall back upon the native bazars for tea and never had any difficulty in getting it, but it was invariably Chinese, no Indian was obtainable. The snuff, for such it invariably looked like was the commonest of dust and was being retailed at about Re. 1-4 to Re. 1-8 per pound. The packages was wooden, and weighed about an ounce and was sold at from 3 to 5 pice; and we are not presuming too much, we think, when we say that judging from the Customs entries, the same trade is still being carried on increasingly, and we think we need hardly add profitably. Does any Indian tea find its way into Ceylon? We don't think so, but a good deal of Ceylon finds its away into India. Another year or two will see a heavy strain on the London market, not so much from the increasing area in Assam and the Dooars, as extensions have received a big check there; but, from all we can gather, there must be a very large amonnt to deal with in the near future from Travancore, or, perhaps, a better term would be Southern India, and, if we could only lighten London of 6 or 7 millions of the lower class of tea during the next year or two, it would tend greatly to strengthen the market, and there is, we hold, no reason why this should not be done; but energetic measures must be introduced. Tea must be sold by the cup at a cheap rate, and small packets done up attractively must be alongside to tempt the drinker to invest. Shops should be established in the great fairs, at places such as Benares, Lucknow, Agra, and Cawnpore; and the Brahmin should be enlisted to conduct these. Without some such vigorous methods the heathen Chinee will still continue to hold his own successfully. A retail trado may not fall in with the views of our large Calcutta mercantile community, but whichever pays must rule the roost; and we have no hesitation in saying, if the native is to be taught how to drink tea, and to pay for it, vigorous measures must be adopted, and, if these are introduced, the return on capital invested would be much greater than in some more high flown speculation. The trade would be a cash one, and there would be, or rather should be, no bad debts, and no expensive establishment to keep up for accounts. In fact, everything should be paid by commission, and worked on the cheapest of lnes, and if this were done there is no need tofear the result.—*Indian Planter's Gazette.*

SOIL EXHAUSTION

BY J. L. THOMSON, TRAVELLING AGRICULTURAL INSTRUCTOR.

All branches of Agriculture in Australia will have greatly advanced when the farmer shall have learned to treat the soil as he would a bank account. No one expects to draw money from a bank continually without paying in anything, for the time would come when the cashier would write across the face of a cheque "No Funds," and it would be returned to the drawer dishonoured. And yet it is just as unreasonable to expect the soil to keep on, year after year, satisfy the heavy drafts that the farmer makes upon it. There is this diference, however, between the soil and a bank. The bank gives no notice of the progressive exhaustion of the deposit. So long as a cheque or draft does not exceed the amount of the credit, the cashier pays it without a word of warning. It is not his business to caution the depositors. The soil on the other hand warns the cultivator of its exhaustion by a decline, in the yield. The warning of fertility is plainly shown in the partial failure of crops. In the older wheat-growing areas this lesson is given on the lands long tilled, but still the resort to fertilising is generally postponed. This is largely because the Australian farmer rarely look upon his land as a heritage to be transmitted to his children undiminished in fertility and productiveness. The farm in many parts of Australia is not commonly regarded as a permanent home for the family and its descendants, as is done in the old country, but merely as land to be worked for all that can be got out of it, leaving posterity to shift for itself.

This view may be justified from the fact that posterity has done nothing for us. It certainly does appear that Australian posterity, at least in the abstract, will be left to "hustle" so far as this problem of fertilisation is concerned. A very little calculation would show that at prevailing prices for wheat there would be little or no profit in growing it, if the fertility it takes from the soil were to be restored by manuring in any form. So little livo stock is kept on our wheat farms that the purchase of commercial fertilisers would be the only means of restoring the plant-food taken away by the crops.

The cost of such fertilisers is regarded as practically prohibitory, so far as grain-raising is concerned, and so the present exhausting system continues.

The prospect, of course, is rough for the future, but the present attitude in this regard is virtually "let the future take care of itself." There are, however, many comparatively young farmers who will be compelled by the poverty or failure of crops to grapple for themselves with this question of fertilising, for it is one that cannot be put down. It is mere folly to ignore the fact of decline of fertility and pure ignorance to insist that the full productiveness of soil can be kept up without replacing the costly phosphoric acid, potash and nitrogen that are taken away by the crops. The lesson of the situation is for the farmers to turn their attention to other crops than wheat, and to practise some system of rotation. Much improvement may be brought about by dairy-farming in suitable districts with or without irrigation, but no great change is to be looked for until, in one way or another, the large farms are subdivided, and small farming become, general, rather than the exception. The subject has many aspects and is entirely too comprehensive to be discussed adequately in a short article. —From the *Agricultural Gazette* of New South Wales.

COCHIN MARKET.

C. N. OIL.—The European Houses having accepted a few contracts caused prices to harden and rates advanced to R88 to R88·4 per candy at which figures a good business has been done mainly for prompt delivery.

COIR YARN.—Continues unchanged. Advices of the first public sale in the year held in London, on 12th ultimo, were received here by the Overland Mail of the same date and we find the parcels offered changed hands at steady prices.

ROPE YARN.— Ditto.

COIR ROPE.—With larger arrivals prices have somewhat declined in London. Good Anjengo yarn ropes fetched only £20 per ton at the last public sale.

COPRA.—Rassi R52·53 per candy.—*Cochin Argus*, Feb. 3.

COCONUT PLANTING ON N.-W. COAST.

MARAWILA, Feb. 6.

WEATHER AND CROPS.—We, in the North-Western coast of the island, were not favoured with the showers of rain that fell last week in Colombo and even as far north as Negombo. The chilly, dewy mornings and the fiercely hot days indicate a period of drought. This is likely to seriously affect coconut crops as we had a failure of the N.-E. monsoon rains. This is the season of small crops, and, as a consequence, the price of coconuts and copra is rising. The local desiccating mills, however, have not raised their rates for buying coconuts as yet. They will have to do it before long to keep their mills agoing.

FARMERS AND THE ROADS.

The following extracts from an article by a Florida farmer in one of the leading American journals seem to be worthy of consideration :—

It is easily possible for farmers to keep country-roads in a much better condition than most of them are at present. The individual can afford to do road mending on the same principle that he repairs fences and buildings: "It pays me;" and a land-owner ought to feel as much shame, even guilt, before the general public over a mud-hole that can be drained, or over a choked-up sluice along his premises, as he ought over neglected cattle or a display of filth.

It is not necessary to wait for the road-working season to come. The most profitable, common-sense work can be put in a little at a time, if at the right time. Drainage is the beginning and the ending of the whole matter, if roads are to be roads and not sloughs. Watering-troughs and hill-side springs are common causes of standing water, yet it is a very simple matter to direct the water flowing from them in the way it should go. A stone, a loose board, a chunk of soil washed down against the end of the sluice, may choke it up till it is worse than nothing. Five minutes' work would send the water rushing through its proper channel. It is not uncommon to see water following the wheel rut for rods, when a man with half an eye can also see that a mere cut through the rigde at the edge of the road would lead the water into the ditch—perhaps down a bank.

Dropping into a bad hole or soft place a few superfluous stones now and then to keep the water out would work a double headed blessing to all passing that way. Heaving out a few stubborn old stones from the track would work a detriment to the blacksmith and waggon maker perhaps, but a big saving to the farmer. If all such patching were thus well kept up, the yearly toll of public service would count more and more toward the good roads of which all are dreaming and talking. This view of the subject is no more than one feature of practical farming, intelligent economy, a mere looking out for number one, no matter how many others are also benefited.—From the *Agricultural Gazette* of New South Wales.

SALE OF RUBBER FROM THE CHARDUAR PLANTATION IN ASSAM.

The Assam Forest Department sold in London the first produce of the Charduar Rubber Plantation at R2-8-6 per lb. The cost of transport from Tezpur and agent's and sale expenses amounted to R0-3-7 per lb. We were offered in Tezpur R1-14-6 per lb. By sending it direct to the market we profited R0-6-5 per lb. The total net profit was R1-2-6 per lb., but this is of no special interest, as the cost of collection was rendered exceptionally high by inexperience and bad weather.—*Indian Forester.*

PLANTING NOTES.

Rubber Supply Dwindling: Substitutes Used.—The rubber supply of the world is running short, and people are asking where our future tyres are to come from. Happily, there are one or two inventions before the public as a substitute for rubber. The nearest is "velvrill," prepared from semi-dried linseed or castor oil. These oils are treated with nitric acid, forming what is called "nitrolinolein" or "nitroricinolein." This preparation is then mixed with nitrocellulose, of a very low degree of nitration, and the whole worked into a homogeneous mass.—*Daily Chronicle,* Dec. 13.

Some Fruit Crops of 1899 in California.—We have been informed that this Garden of America has produced 5,250,000 lb. of Figs last year, against 4,780,000 lb. in the preceding year. The "Pack" of dried Peaches on the coast is placed at 28,300,000 lb., against 10,960,000 in 1898. The Apricot crop of last year was 7,000,000 lb. compared with 8,240,000 lb. in 1898.—*Gardeners' Chroniecle,* Jan. 20.

Experiments in Manuring.—From a paper on the "Arrangement of Experimental Plots in Gardens," issued by the South-Eastern Agricultural College, Wye, the following are mentioned as being the requisite amounts of manure and the right proportions of their constituent parts: "The quantities required are 2 oz per square yard of nitrate of soda sulphate of ammonia, and kainit; 4 oz. per square yard of basic slag or superphosphate; and 1 lb. per square yard of lime." Of course, many other measures will supply nitrogen and phosphoric acid, but the above are the most convenient.—*Gardeners' Chronicle,* Jan. 20.

Economic Progress in Peru.—Our Correspondent writes on December 9th last from Lima:—With the cessation of internal disturbances there is every reason to hope that Peru will make substantial economic progress in the near future. Industrial enterprise is everywhere increasing, notably so in the direction of the production of sugar, the crop of 1899 being fully 15 per cent greater than that of 1898. A larger area of land is being devoted to cane cultivation, and this means that the production for 1900 and 1901 will be considerably heavier than in the present year. Limited libality companies are now being formed to assist the development of the sugar industry in Peru, and by this means the necessary capital will be obtained for the erection of the required machinery, and the further extension of the cane fields. Small estates will no longer require separate mills in many districts, the principle of establishing central factories for the elaboration of the cane into sugar having been recently adopted in several of the most prominent sugar-producing sections of the Republic. Improved accommodation for the working men on many of the more important plantations is solving the difficult problem of a steady labour supply to a marked degree. Moreover, more energy and a closer attention to work are being shown by the planters than have been the rule in former years. The higher price of copper during the past 12 months has opened up fresh possibilities for the mineral industry of Peru, and the export of copper ore will form a valuable item in the list of Peruvian exports for 1900. The centre of the Peruvian mining industry is at Cerro de Pasco, situated only 65 miles from the Central Railway of Peru, now in the hands of the Peruvian Corporation. Railway communication once finally established between Cerro de Pasco and the seaboard, and adequate transport provided by a re-equipment of the Central Railway with freight wagons and locomotives, means an immense development in the working of copper ores. The cost of constructing the necessary 65 miles of line to open this communication is estimated by competent engineers not to exceed £500,000, and the prospects of traffic over such a railway assure satisfactory returns on the capital invested in the undertaking. Naturally, it is the Peruvian Corporation which should take the initiative in this enterprise, for the reason that the new railway will act as a feeder to the centre line. The corporation, unfortunately, however, are at loggerheads with the Peruvian Government, and make small effort to improve their own position by extending the railway system they now control.—London *Times.*

INDIGO AND SUGAR.

THE connection between the two products may not seem very apparent, especially to those who have not any practical acquaintance with either; but in India attention is being drawn to them as helpful to each other in alternate years. Our interest in the connection is neither academic, nor purely scientific. Though Indigo has never found a place among our varied industries—save for a few scattered experiments in the time of the Dutch and the beginning part of the present century—Sugar attracted considerable attention in the earlier years of British occupation: and it still flourishes on a small, but, we fear, a steadily decreasing scale. We are however, now, entertaining the hope (as shown the other day) that it will yet figure, if not as one of our greatest industries, at least as a considerable one, if the expectation prove well founded, after the promised examination of the land along the Mahaweliganga by experts in March and August next. In India, as our readers are aware, Indigo has for some time been in a bad way, chiefly through the competition of artificial dyes. As in the West Indies, so on the adjacent Continent, the opinion is gaining ground that the planters have the remedy to a great extent in their own hands. They may be helpless, without the aid of the State, to protect themselves against fraudulent imitations of Indigo, but the Government will surely help them, if they only ask it for help, against the false representation of a substitute as Indigo. The security thus gained is not all that is wanted. There will be a market for the artificial dye, even when so described, and even if it be proved inferior to the vegetable product originally known to the trade as Indigo; and so far as the competition goes, the demand for the true Indigo will be lessened. In order to check the fall in prices inevitable from over-production, a lessened output is counselled by a writer to the London *Times*, who advises the planters to agree among themselves to devote only the most suitable portion of their lands to Indigo. The counsel is undoubtedly easier to offer than to follow, but it is not impracticable, and when the alternative is loss, if not ruin, an earnest effort to act up to the advice will be true wisdom. And if the land thus left unoccupied can be put under sugar-cane, as is suggested, there need be no special difficulty in following the advice.

There is, of course, the prejudice against Sugar as an industry often which leaves small profits: but it was shown in recent articles how returns have been almost doubled by judicious cultivation, and the proportion of Sugar has been increased by the choice of good seed. So far as India goes, there is the further protection which legislation has secured by countervailing duties against bounty-fed competition. It is further claimed that the new seedling canes which have been recently introduced into Barbadoes, have proved that profits are realisable from Sugar even at prices considerably lower than those which have been ruling lately. And further, Java is quoted as an illustration of the possibility of combining the cultivation of Sugar with that of Indigo. A botanical expert, reporting to the Belgian Government on the methods adopted in Java, mentions the practice of rotation with the best results by the Java planters who alternate the cane every third year with indigo and rice. It is not by rotation of crops alone that Java is deriving handsome returns from Sugar, It utilizes European science, and pays strict attention to details; and, as we are ourselves organizing an Agricultural Department, there is no reason why Ceylon should be behind any other country in securing adequate results from the soil. This is what we read of Java:—

"Instead of wringing their hands, like the West Indian planters, and crying to the mother-country for aid, the Javans, when the crisis came, set to work to apply German science to their own plantations. The sugar-growers formed themselves into an association for the purpose of the scientific study and development of their own industry. Experimental stations were established, with chemical and biological laboratories attached, and European specialists were engaged at high salaries to superintend the work of these stations. The progress of the experiments was regularly communicated to all the planters throughout the island, by means of a periodical publication, which was also used to describe the latest machinery and to deal with any other matters affecting the industry. The result is that Java has completely recovered from the temporary ruin brought about by low prices, and that her sugar industry is now going ahead by leaps and bounds. If this can be done in Java, why not in India? Java has the disadvantage of being compelled to seek a foreign market for her sugar, and in nearly every instance has to fight her way into that market across a barrier of protective duties. In India there is an immense home market waiting for the capitalist who has the intelligence to produce sugar on European methods."

What is said of India applies, of course, to Ceylon, which imports a very considerable quantity of Sugar.

THE SHEEP OF THE WORLD.

As regards the number of sheep, the following figures showing the number possessed by each country in the latest year, for which returns have been published, are noteworthy:—

Algeria	7,435,000	India British	16,875,000
Argentina	75,000,000	Italy	6,900,000
Australasia	103,000,000	Norway	1,417,000
Austria	3,187,000	Poland	3,755,000
Belgium	236,000,000	Romania	5,002,000
Bulgaria	6,868,000	Russia Europe	44,465,000
Canada	1,690,000	Servia	3,094,000
Cape Good Hope	14,000,000	Spain	13,359,000
Denmark	1,246,000	Sweden	1,298,000
France	21,445,000	Switzerland	272,000
Germany	10,866,000	U. S. A.	37,657,000
Holland	700,000	Uruguay	16,397,000
Hungary	8,122,000		

The great sheep-breeding countries of the world, therefore, so far as these figures show, are Australasia, Argentina, Russia, and the United States. All of these possess more sheep than the United Kingdom, which in 1898 had 31,102,000. But in proportion to area the United Kingdom enormously surpasses them, the four countries mentioned having, of course, immense territories,

The figures, which are given in the Agricultural Returns, shows that the United States cover 2,292,000,000 acres; Australia, 1,974,000,000 acres; Russia in Europe 1,244,000,000 acres; and Agentine, 715,000,000 acres. The United Kingdom, on the other hand, covers only the comparatively insignificant area of 77,000,000 acres.—*Agricultural Gazette*, London.

KANAPEDIWATTIE TEA CO., LTD.

DIRECTORS' REPORT.

The Directors have pleasure n laying before the Shareholders their Report and Accounts f or the year ended 31st December, 1899, which they trust will be found satisfactory. The following figures shewing the crop, cost, and average of the tea for the past three years will be found interesting:—

	Crop in lbs.	Cost in Colombo.	Nett Average.
1897.			
From Estate Leaf ...	122,095	25·88	34·18
From Bought Leaf..	22,095		
Total Crop..	144,190		
1898.			
From Estate Leaf ..	142,267	23·11	32·71
From Bought Leaf..	30,330		
Total Crop..	172,597		
1899.			
From Estate Leaf ..	151,030	21·92	36·16
From Bought Leaf..	38,565		
Total Crop..	189,595		

It may be mentioned that the estate tea alone cost cents. 19·94 lb. laid down in Colombo, which reflects great credit on the Superintendent, Mr. Geo. Christie. The crop was 3,970 lb. short of the estimate, but the yield was 543 lb. per acre which may be considered good, as no allowance has been made for cocoa, cinchona and shade trees planted here and there through the tea.

The net profits for the year amount to R44,779·51, which is equal to 13⅝ per cent on the paid up Capital of the Company as against 12 per cent last year.

Including the sum of R771·24 brought forward from last year, the amount available for distribution is R45,550·39, of which R13,360 has been absorbed by the payment of an interim dividend of 4 per cent for the six months ended 30th June last.

The Directors recommend that the available balance, namely R32,190·39, be apportioned as follows:—

By the payment of a Final Dividend of 6½ per cent, making 10½ per cent for the year	R21,710·00
By placing to Reserve Fund ..	10,000 00
By carrying forward to the next account	480·39
Total..	R32,190·39

It will be noticed that the Reserve Fund will then stand at R25,000.

In terms of the Article of Association, Mr. George Christie retires from the Board of Directors, but, being eligible, offers himself for re-election.

The Auditor, Mr. J. D. Forbes, also offers his services for 1900.

YATADERIA TEA CO., OF CEYLON, LTD.

DIRECTORS REPORT.

The directors have the pleasure to submit the Balance Sheet and Profit and Loss Account for the year ending 31st December, 1899, duly audited.

Including extraneous profit from outside manufacture the profit for the year is R88,477·70, to which must be added R9,850·87 balance from 1898. An Interim Dividend of 12½ per cent, absorbing R23,750, was paid last August, and the Directors propose that a further Dividend at the rate of 12½ per cent and a bonus of 20 per cent., absorbing R61,750, be declared and made payable on the 12th instant, leaving a balance of R12,828·57.

It will be seen that the property representing Capital stands in the Balance Sheet at approximately R197 per acre cultivated, as compared with about R200 in the previous year's accounts, and that the profit is R100·54 per acre in bearing, and 46·56 per cent on the Capital.

The total Tea crop was 572,138 lb. or 17,138 lb. more than the estimated quantity, the latter part of the year having been more favourable. The plucking area was 880 acres, in addition to which the 33 acres of 1897 tea was plucked towards the close of the year. The total quantity of Tea for disposal was 577,214 lb., including 5,076 lb. made from purchased leaf, of which 221,481 lb. were sold locally, averaging 33·68 cents per lb., and 355,733 lb. were shipped to London of which, 99,910 lb. had still to be accounted for; but the average obtained for the 255,823lb. as yet accounted for is 35·75 cents per lb. The cost of the tea delivered to buyers or put on board ship, including all charges, was 18 89 cents per lb., and the nett value realised from sales (a portion being estimated) was 34·77 cents per lb. (being 4 96 of a cent more than for the previous crop.)

The Company's property consisted on the 31st December, 1899, of:—

Acres	Tea Planted in	Yielded in 1899 lb. Tea per Acre.	
172	1885	602	Average yield from 880 acres, 646 lb.
298	1887	538	
100	1888	534	
42	1889	630	
6	1890	813	
52	1891	957	
120	1892	789	
68	1894	844	
37	1895	719	
75	1896	530	
33	1897	111*	
29	1898	not in bearing.	
24	1899	do do.	
966			
22	Acres Cocoa and Factory site.		
10	„ Cardamoms.		
255	„ Forest, &c.		

Total 1,253 Acres as per last report.

* Plucked latter end of season.

The estimate crop for 1900 is 580,000 lb. tea.

Mr. J H Starey retires from the Board, and the shareholders will be requested to elect a Director and also Auditor for the current year.

EXPERIMENTAL MANURING IN VICTORIA.—During the coming season the Victorian Department of Agriculture proposes to make a thorough trial of the value of manures in different parts of the colony. Not only will the recent experiments at St. Arnauld be repeated, but experimental plots will be treated with different manures in all the principal wheat-growing districts of the colony. The Minister of Agriculture states that he proposes to have four sets of fertilising drills at work, under the supervision of Mr. A N Pearson, the Government Agricultural Chemist, and Dr. Howell, and every care will be taken to give full publicity to the experiments. A number of sites have already been secured, and in making purchases of manures now on the market for the purpose of the experiments, the Government would take every precaution to ensure the identity of the buyer being kept a secret. Dr. Howell, who has recently joined the department, is now engaged in making a complete soil survey of the colony, and he is lecturing to farmers in all parts of the colony on manures and manuring and the splendid results to be obtained from the scientific use of fertilisers.—*Sydney Mail*, Jan. 20.

Correspondence.

To the Editor.

NEW METHOD OF HARVESTING RUBBER.

[Letter addressed to the President of the Chamber of Agriculture, by M. Josselme, of Cochin China.]

SIR,—I ventnre to address to you this simple note after reading an article by M. Bourdarie, which appeared on April 20, 1899, in your Review under the title, "The Cultivation of Rubber Plants." . . . . . I wish to reassure M. Bourdarie and those who have the same anxiety regarding the difficulties of harvesting and who consider it requires about one man per day per tree. This statement decided me to make known the simple method I have devised, and which reminds me, though it did not so strike me at first, of the simple process adopted in the "landes" of the Gironde for harvesting the resin. This method, which I showed two years ago to Drs. Yersin and Jacquet in Assam, while cutting into some stems of *Manihot Glaziovii*, saves all manipulation and allows of one single person to make at the same time the harvest of a number of trees. This is the way:—Small bags, or rather little pockets, of calico of the poorest quality and provided beforehand with two furniture brads, or any other means of fixing them, are rapidly affixed in the evening, the side next the tree being drawn tight. The next morning at dawn, or at the time of fixing the bags, a cutter following the first operator performs the incisions passing rapidly on from tree to tree. For the process I should prefer to the hatchet the large wood scissor called by the Anamites "fish's tail," driven in with one stroke to the required depth.

The sap flows into the pocket, the watery liquids are filtered through the cloth and evaporate, while the plastic substance remains in the bag and coagulates rapidly. It is easily detached from the tissue and nothing prevents one from submitting it before it hardens to any fumigations or antiseptic processes that may be necessary. True, by this process one would only obtain what might be called rubber in tears, but it would be more difficult to use fraud in this rubber.

The initial trouble in collecting would be much lessened in this way and that is a main point. Hitherto I have made only small experiments as my trees are but young. Need I say that the same pocket moved up or down will serve for many incisions on the same tree? . ,

I may add that the coarse calico lets through a milky substance as well as a clear liquid especially now while the rains are on. This varies with different trees and with the season,—Believe me, etc., etc., J. JOSSELME.

(From the *Revue des Cultures Coloniales* of Dec. 15.)

THE CACAO MARKET:

GIFTS OF CHOCOLATE AND COCOA FOR SOLDIERS.

London, E. C., Jan. 19.

DEAR SIR,—One of the signs of the great increase in the demand for cocoa and chocolate is the large share of attention it receives in the trade journals of late; in one of them alone (the "Confectioners' Union" for January) three special articles and nineteen paragraphs are devoted entirely to it, two of the paragraphs notifying the intention of two new firms going into the business of Cocoa Manufacturers.

Whilst new buyers are springing up on every side, asking for samples from the Mincing Lane Brokers, it will be just as well for both buyers and sellers if it were brought home to them, rather more forcibly than appears to be the case at present, that samples cost money. The little paper bags used down "the Lane" for cacao samples hold about half pound each if filled, so if a dozen buyers ask for samples it means four to six pounds of cacao, at present values costing from 3s to 5s, and from all I see and hear, more than six pounds are sometimes wolved up by professing buyers to whom the broker who at present is forced by the custom of trade to give them out, although he knows the chances are against his getting any adequate return for the loss to his merchant, in the shape of orders, or spirited bidding, which so much sampling would warrant, at the sales. As the cost of samples come out of the shippers' profits, I think it is worthy of their attention, now that there is undoubtedly a much larger demand from *genuine* buyers who must be encouraged than formerly, for samples, to see that this right is not abused and that the samples they have to supply free do not go to help fill some bag which is then sold by the collector either down "the Lane" as "duty paid" cocoa, or may be is included in a direct sale to a manufacturer.

This week same as the previous one has been a good one for sellers. Fine Ceylons are still much wanted, 90s being paid in the sale for by no means Ceylon's record best, and should any such quality be offered just now—I mean beans with a nice even *light* cinnamon break free from whitish or darker beans, and with a bright "silky" outside skin—I believe, the competition would cause it to realise 100s, for by the great changes in values I am of opinion, buyers have orders "to buy on" limits much more elastic than usual. Some lots this week sold at prices out of proportion, simply owing to two or three buyers competing for the same lot, with the result that whilst some lots showed only 1s to 2s rise, another went at a good 5s higher than presale valuations.

This week 1,649 bags of Ceylons were offered, of which 1,305 bags sold, smalls and common native 55s to 68s 6d, fair to good native 69s to 75s. Middling to good red estate qualities 78s 6d to 83s 6d, fine 84s 6d to 90s.

The demand for Trinidads is also very good, sale rates varying from 80s to 82s 6d for good to fine red, and now anything approaching good red seems fairly easy to sell at 80s. The stocks of this growth are very low, being only 16,657 bags.

Grenadas at the sales went firm with an occasional rise of 6d and 1s, the best selling at 73s and 73s 6d against 72s 6d last mail.

As I anticipated, the idea of the Queen making a present of Chocolate to her soldiers has already been copied, one lady having sent 3,500 ½-lb. tins of Cocoa to be distributed amongst certain regiments at the front; this cocoa was supplied by Messrs. Clarke, Nicholls, & Coombs, Ltd., a well-known confectionery house, and one of the two firms I mentioned who are going in for cocoa.

I see by the papers, the Volunteers going to the front are particularly advised to take a quantity of chocolate in case of emergency, and being short of provisions, so on all sides the usefulness of cocoa is being recognised.—Yours truly,

HAROLD HAMEL SMITH.

PLANTERS AND AUXILIARY PRODUCTS.

Upcountry, Feb. 7,

DEAR SIR,—Now that we have to face more enemies than one, connected with the Tea enterprise, is it not time that all tea planters should turn their attention to auxiliary products suited to their different altitudes, so that we may be prepared to tide over troublous times when they do begin to make themselves felt? The prices most of us are now realizing for our staple product can but only help to keep the wolf away from the door; but when we are told of gigantic organizations to wipe us dry, by depriving us even of that last drop in the bucket, it behoves each and all of us to look alive and to be up and doing.

That such another crisis as this Island experienced in the early "eighties," is looming in the not distant future (this time not from disease but from numerous other causes too voluminous to mention) does not require a prophet's eye to discern, and when it does come, how many amongst us will then be found prepared to face the inevitable with all our eggs in the one basket, as most of us at present stand? I trow few, very few!

When the coffee catastrophe swooped down on Ceylon like a thunderbolt, those of the knowing ones amongst our planters of that day, who had cinchona planted on their estates, found and got no little help from that product to keep themselves afloat: a good many of those men will own up that their cinchona went no small way to help them to develop the new industry *tea*. Where in Ceylon is cinchona to be found now? Except in a handful of places, this product is a thing of the past. That this commodity is in demand cannot be doubted, when we see the "sons of the prophet" on the tramp offering quite 25 cts on the spot for a pound of dry bark. I only wish I was the possessor of a few thousand pounds of bark this day: what a haul I should have made!

I will (if you will permit me) through your columns offer a small suggestion to both lowland and highland planters. To the former I would suggest that they plant up all vacancies, roadsides, above drains, boundary belts, &c., with Para rubber, nutmegs and cloves—products well adapted to their climate—and all their flats and undulating lands with coconuts at 30 or 40 feet apart: this will in no way affect their tea. To the highlanders I would say, plant all your vacancies, roadsides, above drains, boundaries, &c., with a good jât cinchona. My brethren, take this advice in a good spirit as it is given in a kindly one; and perhaps, it may be, at the end of five years or so you may live to thank.

EXPERIENCE OF THE EARLY "EIGHTIES."

SUGAR CULTIVATION.

DEAR SIR,—*Re* your articles about sugar cultivation. Did not one of the Lords Elphinstone lose heavily by an experiment in this direction at a place called "Paradua" (I think), in the Kalutara district, in the "fifties?" Rumour had it that my Lord dropped some R30,000 over the business. I hope sincerely I may have been misinformed as to the loss sustained by Lord Elphinstone, but caution is required in all such ventures. E. F. T.

[The changes that have taken place in sugar cultivation and preparation in the past twenty years are very notable and our correspondent may be quite sure that Mr. Turner and his staff will do nothing rashly.—ED. *T. A.*]

PLANTING NOTES:

COREAN PEARL DIVERS.—The diving for the pearl oysters found off the Corean island of Quelpart is entirely done by women. Dressed in a kind of bathing suit, with a sickle in one hand and a gourd with a bag tied to it in front of them, they swim out from the shore as far as half a mile—boats cannot be afforded—and they dive, probably a depth of forty or fifty feet, to the bottom, cut the weeds with the sickle or if they find a pearl oyster, tear it off from the stone, and then put it into the bag, which is kept floating by the gourd. They do not go back before the bag is filled, which often takes more than half an hour.—*Home paper*, Jan. 16.

FOWLS IN FRUIT CULTIVATION.—In the old days of the *Agricultural Gazette* Mr. Alderman and Sheriff Mechi used to entertain the readers with stories of his agricultural experiences, including the work done by fowls in vegetable gardens and orchards in clearing-off insect-pests. This sort of work is being done now with approval in many parts of the world; and from abroad come encouraging reports of the value of chicken-peck. One fruit-grower writes:—"I enclosed half-a-dozen unproductive canker-worm infested Apple-trees in a chicken-yard, and as a result the insects were cleared, and the trees produced good crops of fine fruit." Another wrote:—"The hen has a golden claw; she is a professor of agriculture, too, and teaches clean culture, and lots of it, with high-feeding for a fruit-orchard." *Verb Sap.—Gardeners' Chronicle*, Jan. 20.

TEA IN ASSAM.—The heavy rain that fell in Upper Assam and the north-east tea districts generally the week before last, though it will render the first hoeing more easy and benefit general cultivation, comes rather at an inopportune time for those who commenced their pruning last month, inasmuch as it will bring out a flush tough, leathery, and sapless that will not be worth gathering for manufacture, and yet must be removed or *bangi* will be the result. We are generally prepared for (and expect) the usual Christmas showers but hardly for such an abnormal downpour as this. One or two complaints have reached us that the rain will delay clearance, but with these we have not the slightest sympathy, as there is quite enough land under tea for all likely requirements for the next two years.—*Indian Planters' Gazette.*

RAINFALL RETURN FOR COLOMBO.

(*Supplied by the Surveyor-General.*)

	1895.	1896.	1897.	1898.	1899.	Av of 29yrs.	1900.
	Inch.	Inch	Inch	Inch	Inch.	Inch.	Inch.
January ..	5·00	2·92	3·81	2·32	6·98	3·09	3·72
February ..	0·81	0·35	1·68	1·98	2·78	1·90	0·02*
March ..	1·84	5·64	3·66	4·21	0·88	4·92	
April ..	9·34	5·93	10·97	22·81	6·66	11·47	
May ..	10·09	9·31	8·30	5·80	17·73	11·89	
June ..	13·99	8·37	10·14	10·94	9·23	8·34	
July ..	0·52	2·85	5·24	6·15	1·11	4·49	
August ..	0·92	6·35	9·09	0·97	0·62	3·77	
September	4·09	10·99	4·58	6·90	1·48	5·13	
October ..	30·36	16·78	4·71	20·60	12 99	14·57	
November..	5·83	19.81	11·66	17·38	8·58	12·80	
December..	9·44	11·76	8·89	3·05	4·44	6·45	
Total..	92·23	101·06	82·73	103·11	73·48	88·82	3·74

* From 1st to 7th Feb. 0·02 inch, that is up to 9·30 a.m. on 8th Feb.—ED. *T.A.*

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS FOR DEC. 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Maha-oya tank in the Eastern Province, 31·60 inches and the lowest at Negombo in the Western Province 0·38 inches.

WESTERN PROVINCE.

Negombo, Mr. Bucknall (6) ... 0·38
Kalutara Mr. Gregson (36) ... 11·32
Labugama, Mr. Bond (369) ... 8·19
Henaratgoda, Mr. Silva (33) .. 3·68

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,500) ... 8·35
New Valley, (Dikoya) Mr. Ward (3,700) .. 3·56
Helboda (Pussellawa) Mr. Anderson, (3,360) .. 5·68
Yarrow Estate, Mr. Peto (3,400) ... 5·94
Peradeniya Mr. MacMillan (1,540) ... 6·68
Duckwari, Mr. Edwin (3,300) ... 12·92
Calcdonia, Mr Goork .. (4,273) .. 4·83
Pussellawa, Mr. Powell (3,000) .. 5·43
Hakgala, Mr. Nock (5,581) ... 8·80
S. Wanarajah Estate, Mr. Tatham (3,700) .. 2·88
St. Andrew's (Maskeliya), Not received (4,200).. —
Padupola, Mr. Ward .. (1,636) ... 5·80
Mylapitiya, Mr. Rowland (1,707) ... 1·35

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) .. 9·53
Jaffna Mr. MacDonnell (8) 3 37
Mankulam, (N. Road) Mr. Walker (167) ... 8·71
Elephant Pass, Mr Silva (7) .. 7·37
Vangalachettykulam, Mr. Oorloff (179) .. 4·70
Point Pedro, Mr. Roper, (24) ... 3·17
Jaffna College, Mr. Cooke (9) ... 2·28
Kayts, Mr. Kretser .. (8) .. 1·43
Kankesanturai, Mr. Pararachasingha (10).. 2·00
Pallai, Mr. Silva (24) .. 6·30
Murlkandy, (North-Central Road) Mr. Krester — 6·25
Nedunkeni, Mr. Saumukam (122) ... 16·04
Chavakachcheri, Mr. Silva (16) ... 3·32
Udupiddi, Mr. Hastings (35) ... 3·48
Marichchukaddi, Mr. Thamotharampillay (14) 4·70
Murungan, Mr. Ramalingam (52) 7·05
Vavuniya Mr. Walker (318) 8·12

SOUTHERN PROVINCE.

Ella Vella Mr. Smith (262) 13·21
Kekauadura, do (150) 5·87
Denagama, do (286) 11·51
Udukiriwila Mr. Auwardt (235) ... 5·26
Kirama, Not received (260) —
Hali-ela Mr. Smith (200) 6·45
Tissamaharama, Mr. Peries (75) .. 5·62
Matara Mr. Smith (15) 5·15
Dandeniya, do (157) .. 3·68
Urubokka, Mr. Smith (890) .. 14·09
Elagala, Not received (121) —
Tangalla, do (94) .. —
Mamadola, Mr. Cade (56) .. 8·40

EASTERN PROVINCE.

Irrakkamam, Mr. Bower (42) ... 19·74
Devilana, Mr. Vanderstraaten (136) 15·10
Sagamata, Mr. Bower (40) ... 12·26
Ambare, do (65) 16·16
Kanthalai, Mr. Carte (150) 4·23
Allai, Mr. Carte (95) 17·10
Rukam, Mr. Vanderstraaten (120) ... 23 90
Periyakulam, Mr. Carte (20) ... 25·66
Chadaiyantalawa, Mr. Edge (57) .. 8·42
Kalmunai, do (12) 18·16
Rotewewa, do (30) 15·88
Lahugala, do (70) 9 90
Naulla, do (30) 8·10
Andaukulam, Mr. Carte (41) ... 21·83
Manalpuddy, Mr. Vanderstraaten (21) 11·10
Maha-Oya-Tank, Mr. Vanderstraaten (190) 31·60

N.-W. PROVINCE.

Magalawewa, Mr. Gunaratna (176) .. 2·84
Maha Uswewa tank, Mr. Crabb (160) ... 2·04
Tenepitiya, Mr. Churchill (8) ... 2·30
Batalagoda, Mr. Fonseka — 8·00

N.-C. PROVINCE.

Kalawewa, Mr. Carson (268) 6·18
Maradankadawala, Mr. Carson (443) ... 9·22
Mihiutale, Mr MacBride (354) .. 6·54
Horowapotaua, Mr. MacBride (217) .. 8·66
Madawachchiya, Mr. MacBride (285) .. 13·52
Topare, Mr. Jayewardane (200) .. 13·80
Minnerlya Mr. Morgan — 12·01

UVA PROVINCE.

Bandarawela, Mr. Tocke (4,000) .. 7·26
Haldummulla, Mr. Viramuttu (3,160) .. 9·55
Kumbukan, Mr. Emerson (446) ... 5·72
Koslanda, Mr. Emerson (2,258) ... 11 16
Tanamalwila, Not received (550) .. —
Bibile, Mr. Silva (880) 17·53
Taldena, Mr. Fernando (1,100) .. 20·96
Allutnuwara—Mr. Leembruggen — 20·71

SABARAGAMUWA.

Ambanpitiya, Mr. Caldicott (729) 9 29
Pelmadulla, Mr. Clarke (408) 5·92
Kolonna Korale (Hulanda-oya) Mr. Dabare (203) 8·76
Avisawella, Mr. Jeffery (105) 6 10

S. G. O. METEOROLOGICAL OBSERVATIONS FOR AUGUST, 1899.

The following is the return of the total fall of rain for August, from which it will be seen that the highest fall was at Labookellie, Ramboda, 28·45 inches, and the lowest at Hambantotta and Horakele Estate, Chilaw, 0·04 inches.

Colombo (40) 0·62
Ratnapura (84) 7·98
Puttalam (27) 0
Anuradhapura (295) 0
Mannar (12) 0
Jaffna 9 0
Trincomalee (12) 0·50
Batticaloa (26) 0·74
Hambantota (50) *0·04*
Galle (48) 4·77
Kandy (1,654) 4·14
Nuwara Eliya (6,188) 5·22
Hakgala, Nuwara Eliya (5,581) 2·80
Badulla (2,225) 0·95
Kurunegala (381) 0·74
Maligakanda, Colombo Mr. Johnson (70) 0·89
Agricultural School Colombo, Mr. Rodrigo 1·01
Passara Hospital, Passara (Mr. Thomas) 2,200 3·63
Welhelmina Puttalam, Mr. Ratnayeke (131) ..
Horakele Estate, Chilaw, Mr. Beven (50) *0·04*
Chilaw Kachcheri
Chilaw, Mr. Koch (10) 0
Franklands Estate —
Veyangoda, Mr. Beven 0·93
Orange Hill, Ragama Mr. Bury (50) 0·22
Henaratgoda Gardens, Henaratgoda, Mr. de Silva (33) 0·93
Kotua Godella, Rambukana Mr. Windus (580) —
Eadella or Liberia Estate Polgahawela Mr. Craighead (425) 1·77
Geekiauakanda, Neboda Mr. Towgood (200) —
Polgahakanda, Neboda Mr. Wight (300) 3·84
Labugama, Hanwella, Mr. Bond (369) 5·78
Rayigam, Horana, Mr. Dawson, (300) 3·07
Kanangma, Avissawella Mr. Cooke (200) 4·06
Dunedin Estate, Avissawella, Mr. Bayley, (400) 5·42
Digalla Avisawella, Mr. Tottenham, (400) 7·59
Pambagama, Avisawella, Mr. Bridgman (600) 8·11
Avisawella Estate Avisawella Mr. Byrde (250) 5·45
Yatideriya, Kegalla, Mr. Fairweather — 6·14
Mahawalatenna, Balangoda Mahawalatenna R M. -- 0·32
Agarsland Estate Balangoda Mr. Boyd (2,215) —
Maduwanwala, Rakwana, Maduwanwela R.M. (750) 1·03
Anninkanda, Morawaka, Mr. Anderson, (1,400) 7·85
Panilkauda, Morawaka, Mr. Davidson (1,900) 6·20
St. John Del Rey, Bogawantalawa Mr. Glanville (4,300) 6·41
Friedland, Bogawantalawa Mr. Rammell (5,200) 4·75
Campion, Bogawantalawa. Mr. Gidden, (4,840) 3·88
Blair Athol, Dikoya, Mr. Lane (3,641) 15·54
Annfield, Dikoya, Mr. Knight (4,300) 9·57
Maskeliya Hospital, Maskeliya Mr. Bulner (4,200) 9·05
Hope Estate, Hewaheta, Mr. Bagot (5,000) 3·81
Coldstream Estate, Watawala Mr. Spedding (3,800) 22·75
Holmwood Est., Agrapatana, Mr. Gray (5,240) 7·82
Sandringham, Agrapatana Mr. Orchard (5,200) 5·74
Gingran-oya, Kotmale, Mr. Cox (3,800) 17·07
Labookelle, Ramboda, Mr. Stone (5,000) *28·45*
Dunsinane, Pundatu-oya, Mr. Metcalfe (5,800) 11·94
Sogama, Pussellawa, Mr. Eustace (3,500) 7·99
Kurundu-oya, Maturata, Mr. Corbetta (5,150) 0·36
Kabaragalla, Maturata, Mr. Maclean (4,200) 5·89
Maragalla Estate, Moopana, Mr. Betts, (2,200) 3·42
Moopana, Hospital, Moopana (Mr. Sela) (600) 3·38
Madulsima Hospital Lunugala Dr. Vethecan (2,600) 3·04
Meeriabedda, Haputale, Mr. Dupuis (3,600) 0·91
Udahena Estate, Haputale, Mr. Bisset, (4,400) 1·12
Post Office, Bandarawela, Mr. Mendis (4,036) 1·04
Callander, Ohiya Mr. Green (5,125) —
Mariawatte, Gampola Mr. Salmoud (1,600) 4·84
Orwell Estate, Gampola Mr. Taylor (1,800) 4·98
New Forest, Deltota, Mr. Wardrop (3,500) 6·22
Rajawella, Estate, Telleniya Mr. Miller, (1,500) —
Lower Spring Valley, Badulla Mr. Rettle (3,650) 0·51
Gourakele Estate, Badulla Mr. Hope (1,200) 0·50
Moosagala Estate, Badulla, Mr. Deaker (4,500) 4·91
Ledgerwatte, Badulla Mr. Rettie (4,000) 0·45
Dea Ella Estate, M'walatenna Mr. Vanderslott (800) 3·19
Sembawatte Estate, N'pitiya Mr. Roe (1,600) 15·46
Gammaduwa, Estate, Rattota Mr. Westland (2,400) 0·88
Kobonella Estate, Rangala, Mr. Pole (3,300) 4·12
St. Martins, Rangala, Mr. Wyllie (3,600) —
Crystal Hill, Matale, Mr. Van Starrex (1,400) 0·87
Vicarton Estate, Matale Mr. Carrie (3,250) 2·87
Matale Mr. Tisseverasinghe (1,208) --
Wariapolla, Matale, Mr. Dickenson (1,200) 1·72
Dambulla, Mr. Sinnetamby (400) 0
Kotta Estate, Pallal, Mr. Todd (13) 2·02
Mantota Hospital, Mannar, Mr. Adams (17) 0
Buttala Hospital, Buttala, Mr. Perera — 0·10
Police Station, Hatton Police Constable Miskin (4,141) 17·21
Medway Estate Nilaveli, Mr. Abraham, .. 1·21
Delwita, Kurunegala Mr. Price (490) 3·20
Woodslie, Uragalla Mr. MacMahon (3,000) 1·26
Gillardatown, Wattegama Mr. Hardy (2,600) 8·98

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions.
Agra Ouvah Estates Co., Ltd.	500	950	—	..
Ceylon Tea and Coconut Estates	500	—	500 n'l	..
Castlereagh Tea Co., Ltd.	100	100	..	100
Ceylon Hills Estates Co., Ltd.	100	—	30	..
Ceylon Provincial Estates Co.	500	500	..	..
Claremont Estates Co., Ltd.	100	..	25	..
Clunes Tea Co., Ltd.	100	—	87·50	..
Clyde Estates Co., Ltd.	100	—	70	—
Doomoo Tea Co., Ltd.	100	—	—	—
Drayton Estate Co., Ltd.	100	..	150	..
Ella Tea Co., of Ceylon, Ltd.	100	—	—	70
Estates Co., of Uva, Ltd.	500	—	280	..
Gangawatta	500	—	..	—
Glasgow Estate Co., Ltd.	500	—	..	910 xd
Great Western Tea Co.,	500	—	640	...
Hapugahalande Tea Estate Co.	200	—	275	..
High Forests Estates Co., Ltd	500	—	575	..
Do part paid	350	—	—	410
Horekelly Estates Co., Ltd.	100	—	—	..
Kalutara Co., Ltd.	500	..	400	—
Kandyan Hills Co., Ltd.	100	—	70	..
Kanapediwatte Ltd.	100	100	97½	95
Kelani Tea Garden Co., Ltd.	100	45	..	..
Kirklees Estates Co., Ltd.	100	—	145	—
Knavesmire Estates Co., Ltd.	100	50	—	—
Maha Uva Estates Co., Ltd	500	—	450	..
Mocha Tea Co., of Ceylon, Ltd.	500	610	—	625 xd
Nahavilla Estate Co., Ltd.	500	—	475	...
Neboda Tea., Co. Ltd	500	500	..	—
Nyassaland Coffee Co. Ltd.	100	—	..	..
Ottery Estate Co., Ltd.	100	—	—	—
Palmerston Tea Co., Ltd.	500	—	400	...
Penrhos Estates Co., Ltd.	100	—	100	..
Pine Hill Estate Co., Ltd.	60	45	..	..
Pitakanda Tea Company	500	1,000	—	..
Putupaula Tea Co., Ltd.	100	—	120	—
Ratwatte Cocoa Co., Ltd.	500	—	—	..
Rayigam Tea Co., Ltd.	100	—	67½	67½
Roeberry Tea Co., Ltd.	100	45	—	—
Ruanwella Tea Co., Ltd.	100	—	70	..
St. Heliers Tea Co., Ltd.	500	500	—	..
Talgaswela Tea Co., Ltd.	100	—	—	...
Do 7 per cent. Prefs.	100	...	..	..
Tonacombe Estate Co., Ltd.	500	—	450	..
Udabage Estate Co., Ltd.	100	..	—	—
Udugama Tea & Timber Co., Ltd.	50	5	10	..
Union Estate Co., Ltd.	500	290	300	—
Upper Maskeliya Estate Co., Ltd.	500	..	500	—
Uvakellie Tea Co., of Ceylon, Ltd.	100	...	70	...
Vogan Tea Co., Ltd.	100	..	83	—
Wanarajah Tea Co., Ltd.	500	—	1145	...
Yataderiya Tea Co., Ltd.	100	—	430	430

CEYLON COMMERCIAL COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions.
Adam's Peak Hotel Co., Ltd.	100	—	—	..
Bristol Hotel Co., Ltd.	100	—	87½	..
Do 7 per cent Debts.	100	105	—	—
Ceylon Gen. Steam Navgt. Co., Ltd.	100	..	200	.
Colombo Apothecaries Co., Ltd	100	142½	..	145
Colombo Assembly Rooms Co., Ltd.	20	12·50	..	..
Do prefs.	20	—	..	..
Colombo Fort Land and Building Co., Ltd.	100	..	90	..
Colombo Hotels Company	100	..	—	303
Galle Face Hotel Co., Ltd.	100	..	155	155
Kandy Hotels Co., Ltd.	100	117½	—	117½
Kandy Stations Hotels Co.	100	..	30	—
Mount Lavinia Hotels Co., Ltd.	500	—	300	..
New Colombo Ice Co., Ltd.	100	170	—	170
Nuwara Eliya Hotels Co., Ltd.	100	27½	30	..
Public Hall Co., Ltd.	20	15	—	—
Petroleum Storage Co.	100	—	—	—
Do 10 % prefs,	100	—	...	—

LONDON COMPANIES.*

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Alliance Tea Co., of Ceylon,	10	8—9	—	7¾
Anglo Ceylon General Estates Co.	100	—	35—40	..
Associated Estates Co., of Ceylon	10	—	3—5	...
Do. 6 per cent prefs.	10	..	7½	..
Ceylon Proprietary Co.	1	...	12·6—17·6	..
Ceylon Tea Plantation Co.,	10	..	24½—25½	—
Dimbula Valley Co.,	5	..	5½—6	—
Do prefs.	5	..	..	—
Eastern Produce and Estates Co.	5	...	5½—6	...
Ederapolla Tea Co.,	10	...	7—8	..
Imperial Tea Estates	10	...	5—6	..
Kelani Valley Tea Asson.,	5	..	5—6	..
Kintyre Estates Co.,	10	7½	7—9	7½
Lanka Plantation Co.,	10	4½	4—5	..
Nahalma Estates Co ,	1	—	½—¾	..
New Dimbula Co.,	1	—	2½—3	..
Nuwara Eliya Tea Estate Co.	10	9½	9—10	9
Ouvah Coffee Co.,	10	7	—	..
Ragalla Tea Estates Co.,	10	—	10	..
Scottish Ceylon Tea Co.,	10	—	14—15	.
Spring Valley Tea Co.,	10	3	4—5	..
Standard Tea Co.,	6	—	11—12	..
The Shell Transport and Trading Company,	100	250	—	250
Yatiyantota Ceylon Tea Co.,	10	—	8—9	..
Yatiyantota pref. 6 o/o	10	—	9¾—10½	..

BY ORDER OF THE COMMITTEE.

Colombo, February 9th, 1900.

* Latest London Prices

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)
Colombo, Feb. 6th, 1900.

COFFEE:—	
Estate Parchment per bushel	R7·50 to 9·00
Chetty do do	R5·00 to 6·00
Native Coffee } per cwt.	} R38·00 none offering
do F. O. B }	
Liberian coffee:—per bushel	R5 00
do cleaned coffee:—per cwt	R22·00 to 25·00
Cocoa unpicked:—per cwt	R38·00 to 41·00
do cleaned do	R44·00 to 47·00
Cardamoms Malabar per lb	R1·00 to 1·10
do Mysore do	R1·65 to 1·90
RICE:—	
Soolai per bag of 164 lb. nett	R9·00 to 9·25
Slate or 1st quality:—per bushel	R3·38 to 3·43
Soolai 2 & 3rd. do do do	R3·28 to 3·35
Coast Calunda	R3·87 to 4·00
Coast Kara	R3·75 to 3·87
Kazala	R3·25 to 3·28
Muttusamba Ordinary	R4·25 to 4·87 scarce
Cinnamon. per lb No 1 to 4	R00·58
do do 1 to 2	R00·62
do Chips per candy	R92 50 to 95·00
Coconuts Ordinary per thousand	R35·00 to 38·00
do Selected do	R36·00 to 40·00
Coconut Oil per cwt	R14·25 to 14·50
do do F. O. B. per ton	R285·00 to 290·00
POONAC:—	
Gingelly per ton	R97·50 to 100·00
Coconut Chekku do	R80·00 to 82·50
do Mill (retail) do	R77·50 to 80·00
Cotton Seed per ton	R85·00 to 87·50
Copra per candy	
Kalpitiya do	Nil
Marawila do	R43·50 to 43·75
Cart Copra do	R38·00 to 42·00
Satinwood per cubic feet	R2 00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R28·00 to 30·00
Palmyra do do	R5·00 to 15·50
Jaffna Black Clean per cwt	R15·00
do mixed do	R12·50 to 13·50
Indian do	R8·50 to 13·00
do Cleaned do	R10·50 to 14·50
Sapanwood per ton	R55·00 to 58·00
Kerosine oil American per case	R8·00 to 8·25
do bulk Russian per tin	R3·40 to 3·50
do Russian per case	R7·00 to 7·25
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R30·00
Kapok cleaned f o b per cwt	R24·50
do unpicked do	R6·00
Plumbago per ton, according to grade — Large lumps	R700·00 to 1000·00
do	R500·00 to 1000·00
Chips	R250·00 to 750·00
Dust	R100·00 to 550·00

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo, 5th Feb. 1900.

Cardamoms:—
All round parcel, well bleached per lb. R1·85
Do. dull medium do. 1·55
Special assortment, 0 and 1 only do. 2·25
Seeds do. 1·35

Cinchona Bark:—
Per unit of Sulphate of Quinine 12c. 1 o/o to 4 o/o

Cinnamon :—
Ordinary assortment per lb. 59c.
Nos. 1 and 2 only per lb, 65c.
Nos. 3 and 4 only per lb. 52c.

Cinnamon Chips :—
Per candy of 560 lb R95

Cocoa :—
Finest estate red ; unpicked per cwt R46·50
Medium do do per cwt R42·00
Bright native, unpicked and undried per cwt }
Ordinary do do do } None offering.

Coconuts—(husked).
Selected per thousand R45·00
Ordinary " R40·00
Smalls " R28·00

Coconut Cake—
Poonac in robins f. o. b. per ton R80·00
Do. in bags none

Coconut (Dessicated).
Assorted all grades per lb. 13¾c Nominal.

Coconut Oil—
Dealers' Oil per cwt. R14·25 Closing at R14·00
Coconut Oil in ordinary packages, f. o. b. per ton R322·50. Marhet quiet but firm; supplies scarce.

Coffee—
Plantation Estate Parchment on the spot per bus. R9·00
Plantation Estate Coffee f.o.b. (ready) per cwt. R65
Native Coffee, f.o.b 42·50. Nominal.

Citronella Oil—
Ready do per lb. 65c—Per drum of 800 lbs
do do per lb. 63c—Per case of 90 lbs in tins.

Copra—

Boat Copra	per candy	of	560 lb.	R45·00
Calpentyn Copra	do	do	do	R45·50
Cart	do	do	do	R42·00
Estate	do	do	do	R45·00

Croton Seed per cwt R25·00

Ebony—
Sound per ton at Govt. depot R175,—as per last Governmen Sales, Nov. 15th.
Inferior per ton at Govt. depot R120

Fibres—

Coconut Bristle	No. 1	per cwt	R11
Do	" 2	"	8
Coconut mattress	" 1	"	2·75
Do	" 2	"	2
Coir Yarn Kogalla	" 1 to 8		18
Do Colombo	" 1 to 8		16
Kitool all sizes			38
Palmyrah			14

Pepper—Black per lb 28c.

Plumbago—

Large lumps	"	per ton R1050	Little enquiry—Prices Nominal.
Ordinary lumps	"	" 1000	
Chips	"	" 750	
Dust	"	" 550	
Do (Flying)	"	" 200	

Sapanwood— per ton R60

Satinwood (ordinary) per cubic ft R2·40

Tea—	High Grown. cts	Medium. cts	Low Grown. cts
Broken Pekoe per lb	34 to 76	26 to 45	31 to 38
Orange Pekoe do	41 to 75	32 to 43	34 to 41
Pekoe do	32 to 50	27 to 39	30 to 34
Pekoe Souchong do	32 to 40	25 to 35	26 to 32
Pekoe Fannings do	27 to 36	24 to 34	25 to 31
Broken mixed—dust, &c. per lb	24 to 27	16 to 34	20 to 26

CEYLON EXPORTS AND DISTRIBUTION. 1899-1900.

Countries	Tea. 1900 lbs.	Tea. 1899 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.	Coconut Oil 1900 cwts.	Coconut Oil 1899 cwts	Copra cwts.	Desiccated Coconut lb.	Poonac cwts.	Coconuts No.	Plumbago. 1900 cwts.	Plumbago. 1899 cwts.	Ebony. cwts.	Sapan-wood cwts.
To U K.	9234210	6839091	390	..	390	4255	26877	59907	..	14437	8236	1200	472027	..	415235	6728	7751	..	240
" Austria	100	150	..	..	..	..	..	..	..	1616	851	..	..	..	..	..	..	..	..
" Belgium	...	563	27	..	27	63	..	16200	..	..	..	13762	..	5144	..	2643	1931	..	..
" France	12834	21 57	..	..	..	..	..	34000	..	..	..	..	1200	..	..	..	..	..	..
" Germany	39773	27140	..	..	..	..	19660	59900	71750	2245	..	15254	60143	3513	100905	6501	5405	..	..
" Holland	..	..	..	..	..	..	..	..	11200	..	..	..	..	..	..	..	..	..	..
" Italy	433	1040	..	..	..	..	..	13500	..	..	205	..	..	..	..	..	..	..	..
" Russia	645408	..	15	..	15	..	..	..	..	..	..	9002	..	..	..	..	..	..	..
" Spain	3170	..	..	..	..	..	..	1300	..	..	..	..	..	..	..	..	..	..	..
" Sweden	12580	4268	..	..	..	..	..	..	..	..	..	..	..	..	..	105	..	..	..
" Turkey	1400	2510	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" India	52001	59988	..	..	..	..	7014	..	..	5711	4395	..	..	..	..	..	15	..	23
" Australia	855517	825457	267	..	267	..	..	..	3136	..	42	..	57470	..	..	10	70	..	..
" America	541717	139232	..	..	..	..	..	20000	44800	15223	5513	..	80270	..	..	24717	11695	..	..
" Africa	6330	1150	..	..	..	..	40	..	..	..	..	..	..	..	211260	..	..	..	..
" China	41265	121718	..	..	..	52	..	..	..	..	703	..	7260	..	..	..	..	..	..
" Singapore	1000	10872	..	..	..	..	..	..	..	..	15357	..	..	..	..	..	..	..	..
" Mauritius	...	4000	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" Malta	32220	4380	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total export from 1st Jan. to 5th Feb. 1900	11479961	8062816	699	..	699	4370	53591	204807	130886	39230	35302	39218	678370	8657	727400	40704	26867	..	263

MARKET RATES FOR OLD AND NEW PRODUCTS

(From Lewis & Peat's Fortnightly Prices Current, London, January 24th, 1900.

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ...	44s a 100s
Zanzibar & Hepatic ,,	Common to good ...	20s a 60s
BEES' WAX, ,,		
Zanzibar & Bombay White ,,	Good to fine	£6 a £7 10s
Zanzibar & Bombay Yellow ,,	Fair ,,	£5 5s a £6 10s
Madagascar ,,	Dark to good palish	£6 5s a £6 12s 6d
CAMPHOR, China ,,	Fair average quality	162s 6d
Japan ,,	,, ,, ,,	170s
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 7d a 2s
Ceylon.—Mysore ,,	Fair to fine plump ..	3s 5d a 4s 1d
	Seeds ..	1s 6d a 2s 6d
,, Tellicherry ,,	Good to fine ..	2s 11d a 3s
	Brownish ..	2s 6d
,, Long ,,	Shelly to good ..	2s 11d a 4s
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4¼d
Madras ,,	..	
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	40s a 47s 6d
CINCHONA BARK.—		
Ceylon lb.	Crown, Renewed	5d a 7d
	Org. Stem	3¾d a 5½d
	Red Org. Stem	4⅜d a 5⅜d
	Renewed	5¾d a 7½d
	Root	3¾d a 4d
CINNAMON, Ceylon 1sts per lb.	Ordinary to fine quill	10d a 1s 8d
2nds	,, ,,	9½d a 1s 5d
3rds	,, ,,	8½d a 1s 4d
4ths	,, ,,	8d a 11½d
Chips	,, ,,	2½d a 8d
CLOVES, Penang lb.	Dull to fine bright bold	4d a 9d
Amboyna ..	Dull to fine	4d a 5¼d
Zanzibar and Pemba	Good and fine bright	3⅜d a 4¾d
	Common dull to fair	3½d a 3 11-16d
Stems ..	Fair	1¾d
COCULUS INDICUS cwt.	Fair	9s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	100s a 115s
	Middling to fine mid ..	85s a 95s
	Low mid. and low grown	75s a 82s 6d
	Smalls	55s a 75s
Native	Good ordinary	30s a 70s
Liberian ,,	Small to bold	33s a 40s
COCOA, Ceylon ,,	Bold to fine bold	86s a 95s
	Medium and fair	76s a 85s
	Triage to ordinary	60s a 70s
COLOMBO ROOT ,,	Fair to good	22s 6d a 39s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair ..	£19 a £23
FIBRE, Brush ,,	Ord. to fine long straight	£19 a £21
Cochin ,,	Ordinary to good clean	£18 a £22
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	,, ,, very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	38s a 45s
CUTCH ,, ,,	Fair to fine dry	28s a 42s
GINGER, Bengal, rough ,,	Fair	25s
Calicut, Cut A ,,	Good to fine bold	87s 6d a 92s 6d
B & C ,,	Small and medium	35s a 72s 6d
Cochin Rough ,,	Common to fine bold	25s a 32s
	Small and D's	22s a 26s
Japan ,,	Unsplit	24s
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £20
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 2/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ...	£4 8s a £8
	,, ,, red ...	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 60s
Turkey sorts ,,		67s 6d a 85s
Ghatti ,,	Pickings to fine pale ...	12s 6d a 35s
Kurrachee ,,	Good and fine pale ...	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras ,,	Dark to fine pale ...	23s a 35s
ASSAFŒTIDA ,,	Clean fr to gd. almonds	40s a 80s
	Ord. stony and blocky	12s 6d a 35s
KINO ,,	Fine bright	1s 6d
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	17s a 20s
siftings ,,	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 4d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 2d
	Common to fine	1s a 2s 4d

	QUALITY.	QUOTATIONS
INDIARUBBER, (Contd).		
Java, Sing. & Penang lb	Foul to good clean ..	8d a 3s 3½d
Mozambique ,,	Good to fine Ball ...	2s 8d a 3s 7d
	Ordinary to fair Ball ..	2s a 2s 10¾d
	Low sandy Ball ..	1s 3d a 1s 7d
	Sausage, fair to good .	3s 2d a 3s 6d
	Liver and livery Ball	2s 4d a 3s 2½d
Madagascar ,,	Fr. to fine pinky & white	3s a 3s 6¼d
	Fair to good black ..	2s a 2s 10¾d
	Niggers, low to fine ..	1s 4d a 2s 10d
INDIGO, E.I. ,,	Bengal—	
	Shipping mid to gd violet	3s 9d a 4s 6d
	Consuming mid. to gd.	3s 6d a 3s 8d
	Ordinary to mid.	3s 2d a 3s 5d
	Mid. to good Kurpah	2s 2d a 2s 8d
	Low to ordinary	1s 11d a 2s 1d
	Mid. to good Madras	1s 5d a 2s 6d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 4d a 1s 11d
	Pickings	1s 4d a 1s 4½d
MYRABOLANES, Madras cwt	Dark to fine pale UG	6s a 7s
	Fair Coast	5s 6d a 6s
Bombay ,,	Jubblepore	4s 3d a 7s
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	11½d a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 21s
NUX VOMICA, Bombay	Ordinary to middling	4s a 5s 6d
per cwt. Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	5s 9d a 5s 10d
CASSIA ,,	According to analysis	3s 9d a 4s 6d
LEMONGRASS ,,	Good flavour & colour	3d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3½d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1s 1/0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER - (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	5 15-16d a 6⅛d
Singapore	Fair	5 15-16d
Acheen & W. C. Penang	Dull to fine ...	5¼d a 5¾d
PLUMBAGO, lump cwt.	Fair to fine bright bold	64s a 72s
	Middling to good small	25s a 50s
chips ,,	Dull to fine bright ..	23s a 57s 6d
dust ,,	Ordinary to fine bright	12s a 35s
SAFFLOWER ,,	Good to fine pinky .	60s a 65s
	Inferior and pickings .	40s a 57s 6d
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £50
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay ,,	Lean to good ..	£4 a £5
Madras ,,	Good average	£4 a £5 nom.
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	53s a 59s
SENNA, Tinnevelly lb	Good to fine bold green	5d a 8d
	Fair middling medium	4d a 5¼d
	Common dark and small	1¾d a 3½d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's D's and B's Small ...	£4 a £5 5s
Mergui ,,	Small to bold ..	£6 a £8
Mussel ,,	Small to bold ...	£1 a £2 15s
TAMARINDS, Calcutta... per cwt.	Mid. to fine bl'k not stony	15s a 16s
Madras	Stony and inferior ..	7s 6d a 11s
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	15s a 23s 6d
TURMERIC, Bengal cwt.	Fair ...	26s
Madras ,,	Finger fair to fine bold bright	35s a 42s 6d
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger .	21s
	Bulbs ..	9s a 12s
VANILLOES— lb.		
Mauritius and Bourbon ... 1sts	Gd. crysallized 3½ a 9 in	17s 6d a 27s
2nds	Foxy & reddish 4½ a 8 ,,	17s a 24s
Seychelles 3rds	Lean and inferior ...	10s a 15s
VERMILION lb.	Fine, pure, bright ...	3s 8d
WAX, Japan, squares cwt	Good white hard ...	30s 6d a 31s

THE

AGRICULTURAL MAGAZINE,

COLOMBO

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for February :—

Vol. XI.] FEBRUARY, 1900. [No. 7.

1900.

THE present number is the first of a new year (and indeed of a new century). Thile wishing that the the year 1900 has the maximum of good and minimum of bad in store for our readers, and that the agriculturists in Ceylon will experience the best of seasons and reap abundant crops, we cannot but introduce a personal element into this sentiment, and hope that the School of Agriculture will enter upon a new era. During the past year there has been a good deal of conference among those best qualified to give their views on questions connected with agricultural work, including agricultural education, and it is to be earnestly hoped that the conclusion of the whole matter will be a determination to establish an Agricultural Institntion—call it a Department or what you please—worthy of the colony and capable of fostering its agricultural interests.

A COMPARISON.

We read in a review of the Report on the Madras College of Agriculture that though "the farm (attached to the College) is not maintained with a special view to profit on experiment, the fact that the net cost thereof was less than Rs. 500 is creditable to the management," and that a large share of the income is obtained from the dairy herd kept on the farm.

Without in the least wishing to disparage the efforts of our sister institution in Madras, we should wish to point out that if we took credit for the income from our dairy herd in estimating the working of our school "farm" (to wit the cultivated area attached to the School of Agriculture) the "net *ineome*" would be represented by a few thousand rupees, and this would be substantially increased if the Model Farm revenue was added.

We feel inclined to envy the Madras College for being able to take credit for the income from the dairy herd in estimating the working of the experimental grounds, and placing it against the presumably substantial expenditure allowed for maintaining the latter—another circumstance which excites our envy. How do we stand? Why our vote for the Experimental Garden is practically *nil*, while the income from the dairy herd, and the grass farms attached to the school and the Model Farm goes to the credit of Revenue.

What the Colombo School of Agriculture has to deplore is the commercial spirit in which it is worked. It would be scarcely credited by those who have had any connection with Agricultural Schools and Colleges, that no special provision whatever is made for conducting the practical operations associated with the instruction imparted in our School of Agriculture. Not many years ago there was no dairy herd and no grass farms connected with the school, and though these latter now yield a handsome revenue, the school has the same needs now as it had then. Is it not reasonable to expect that the revenues referred to would have been utilized for the improvement and elevation of the school, especially when the institutions which yield the revenues are its offshoots, and their work directed from the school? So far from this being the case, the greater part of the grounds is in a neglected condition for want of a vote for the necessary expenditure required to maintain it as a useful experimental garden, an object lesson of clean cultivation to the students, and an ornamental purlieu of the city. The wonder then is not that the school has not produced the best results, but that it has been found possible to secure any students for the classes. In India they offer scholarships and appointments to induce the study of agriculture; here the prospects, to the intending student, are most discouraging.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF DECEMBER, 1899.

1	Friday ..	·02	17	Sunday ..	Nil
2	Saturday ..	1·13	18	Monday ..	Nil
3	Sunday ..	·52	19	Tuesday ..	Nil
4	Monday ..	·22	20	Wednesday	Nil
5	Tuesday ..	Nil	21	Thursday ..	Nil
6	Wednesday	Nil	22	Friday ..	·22
7	Thursday ..	Nil	23	Saturday ..	·15
8	Friday ..	Nil	24	Sunday ..	Nil
9	Saturday ..	Nil	25	Monday ..	1·36
10	Sunday ..	·4	29	Tuesday ..	2·5
11	Monday ..	Nil	27	Wednesday	Nil
12	Tuesday ..	Nil	28	Thursday ..	Nil
13	Wednesday	Nil	29	Friday ..	Nil
14	Thursday ..	Nil	30	Saturday ..	Nil
15	Friday ..	Nil	31	Sunday ..	Nil
16	Saturday ..	Nil			
				Total..	6·30

Greatest amount of rainfall in any 24 hours on the 26th inst. was 2·5 inches.

Recorded by Mr. J. A. G. RODRIGO.

GUINEA-GRASS.

Mr. A. A. Ramsay, F.C.S., Sugar Chemist to the Department of Agriculture, and Superintendent of the Sugar Experiment Station, Mackay, has kindly furnished the following analysis lately made by him of Guinea-grass. He says:—

Guinea-grass has been grown for some time now at the sugar experiment station, for feed purposes and also for seed.

In July we had a number of stools of overmature grass, which the stock would not eat, while they seemed very fond of the young leaves shooting from stools cut previously. I was led, by this, to make analyses of two samples with the following result:

	Over-ripe Grass.	Young Shoots.
Moisture	70·92 ...	69·08
Soluble Albumenoids ...	·88 ...	·86
Insoluble do ...	·66 ...	2·20
Digestible fibre ...	1·94 ..	2·25
Woody fibre	20·11 ...	13·92
Soluble ash	1·07 ...	1·02
Insoluble ash ..	2·29 ...	3·55
Chlorophyl amides, &c.	2·13 ...	7·12
	100·00	100·00
Total nitrogen ..	·40 ..	·71
Total albumenoid nitrogen	·25 ..	·49
Albumenoid ratio ...	1:14·3 ...	1:5·3

I would state that these analyses are of the few stools of grass that were growing here, and available for our purpose, and no special cultivation or attention has been given them. The grass was planted in rows 3 ft. 6 in. apart and 4 ft. between the stools. The average weight of the shoots analysed (of overripe grass) was nearly 8lb.

From figures published under the authority of the Royal Agricultural Society of England I give, for the purpose of comparison, the total nitrogen in average grass, meadow hay and clover (these latter are calculated to 70 per cent. water for easier comparison). There are

Grass	..	4
Meadow hay	..	5
Clover hay	..	7

JADOO FIBRE.

BY J. C. BRUNNICH,

Chemist to the Queensland Department of Agriculture.

Several articles have appeared in this *Journal* on Jadoo fibre, an artificial fertilising product, which, so far, has hardly received in this colony the attention it seemingly deserves.

The Department of Agriculture supplied a quantity of Jadoo fibre to the Agricultural College for experimental purposes, and the results of these experiments will be looked for with interest, although in our rich College soils the effects might not be so marked as in poorer soil.

In order to see if what the inventor claims is really true, I made a complete analysis of the product with the following result:—

I found Jadoo fibre to be a fine fibrous product, of brownish colour, which, almost like a sponge, has the power of absorbing an enormous quantity of water up to six to eight times its own weight. This fact alone will explain part of its practical value, when used for pot plants in the orchard or vineyard. This fibrous raw material is saturated with plant foods, which, according to analysis, are to a large extent soluble in water, any plant having thus a fair amount of plant foods at once available for its growth: another portion of the plant foods is like some in the soil not soluble in water, but soluble in hydrochloric acid, and these will become available gradually, by the chemical dissolving action possessed by the roots of growing plants. As a matter of fact, Jadoo fibre must be considered a highly fertile artificial peaty soil.

Analysis.

	Per cent.
Organic matters	71·40

Containing ·812 per cent. of Nitrogen=·986 percent. Ammonia. Mineral matters—

Soluble in water (total, 4·36 per cent.)

	Per cent.
Phosphoric acid, P_2O_5	·445
Sulphuric acid SO_3	1·286
Nitric acid, N_2O_5	·520
Alumina and Iron, Al_2O_3, Fe_2O_3 ...	·271
Lime, CaO	·303
Magnesia, MgO	·107
Potash, K_2O	·357
Soda, Na_2O	·750
Ammonia, NH_3	·020

Soluble in hydrochloric acid, 1·1 sp. gr.

	Per cent.
Silica, SiO_2	·031
Sulphuric acid, SO_3	·926
Phosphoric acid, P_2O_5	·715
Alumina, Al_2O_3	·765
Iron, Fe_2O_3	·170
Lime, CaO	1·875
Magnesia, MgO	·163
Potash, K_2O	·402
Soda, Na_2O	·791
	5·838
Insoluble in HCl...	4·012
Total ash	9·85
Moisture	18·75

The inventor does not claim the product to be a manure, and in accordance with the analysis the actual value of the plant foods, phosphoric acid, potash, and nitrogen amounts to 15/ per ton of Jadoo fibre. The secret of the preparation lies in the foundation material which has the power of absorbing and retaining the fertilising ingredients, which are thoroughly incorporated with the fibre by a slow process of fermented.

THE WEST INDIAN AGRICULTURAL DEPARTMENT.

The first number of the *West Indian Bulletin*, the official organ of the new Department of Agriculture, gives the history of the movement, and an account of the department, its purposes, aims, &c. The experimental and educational work which it is instituting, its field of operations, and the problems presented to it, make the new department worthy of more extended notice.

It will be remembered that the extreme depression of the sugar industry in the West Indian Colonies, which caused many sugar plantations to be abandoned and threatened others, led the British Government to appoint a West Indian Royal Commission in December, 1896, to investigate the condition of the Island and suggest measures for relief. The Report of the Royal Commission pointed out the causes of the "critical" condition, and emphasized the need of improving and cheapening sugar production, by the introduction and improvement of varieties of cane, better methods of culture, and the prevention of excessive losses in the manufacture of sugar in some cases by using more efficient machinery. It also strongly recommended the introduction of other farm industries where possible, and the teaching of agriculture in different classes of institutions. The commission commended the work of the botanic stations already established in a number of the islands, and recommended that they be enlarged and extended and placed under a central department of agriculture, which was to be charged with the promotion of the agricultural interests of the colonies in general.

The recommendations of the commission in this and other matters have been adopted and carried into effect. The British Government appropriated £4,500 for the new department for the first year, and it is estimated that in future an annual grant of £17,500 will be required to carry out the recommendations of the commission as adopted. "The cost of the department for a period of ten years, will be provided from Imperial funds, and grants will also be made in aid of the public revenues of Trinidad and Tobago (for the benefit of the latter islands), British Guiana, Barbados, the Windward Islands, and the Leeward Islands, to provide for or to assist in the maintenance of agricultural and botanical establishments, industrial schools, or other kindred purposes."

The headquarters of the department are at Barbados. Its duties as outlined are twofold: "(1) To endeavour to restore the sugar industry to a condition in which it can be profitably carried on, and (2) to encourage the establishment of other industries in such colonies as afford suitable conditions to supplement the staple industry."

In inaugurating its experimental work, advantage will be taken of the beginning previously made in experimenting in cane growing and the improvement of cane at a number of places, and this work will be greatly developed and extended. Four "principal" or "central" experiment stations and eight "local" stations for the improvement of the sugarcane will be established on the island of Barbados. The object of the central stations will be the growing of seedlings and improvement of varieties, and the carrying on of fertilizer experiments. The more promising varieties will be given a practical trial at the local stations to test their adaptability and value in different soils and localities, and also as a demonstration to the planters in each parish. Experiments on similar lines have been arranged for at Antigua and St. Kitts, while the work previously inaugurated at Trinidad will be largely extended and the necessary chemical assistance provided.

The botanic stations placed under the control of the department are those at Tobago, Grenada, St. Vincent, Barbados, St. Lucia, Dominica, Montserrat, Antigua, and St. Kitts-Nevis. The expense of their maintenance has been transferred to Imperial funds. The object of these stations is to test and distribute promising economic plants for the region, introduce new or little known plants for experimental cultivation, and conduct experiments on the improvement of sugarcane. In addition they distribute information, and send out lecturers for institute work.

The excessive losses in sugar manufacture on the smaller islands under the crude methods employed, is emphasized by the statements that there is "an average of over 2,000 pounds of sugar per acre left in the cane after crushing, which is burnt in the megass;" and that owing to heavy losses in boiling, 'for every 100 pounds of crystallizable sugar contained in the juice, not more than an average of 75 pounds of ordinary muscovado sugar is now produced." It is said that at present about 13 tons of cane are required to produce a ton of sugar on these smaller islands, while with efficient machinery 9 tons would suffice. The remedy recommended by the Royal Commission is the establishment of central factories, equipped with the best machinery, and it is the expectation of the department to establish one or two experimental factories at an early date.

The new department will also promote agricultural education in the islands, which heretofore has received little attention. The plan of the Royal Commission to establish agricultural schools in connection with the botanic stations has been carried out by opening a school at Dominica, and others will be started at St. Vincent, St. Lucia, and St. Kitts Nevis as soon as the necessary land is obtained. Furthermore, "the department is prepared to offer grants to enable certain institutions to employ teachers in agricultural science, and possibly provide a number of scholarships for the most promising pupils;" and in co-operation with the central educational authorities in each colony, the teachers in the elementary schools will be given a course of instruction in the principles of agriculture, to enable them to give simple instruction and conduct school gardens. It is proposed

to attach an agricultural instructor to each of the botanic stations, who will travel about holding meetings and demonstrations, and imparting information on improved methods directly to the planters; and in addition instructors or experts in special lines, as budding and pruning fruit-trees, curing tobacco, bee-keeping, etc., will be employed to spend a month or two on each island.

The publications of the department will also be a means of diffusing popular information. They will include handbooks on the cultivation of special crops, bulletins and leaflets, the latter especially being in very simple, clear language. The *West Indian Bulletin*, mentioned above, will be issued by the department periodically. The first number of this journal contains as an introductory, an account of the establishment of the department, and a report of the first agricultural conference held at Barbados. The latter contains a number of papers of merit on different features of cane growing, central factories, agricultural education, etc.

It will be seen that a very liberal and comprehensive plan has been adopted for acquiring and diffusing information, and that no effort is to be spared to make the department of the greatest direct benefit to the planters and to bring the teachings of agricultural science home to them. The progress of the new department in its various branches will be a matter of much interest to people of this country, especially in view of our interest in islands adjacent to those for whose benefit it was established. The experience there will prove of value, as well as the actual contributions to agricultural science and practice.

TO TELL THE AGE OF CATTLE.

The first ring at three years, and a ring on the horn for each succeeding year, is the usual way of reckoning; but as these can be rasped off, and some breeds do not have horns, it is advisable to determine certainly by the teeth. The unimproved long horns, and other old-fashioned breeds which are long in coming to maturity, were found to be later in the putting out of the teeth; but the following table, drawn by Professor Simonds, is reliable for Shorthorns and others which mature early. The same order is maintained as regards the front teeth or incisors in all animals—namely, the two to come through first are the central; the next pair consists of one on each side of them, and again one on each side of the laterals, the outer laterals following until the number (eight in the ox) is completed. The molars, or grinding teeth, also afford evidence to those able to distinguish them, but for all practical purposes the age is nearly enough ascertained by the number and development of the incisors. A rough-and-ready way of remembering is, first pair at one year and nine months; second pair at two years and three months; and so on, each pair being about six months later than the previous ones in breaking through the gum. As soon as the mouth is "full," or complete, the teeth begin to show wear, and gradually separate, as well as look narrower, and have interdental spaces, which go on increasing until, in very old animals, they fall out and leave gaps.

Simond's Table of Early Average. Improved Breeds.			Simond's Table of Late Average. Improved Breeds.			Girard's Table of Late Average. Unimproved Breeds.		
Y.	M.	No. of Teeth. permanent incisors	Y.	M.	No of Teeth. permanent incisors	Y.	M.	No. of Teeth permanent incisors
1	9	2	2	3	2	2	3	2
2	3	4	2	9	4	3	0	4
2	9	6	3	3	6	4	0	6
3	3	8	3	9	8	5	0	8

A Writer in an American exchange says:—I have always regarded the horns of very small importance in showing the age of the cow when buying. It is true that the horns indicate the age, but not always accurately. The rings usually begin to come with the first calf. For instance, if a heifer drops her first calf at two years old, the first ring counts two; but if she does not calve until three, then the first ring counts three years. After the cow gets along in years, the most important thing on which her continuance of usefulness depends is the condition of her teeth. Generally, as long as her teeth last, she will continue to do well in the dairy; but when these fail, she will begin to go down hill. Therefore, it is never safe to buy a cow without looking at her teeth, for some fail sooner than others. For the benefit of those who are not in the habit of examining the teeth of the cow, I will describe their appearance at various stages. In determining the age of the cow, it is necessary only to examine the front teeth of the lower jaw—I say "lower" jaw, because a man came to buy a cow me some time ago, and objected to taking her because she had no upper front teeth. The calf has eight small milk teeth; but when nearing two years old, the two middle ones are replaced by two permanent and much larger ones. The two next ones come at three or a little before, two more at four, and at five years old the cow has a full mouth. The two middle ones are at this time about $\frac{3}{4}$ inch long, with the others growing shorter to the outside. After this the teeth grow shorter every year, and at seven years we may expect to find the teeth not much over $\frac{1}{2}$ inch. They keep on wearing off until at 9 or 10 years they are very much shorter and seem narrower, also barely touching each other. The gums also begin to shrink away, until sometimes a tooth or two may get knocked out by biting something hard.

By looking at the teeth of cows of which one knows the age, he may soon become well acquainted with their appearance. While it is impossible to tell exactly the age of a cow when over five years old, still one may judge near enough for all practical purposes. If a cow's mouth presents an 8-year-old appearance, it does not make much difference if she is nine or ten. She will, in all probability, last as long as the average 8-year-old cow. Dealers will often insist that a 10-year-old mouth belongs to a 7-year-old cow; but that is no reason why the buyer should be deceived. He can easily learn for himself.

SHOULD EGGS BE WASHED?

The *Rural New Yorker* sent out this question to a number of poultry experts, and, as usual, views differ.

The *New York Produce Review* may take its eggs dirty if it likes, but I shall continue to ship mine clean. I have been producing about 1,000 dozen a month for years, and every egg goes into a pan of lukewarm water as soon as it has been gathered out of the nest. All dirt is easily removed after the eggs have been allowed to lie in warm water a few minutes, and the heat imparted to the egg by the warm water causes it to dry quickly, and gives it that fresh appearance peculiar to a new-laid egg. If the water hurts their keeping quality, I have never heard of it. Thie testimony probably has little value, as my eggs get into consumers' hands before they have time to spoil. A few years ago I filled a few glass fruit cans with eggs, and then filled the cans with sterilised water at a temperature of 155 degrees sealing immediately. Eggs thus treated in December were in perfect condition after four months. The most expert chandler that I could find in the city said that they would pass anywhere for new-laid eggs, and Dr. W. E. Douglass, of Middleton, to whom I sent some, had them poached for his dinner-table, and said that no one at his table could tell them from new-laid eggs. The shells were in perfect condition so far as we could see, and the air cells smaller, if anything, than in a new-laid egg. I also tried some in the same way during the summer, but the water and eggs soon became tainted. From this I concluded that, although stated in the *New York Produce Review*, "wet eggs soon decay in wet weather," the cause is found in "warm weather," and not in "wet eggs."

Keep Eggs Dry.—The *New York Produce Review* is right. Eggs certainly are injured by washing. They will not keep so well or hatch so well as unwashed eggs. At least such has been my experience. The best that can be done for a soiled egg is to wipe it with a dry cloth; and, if the matter is important, carefully rasp the thickest of the dirt off with coarse sandpaper. If an egg is washed in either cold or warm water, it will be noticed at once that the "bloom" has disappeared, and a careful egg-buyer would at once pronounce it a stale egg. If only the fourth part of the shell is unsoiled, that part will show that the egg is fresh, because the "bloom" will be there. If you want eggs to keep well or hatch well, I would advice you to keep them out of water. Don't even rub them with a damp cloth. Keep hem dry.

FIBRES.

THEIR CHEMICAL EXAMINATION.

(*Dr. Dodge.*)

In presenting this phase of the study of fibres, I can but refer to the valuable work that has been accomplished in England in the field of chemical research by Messrs. Cross, Bevan, and King, and I will refer particularly to the Report on Indian Fibres and the work on Cellulose, the latter being a recent publication. The methods adopted in the chemical study of fibres and the processes essential to proper determinations are as follows:—

Moisture.—All the celluloses hold in their ordinary state a certain proportion of moisture, which, within the limits of variation (one-half of one per cent) due to atmospheric changes, is definite and characteristic of each fibre. It is noteworthy that the proportion of hygroscopic moisture is an index of susceptibility of attack by hydrolytic agents; it is certainly true that the textile fibres of the highest class are distinguished by their relatively low moisture. It is scarcely necessary to say that the moisture is determined by drying a weighed quantity of the fibre. It is necessary to raise the temperature to 110° to drive off the whole of the water; at 100° a fibre will often retain one per cent of its weight. Owing to the variations in this constituent, it is expedient to express all the results of analysis as percentages of the dry fibre.

Mineral Constituents.—The ash left on incinerating the fibre is determined in the usual way. The proportion is low in the ligno-celluloses, higher in the pecto-celluloses, especially when the proportion of non-celluloses is high. Cellular tissue further contains a higher proportion of mineral constituents than the fibers, and an admixture of the former therefore raises the percentage.

Hydrolysis.—There are two classes of reagents which intensify that resolving action of water upon organic bodies known as hydrolysis; they are the acids and alkalis. The destructive action of acids has not been included in the scheme of analysis. The action of boiling dilute alkalis, however, effecting a simpler resolution and involving very important points in the practical applications of the fibres, give results which form a necessary part of their diagnosis.

Example of Treatment.—The fibre is boiled (*a*) for five minutes in a solution of caustic soda (1 per cent Na_2O), washed, dried, and weighed, the loss of weight presents the proportion of the fibre which yields to the solvent action of the alkali; (*b*) in a second portion the boiling is continued for one hour—the loss of weight is an indication of the "degrading" action of the alkali. In many of the pecto-celluloses the hydrolytic action of the prolonged boiling is such that the non-cellulose is almost completely dissolved away. The power of resistance of a fibre to the action of bleaching processes, as well as the resisting of "wear" of the manufactured fabric in subsequent washings (laundering), where strong alkaline soaps or even chemicals are used, is shown.

Cellulose.—Celluloses, although similar in external characteristics, are of widely different chemical constitution, and vary considerably in their power of resisting the further action of oxidizing and hydrolytic action. A determination of the value and composition of cellulose is made

as follows :—A fresh specimen having been boiled in the dilute alkali (1 per cent Na_2O), is well washed and exposed for one hour, at the ordinary temperature, to an atmosphere of chlorine gas. It is then removed, washed, and treated with a solution of sodium sulphite, which is slowly raised to the boiling point. After two or three minutes' boiling it is washed on a filter when necessary, though in most cases it may be so placed in a funnel as to act as its own filter. Lastly, it is treated with dilute acetic acid, washed, dried, and weighed. The percentage yield on the raw fibre is the most important criterion of its composition and value.

Mercerzing.—This refers to the action of concentrated solutions of the alkalis upon vegetable fibres, particularly the compound fibres or those which are made up of a number of fibrils aggregated into a bundle, the larger portion of fibre consisting of such bundles. The action of the alkali often causes a very profound change in structure, not only dissecting the bundles, but altering the contour of the fibrils. The treatment takes its name from Mercer, whose original studies were for the determination of the structural modification which cotton undergoes when treated with strong alkalis.

Nitration.—When a fibre is exposed for one hour to a nitrating acid, such as a mixture of equal volumes of concentrated nitric and sulphuric acids, one of the most important results which follow is an increase in weight. An external characteristic which should also be noted is colour. A great deal of information regarding the constitution of a fibre is ascertained by this process.

Carbon percentages from Combustion.—This process consists in burning the substance with chromic anhydride in presence of sulphuric acid and leading over the gaseous products (CO and CO_2) into an apparatus in which their volume can be exactly measured. The two oxides of carbon having the same volume, the quantity of carbon in unit volume is independent of the composition of the gas, which therefore only requires to be measured. The carbon in the typical (cotton) cellulose is 44·4 per cent.; the compound celluloses, on the other hand, range themselves for the most part into two groups (1) of lower carbon percentage (40-43), (2) of higher (45-50), in the former the pecto-celluloses are included, the ligno-celluloses in the latter. This is considered a prominent chemical constant of the fibre substance.

Acid Purification.—The object of this treatment is to clean the fibre and remove accidental impurities, while occasioning the minimum loss of weight and therefore alteration in composition. For this purpose acetic acid (20 per cent) is chosen, the fibre being heated with the acid to the boiling point, then removed and washed first with alcohol, and lastly with water, dried, and weighed. The loss in weight sustained is thus determined. It is in the fibre thus purified that the carbon percentages are determined

In a report on the miscellaneous fibres in the Colonial and London Exhibition of 1886, by C. F. Cross, the scheme of analysis is thus briefly stated in tabular form :—

Seperate portion taken for each determination. Results calcu ated in percentage of dry substance.

Moisture	Hygroscopic water, or water of condition.
Ash	Total residue left on ignition.
Hydrolysis (*a*)	Loss of weight on boiling raw fibre five minutes in one percent solution of caustic soda.
Hydrolysis (*b*)	Loss of weight on continuing to boil one hour.
Cellulose	White or bleached residue from following treatment (1) Boil in one per cent. Na O H five minutes; (2) exposure to chlorine gas one hour; (3) boil in basic sodium sulphite.
Mercerizing	Loss on treating one hour with 33 per cent solution caustic potash, cold.
Nitration	Weight of nitrated product obtained by treatment with mixture equal volumes of nitric and sulphuric acids one hour, in the cold.
Acid Purification	Raw fibre boiled one minute with acetic acid (20 per cent), washed with water and alcohol and dried.
Carbon percentage	The carbon in the fibre from above, determined by combustion.

THE MICRO-CHEMICAL STUDY OF FIBRES.

The microscope is a valuable adjunct to the study of fibres, not only for the purpose of determining the dimensions of the ultimate cell, the thickness of the cell walls, the arrangement of the different kinds of cells in the plant tissue, and the relative abundance of the fibre cells, but all these taken together, with the employment also of certain chemical reagents, giving a ready means of determining the identity of the species of fibre where doubt exists as to the kind of fibre that has been employed in the particular manufacture under investigation. The methods to be pursued in this kind of fibre analysis should be fully understood by the textile student, as well as the industrialist and all others who handle fibres and fabrics commercially.

Among the text-books that may be consulted no better can be suggested than the valuable work of

M. Vetillart, of Paris, who has given many years of study to the subject. As the publication is in the French, it is not readily available to English students. An abstract of the methods pursued by M. Vetillart appears, however, in Appendix B. in the valuable paper "On the Identification of Fibres," which has been specially prepared by Prof. William H. Seaman.

The identification of fibres involves both chemical and microscopic study in many instances microscopic determination only being possible with the employment of the resources of the chemist, and the use of both systems, therefore, is essential. As the work of Professor Seaman covers the ground most thoroughly, a further consideration of the subject here is unnecessary.

PEABERRIES AND MALE COFFEE PLANTS.

Dr. D. Thomatis, commenting on a paragraph in the May number of this *Journal* (1899) on the subject of male coffee plants, writes:—

"As our Government Botanist, Mr. F. M. Bailey, states, the coffee plant is neither *diœcious* nor *monœcious*, but beyond doubt *hermaphrodite*, as clearly shown by the examination of its flower. Why should the abundance of *peaberries* fruit on a tree indicate that it is a *male?* Is not peaberry fruit all the same? And still more, a peaberry seed germinates as readily as a bi-lobed berry. The paragraph says that the cause of peaberry fruit is not definitely known. I am surprised at this statement, as it is very easy to find the cause, which is in the poverty of the soil and the dryness of the weather after the blossoming time, as through these two causes the young fruit could not be fully formed, developed, and nourished; hence only one lobe grew, and the germ of the other became abortive and atrophied, and consequently the single lobe or grain grew in a roundish form, and the fruit, being a single-grained berry, is richer in the essential aroma. If the ground be rich, season favourable, tree well trimmed and pruned, and blossoms thinned, very few peaberries will be produced."

Reporting on the question raised in the paragraph and in the above letter, Mr. Howard Newport, Instructor in Coffee Culture, says:—

In the accompanying letter on this subject, sent on to me for an expression of opinion, I fail to see where the question arises as to why the abundance of peaberries on a tree should indicate that it is a male.

On referring to the article in the May issue of the departmental *Journal* quoted by the correspondent, it would seem that the first mention of the idea was in the form of a contradiction. It is later contradicted by the Colonial Botanist, and is in itself a contradiction. The amount of peaberry on a tree has nothing whatever to do with the sex of coffee.

Peaberry is the result of the failure, for some reason or other, of its fellow-germ to fructify. There are naturally in the embryo berry two cells, and it would appear that under certain circumstances one of the cells, on coming in contact with the pollen, will fructify while the other will not.

That it is so is clear on examination of the peaberry where the atrophied germ is discernable, and its envelope of parchment skin, folded together, still in its place within the "pulp." The reason why the pistils should convey the pollen to one ovule and fail to fructify the other, is the point that is not thoroughly understood yet, and not the state of the tree in which it is most liable to this condition, as your correspondent seems to think.

The peaberry is a malformation, and generally takes place when the tree is weak or in a state of low vitality, and this condition may be brought about by unfavourable conditions of soil, climate, or cultivation. A tree overbearing will produce a larger percentage of peaberry than one with a more moderate crop, even though conditions of soil and climate are as favourable as could be desired.

The shape of the malformed growth is somewhat as your correspondent states. It was thought at one time that it was the production of a special variety of coffee-bush—at any rate, by those who had to do only with the cured article; and there are many yet that still adhere to this fallacy, due chiefly to the fact of its being graded separately.

Peaberry obtains its higher value in the market chiefly on account of the advantage of its shape in roasting. Being easier to roast uniformly, it is supposed to contain a greater percentage of caffeine or aromatic properties, but this is exceedingly doubtful. Its presence on the tree is of doubtful advantage also. A large percentage of "P.B." grade—indicating, as it does, impaired vitality—although its price is enhanced, is yet a long way short of the value of the double bean in the normal growth.

As a seed for propagation, "P.B." germinates readily, but repeated experiments have been able to show no advantage in the growth, stamina, or bearing capabilities of its production over that of the bi-lobe; nor does the plant raised from a peaberry show any special tendency to produce peaberries.

"*Male*" *Trees.*—The coffee-tree is, as is well known, hermaphrodite; it is also well known that in such cases generally the contact of pollen from another tree or blossom obtains better results than its own pollen. It may be, therefore, that the peaberry is due, to a certain extent, to continued self-fertilising of the plant or "inbreeding."

It is supposed that the plant commonly called the "male" coffee-tree is due to this cause. However this may be among seedlings in a nursery, there is always found a small percentage of plants that appear with long narrow leaves, eyes closer together than ordinary, and a smaller and more stunted growth altogether.

In cultivating these in the field, it is found they bear very little, although they blossom freely. (I have never yet met with one that did not bear at all.) The flower is somewhat smaller than that of the ordinary tree, but would structurally appear to be identical. It is supposed that the want of fertility is due to some malformation of the stigma or ovules, since the pollen is perfectly fertile when applied to other blossoms.

This tendency to produce blossom that will not fertilise, yet will fertilise others, has earned for this long-leaved tree the sobriquet of "male" coffee. Whether the presence of such trees in an estate is Nature's own remedy for a too long-continued course of "in-breeding," and is, therefore, of advantage, is a moot point. Generally the plant is considered useless and unnecessary (since the other trees, being hermaphrodite, can do without it), and since it bears so little, is not considered "worth its keep." It is, therefore, usually picked out and thrown away as early as it shows the telltale narrow long leaf in the germinating bed or nursery.

PRESERVATION OF EGGS.

The following is a report of experiments made at the Central Experiment Farm, Ottawa, Canada, of the two methods usually considered the best of preserving eggs. The experiments were conducted by Mr. Frank T. Shutt, chemist, Dominion Experiment Farm, and Mr. A. G. Gilbert, the poultry manager. Having received numerous inquiries from farmers during the past two months respecting the merits of "water glass" as a medium in which to keep eggs, we are led to think that certain conclusions drawn from an experiment, lately brought to a close, with this and other preservatives will be of interest to your readers. The investigation was commenced last September, perfectly fresh eggs from the farm poultry house being used for the test, which consisted in immersing the eggs for varying lengths of time, from a few hours to six months in (*a*) limewater, and (*b*) 10 per cent. solution of "water glass." Those eggs which were treated for a few hours, days, or weeks, as the case might be, were subsequently placed, together with the untreated eggs to be used as a check, in a rack within a drawer in the laboratory till the close of the experiment, 30th March, 1899. All the eggs were at a temperature from 65 degrees to 72 degrees Fahr. throughout the trial. The testing consisted in breaking the eggs into a glass and noting the appearance of the "white" and yolk, whether the yolk was stuck to the shell, size of air-space, odour, &c. The eggs were then poached and again the odour, appearance, &c., noted. Without giving in detail the results of the various trials, it may suffice for the present purposes to summarise the conclusions reached, as follows :—

CONCLUSIONS.

1. In no instance, either of treated or untreated eggs, were any "bad" eggs found.

2. In all cases where the eggs were not kept covered throughout the period of the test with the preservative solution, shrinkage of the contents had taken place, as shown by the larger air-space, less globular form of the yolk, and in many instances by the adherence of the yolk to the shell. The eggs treated for seven days and less with limewater showed somewhat less shrinkage than those treated a similar length of time with silicate of soda.

3. It would appear that limewater and "water glass" used continuously are equally efficacious in preventing shrinkage. They may also be said to give practically the same results as regards both external and internal appearances, flavour, &c., of the eggs preserved. Since "water glass" (silicate of soda) is more costly and more disagreeable to use than limewater, we could not from the present results recommend the former as the better preservative.

4. The albumen or "white" in all the preserved eggs was very faintly yellow (though not to the same degree in all the eggs), the tint becoming deeper on boiling.

5. No offensive odour was to be perceived from any of the eggs when broken, but in all instances a faint but peculiar musty or stale odour and flavour developed on poaching.

6. It is probable that no preservative will prevent the loss of flavour possessed by the fresh egg, but those which wholly exclude the air (and thus at the same time prevent shrinkage from evaporation) will be the most successful. Continual submergence is evidently better than treatment for a few days. The limewater may be made by putting 2 or 3 lb. of good fresh lime in 5 gallons of water, stirring well at intervals, for a few hours, and then allowed to settle. The clear supernatant fluid can then be poured over the eggs, which have been previously placed in a crock or water-tight barrel.

Some authorities recommend the addition of 1 lb. or so of salt to the limewater, but the writers are of the opinion that this is unnecessary, and probably leads to the imparting of a limy flavour to the eggs by inducing an interchange of the fluids within and without the egg. The all essential points to be remembered are :—(1) The the eggs to be preserved shall be perfectly fresh, and (2) that they shall be covered with the preservative fluid.

GENERAL ITEMS.

The extent of mortality in Sind amongst cattle, due to the famine, may be judged from the fact that one Trading Company alone has already purchased three million hides for shipment. Up to the present time the cattle have sufferred more acutely than the people. This is partly due to the promptness with which relief works have been opened, and partly to the rapidity with which grain has poured in from other Provinces by the natural operation of the law of supply and demand.

The stimulus given to the hide trade by the famine is not confined to Western India. The returns show a jump from nineteen to forty-nine lakhs of rupees in the value of hides exported from Calcutta in November, as compared with the corresponding period a year ago. The increase thus amounts to thirty lakhs in the same number of days, all classes of skins sharing in the advance.

The report of the Governor of Trinidad furnishes an agreeable contrast to the stories we have so often been told of the ruin of the West Indies. Writing in July last, Governor Knollys says: "There is no doubt that at the present moment Trinidad is more prosperous than it has ever been before."

In connection with the question of the appointment of scientific experts for the investigation

of questions connected with the cultivation and' manufacture of Indian tea, the Committee of the Indian Tea Association has recommended the engagement of an experienced Agricultural Chemist, recommended by Dr. Voelcker.

The Director of Agricultural Education to the Gloucestershire County Couucil, Mr. Howman, has carried out a series of interesting experiments in the manuring of fields. Plots of ¼-acre each have been annually manured under five different systems. Basic slag was used alone and iucombination with nitrate of soda. Bone meal was used with mineral superphosphate in a third case, while the two remaining plots were manured with kainit and gypsum. The quantities of each mar ure used are not given, but the following is the cost per acre:—For slag, 15s. 8d.; for slag and nitrate, 26s. 8d.; for bone meal and superphosphate, 16s. 8d.; for kainit, 7s.; and for gypsum, 5s. 6d. The whole of the plots on two different fields were manured five years ago, and have not been manured since. In 1895 the plot receiving slag alone returned an increased value per acre of 2s. 4d.; 1896 the field was grazed; in 1897 the increased value was 59s. 4d.; in 1898, 35s. 6d.; and in 1899, 51s. 8d.; or in all £7 8s. 10d. for four years. Where slag and nitrate were employed, the increased value as compared with slag alone was slightly more in 1895 and 1897, but less in 1898 and 1899; the total increased value for the four years being £6 4s. The bone meal and superphosphate gave a total increased value of 22s. 8d., the kainit of 2s., and the gypsum of £1 18s. 8d., so that the slag proved the most useful manures.

Mr. A. N. Pearson, Government Agricultural Chemist, Victoria. writes:—Bones in country districts, where crushing mills are not available, may be reduced by means of caustic lye, quicklime, or freshly calcined wood ashes· A simple plan is to pack the bones, layer by layer, with the calcined wood ashes taken fresh from the fire, in a barrel, cover the whole with a thick layer of soil, and keep the mixture moistened for some months. Casks may be kept in constant use for this purpose on a farm, receiving every few days a fresh layer of bones and ashes, removing the layer of soil for the purpose, and freshly calcining any old ashes that may have accumulated. A quicker method is to boil the bones in an iron or copper boiler with strong caustic lye. The proportions of bones and lye are not invariable, but may be taken as about 10 lb. canstic soda or 14 lb. caustic potash, dissolved in 3 gallons of water, to 30 lb. or 40 lb. of bones. The bones boiled for two or three hours in this lye should be completely disintegrated. Eveu without boiling, the lye will, in a week or so, disintergate the bones. Another method of softening bones is to mix them in heaps with quickline and loam. A layer of bones 6 inches deep is made, and on this is placed a layer 3 inches thick of quicklime, and then a layer 4 inches deep of loam. The layers of bones, lime, and loam are repeated until the heap is of a convenient height, when it is finally covered with a thick layer of earth. Holes are then bored into the heap from the top, and water poured in to slake the lime. The mass becomes hot, and will remain so for two or three months, after which the bones should be very friable. The whole heap may then be mixed up, and used on the ground at rate of 10 cwt. to the acre.

Watering is a question which perplexes many an amateur florist. How often shall I water my plants? How much shall I give at a time? Over and over these queries are made by correspondents. To which I can make but one reply: There is no hard and fast rule about watering plants. There can be none, because conditions under which plants are grown differ so widely that what would apply in one case would fail to do in another. But we have a general rule which is subject to such modifications as observation and intelligent study of one's plants seem to make necessary, and that rule is this: Wait until the surface of the soil in the pot looks dry, then apply water, and apply enough of it to thoroughly saturate all the soil in the pot. You can tell when this is done by the escape of some of it through the drainage hole in the bottom. Then wait again until the dry look comes on the surface before applying more. Of course Callas and other plants of a semi-aquatic nature will require more water than others like the Geranium and the Rose, and here is where study and observation must come in to enable you to care for your plants properly, To be a really successful plant grower you must understand the nature and habit of every plant in your collection, and so vary your attention as to give each plant the particular care it requires. One of the chief charms of flowers growing consists in this study of plant life. We take it up at first because we want to give our plants the attention they need in order to make a satisfactory developmeut. In a little while we have become so interested in it that we continue it for the pleasure it affords us. It is a facinating study. It is a study in which there is always something more to learn.

The Annual Report of the Department of Agriculture says:—Rice being a crop more especially adapted to the North, did not come uuder the ban that was placed upon the grain crops that are grown in the South, and was favoured with a good season. This is becoming a staple grain crop in that part of Queensland, the area for 1898 showing an increase of 418 acres over 1897, that for the former year being 863 acres, with a yield of 38,133 bushels, or an average of 44·19 bushels to the acre, as against 29·19 for 1897. Hitherto rice has been in the experimental stage, has been grown in many parts of the colony, and has fluctuated in area as success or non-success has been met with. It is, however, now settling down to be the property of the Northern district, and it is to that part that the future supply may be looked for, for it behoves the farmers to be careful to grow the variety to suit the market, for of all grains rice is most subject to prejudice and favouritism. It is the grain that in the largest quantities comes into the hands of the consumer in the form that is most nearly allied to the original state, and so is dependent upon the fancies of the consumer for the variety that shall command

the highest price. From the figures of the Registrar-General, Queensland at present produces 14 per cent. of its annual consumption, the statistics being—Production (estimated at the rate of 162 lb. of paddy to the 100 lb. of clean rice), 1,318,176 lb. of clean rice; and the imports, 8,235,564 lb., of a value of £49,456. The principal district for rice is that of Cairns, which produced 82 per cent. of the total yield, 708 acres being cropped for 33,540 bushels, or an average of 47·30 bushels to the acre.

There are many so-called remedies for warts on animals which are more or less non-effective. The latest we have heard of appears to have proved successful in the case of dogs. A gentleman in England had a beagle puppy whose mouth, tongue, lips, and face were covered with white warts closely packed together. Several so-called remedies were tried without result, and the dog died, choked. A year or two after he had a cob with warts over the shoulder, neck, and face, when, either in print or from hearsay, he learned that warm bullock's blood would remove them. This was tried, on the principle that if it did no good it could do no harm; result, after two or three dressings the warts disappeared, and did not come any more. Another case. Five years ago he had six greyhound saplings, whose mouths, tongue, and lips, outside and in, were covered with warts. It was two days after discovery before he was able get to the butcher when killing. By this time a fine crop of warts had developed. The method was this: As soon as the bullock was knocked down and stuck, the dogs' heads were dipped in a bowl of the live blood, and all the parts affected were well rubbed with it while warm (after it begins to clot or solidify it is no use). The day after the first dressing the warts turned brown. Two days after they were dressed again. The following day they (the warts) began to get soft, and looked rotten, many of them falling out on being handled. After two days, dressed again, when they all disappeared, leaving small marks such as smallpox leaves. After a time nothing could be detected at all. He gives this as his experience. At all events, it is harmless and painless, and the price of a pint or two to the butcher is not costly. This remedy might be tried in the case of fowls. Warts on chickens may, however, be absolutely cured by dipping the fowls' heads in urine. After a few applications of this remedy the warts disappear. We cured nine valuable Cochin chickens in this manner, whose heads were a mass of warts.

The *Pacific Rural Press* describes as follows the system of propagating trees from cuttings with the aid of nurse roots. It is of especial interest in the relation it bears to the important discovery claimed by Secretary Lelong, of the California State Board of Horticulture, as to propagation by aid of "mother roots":—If you take a cutting of almost any kind and make a side cut upwards a little above its base, and insert in this cut a piece of the root of the same kind of a plant cut with a wedge shape at the top so as to fit closely in the cut in the cutting, this root will quickly callus itself to the cutting, send sap into it and start its growth. If the cutting were planted without this "starter" root, all the moisture might evaporate from its tissues (which is death to a cutting) before it can establish roots of its own to supply it with sap. Thus this root piece becomes a nurse to the cutting until it is able to take its own nourishment, as it soon will by means of roots emitted from its own tissue. There is no recent discovery about this. It has been kown for generations and has been employed in the propagation of all sorts of plants. It is simply one of the many forms of root grafting. If it is desired that the cutting grow upon its own roots alone, it is taken up at the end of the first season's growth and the nurse root is cleanly cut out and the well-rooted cutting is replanted. If it does not matter whether it grows upon its own roots and the enlargement of the nurse root (which is generally the case) it is allowed simply to go ahead as it likes. All roots on root grafts are nurse roots, more or less, because in almost any underground grafting you will have roots from the scion unless you take pains to replant with the whole of the scion or cutting above ground. This work can be done with cuttings of greater or less maturity. If you take last year's wood from a bearing tree you will, of course, get fruit in a year probably. If you take a cutting from a tree not yet in bearing you will have to wait longer. The speed of fruiting will be conditioned upon the age of the tree, and its habit of bearing upon wood of one or two years' maturity.

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RINDERPEST.*

By G. W. STURGESS, M.R.C.V.S.,
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As I am constantly being asked for information as to what should be done with the view of guarding against an attack of this disease and its suppression after it has broken out, I propose in a few notes upon the subject to state as simply and clearly as possible the position at the present time, and the precautions which owners of cattle can adopt.

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* CATTLE DISEASE.

Kandy, Feb. 23.

The Editor, Tropical Agriculturist, Colombo.

SIR,—With reference to the annexed copy of minute and resolution passed at a recent meeting of the Committee of the Planters' Association, I write to ask you whether the accompanying paper on Rinderpest would be acceptable to you for reproduction in the *Tropical Agriculturist*.—I am, sir, yours faithfully, A. PHILIP,
Secretary to the Planters' Association of Ceylon.

MINUTE AND RESOLUTION REFERRED TO.

Read letter from the Government Veterinary Surgeon, Colombo, transmitting his paper on Rinderpest and adding that he was leaving the island for South Africa, and that owners of cattle should report any case of Rinderpest to the Government Agent without delay who would inform the Veterinary Department; trained inoculators are kept in readiness and would be sent when required. Resolved:—"That the thanks of the Association conveyed to Mr. G. W. Sturgess, M.R.C., V.S. Government Veterinary Surgeon, Ceylon, be confirmed and that his paper be published."

[Dr. Sturgess's paper, which we now publish, will be of interest and value to all stockholders —European and Native.—ED. *T.A.*]

QUARANTINE.—The question of the subjection to quarantine of all cattle imported into this country I have recently raised, and it is under the consideration of Government. Apart from that, I would advise that all fresh cattle purchased should be kept apart from the remainder of the estate cattle for a clear week as a precaution not only against rinderpest but several other less serious diseases. A cadjan shed can without much cost be provided for this purpose whenever cattle are purchased. If after this period the cattle exhibit the usual signs of health and have a normal temperature they may be regarded as perfectly safe.

TEMPERATURE.—The average temperature of cattle in health is 102 F. As a maximum 103 F. and as a minimum 101F. may be taken. Any animal with a temperature over 103 F. should be regarded with suspicion. The temperature is taken at the rectum by means of a clinical thermometer.

RINDERPEST.—It is a highly contagious and infectious disease. It principally attacks cattle, but during a bad outbreak the smaller animals such as sheep, deer, goats may also be attacked, yet do not suffer so severely as cattle. It is communicated from one animal to another mainly by cohabitation; it may be carried short distances by the air. It may be spread by animal agency and by discharges from sick animals for long distances. The period of incubation is from five to ten days, and cattle recover or die in about the same time. The vitality of the virus in the nasal and other discharges is probably about a fortnight when exposed to the air, especially to the tropical sun; in buried carcasses it is probably several months.

SYMPTOMS.—There is elevation of temperature some days before the more marked symptoms appear, and animals may be ill and capable of communicating the disease before the more severe symptoms are exhibited. One of the earliest in many cases is puffing of the stomach resembling

ordinary indigestion. After a time the animal appears dull and dejected and loses its appetite. There may be twitching of the muscles of some part of the body. Usually at the outset there is constipation, soon followed by diarrhoea with blood in the discharges, which becomes worse as times goes on and has an offensive odour, the term "rice water diarrhoea being applied." Membranous casts resembling strings of flesh may be passed. The posterior bowel is intensely red and inflamed, and in the last stages protrudes from the anus.

There is a discharge from the eyes and nose which is irritant and often causes sores around the nostrils. The lining of the mouth becomes red and inflamed, and ulcers may be found inside the lips,* red patches may be seen inside the thighs of males and in females around the udder and vulva and inside the vagina. In the later stages the animal has a miserable appearance and may give low moans, emaciation goes on rapidly, the eyes sink and there is utter collapse and death.

PRECAUTIONS TO BE OBSERVED WHEN AN OUTBREAK OCCURS OR IS SUSPECTED.—When an animal falls ill in a herd exhibiting the symptoms of the disease it should be at once isolated in a shed as far away as possible from other cattle. As fever is one of the earliest symptoms, the temperatures of the remainder should be taken every day, and any showing high fever over 103 F. should be removed and isolated. In this way an animal can be picked out before it spreads the infection to its neighbours. It is as well to have two sheds, one for animals having a high temperature suspected to be developing the disease, and the other where those that develop the disease can be taken. Sacks soaked in creosote and water (½ teacupful to a bucket of water) or carbolic acid and water should be hung up in all the sheds for disinfection. The walls and floors should be sprinkled with the same solution or Jeye's fluid and water. The cattle should not be allowed to drink all from one vessel.

As an aid to prevention *all* the animals may be given ten drops of Jeye's fluid daily in their food. After three or four days' use it should be discontinued for a couple of days and then given again.

It is obvious that an owner should prevent his cattle coming into contact with other cattle as much as possible during an outbreak in a district and should not allow outside cattle to come on the estate, or cart manure from an infected village to the estate.

TREATMENT OF SICK ANIMALS.—Very little can be done in the way of treatment, but the following I have found most useful:—

Quinine	.. ..	1 dram
Arrack	... ..	¼ bottle
Rice Congee ...	..	4 bottles
(Mixed.)		

To be given once or twice a day for a week or longer if necessary.

Ten drops of Jeye's fluid may also be given daily.

* They differ from the blisters of Foot-and-Mouth disease, being *cracks* in the skin, while the superficial layer of the skin is raised in the form of a blister in Foot-and-Mouth disease, and in the latter disease the feet are sore as well.

AS FOOD.—Rice congee, scalded bran, or bovinia and water. No hard food such as straw or grass should on any account be given until convalescence is well established, and then very gradually.

If there is violent diarrhoea a few doses of the following powder will be found beneficial:—

Prepared chalk	.. ..	2 ounces
Powdered catechu	... ..	½ ounce
Powdered Gentian	.. ...	1½ ounces
(Mixed.)		

To be given in a quart of congee.

INOCULATION.—When Rinderpest made its appearance in South Africa and became so widespread, scientific experts were got out to endeavour by experiment to find out a method of protective inoculation. After some time Professor Koch pointed out that the contents of the gall-bladder, the "bile" possessed protective properties when taken from an animal dead from rinderpest under certain conditions. This is the "*bile method*." Later it was found that the blood of an animal that had recovered from the disease had protective properties in a mild degree. By injecting such an animal with gradually increasing doses of virulent rinderpest blood it was capable after a time of giving a blood serum of high protective value. This is the "*serum method*" and all the others are modifications of the two.

The bile method is simple and can be carried out without much difficulty. The material is always at hand whenever the disease breaks out. The serum method requires a properly equipped rinderpest station and laboratory in order to produce the serum.

The bile method affords protection for three or four months and repetition is necessary; the serum method also only gives temporary protection to healthy cattle, but it has been demonstrated that if cattle are inoculated with serum when developing the disease *as soon as* the temperature rises more or less permanent protection is given. A mild attack is contracted and a great many animals recover, but some losses occur.

The following are the details of the bile method which I published in 1898 (*vide* Ceylon Sessional Papers), and as far as I have gone with it—some one hundred cases—the results have been satisfactory. When properly and clearly carried out the cattle have not suffered any inconvenience and have returned to their work in about ten days.

THE BILE.—In a good percentage of fatal cases of rinderpest the bile will be found good for the purpose of inoculation. It should be dark-green in colour, perfectly fluid, free from shreds of the lining membrance of the gall-bladder, and from any odour of decomposition. A good number of instances occur where the bile is unfit for use, being yellow or dark-brown in colour, ropy in consistency, and containing shreds of the mucous lining of the gall-bladder. Such bile is poisonous and useless. The best bile is that obtained from an animal that has suffered severely from rinderpest for some days, or better if it has succumbed to the disease. It must be taken before decomposition of the body commences. In instances where it has been good I have noticed it was very abundant in most cases, a half to one pint being easily obtained.

METHOD OF TAKING THE BILE.—Great care must be taken in removing the bile in order t avoid contamination by blood, or contents of th

intestines, or by fluid of any kind in the abdominal cavity.

N.B.—The carcass should be placed on the left side and the abdominal cavity opened by cutting along the middle line from the breast-bone to the pubis and behind the last rib down to the backbone. An assistant can then raise the flap, and the liver and gall-bladder lying underneath the ribs are well exposed.

The gall-bladder should be slightly raised with the hand, and if dirty washed with a weak solution of bichloride of mercury (corrosive sublimate) in water (1 in 1,000 or 10 grains to the pint). An assistant holds a glass jar against it (taking care not to allow any blood or extraneous matter to enter), and it is then punctured with a sharp knife and the bile allowed to flow into the jar. A glass cover should be placed over the jar when the operation is finished. The hands, jar and instruments should be well washed and rinsed with the bichloride of mercury solution and dried. If several good samples of bile are obtained they should be mixed together and left for several hours before using. The bile should keep good for at least 24 hours if kept cool and in a covered vessel.

METHOD OF INOCULATION.—The animals should be cast and the legs tied. Ten cubic centimetres (about three drams) of bile is then gently injected under the loose skin in front of the chest (dewlap) by means of a 10 cubic centimetre hypodermic syringe and needle. As the needle of the syringe is withdrawn the skin should be pinched between the finger and thumb at the point of insertion, to prevent any of the bile coming out again and to close the wound. The part should be gently squeezed to insure distribution of the bile in the subcutaneous tissue. Protection is given in 10 days.

After inoculation cattle should not be worked for ten days. A swelling forms at the seat of inoculation and gradually subsides. There may be a little fever. The method is only of service when the cattle are free from the disease ; if they have contracted it before inoculation it is of little service as protection is only afforded after *ten days* from date of inoculation.

Probably in some cases the bile may not contain the protective property to a sufficient degree, and some inoculated animals may develop the disease after inoculation and die, but this does not detract from the general usefulness of the method.

The disease in Ceylon is usually confined to areas and appears at intervals—sometimes long intervals—and as the "serum" method of inoculation on healthy cattle only confers temporary protection similarly to the "bile" unless applied when the animals are developing the disease, which would necessitate "salted" animals being kept at a high degrees of immunity so as to be capable of yielding the proper serum from their blood at once whenever the disease broke out. It takes several months to bring cattle to this stage by injecting increasing doses of virulent blood from an animal suffering from the disease. The preparation of the animals and serum could only be done at a properly isolated rinderpest station.

While favouring the permanent protection by serum, applied when the animals are past developing the disease (it is very plain to anyone I think how difficult it would be to apply this in this country). I think the bile method will answer our purpose combined with proper care in carrying out the simple rules of isolation and disinfection as applied to any contagious or infectious disease, at least until further investigation has perhaps shown a more useful and permanent method.

In South Africa evidence tends to show that it is possible for pure rinderpest bile to communicate the disease when injected into an animal.

Bile can be kept for some time by mixing it with glycerine, one part of glycerine to two parts of bile. It should be kept 48 hours before using.

This is quite safe (due to the action of the glycerine) and it is said to be of service as a curative applied to sick animals. From fifteen to thirty cubic centimetres can be injected either under the skin in front of the chest, or into the jugular vein when it exerts its action at once.

I do not advise indiscriminate inoculation. When disease breaks out in a district I would use *pure* bile amongst the *infected* herd, in doses of 10 c.c. (for very big animals 15 c.c. may be used), and for *clean* herds in the immediate vicinity an injection of 20 c.c. of *glycerinated bile*, and 10 days afterwards and injection of 10 c.c or 15 c.c, of *pure* bile taken from an animal that has died from rinderpest, which will confer a fairly strong protection.

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THE GEOGRAPHY OF TEA.

Having acquired, by travel in several of the principal places of production and in most of the important countries of consumption, a personal knowledge of the geographical distribution of the Tea plant in growth and of its product in consumption, I put together the results of my experience as a contribution, to the sum of commercial geography. This subject is not one of general importance to an International Congress, the areas of production and distribution being so comparatively limited, but it presents certain aspects of interest to the student of geography, and those I propose briefly to deal with.

It is doubtful if we ever shall be able to trace at what period in history an infusion made from the leaves of the Tea plant was first introduced as a beverage for domestic consumption, or how it was discovered that those leaves yielded a palatable drink when treated in the now familiar manner. Nor are we ever likely to know definitely when or how the regular cultivation of Tea shrubs was adopted in China as an agricultural industry, but it is probable that as our knowledge of China and its history increases, by reason of the developments now taking place there, we may gradually learn more of the past and we may possibly find authentic books dealing with the subject. At present we have little more than myth to go upon, and most of it is not worth treating seriously.

It is claimed that reference can be traced to the use of Tea in the writings of a Chinese author of about 2,700 B.C., but the earliest date that the article may be said to be of interest in connection with commercial geography is when it began to be exported. Even that period is difficult to fix, but during the 8th century A.D., it had become an article of taxable value, and probably soon after that the growing of it was commenced in Japan, although the cultivation of it there as an agricultural product does not seem to have begun till the 13th century.

The special points relative to the commercial geography of Tea, to which I wish to direct attention, may be grouped under three headings—

1. The principal localities of growth.
2. The principal areas of consumption.
3. The principal trade routes for transit.

(1) THE PRINCIPAL LOCALITIES OF GROWTH.

In the popular mind China still stands as the great producer, and, although reliable statistics of internal production and consumption are difficult to obtain, it is probable, having in view the immense population of that vast empire, and the very general use there of Tea, that the Chinese production is in respect to total quantity much the most important. But China is no longer regarded as the home of the Tea plant. Investigations have fairly and reasonably proved that Tea is indigenous to the valleyes of Upper Assam, and, proceeding upon the theory that a plant will thrive and develop best in what is its place of origin, the conclusion has been formed that the Tea plant of China is merely a debased variety of the indigenous Indian growth.

Probably Manipur was the birthplace of the Tea plant, as the variety of Tea known by the name of that native state has been the most successful and the most continually in favour with the planters. This state, lying just outside the tropics—an extensive valley with numerous hill ranges around it, densely clothed with jungle and large timber—seems to have developed those striking characteristics of the *Thea Assamica* which differentiate it so markedly from *Thea Sinensis*. In a climate where there is an abundant and fairly well regulated rainfall and a moist, steamy atmosphere with a cold, dry season to rest and ripen after growth, the Tea plant attained its highest development. Its existence in India and the native states bordering there-upon was unknown or at least unacknowledged till 1834; but as the Province of Assam was gradually explored and became developed by the constantly increasing Tea industry, there were found scattered through it and the adjacent districts many tracts of indigenous Tea. (*See Note at end.*)

Those considerations have given a fairly reasonable basis for the theory that the Tea plant made its way gradually eastwards along the lower slopes of the mountainous range lying just north of the Tropic of Cancer for some 30 degrees of longitude from the Brahmapootra Valley eastwards. At various points of the intervening distance can be found connecting links—say in Upper Burmah—until Tea is found in cultivation in Yunnan, the westernmost province of China. But the Tea, which in the jungles of Assam is often a tree 9 metres and upwards in height, has become merely a bush and so different in its general appearance that the botanists to whom the early discovered specimens of *Thea Assamica* were submitted may be pardoned for deciding that the latter was not Tea at all. The climate and soil of China, though suited to maintain life in the plant, do not induce the rank, quick, vigorous growth which an Indian plantation exhibits during fully half of each year, and in China the recovery of the bushes after plucking is much slower. The individual leaves are smaller and the flavour of the infusion made from these is so absolutely different from the other that even an untrained palate can recognise the contrast.

Minor differences however in that respect exist between the Teas grown in different districts of the same country, and even between plantations on opposite sides of the same valley or the same hill; situation, soil, elevation, climate and temporary climateic or weather conditions, all having a material influence upon both the appearance and the flavour of the manufactured article, and altering more or less its characteristics.

From Yunnan the cultivation of Tea doubtless spread eastwards and northwards, crossing ultimately from the mainland to the Island of Formosa and later to Japan.

Until well on in this century no effort appears to have been made to remove from Mongolian hands the monopoly of the Tea production, but when the Honourable East India Company lost in 1833 their monopoly of the China Tea Trade, the Directors set themselves to ascertain whether or not it was possible to secure for their own territories the supplying of a portion of what had become to them a very material business.

Vigorous but ill-advised efforts were made to introduce the cultivation of Tea into India, and seeds and plants of the debased China variety were imported. With those came Chinamen and Chinese methods of planting, cultivation and manufacture—much to the determent of the industry, the following 40 or 50 years being occupied in getting away from everything Chinese, and through the costly experience of mistaken and misdirected effort, the poor planter and investor acquired the excellent methods upon which the Indian Tea production is now worked—worked so excellently indeed as to have proctically destroyed the export trade for certain classes of the Tea produce of China. Clearances of jungle were made, including tracts of the indigenous Assam variety not then recognised, and the extensive province of Assam with its magnificent waterway was gradually opened up, the greater part of its area being carefully explored in the light of Tea possibilities with a thoroughness that might gratify any geographical society.

Following the success in Assam, Tea was planted in various parts of Bengal and other provinces of India, with more or less success until in 1897 the area was officially stated to be equal to 200,000 hectares. The greatest success has been along the line just north of the Tropic of Cancer, in the latitude where the principal part of the Chinese cultivation lay.

So far, reference has been made merely to Tea grown either in its natural habitat or in territories to which it may be said to have extended naturally, or by assistance, in a lateral direction.

But the two largest developments of production outside of India, China and Japan, have been on the Islands of Ceylon and Java,* both lying as to longitude in or near what might be termed the Tea belt, and about equidistant from the Equator, one to the north and the other to the south. In those the existence of high mountains, heavy rainfalls and climates forcing continuous growth have made the production of Tea commercially successful, although on lines materially differing from those followed in both China and India.

Other minor cultivations of Tea, have been attempted in Natal, Mauritius, the Straits Settlements, the Caucasus, Fiji, Johore, Brazil and many other places, including South Carolina, (U.S.A.), but none of them can be regarded as commercially successful on a Free Trade basis.†

(2) THE PRINCIPAL AREAS OF CONSUMPTION.

If it is a curious and interesting fact that almost the entire production for the world, of Tea, is raised within an area confined by 40 degrees of latitude and 60 degrees of logitude, it is equally curious that the consumption shows itself to have strictly geographical limitations. Outside of the domestic consumption of China and Japan, regarding with no reliable statistics can be obtained, the principal Tea drinkers are the people of Great Britain, Ireland, and of the British Colonies, the people of Russia and those of the United States of America.

Excluding the requirements of those Mongolian peoples, the world's consumption of Tea may be taken roughly at 230,000,000 kilogrammes of Tea per annum, a quantity which, including cost of transportation to the countries of consumption, but excluding revenue duties and distributive profits, may be valued at about £17,000,000. The huge volume of this will be better appriciated when it is stated that the large

* Java is far behind Ceylon in the production of tea.—ED. *T.A.*

† In the discussion upon the paper Captain Vasconcellos, Secretary of the Geographical Society of Lisbon, of the Portuguese Colonial Office, added to this list, the Azores, where, on the Island of San Miguel, Tea has been produced in sufficient quantity to allow of exporation to Portugal of an excess beyond local requirements.

passenger liner, the "Kaiser Wilhelm der Grosse," would have her cargo space entirely filled 232 times over were she engaged transporting it. To put it another way, the quantity of dry Tea leaves is sufficient to make an infusion of 28,000,000,000 litres of liquid Tea, or 100,000,000,000 ordinary tea-cups, being one for each day of the year for every five persons of the present estimated population of the entire world.

The Southern Hemisphere ranks lightly in the matter of population, and its Tea consumers live south of the topic of Capricorn in South Africa and Australia; but if they are few relatively they consume heavily, the average consumption per head in Australia being nearly 4 kilogrammes per annum.

In the Northern Hemisphere (again excluding the races who consume their own produce) the material consumption of Tea is in regions lying 40 degrees north and above it, but here there is an interesting sub-divison to be made. In the United States and Canada, in some postions of Europe and of Asia, and along the north of Africa there is a free use made of green or unfermentrd Teas with pale pungent infusions. The demand for such, as a general rule, lies principally in lower latitudes, while the further north the consumer lives he seems to require more of the black or fermented Tea of India, Ceylon or China, with the dark, thick, heavy liquor its infusion produces.

Great Britain and Ireland take much the largest total of imports, the quantity in 1898 being 107,000,000 kilogrammes, but per head this only amounts to 2·65 kilogrammes per annum of the population, or a good deal less than is taken by the British Colonies in Australasia.

Next to Great Britain comes Russia as a consumer of 42,000,000 kilogrammes, but that only represents about ·34 kilogramme for each of the population, the poverty and not the will of the people probably accountiug for the small figure, as they are really great users of Tea, but take it exceedingly weak, and draw the spent leaves until no colouring matter is left in them.

The United States is a large consumer in point of total—31,000,000 kilogrammes, but this is only ·41 kilogramme per annum for each of the population, although she United States people are great coffee drinkers, taking 5 kilogrammes per head per annum of coffee. Besides, the population is of such a composite character that it includes many people not by descent Tea drinkers.

Except Canada, which follows the customs of its mother country and sister colonies by consuming about 2 kilogrammes per head per annum, and Holland, which takes roughly ½ kilogramme per head there is no other country whose consumption, either in total or per head calls for special notice.

(3) The Principal Trade Routes for Transit is perhaps for geographers the most interesting section of this subject.

In the absence of authentic knowledge as to the early history of Tea cultivation, and of the origin and extension of the tea-drinking habit, we may take it there was little or no foreign trade in the article until the Dutch carried small quantities of it to Europe.

Probably some left the North of China in caravans as it does to this day, and there may have been some trade done with Mongolia and possibly Siberia, but there is no record of it ever having been brought to Wisby in Gothland, the great mart for Oriental produce during the 11th and 12th centuries. There is also no reference made to Tea commerce or to Tea drinking in the travels of Marco Polo, so he probably either did not observe the habit, or if he did it did not strike him as worthy of notice.

Starting with the introduction above referred to in the 16th century, the use of Tea in England made slow progress, but a public Teahouse was opened in London in 1657, and in 1678 the import to the Honourable East India Company was 2,138 kilogrammes.

A century later it reached 2,600,000 kilogrammes per annum, and early in this century the figure was 10¾ millions, but that represented the supply of many countries besides England, as London was then, and until recently, the commou warehouse and markad for the world, and England the common carrier.

Throughout the century, fairly steady and rapid progress has been shown—especially in its earlier periods—in the trade from China, which reached its maximum in 1879. And it is here that some of the romance of commerce comes in.

As the trade grew in importance, the advantages of rapid transit for the Tea of New Season's production began to be appreciated, and the slow and stately progress of the old East Indiaman grew out of date. A type of vessel specially designed for the rapid carrying of Tea from China to Englaud *via* the Cape of Good Hope, was introduced, known as the "China Clipper," and the competition was always keen as to which ship should make the most rapid passage. This culminated in the year 1866, when nine ships sailed almost simultaneously from Foochow, three of them crossing the bar in compauy. Those three were all built by the same builders in Greenock, and came in ahead of all the others, making the long voyage of fully 16,000 miles in 99 days. They each docked in a separated dock in London upon the same day, and all within two hours of each other. The two leading ships had not seen each other for 70 days and met off the lizard, from which point they ran a neck and neck race before a strong westerly wind, with every rag of canvas set.

The opening of the Suez Canal in 1869 soon changed the course of all trade with the East, and in a few years the seuding of Tea per sailing ship round the Cape of Good Hope, was a thing of the past. Romance was no more, although there was extreme competition in building steamers with great power and speed to land their cargoes rapidly by the new route. This culminated in 1882, when the S.S. "Stirling Castle" made the phenomenal run for those times, of 28 days from Woosnng to Loudon.

But England, which formerly supplied almost everything to her own colonies and to many foreign countries besides, has uuder the modified conditions of abundant steam tonnage everywhere, become less and less of a distributive couutry. Consequently, direct shipments are made now from the countries of production to those of consumption. America gets its Tea largely through its western sea-board from China, Japan, Ceylon and India, while not a little is reaching it of recent years by steamers running direct from those countries *via* the Suez Canal to New York. The Australian demand is fed by steamers from Chinese ports, from Calcutta and Colombo.

The extensive Russian trade is still done in its major part by overland transit, by caravan and partly by river and railroad, and this, next to the transit to London, represents much the largest volume of Tea traffic passing in one channel. For the purpose of this trade, the greater portion of the Tea supply is compressed into what is termed Brick Tea, the Bricks being flat tablets weighing about one kilogramme each. The supplies are packed and prepared at various Tea ports in China, and concentrated at Tientsin, from where they are despatched. An enormous traffic with Siberia takes place in these, and the baskets into which they are made up are sent by camel caravans out of the Kalgan Gate of the Great Wall through Manchuria or Mongolia to Kiakhta, and thence distributed through Siberia. In some cases the shipments are made by sea to Nikolaevsk, and thence by water up the Amur River.

One of the most interesting developments of modern trade—in which Tea is an important factor—is the opening up of traffic through the Kara Sea into the Obi and Yenisei Rivers, with which the name of Captain Wiggins has been associated. By this route for several years past considerable quantities of Brick Tea have been conveyed entirely by water from Chinese ports with transhipment in London to steamers proceeding up the Gulf of Obi to Tiumen

for sale at the fair which is held annually in February at Irbit. This Journey, although about 7 times as long in point of mileage as the old direct caravan route, can be done in about 4 months as against eighteen by the other way, and it is of course much less expensive. The partial opening of the Siberian Railway has affected the trade route, and when there is through transit across Siberia from Vladivostock and possibly Port Arthur to Europe, the Russian Tea trade will probably be subjected to further re-arrangement of routes.

Another recent development in connection with the Russian Tea trade has been that of the great Russian Volunteer Fleet in calling at Chinese ports and Ceylon, and carrying from them large quantities of Tea to Odessa for distribution to Moscow, Nijni Novgorod, and other points.

Other most interesting trade routes are those for the supply of Persia, Turkestan and Afghanistan, partly through the Persian Gulf on to Meshed, and partly through the Black Sea to Trebizond and Tabreez.

NOTE.—In the discussion following the paper, Professor Andreas Krassnow, from Kharkoff (Russia), expressed the opinion that the Tea plant must be indigenous, not to Assam only, but to the whole monsoon region of Eastern Asia, where it grows wild as far north as the islands of Southern Japan. Dr. Krassnow collected in many parts af the island of Shikoku in Japan, and in the environs of the town of Kochi, wild growing plants. They occur in the dense forests on the slopes of mountains, which have never been cultivated in the province of Japan, and are even now not thickly populated. Like the English in Assam, the Japanese are cutting down and felling the forests, but they are leaving the Tea plants to grow in the form of plantations of wild Tea, from the leaves of which they produce different kinds of Tea of inferior quality. Not only common Japanese Green Tea is prepared, but two or three inferior sorts, whose qualities resemble much the material from which the Chinese make their Brick Tea.

The wild tea grows to a height from 3 to 5 feet, and the flowers are a little smaller than those of the cultivated form, but the leaves are not re-curved on the edges. In some forests the plant is very numerous, in others it occurs more rarely, and is found amongst other evergreen shrubs, growing in the shadow of *Quercus glabra*, and similar trees, which largely make up the evergreen forests of Southern Japan.

Dr. Krassnow believes that the Tea plant existed in China and Japan long before it was introduced in cultivated form, and that the peculiar properties of the China plant were produced, not by cultivation in a colder climate or on exhausted soil, but by the changes of climate which have taken place in Eastern Asia since the Tertiary Epoch. The period of cultivation of tea has been too short to produce the differences which exist between the Chinese and Assam plants, and many botanists consider them to be different species. It is well known that the Assam plant is frozen by temperatures which the China plant bears very well, and that the hybrids which are cultivated in hot climates, approach more to the Indian, and those in colder climates to the Chinese plant. The hybrids suffer from the cold winters in Batoum, which the Chinese plants never do. On the other hand, China plants cultivated in hot climates never become so tall and never have such large leaves as the Indian. All these facts are stated by Professor Krassnow with more details in his book "On the Tea-producing Districts of Asia," bringing out the conclusion that the Tea plant since the remotest times formed two varieties—Assam and Chinese—the first growing wild in India, and the other occuring still wild in Southern Japan (and perhaps in Formosa) where they were discovered by aborigines *after the introduction of the cultivated form from the south-west.*

PLANTING COFFEE, BANANAS AND ORANGES.

I send a diagram showing how I am planting out ten acres of Coffee, Bananas and Oranges. If I am on the wrong tract I want those who have a better way to show wherin I am wrong. The way to make this "Journal" more interesting is for those who engaged in Agriculture to write up what they are doing, and how they are doing it, and what success they are having. "In the multitude of consellors there is safety," you will find in Proverbs. So come on a "multitude" of you and let us help the Editors all we can. I am planting coffee six feet apart, bananas 12 feet, and oranges 24 feet. I have two men measuring and staking coffee for which I pay sixpence per 100, or six shillings per acre. Coffee at six feet square will take just 1,210 plants per acre. I have the coffee pits dug, and coffee planted by the day—as I do not care to have this part of the work rushed or carelessly done. But I do not feel satisfied unless I can get 300 holes dug and that number of coffee plants put in for a shilling. Planters know of course that coffee just now is very low in the markets of the world, and one must therefore have more work done for the same pay. The bananas I am planting at two shillings per 100. The labourer digs 100 holes, he then gets 100 good large roots cut off the stalk close to the roots, and leaves the root-stump near the hole. My head man then inspects both the holes and roots, and if satisfactory he tells the men to go ahead and cover up. So I am planting bananas at less than a farthing a hill. Now comes my orange plants, sour stock, one year old from a nursery where they were planted one foot apart. The ground before planting the seed was dug—or forked 15 inches deep, and from this I got as fine plants as any one could wish. These I am planting out 24 feet apart. The following diagram will explain, the o is coffee, x bananas, and *oranges. As the orange trees grow and shade the coffee it is my intention to cut out the banana trees, slice them up and dig them into the soil.

```
o o o o o o o o o o o o o
 x   x   x   x   x   x
o o o o o o o o o o o o o
*       *       *       *

o o o o o o o o o o o o o
 x   x   x   x   x   x
o o o o o o o o o o o o o
o o o o o o o o o o o o o
 x   x   x   x   x   x
o o o o o o o o o o o o o
*       *       *       *

o o o o o o o o o o o o o
 x   x   x   x   x   x
o o o o o o o o o o o o o
o o o o o o o o o o o o o
 x   x   x   x   x   x
o o o o o o o o o o o o o
*       *       *       *

o o o o o o o o o o o o o
 x   x   x   x   x   x
o o o o o o o o o o o o o
o o o o o o o o o o o o o
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It will be seen above that bananas are planted between every other row of coffee—each square of four coffee plants having a banana tree for shade—and at every fourth coffee tree there is an orange tree in the line. I have decided on this way of planting after a great amount of planing and figuring. If any of our readers have a better way by all means let us have it in the next "Journal." Many will say wat's the use of bothering with coffee now, it is so cheap. In reply I will say that I have seen coffee just where it is now three times since 1861, and between times I have sold at 136s. per cwt. Take my advice, plant Coffee, Bananas and Oranges, *but plant coffee plants*, not suple jack coffee

suckers. Plant good thick stout banana roots, and orange plants grown in a nursery, not miserable things yanked out of cow pastures.—*Journal of the Jamaica Agricultural Society.*

Williamsfield. J. DOIDGE.

PRESERVATION OF STABLE MANURE.

(Continued from page 516.)

"Equal weights of horse and cow manure, 4 ton of each, were intimately mixed. A sample of this mixed manure was taken and analysed. This gave the composition of the manure at the beginning of the experiment. Then the 8 tons were divided into two equal parts, and 4 tons were placed in a small building that was weather-proof, and compressed by pounding; the other 4 tons were placed in an open bin. In this bin the manure was exposed to every rain that fell, but the sides and floors being constructed of double boarding, all due precaution against the leaching was taken. From month to month, for a whole year, both these manures were weighed and sampled. The samples were then submitted to careful analysis, and from the figures obtained the losses which might have occurred were calculated, both in the 'protected' and 'exposed' manures. From these figures it is possible to say whether the plant-food in either of the manures had become more available. The following chart will show clearly the results arrived at:—

WEIGHTS OF FERTILISING CONSTITUENTS IN "PROTECTED" AND "EXPOSED" MANURES.

	Fresh.		At the end of 3 months.		At the end of 6 months.		At the end of 9 months.		At the end of 12 months.	
	Protected.	Exposed.	Protected.	Exposed.	Protected.	Exposed.	Protected.	Exposed.	Protected.	Exposed.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Weight of manure ..	8,000	8,000	2,980	3,903	2,308	4,124	2,224	4,189	2.185	3,838
Organic matter ..	1,938	1,938	880	791	803	652	760	648	770	607
Total nitrogen ..	48	48	40	34	39	33	37	29	37	31
*Total phosphoric acid ..	25	25	25	23	26	22	25	21	21	21
†Available phosphoric acid	15	15	20	15	19	15	21	17	19	16
*Total potash ..	62	62	65	48	59	44	60	41	60	40
†Available potash ..	54	54	62	45	52	42	56	38	55	35

* Soluble in strong hydrochloric acid. † Soluble in dilute citric acid.

Further, in addition to determining the total amounts of those elements enumerated, the amounts of such as were converted into compounds more available plant absorption, were estimated month by month. This is an important matter, as these constituents are of practically but little value to crops until they have been so converted.

Mr. Shutt adds:—"In considering the charts, I wish, first, to call attention to the richness of the fresh manure as produced on the Experimental Farm, Ottawa, compared with manures ordinarily found in the barnyards throughout the country.

	Average on Farms	C. E. F.
	lb. per ton.	lb. per ton.
Nitrogen	7·8	12·0
Phosphoric Acid	3·6	6·1
Potash	9 0	15·3

"You will notice that there is a very great difference in favour of the C. E. F, manure. I attribute it chiefly to the greater care of the liquid manure on the Experimental Farm. We know that the liquid manure is by far the richer in nitrogen and potash, and I cannot impress upon you too strongly the desirability of using sufficient absorbent litter to hold all the urine. This is a matter in which tons of most valuable plant-food are annually lost by farmers.

"By referring to chart No. 1, you will notice there was a continuous loss in weight, both in the 'protected' and 'exposed' manures, throughout the period of the experiment. This loss was largely due to the destruction of the organic matter by fermentation. This is made clear by comparing the amounts of organic matter present, month by month. During the first three months the "pretected' manure lost 1,058 lb., and the 'exposed' manure 1,147 lb. organic matter. At the end of the year the organic matter in the former had been reduced to 770 lb., in the latter to 607 lb.

"Secondly, there is a similar (though not so great) loss of nitrogen. From 48 lb. in the 'protected' the nitrogen was roduced to 40 lb. in three months; in the 'exposed' the nitrogen fell from 48 lb. to 34 lb. in the same period. Again we notice, then, the greater loss in the manure fermented without protection.

"Thirdly, as regards phosphoric acid, it is to be observed that practically there is no loss in the protected manure; in the exposed manure 4 lb. of the 25 lb. originally present were lost by drainage.

"Considering the effect of fermentation upon the availability of the phosphoric acid it will be seen that in the protected manure the amount of such available phosphoric acid increased. This I deem a matter of considerable moment.

"Fourthly, in speaking of potash we have again to record the fact that practically there was no loss in the protected manure. The case, however, is very different in the exposed manure. Although precautions were taken against undue leaching, by providing the bin with double flooring, yet nevertheless there was a great loss of this element by soakage. It must be remembered that the potash of manure exists for the greater part in the urine, and consequently is present in solution. This exposed manure lost 22 lb. out of 62 lb. originally present—more than one-third. It seems to me that from a consideration of this experiment we may conclude that there will always be some loss on keeping manure unless it is preserved on a cement floor. In thinking over these results I would like every farmer to ask himself if the conditions under which he rots manure are as go d as those of the exposed bin of this experiment. If not, his loss of potash will be greater than that we sustained.

"In the following chart we have given the percentages of the fertilising constituents lost under the two systems of rotting, and also state the loss

in valu e per ton that these manures sustained. This table is a most instructive one, and worthy of careful study.

Loss of Fertilising Constituents in the Rotting of Manure.

	At end of 3 months.		At end of 6 months.		At end of 9 months.		At end of 12 months.	
	Protected.	Exposed.	Protected.	Exposed.	Protected.	Exposed.	Protected.	Exposed.
	p. c.	p c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.
Loss of organic matter ..	55	60	58	65	60	67	60	69
" Nitrogen ...	17	29	19	30	23	40	23	40
" Phosphoric acid ..	none	8	none	12	none	16	4	16
" Potash ...	none	22	3	29	3	31	3	36
Loss in value per ton of original manure.	20c.	64c.	27c.	80c.	36c.	90c.	36c.	95c.

Value of fresh manure, \$2·61 (10s. 10½d.) per ton.

Conclusions.

1. Fermentation causes loss. In both instances there was loss by destruction of organic matter and nitrogen, though the loss of these constituents was much greater in the exposed than in the protected manure. By rotting we must allow that the organic matter is converted into compounds that more readily form humus in the soil, and this is certrinly an advantage. It is an offset against the loss we have mentioned.

2. There was no loss of phosphoric acid in the protected manure, but the exposed manure suffered loss in this element. Rotting had a useful effect in rendering the phosphoric acid more available.

3. Though practically no potash was lost from the protected manure, more than one-third the amount of this value element was lost by drainage in the exposed manure.

4. Rotting does not affect the availability of the potash; in other words, the potash of fresh manure is just as valuable as plant-food as that in rotted manure.

5 There appears to be no object in rotting manure for a longer period than three months.

6. The best conditions for rotting necessitate (1) protection from rain, sun, and wind, (2) a water-tight cement floor, and (3) that the mass of manure be kept moist and compact.

7. Weight for weight, well rotted manure is much richer in plant-food than fresh manure.

8. Rotting manure destroys weed-seeds that may be present.

In answer to a question as to whether it would not be better for the farmer to use manure in the green state, unless he has foul seed in it, and he should then ferment it to destroy the seed, Mr. Shutt said:—"Not necessarily. For certain crops and certain soils it is better to have rotted manure, though it may not be possible to rot the manure without some loss; but if he is not prepared to have such arrangements whereby the manure is protected and preserved from leaching, and if he is not prepared to keep the manure moist and compact, then it is better for him to get that manure into the ground as soon as possible. It seems to be the opinion of most practical men that heavy clay loams are those which benefit most by fresh manure. There is no doubt that the soil is a storehouse which prevents loss of the fertilising material of the manure. Clay loams are very much improved in their mechanical condition by the application of fresh manure. On the other hand, for light and sandy soils, rotted manures are probably the best. In working light and leachy soils it seems to be the greater economy to feed the crop rather than to try to improve the soil; in other words, to apply the manure annually in the rotted condition. For such soils there is nothing better than leguminous crop turned under. This is the cheapest way of permanently improving such soils."—*Agricultural Gazette.*

BORDEAUX MIXTURE FOR PEACH FRECKLE.

A correspondent writes, that in his experiments with Bordeaux mixture (very carefully prepared) for peach freckle, the fruit and leaves of some of the trees were destroyed.

The fruit expert, Mr. Allen, reports that in using Bordeaux mixture on tender foliage, unless the climatic conditions are absolutely favourable, it is well to always be on the safe side and dilute the 40 gallon mixture up to 45 or even 50 gallons of water.

Mr. Allen also wishes fruit-growers intending to fumigate while trees are making new growth to note that not more cyanide than 1 oz. to 200 cubic feet ten-space should be used.—*Agricultural Gazette.*

Banana Food for Invalids.—After a long experience with typhoid patients, Dr. Ussery, of St. Lois, maintains that the best food for them is the banana. He explains by stating that in this disease the living membrane of the small intestines becomes intensely inflamed and engorged, eventually beginning to slough away in spots, leaving well-defined ulcers, at which places the intestinal walls become dangerously thin. Now, a solid food, if taken into the stomach, is likely to produce perforation of the intestines, dire results naturally following; and this being the case, solid foods, or those containing a large amount of innutritious substances, are to be avoided as dangerous. But this banana, though it may be classed as a solid food, containing as it does some ninety-five per cent. nutrition, does not possess sufficient waste to irritate the sore spots; nearly the whole amount taken into the stomach is absorbed, giving the patient more strength than can be obtained from other food.—*Journal of the Jamaica Agricultural Society.*

Nettle Fibre in Germany.—Nettle fibre has of late come greatly into favour in the manufacture of fine yarns and tissues in Germany. In that country, according to the United States Consul at Glauchau, there are factories which use these fibres, both in spinning and also for ulterior purposes. In nettle spinning alone, over 10,000 spindles and some hundred workmen are employed. The raw material is imported almost exclusively from China, whence from 660,000 to 800,000 lbs. are annually sent to Germany. Nettle fibre produces one of the finest tissues obtainable from any known kind of vegetable fibre. In view of the importance with this seems likely to attain in connection with the weaving industries, it is intended to introduce the cultivation of nettles, if possible, into the Cameroons. The idea is to prepare the products of this experimental culture at the place where they are obtained, and test them in German factories. Should favourable results follow from these experiments, it is intended to organise nettle-growing enterprises on an extensive scale.—*Journal of the Society of Arts.*

COOLY IMMIGRATION FROM THE INDIAN FAMINE DISTRICTS.

HERE is an answer to our enquiry as to coolies from the famine districts, written by the Rev. H. G. de St. Dalmas who has had long experience as Missionary in Central India and also knows Ceylon well :—"Yours of 1st February has reached me here (Poona) today—only five days from Colombo ! Some of the famine people would certainly be glad to go to Ceylon and some are actually going to Assam (Sylhet) and tea planters come to Rutlam to select coolies. Many were disappointed at not being passed by the doctor. I wrote to the Rutlam Missionary, the Rev. J. Fraser Campbell, D.D., Canadian Mission, Rutlam, C.I., to invite the planter to come to Sehore, but I got no reply—this was only a few days before we left Sehore. I have also heard that Government is sending Marwaris back to their own country, Jodhpur, Rajputana, and that 1,600 were sent away from Indore.

"There has been a great emigration and some, who are ready to perish, would be glad to go anywhere. Some well organized effort by Government or by a Syndicate might succeed in getting some hundreds of familie to emigrate. I doubt if this could be success fully accomplished without the presence of an agent from Ceylon who had time and money to go about to the various centres and collect suitable families and arrange for their transport. If such an agent were known to be coming, the Missionaries in Central India could get lists of volunteers from whom suitable ones could be selected. At Sehore we have relieved thousands, helping many to go to the other Provinces to look for work, and I think the most successful hunting ground might be the relief works in the Central Provinces. The new Chief Commissioner, A. H. L. Fraser, Esq., C.S.I., Nagpur, is a good Christian man (son of old Dr. Fraser, formerly of Poona.) If a large number could be taken, how would it be to write to Mr. Fraser, the C.C., and get Government help to hunt up coolies and families at the chief relief centres in the C.P. ? My successor at Sehore, Mr. A. Taylor I fear could not help much, but would get lists prepared—if the Marwaris, &c., are not in the meantime sent away. Mr. Fraser Campbell, editor *Gyan Patrika*, Rutlam, C.I., could put a para in his paper about coolies for Ceylon and Mr. Evans, now at Dhar, C.I., care of the Rev. F H Russell (his son-in-law) has been writing about these famine wanderers in Central India and might take an interest in the scheme."

Mr. St. Dalmas himself is about to leave for England. His information ought to be useful to Government and the new Railway Contractors and later on, perhaps to Sugar growers here.

TEA LAND IN JAVA.

An advertisement in the *Ceylon Observer* shows that two fine blocks of land, suited for tea, are for sale in Java at what seems not too high a rate. We do not like in Ceylon to hear of more tea being planted ; but the redeeming features in this case are found in the fact that there is a large local demand for Java tea, and that the exports are more and more taking the place of coffee in Holland and Western Germany.

CASTLEREAGH TEA COMPANY OF CEYLON, LIMITED.

ANNUAL REPORT.

The Directors submit herewith the balance sheet and profit and loss account for the year ending 31st December, 1899, duly audited.

The balance of profit (including R2,407·89 brought forward, and after providing for depreciation of buildings and machinery as shown in the accounts) is R31,157·25. Of this sum R9,600 has been absorbed in paying an interim dividend at the rate of 4 per cent. The directors propose, after placing R718·73 to reserve fund, being 2½ per cent. on the profits, as resolved on in general meeting, to declare a further dividend at the rate of 8 per cent. payable on the 13th February, absorbing R19,200 and after paying a bonus of 5 per cent. on the profits divided, including reserve fund, for the year to the superintendent, in terms of a promise made to him, absorbing R1,475·93 to carry forward to 1900 account R162·59.

The total tea crop was 175,755 lb. against the estimate of 195,000 lb., the season having been unfavourable, in the earlier months. The cost of the tea delivered to buyers was 24·82 cents per lb., or 22·82 cents exclusive of provision for depreciation on buildings and machinery. The tea was sold locally, realising 42·51 cents per lb, leaving balance of gain 17·69 cents. Cost in 1898 was 24.68 cents, and value 39 cents per lb.

The Company's Property consists of :—

476 acres tea under leaf. Yield in 1899=369lb, tea per acre.
4 „ planted in 1897.
4 „ „ 1898.
42 „ forest.

Total..526 acres.

The estimated crop for 1900 is 185,000 lb. tea, or 389 lb. per acre.

It will be seen that the property representing capital stands in the balance sheet at approximately R495 per acre cultivated, and that the profit per acre is over R60 as compared with R39 in 1898 and R28 in 1897, the profit upon capital being R11·97 per cent, or including the sum reserved against depreciation R13·44 per cent.

Mr. J H Starey retires from the Board.

The shareholders will be requested to elect a director and also an auditor for the current year.

THE KELANI VALLEY PLANTERS' ASSOCIATION.

FIFTEENTH ANNUAL REPORT OF THE ASSOCIATION.

Your Committee have pleasure in submitting their 15th Annual Report.

MEETINGS.—Five Committee and four General Meetings have been held during the year.

FINANCE.—The balance in hand is R567·80 against R600·75 at credit last year.

SCHEDULE.—The schedules of the Association shows 78 estates, one private and one honorary member, against 76 estates, one private and one honorary member last year, two new estates having joined the Association during the year.

CROP.—The estimate for 1900 is 15,303,800 lb. The acreage, of tea in bearing is 31,228 acres ; there are 4,691 acres not in bearing total 35,919 acres, the average yield per acre is 490 lb. The large increase over last year both in acreage and crop, is accounted for by the more accurate collection of returns.

TEA PRICES.—The price of low-country teas has, your Committee is glad to note, been very satisfactory during the year, being from ½d to ¾d better than in 1898, the prices during the first six months were especially good. In August after the conclusion of the 1 lb. draft dispute the average price of Ceylon tea fell to the lowest point, and since then, though there has been a recovery, prices have been much below the corresponding rates of last year. Your Committee regret to note that the concession as to

the taring of packages on which the draft dispute was settled, has not yet been introduced, owing to the objection of some of the importers to clause G of the new regulations. There seems at present no prospect of a settlement being arrived at, and if this concession be lost, the draft dispute with its resultant disorganization of prices will have been fruitless.

KELANI VALLEY RAILWAY.

Your Committee regret that they cannot as yet report that the construction of the line has been begun. The Engineer in charge has been engaged during the year, in surveying portions of the line, according to the recommendations of the Consulting Engineers. The survey was finished in August, and the report is now, we believe, under consideration by the latter. The survey of the private lands required for the construction of the line is now proceeding; this and the proceedings in connection with the purchase of the lands will take some time. On the whole, your Committee cannot but feel disappointed with the slow progress made in commencing this railway, which has been an urgent want of the district for many years. H. E. the Governor visited the district in January and fully explained the reasons for the delay, and your Committee feel assured that the work will now be pushed on with all despatch. Your Committee regret that Mr. Mackintosh, the late Chief Resident Engineer of Railway Extension, was obliged to resign his post owing to ill-health, and wish to record their thanks to him for his services in connection with the survey of the railway. Mr. Oliver has been appointed in his place, and your Committee have every confidence in this appointment, Mr. Oliver having already had many years experience in railway construction in the island. Your Committee take this opportunity of offering the Hon. W W Mitchell a hearty vote of thanks for the able and painstaking way in which he has always advocated the construction of the railway and learn with much regret of his of retirement from the Legislative Council of Ceylon.

MEDICAL.—The health of the coolies has been fair during the year. The extension of the Avisawella hospital was sanctioned in December, 1898; the first step in connection with the purchase of the necessary land were taken in June last and the land has since been acquired, and the foundations of the new wards are now being cut. Your Committee regret the long delay in connection with this most necessary work, as the accommodation at this hospital is, and has been for some years totally inadequate to the needs of the district served by it. During the year the hospital visitor drew your attention to the insufficient supply of clothing and nursing attendance in this hospital. The matter was brought to the notice of the P.C.M.O., and is now the subject of correspondence. Your Committee hope that the deficiencies pointed out, will be rectified. In this connection, your Committee would draw your attention to the unwarranted attack made, in his report for 1898, by Mr. Arunachalam, the Registrar-General, on the lowcountry planter. After quoting figures to show that, while the ratio of mortality amongst labourers on upcountry estates is less than that amongst the upcountry Sinhalese, on the other hand, the ratio of mortality amongst the labourers on lowcountry estates, greatly exceeds that of the lowcountry Sinhalese. Mr. Arunachalam proceeds as follows:—"The conclusion seems to be almost irresistible that in the newly developed estates of the lowcountry districts, the labourers' health is not looked after by his employer in the same manner as in the upcountry districts with their long traditions of excellent relations between employer and employed, and that it is necessary to resume the system of Government medical supervision abandoned some years ago."

While Mr. Arunachalam is, no doubt, an eminent authority on statistics, he cannot be said to be an authority on medical or sanitary matters, and an attack from such a quarter might well be passed over in silence. Nevertheless your Committee think it best to put the following reply on record. The question of hospital accommodation and medical attendance is one which has occupied attention at almost every meeting of the Association since in foundation, and we have continually kept before Government the necessity for extending hospital accommodation in accordance with the increase of the acreage in cultivation and of the estate population. In addition to this, the majority of estates have established at a considerable cost to private dispensaries (for which the Government supply medicines free) for the early treatment of disease. While your Committee regret the large ratio of mortality, they are convinced that there is no such evasion of duties as is imputed, but that the causes thereof lie beyond your control. Malarial fever and the diseases connected therewith are the principal source of illness amongst the low country estate population. As is well-known, these diseases are always prevalent in low-country districts such as the Kelani Valley, and until medical science is more advanced it will not be possible to control them.

TELEGRAPHS.—During the year, the telegraph wire has been extended to Ruanwella. Your Committee regret to have to report that the Post-master General still refuses to open a Telegraph Office at Dehiowita, though the wire passes the door of the Post Office Your Committee hope that the P M G will see his way to concede this small boon at an early date.

ROADS.—The state of the roads in the district has again been a source of much trouble and complaint. The Planting Member, at your request endeavoured to obtain a larger vote for upkeep during the year but without success. The vote for upkeep being indeed reduced. The dry weather during the last six months has been against repairs being executed, but the roads will never be in a satisfactory state until a large amount has been spent in putting them into thorough repair, the present vote being quite insufficient for that purpose. In this connection, your Committee would impress upon the Director of Public Works the vital importance of keeping the district communications in a thorough state of repair, until the completion of the Railway. Your Committee regret very much that the Government has not decided to construct a bridge over the Algoda River, so as to bring the Panawala Korale in direct road communication with the Railway station at Dehiowita. They regard the construction of a causeway, with approaches at a gradient of 1 in 14, as altogether unsound. Moreover, they think it is an engineering mistake and will be liable to be washed away in heavy floods.

A causeway was built on the Ritigaha Oya River some years ago, but a bridge had later to be substituted as the causeway was found unsuitable.

LABOUR.—The supply has been fair during the year but your Committee regret to note that the number of emigrant coolies has largely exceeded the number of immigrants during the past 12 months. The construction of the railways now sanctioned, will require the services of some thousands of coolies. The subject of recruiting this labour has been before the Parent Association, who appointed a sub-committee to consider the matter. This Sub-Committee has drafted a report containing suggestions and recommendations, which has been forwarded to Government.

The Government have practically agreed to recruit labour required in India, and to appoint a Commission to consider the question. Your Committee have read with lively satisfaction the speech of the Colonial Secretary in Council, on this subject.

K. V. LABOUR FEDERATION.—The K. V. Labour Federation has continued to work satisfactorily during the year. In August the Dolosbagie and Yakdessa Association affiliated itself with the K. V. Labour Federation, and a scheme has been adopted for the settlement of disputes between the members of each district.

BLIGHTS have attracted considerable attention during the year, throughout the Planting districts,

but your Committee are glad to report that the Kelani Valley is fairly free from them.

Mr. Kelway Bamber; Government Mycologist, &c. Your Committee await with eagerness Mr. Kelway Bamber's Report on the cultivation and manufacture of tea. They are glad to note the appointment of Mr. Carruthers as Government Mycologist in addition to the appointment of Mr. E E Green as Government Entomologist, and they hail with approval this inauguration of an Agricultural Department, which has been too long delayed.

Coach Services.—Numerous complaints as to the state of the coaches, and the cruelty practised on the horses have again been received during the year. The matter was brought to the notice of the Colonial Seeretary, who has replied that complaints should be forwarded to the Government Agent Western Province, who will take action thereon. Your Committee hope that members will act on this recommendation, and report all cases of cruelty that come under their notice.

Obituary.—Your Committee regret to record the death in England of Mr. Chas. Ogilvie, a resident proprietary Planter of long standing in the district, and that of Mr. F Drummond, both late members of your Association.

MATURATA AND HEWAHETA PLANTERS' ASSOCIATION.

FOURTH ANNUAL REPORT.

Your Committee beg to submit the fourth annual report, 1899.

Office-Bearers.—Messrs. A C Kingsford, Chairman; R B Roberts, Hon. Secretary.

Committee.—Messrs. G H Bennett, H E Power, G F Deane, D H Williams, L St. G Carey, E Turner, T N Orchard, and H V Bagot.

Kandy Representatives.—The Chairman and Hon. Secretary, Messrs. E. Turner and L St. G Casey.

Meetings.—During the year, three general and four Committee meetings have been held. The roll of membership is 39. The balance in hand is R186·09 as compared with R53·39 in 1898.

The tea crop was generally satisfactory, and in many instances estimates were exceeded.

The estimates for 1900 show a slight increase—

	Total acreage in tea	In bearing.	Crop	Yield per acre. lb.
Maturata	6,733	5,746	2,154,875	381
Upper Hewaheta	4,146	3,580	1,653,000	461
Lower Hewaheta	6,756	6,207	2,317,350	373

Roads.—The Grant-in-aid Road from Padiapallella to Ellamalle has been completed.

Your Committee would again urge upon Government the desirability of continuing the cart road from Loolecondera to Rahatungoda, more especially in view of the increasing traffic thrown on the Hangurankette Road. Further they would urge on Government the necessity of improving the zigzags between the 10th and 12th mile post on the Hangurankette Road.

Bridle Paths.—The bridle paths have been kept in a fair rate of efficiency. Grants have been received from the D R C, Nuwara Eliya, for Rahatungoda-Denika Road R70, Gonavy-Rahatungoda Road R230 and considerable sums in the Maturata District.

Your Committee regret that the amounts received from the D R C Kandy were quite inadequate, and in view of the amounts collected in Road Taxes from this part of the District, and number of natives using the roads, should ask for a more satisfactory vote for 1900. The Committee is glad to report that the bridle path from Upper Hewaheta *via* Ramboda to Nuwara Eliya, asked for by your Association is now in course of construction, and will be of great convenience when opened.

Hospitals.—Your Committee is now able to report that foundations for the Maturata hospital are being cut, and the Director of Public Works hopes to spend during the year the amount provided for in this year's Supply Bill, viz R35,000. Your Committee fail to understand the lengthy delay in commencing this work, considering that this hospital was sanctioned, and a vote on account in the Supply Bill, R20,000 was taken in November 1897. Your Committee are of opinion that a smaller and less expensive building, constructed with less delay, would have been of greater benefit. Mr. Roberts was nominated by your Association, visitor to the Deltotta hospital in November, 1898, but as yet the appoinment has not been confirmed by Government.

Telegraph.—Your Committee have for some years past urged the desirability of telegraphic extension to Deltota and Hewaheta, and regret that the more recent offer to guarantee any loss on the working has met with little response.

Cattle Branding.—This matter, originally brought into prominence by your Association, has again had the full attention of the Parent Association and the public press, and your Committee trust that the Ordinance will no longer be allowed to remain a dead letter, and that instructions will be issued to the police to take action which will minimise this cruelty.

Rinderpest.—A serious outbreak in the early part of the year caused considerable difficulty in carting. We trust that future outbreaks will receive more prompt attention,

Agricultural Chemist.—Loolecondera and Galaha, the selected estates, were visited twice by Mr. Bamber during the year, and we regret that we are unable to report more fully owing to the long delay in printing the report.

Blight.—Your Committee are glad to report that there has been no serious attack of Blight in the district.

Paris Exhibition.—Exhibits of commercial tea, were kindly sent from Bramley estate in Maturata. Columbia estate in Upper Hewaheta, and Great Valley in Lower Hewaheta.

Labour.—Your Committee regret that labour is generally insufficient, and they consider this is greatly due to the closure of the North Road, and consequent enhancement of the cost of bringing over coolies, and would therefore urge on Government that the funds usually devoted (approximately R100,000) to the upkeep and establishment of the Northern Route should, in the event of its being considered advisable to continue this course, be devoted towards subsidising the steamer service for immigrant labour.

Labour League.—This has worked smoothly, and no complaints have been received.

Railway Rates.—Your Committee feel that they cannot do better than repeat their paragraph in last annual report *re* railway rates, viz., "We regret that so far Government have not acceeded to the request to lower the rates on tea from the 4th to the 6th class; and would wish to draw the attention of His Excellency to the great difficulties and cost of transport both from Maturata and Hewaheta estates having to carry and cart their produce over difficult roads, from 25 to 35 miles, before reaching the railway. and, in addition to paying rates for cartage, contribute annually in tolls, grant-in-aid roads and private roads R20,000 towards the annual upkeep of roads. All estates have used the railway from the time of its opening, and also contributed towards the export tax, which paid for one-third of the cost of construction and should therefore now, in this time of depression, lay claim to special consideration, more especially in view of the large profits obtained from the Colombo-Kandy section of the line for many years past."

Plague.—Your Committee congratulate the Government and the Planting Community on the immunity of the Island from Plague during the past year, and trust that Government will continue the present most necessary precautions.

Your Committee regret to report that nine estates in Maturata have resigned membership of the Association and that no member from Maturata has attended any meeting during the year, and would, therefore, suggest that the word Maturata be deleted and that in future this Association be called the Hewaheta Planters' Association.

R. B. Roberts, Hon, Secretary.

PRODUCE AND PLANTING.

The Tea Trade of the United States.—Some statistics relative to the consumption of tea in America are sent by the New York correspondent of the "Grocer." "The fiscal year of the United States ends June 30. The net imports of tea are taken as representing consumption. Prior to the levying of the present duty tea was not left in Government warehouses as is at present the custom. In 1897 imports were unusually heavy exceeding any former year by nearly 20,000,000 lb. This was probably due to importers buying heavily in anticipation of a duty being levied. This was done by War Revenue Act of 1898, when tea was taxed 10 cents per lb. During the year ending June 30, 1898, the imports were the smallest for any year since 1879, notwithstanding the population increased 25,000,000. When the Tea Act went into force there was a heavy stock of inferior grades and trash on the market, some of which was twenty years old, and had been unsaleable at 2d. per lb. The diminished imports of 1898 and the 5d. duty enabled holders to dispose of the old stocks, which were not entirely dissipated until the summer of 1899. It is a fact that the trash offered at 2d. sold subsequently as high as 11d. The result of counting net imports as consumption causes considerable irregularity in the Government per capita estimate, as it leaves out of consideration stocks in first and second hands."

The Probable Demand.—"The present population of the United States," says the authority referred to, "is estimated at 74,000,000, and the requirements for 1899 should be 96,000,000 lb. The net imports for the year ending June 30, 1899, however were only 72,833,070 lb., falling nearly 16,000,000 lb. below the annual average, and can only be accounted for on the ground that old stocks were larger than estimated, or else that 1·31 lb. per capita is too high as representing consumption. The imports for eleven months ending November 30, 1899, were 77,517,366 lb. So much for the Goverument returns, on which my statement was based, in connection with the fact that withdrawals in November were over 8,000,000 lb. According to private estimate the average monthly withdrawals averaged, June to November 30 7,300,000 lb., or 87,600,000 lb. per annum, and for the next six months are estimated at only 7,000,000 lb. If an average of 7,375,000 lb. were used monthly for ten years ending June 30, 1898, which covers five years of trade depression, it is not fair to assume that, with prosperity never before equalled, and old stocks wiped out, the consumption should increase? In a recent interview with the New York agent of a prominent tea firm having offices in Ceylon and London, and who is a careful student of the situation, he stated that his estimate of consumption was 92,000,000 lb. for the United States, less exports to other countries than Canada, a very small quantity. Undoubtedly roasted coffee at 10 cents per lb.," says the correspondent, "is cutting into the consumption of tea. Possibly I have taken too optimistic a view of the situation, but if so it must be measured by the figures given above, viz., that monthly withdrawals for six months show an annual consumption of 88,000,000 lb."

Mr. Ruskin's Tea-shop.—At one time, Mr. Ruskin, in addition to his other multifarious occupations, kept a tea-shop. "How good of you," he wrote on one occasion to a friend, "to go to the tea-shop; and I'm so glad of your report; I must really get up my sign." But the sign, we believe, never made its appearance. "Owing," Mr. Ruskin has elsewhere explained "to that total want of imagination and invention which makes me so impartial and so accurate a writer on subjects of political economy, I could not for months determine whether the said sign should be of a Chinese character, black upon gold; or of a Japanese, blue upon white; or of pleasant English, rose colour on green; and still less how far legible scale of letters could be compatible, on a board only a foot broad, with a lengthy enough elucidation of the peculiar offices of 'Mr. Ruskin's tea-shop.'" Whether it was due to the absence of a sign or not the Ruskin tea-shop was not a success. It was established at 29, Paddington Street. W., "to supply the poor in that neighbourhood with pure tea in packets as small as they chose to buy, without making a profit on the subdivision." The result of the experiment was, says Mr. Ruskin, "my ascertaining that the poor only like to buy their tea where it is brilliantly lighted and eloquently ticketed; and as I resolutely refuse to compete with my neighbouring tradesmen either in gas or rhetoric the patient subdivision of my parcels by the two old servants of my mother's, who manage the business for me, hitherto passes little recognised as an advantage by my uncalculating public. The business, sad to relate, languished, and the rent and taxes absorbed the profits and something more. This was prior to the ascendency of Indian and Ceylon tea.—*H. and C. Mail*, Jan. 26.

CEYLON TEA IN SOUTH GERMANY.

We are glad to welcome genial and well-informed Mr. Chas. Bohringer back, after an absence in Germany of over two years. During this time Mr. Bohringer has not been idle, more particularly in trying to introduce Ceylon tea into the States of Bavaria, Wurtemburg and Baden; and he is well satisfied with the measure of success attained. The work has been a slow one, owing very much to the opposition of the Hamburg tea merchants; but a considerable hold has now been got and Mr. Bohringer was gratified in November last to obtain a gold medal for his exhibit of Ceylon Teas at the Munich Food Products Exhibition. The "Thirty Committee" should pass a vote of thanks to Mr. Bohringer at their next meeting for the good work he has been doing for our staple. If, as he believes, the people of Southern Germany are going to take freely to good tea, how much more should we expect those in Central and Northern Germany to do so? Now that tea enters duty free into Belgium, Antwerp is becoming a chief port for imports to serve a large part of Central Europe.

Sunflower-growing in Southern Russia.—According to a French consular report, there is in Southern Russia a growing demand for oil-bearing seed, particularly sunflower-seed. Until recently there had been in that region but few establishments for extracting this oil, and the producers, finding no market at home, sent the seeds to foreign countries. Now, however, there are mills in the south which are prepared to use considerable quantities of these products, and they offer to the cultivators better prices than they could secure in foreign markets.—*Chemist and Druggist*, Jan. 27.

THE RETENTION OF DUTY-PAID TEA IN BOND.

The following circulars have been issued by Messrs, Densham and Sons, Limited, of 49 and 51, Eastcheap, E.C.:—

"January 15, 1900.

"DEAR SIR,—You will probably notice in to-morrow's papers that we have today paid a record cheque for tea duty, amounting to £85,862 8s 8d. This cheque represents a larger amount of duty-paid tea than has ever been held by any wholesale house in the history of the tea trade. We have bought this tea, and paid duty on it, for two reasons. First, because we anticipate a very large demand for duty-paid teas during the next six weeks from all parts of the kingdom, owing to the growing belief that an alteration will be made in the tea duty, and, secondly, because, as you are well aware, during the exceptionally dull months of November and December last, good teas were of far better value than has ever been known. Our purchases were made during these two months, and we are now in a position to meet this demand from our customers, however big it may be. We need hardly say how pleased we should be to send you samples of any class of Indian or Ceylon tea that you may be tasting, and we would expressly ask you not to purchase until you have seen a selection from our stock.

"*We have been informed by the Customs authorities that in future no tea will be allowed to remain in the bonded warehouses, duty paid more than a reasonable time for clearance of same,* and for this reason we are making arrangements for taking the whole of this stock into our new warehouse, which have a capacity of over two million cubic feet. You can therefore leave any purchases you may make from us in these warehouses, properly insured by us, and rent free, until you require them."

"January 20, 1900.

"DEAR SIR,—Referring to our letter of 15th inst., informing you of the payment of our record cheque for tea duty, you will probably have noticed a letter on page 134 of this week's *Grocer*, evidently intended to convey the idea that the statements made in our letter were not correct. The letter is as follows:—' 10, Philpot Lane, E. C, January 18.—SIR,—In a recent announcement of new premises, a remark occurs implying that a certain risk is incurred by owners of duty-paid tea, if the tea be permitted to remain in a bonded warehouse beyond a "reasonable" time, whatever that remarkably vague period may mean. As a matter of fact, which may interest many of your readers, there is no time limit or restriction of any kind placed by H. M. Customs as to the removal of teas upon which the duty has been paid—We are, &c., BURBRIDGE, PRITCHARD, and BARTLEET.'

"We are much indebted to Messrs. Burbidge, Pritchard, and Bartleet for giving us this opportunity of stating the exact facts, of which they do not appear to be cognisant. Being most anxious in the interest of the tea trade in general, and of our customers in particular, to find out the true position, we applied to the secretary of Her Majesty's Customs for information on the subject, and to enable you to form your own judgment we subjoin an extract from his reply dealing with the question.—We are, yours faithfully, DENSHAM AND SONS, LIMITED."

Extract of leter from the secretary to Her Majesty's Customs:—

"I am directed to acquaint you that the Warehousing Law implies that warehoused goods which have been cleared for home consumption, and on which duty has been paid, shall be taken from the warehouse immediately. Not only does the payment of duty imply that the owners of goods require them for use, and that they will be removed with the utmost expedition, but the presence together of warehoused and unwarehoused goods in bonded premises imperils the value of security by which the warehouse is covered. This being the position, the Board feels bound to withhold assent to the retention of tea in bond after duty has been paid upon it. I am to add that you are not correct in your impression, that the rules of the department have allowed a period of twenty-one days, or any other defined time, for the removal of duty-paid stock from bonded warehouses after payment of duty."

After seeing Messrs. Densham and Sons' first circular, given above, Mr. Prowse wrote:—

"Many thanks. The underscored part of this notice (given in italics) correctly expresses our attitude, and it is quite intended to exercise all the powers we may find ourselves to be possessed of to prevent the wholesale retention of duty-paid stock in bonded warehouses.

"(Signed) R. T. PROWSE, Secretary.

"Customs, January 23, 1900."

—*Home and Colonial Mail*, Jan. 26.

THE PROSPECTS OF CINCHONA.

Mr. Bohringer confirms our view of the great encouragement now offering to cultivate cinchona—and especially hybrid cinchonas—in Ceylon. He points out that the bye-product, cinchonidia or cinchonia—at one time comparatively valueless—is now as much thought of as sulphate of quinine itself; and further that it is in Ceylon, rather than in Java, bark such a bye-product is chiefly found. He would therefore advise the planting up of a hardy hybrid variety and there is every prospect of prices improving rather than going back, although already they are double what they were some time ago. The United States alone with Cuba, Porto Rico and the Philippines on their hands, are bound to be very large customers; but apart from this, quinine is now utilised in so many directions that a steady and growing consumption is assured. We would strongly urge Ceylon planters in the medium and higher and especially in the Uva districts, not to neglect the planting of cinchona.

SUGAR IN MAURITIUS.

PORT-LOUIS, Jan. 30.

All the estates of the island have now finished the crop. In some factories there is still some sugar to be centrifugalled, as this work could not be done owing to the usual important operations in the fields at this time of the year.

The total yield of the crop, which we had estimated at 150,000 tons, will probably slightly exceed that figure.

The prolonged drought is doing harm to the plantations. It is to be hoped that there will soon be a good downpour all over the island.—*Mauritius Planters Gazette.*

CEYLON EXPORTS IN RELATION TO FREIGHT AND TONNAGE: 1888-1899

TEA GIVING 44 PER CENT, AND PRODUCTS OF THE COCONUT PALM 41 PER CENT, OF EXPORT TONNAGE FROM CEYLON IN 1899.

The following figures—compiled from the Annual Returns of Exports and Shipping—give the quantities of produce exported from Ceylon and the number of vessels by which such produce was shipped. The figures for produce exported are, in this instance, reduced to "shipping tons" on the basis of the Ceylon Tonnage Scale:—

In	Vessels Cleared with cargo.	Tons cargo taken.	Average tons taken per vessel.
1888	573	120,431	210
1889	611	131,849	215
1890	698	156,159	223
1891	872	174,316	200
1892	871	200,986	230
1893	848	197,823	233
1894	808	200,489	248
1895	784	213,843	272
1896	830	216,844	261
1897	756	245,830	325
1898	773	297,211	384
1899	856	293,507	343

The decrease in shipping tons of cargo exported from Ceylon in 1899 is 3,704 as compared with 1898, but compared with 1897 the increase is 47,677 tons. The slight falling-off in 1898 is due entirely to shrinkage in exports of coconut palm products, and mainly to a reduced export of copra.

Going into detail the following figures show which products have mainly contributed to keep the total export to within a few thousand tons of last year:—

	Tons.
Tea shows an increase of	10,125
Plumbago ,, ,,	7,166
Coffee ,, ,,	360
Cocoa ,, ,,	409
Cinnamon ,, ,,	1,539

The exports of cinchona, cardamoms, sapanwood and ebony do not show sufficient variations from 1898 to call for special comment. As indicated above, exports of the products of the coconut palm for 1899 show a heavy falling-off from those of the preceding year. Grouping them together—coconut oil, copra, desiccated coconut, coconuts, poonac, coir yarn, rope and fibre—the following figures will be found of interest:—

	Shipping Tons.		Shipping Tons.
1888	61,375	1894	85,711
1889	55,780	1895	84,567
1890	72,291	1896	80,570
1891	69,879	1897	100,614
1892	94,550	1898	139,334
1893	79,935	1899	119,154

Of the total exports of the year:—

Tea gives	44% of	the shipping tons.
Products of the coconut palm give	41%	do
Other products give	15%	do

The falling-off in exports of the coconut palm showing, as they do, a shrinkage of 20,184 shipping tons for the past year, as compared with 1898, is a very serious one, and it is anticipated that, owing to the restricted rainfall last year, the exports of the coconut palm for the year 1900 will show no better results, if indeed the exports reach those of the past year.

The number of vessels which cleared with cargo in 1899 shows a considerable increase over the figures for 1898. The average quantity of cargo taken per vessel works out naturally under those for 1898. Putting aside some short temporary scarcity of space, the supply of tonnage has been ample for the requirements of shippers, and the continued increase in the carrying capacity of recently built steamers, which run on the Eastern lines, will meet any expansion in our exports.

FREIGHTS have on an average been low.

Tea has varied between 25s and 30s to London. To the Continent freights have varied considerably between 20s and 30s for rough cargo. Freights to Australian ports remain as before, viz.:—R40 per ton on tea to Adelaide, Melbourne, Sydney or Brisbane.

The following are fluctuations in freights on tea by steamers to London:—

	Maximum.	Minimum.		Maximum.	Minimum.
1891	45/	27/6	1896	25	7/6
1892	35/	15/	1897	35/	10/
1893	30/	12/6	1898	40/	20/
1894	35/	20/	1899	30/	25/
1895	30/	17/6			

Vessels which called for coals only, and native schooners, are not included in these returns.

COCONUT PLANTING IN THE EASTERN PROVINCE.

(From a Correspondent of "Colonia": the Colonial College Magazine.)

"I must apologize for not having written before to thank you for the ambulance certificate. When I last wrote I was, I believe, tea planting, up country, but I have now got over my planting babyhood, and am a full-fledged superintendent of one of my brother's estates of fourteen hundred acres. When I first came down here seven months ago it was all virgin jungle, but I have cleared about two hundred acres, which I am now planting up. I have therefore been so busy that I have hardly any time to write. The estate lies on the eastern and hottest coast of Ceylon, and stretches for about nine miles along the seashore. It is, of course, not suited for tea planting, owing to the climate, but is ideal soil for coconuts. Coconuts are one of the most paying products, if not the most paying, in Ceylon; but as they do not come into bearing for ten to twelve years after planting, it entails an immense expenditure of capital in the interim. There are certainly many minor products which may be planted. I myself am planting up Indian corn and chillies, and although both of these products take a certain amount out of the soil, I hope that judicious artificial manuring will replace the good taken out of it. I now regret very much not having attended the agricultural classes at the College, though at that time I had little or no idea of taking up planting. I am thinking of going in for my licensed surveyor's examination, as there is a good deal of work about here; and as I shall soon have a good deal of time on my hands, I could add largely to my income in that manner.

I think perhaps it would not be amiss to warn you about the so-called 'creeper mongering,' it is one of the planting disgraces. A few planters, I am glad to say a very few, advertise for young men to come out here to learn tea-planting, with a promise of a billet at the end of a certain time. They have to pay a premium from £100 to £200. Everything is painted in the most roseate hues. In many cases they are not shown or taught any-

thing personally, but allowed to do what they like, and when they eventually get a billet on R88·33, which is about four pounds a month, unless they are hard workers they get the sack and add to the great army of unemployed planters to be found in Ceylon. Tea seems to be on its last legs, everywhere salaries and staff are being reduced. White men are getting sacked and native conductors are taking their places on a salary about a quarter what a European would get. It will be a case of the survival of the fittest: many estates I expect will be abandoned unless something unforeseen turns up.

This is a magnificent game country, being all virgin jungle; elephants, leopards, bears, buffaloes, pig, deer, peafowl, etc. I shot a cheetah the other night about two hundred yards from my bungalow. We live on fowls down here, as butcher's meat is not procurable, and one's gun is a very useful thing to vary the monotony of the everlasting chicken. I enclose you a cheque for 30/ for my subscription to *Colonia*. I should be very much obliged if I could get the back numbers which have been issued since I left the College."

WEIGHING TEA—AND CEYLON MYCOLOGIST.

In a London letter to the *Observer*, I saw it mentioned that the scales on some tea estates must be wrongly balanced, which would account for the difference of weight which the tea chests would turn out, in London. From my personal experience I know that spring balance scales, such as are used at railway stations, and which, I believe, are the sort used in tea factories also, are in the habit of going wrong on the slightest provocation. In weighing bags of grain, averaging about 200 lb. each, these scales generally show a difference of from 2 to 4 lb. per sack, and that would just run out about the amount of deficit on tea chests. I check my scales by having myself weighed on a beam scale, which, of course, is always right, and then trying my weight on the balance scale, allowing the difference between the two. Tea planters should try this plan. Of course, Railway companies naturally patronize a class of weighing scale which enables them to charge more on packages than they are justly entitled to.

APPOINTMENT OF A MYCOLOGIST.

I am glad to see that you are, at last, going to have justice done to your island, in this respect, for a Mycologist is really one of the most useful appointments that could be made in connection with any agricultural or horticultural community. I don't grudge you your good luck in gaining your point, although we agriculturists in Britain are never, by any chance, so fortunate as to get any concession from the powers-that-be, because the policy of our Government, be it Tory, Whig or Radical, is to encourage the foreign agriculturist and crush their own countrymen. Our Minister of Agriculture, Mr. Walter Long, has lately been visiting the Scotch agriculturist on his native heath, and has been bombarded with wild provosts, J. P.'s, kerosine lamps, addresses and other bucolic products; but all to no purpose, for he simply refuses to do anything for the greatest but most depressed industry of our native land. COSMOPOLITE.

NEW GUINEA RUBBER.

It is encouraging to learn that a high value is placed in London on rubber from New Guinea. As much as 3s 4d per pound has been realised for the article in the home market. The reason for this is said to be that adul eration, so much practised in other rubber-producing countries, New Guinea not excepted, has been promptly checked in the Possession. With the cessation of adulteration, prices have rapidly risen for the Papuan production. Let us hope that with the encourgement of quick sales and high prices the collection of rubber will become one of the steady industries of the island.

The *Northern Miner* says on this subject :—"Messr. McIlwraith, McEacharn, and Co. inform me (writes 'city Man,' in the *British Australasian*) that the rubber which they receive from New Guinea has been steadily advancing in value of late, owing to the improvement which is taking place in the preparation of the article. The gentle and unsophisticated nigger, in whatever part of the world he is, has a nasty knack of adulterating the rubber which he sells to the trader, and the Papuan is not an exception to the rule. But this propensity in his case has been firmly checked lately, with the result that New Guinea rubber has been selling in London up to 3s 4d per lb."—From the *Queensland Agricultural Journal*.

A CURE AGAINST DYSENTERY.

The Colonial Garden in Indo-China, through the good offices of Senator Pauliat, has received some seeds called "Ko-San" by the Chinese and employed by them as a preventive against dysentery. Dr. Mongeot, of Saigon, had the happy idea of utlising these seeds according to the Chinese methods, and the results have been very satisfactory. Out of 879 cases experimented upon, he met with only eight unsuccessful results. Experiments made at the Colonial Garden have shown that the seeds had a powerful physiological action. New experiments will, no doubt, enable the causes to be traced, and the effects of the action determined. If, as everything seems to point to it, the utility of this Ko-San seed is confirmed, the plant will be spread all throughout the French Colonies.—*London and China Express*, Jan. 26.

THE INDIAN TEA ASSOCIATION (LONDON).

SCIENTIFIC OFFICER FOR THE TEA DISTRICTS.—A letter on this subject from Dr. Voelcker, addressed to Mr. Cruickshank, was read by the Secretary, and at the request of the Committee Mr. Cruickshank arranged to see Dr. Voelcker again and settle with him as to the engagement of a suitable man with the requisite qualifications to proceed to India and take up the appointment.

TRAVANCORE STATISTICS.—After some discussion it was decided that in future it was advisable that estimates of Travancore crop, should, if procurable, be given separately by the Calcutta Association when framing their forecast of the Indian tea crop.—*Indian Planters' Gazette.*

LIQUID MANURE.

A simple and cleanly way of applying liquid manure to pot plants, is first of all to make a strong liquid manure, and into this put dry charcoal. When the charcoal is thoroughly soaked, take it out and dry it. When repotting plants put a little of it into the bottom of the pot. When the roots of the plant reach it, the effect is soon visible. By this means there is no smell as in using the manure in a liquid state.—*Queensland Agricultural Journal.*

PLANTING NOTES.

MICA.—As a correspondent some time ago remarked in an Akyab paper the resources of Upper Burma are plentiful in regard to mineral wealth, but search is required. We now hear that mica mines have been found in the Ruby mines district and also plumbago. Working up is the only thing necessary.—*Mandalay Herald*, February 3.

SEED DISTRIBUTION IN AMERICA.—The Department of Agriculture began its distribution of seeds a little earlier this year than last, forwarding them south at the beginning of January. This year the seeds for distribution to all parts of the country will consist or 13,000,000 packets of vegetable seeds, 1,560,000 of flower seeds, besides field and lawn grass seeds.—("Washington Post.")—*Home Paper.*

SIBERIAN FORESTS.—The Russian Ministry of Agriculture has assigned the sum of 50,000 roubles to be expended in the forests in the Governments of Tobolsk and Omsk, in accordance with the methods usually practised in the arrangements of forests in European Russia. The object in view is to prevent the increasing destruction of Siberian forests.—From *Journal of the Society of Arts* for January 19th.

COFFEE IN THE STRAITS SETTLEMENTS.—A correspondent writes with reference to the remark of our Sumatra correspondent:—"$21 per picul Liberian coffee won't make the Liberian coffee estate proprietor fat, since it costs him $18 per picul *f.o.b.* when his estate is in full bearing. $40 per picul was the price going when the rush into Liberian coffee was made four years ago in the Malaya Peninsula."

TEA DRYING.—The whole philosophy (says an Indian contemporary) of rapid, economical and thorough drying or firing of tea may well be summed up in the three following points:—(1) The tea should be kept in gentle, but effectual, movement, so as to separate every leaf from every other leaf and allow the dry air to get at *both* sides. (2) The application of as much air as can be introduced without blowing the charge out of the machine. (3) The skillful adjustment of the temperature of that air, so as to obtain the highest drying power without injury to the product; in other words, firing without burning.

BUDDING OF MANGOES.—The following interesting remarks which were culled by Mr Gollan, of Saharanpur, from a quotation made by the Queensland Agricultural Journal from the Bulletin of the Jamaica Botanical Department on the propagation of the mango tree by budding instead of the present laborious and slow process of grafting, are here reproduced for information:—"Budding the mango has been generally considered an impossibility but this is a mistake, because it is done by experts in Florida, and it can be done by others when understood. The secret lies in taking the buds from about the middle of the growing shoot where they are well developed, and yet not too tender where the colour of the bark is just turning from green to purple, and at a time just prior to a vigorous stage of growth in the tree to be budded. The shield method has been used, but the ring or plate would be better."—*Agri-Horticultural Society, Madras.*

MANURING TEA.—Can it be true that Mr. Joseph Fraser estimates the increased crop from "judicious manuring"—such as he recommends—at 200lb per acre. Take half our area as amenable to such treatment and Mr. Fraser will have to face 37 million pounds additional of Ceylon tea! But where is the labour to pluck 148 million pounds additional of leaf? Mr. Fraser must be interviewed by a Deputation of poor tea-estate proprietors!

LAGOS PALM OIL.—The exports of palm oil from 1894-98 were as follows:—1894, £187,297; 1895, £205,553; 1896, 159,150; 1897, 97,590; 1898, £97,337. From these figures it appears that the palm-oil trade is less than half what it was in 1894 and 1895. The falling-off is attributed to rubber having become, since 1894, such a large article of export from the colony, but owing to the injury inflicted on the trees (says the Governor of Lagos) from the reckless way in which it has been collected, it appears certain that within, say, five or six years this industry will fall off entirely. The export of palm-kernels during the past five year remains about stationary, the value in 1898 being £362,539.—*Chemist and Druggist*, Jan. 27.

TEA FACTORIES AND FIRE INSURANCE.—There was some reason for the Maskeliya planters specially interesting themselves in this subject; for of the 18 fires reported by their Committee, two had occurred in their district, against two in Dimbula; one only in Dikoya; two in Madulsima; two in Pussellawa; and no fewer than four in the Kelani Valley, where we should have thought the temperature was too high to encourage fires. We repeat the interesting table with the districts given opposite the estates:—

Fires in Ceylon Estate Factories during a period of eight years.

NAME OF FACTORY.	DISTRICT.	DATE.	
Heatherley Factory	Pussellawa	March	1891
Suduganga do	Matale East	May	1891
Bloomfield do	Maskeliya	Feb.	1894
New Peradeniya Factory	Hantane	Jan.	1894
Alton Factory	Maskeliya	June	1894
Lynsted do	Dikoya	Jan.	1895
Kinnuagoda Factory	Madulsima	March	1896
Great Western do	Dimbula	Jan.	1898
Dunedin do	Kelani Valley		1898
Tembiligalla do	Pussellawa		1899
Knavesmire do	Kelani Valley		1899
Sirisanda do	do		1897
Kanavesmire Sirocco	do	Jan.	1899
Ferham Factory	Dimbula		1898
Battawatte Withering Shed	Madulsima		1898
Dunsinane Brit. Drier	Pundaluoya		1897
Lower Haloya Sirocco	Nilambe		1897
Culloden Factory	Kalutara	May	1896

Total amount paid R385,767.

A merchant, who has paid some attention to the question, writes, after reading the Report:—

"I do not quite understand the paragraph in their report in which they estimate the annual premium value at R187,500. But if that is a fair estimate, the losses amount to 25·72 per cent of the premium insured; whereas the experience of 43 British Fire Offices in 1898 as shewn in Mr. Horsfall's circular of 7th July, 1899, was 56·12 per cent."

THE RICE TRADE OF CEYLON:

Imports from Bengal, S. India, Burmah, &c.

The largest import trade carried on through Colombo, is, as may well be guessed by all who have any knowledge of the local requirements of the article, the import trade in Rice. While the exported quantity of Tea—the largest item in the export trade—last year was close on 130,000,000 lb.; for the same period we notice (see tables on next page) that the imports of rice must weigh about 500 million pounds or not far short of four times the weight of the exports in tea. The trade in rice with this island being of such dimensions as we have indicated, it is worth while to consider its present condition and the changes that have recently taken place therein.

In the first place, referring to the tables which appear on next page, it will be seen that the imports *in bags*, during 1868 are given as 2,790,638 while far 1899 they are 3,031,975 showing an increase of 241,337 bags. From this one would gather that the quantity of imported rice had increased last year as it has done for several years past. On examination of the smaller table, however, it will be found that there has in fact been a *decrease* in the total quantity imported by 14,616 bushels. The explanation of this is not difficult; but to make it plain with all the figures before us, is somewhat less easy. The point is that Rangoon rice is measured in bags taking 3 bushels and not 2½ bushels, as is the case with Calcutta bags; these are the usual measures, but not even these remain continuously the same. Moreover in the cases of nearly every other port the quantity per bag is different: and as the larger table, mentions no less than 18 sources from which our rice was drawn last year it will be seen that an increase or decrease in bags is not a true criterion of the actual amount of rice imported. The decrease in the importations of rice last year is nothing abnormal and may almost entirely be explained by the smaller quantity of estate labour then available in Ceylon.

Now as to the sources of our rice supply, Calcutta, in spite of "plague," still stands easily first· Southern India coming next; these two will, we belive, continue to remain our chief sources of supply. Rangoon comes next; but from Rangoon we are again receiving only the broken rice or chips which have been imported for many years past. The trade in Rangoon rice all over the world is something enormous and the surplus crop alone in this year is estimated at about 2 million tons, a good deal of which it is expected that Bombay will take. But rice in Rangoon is differently prepared from the Calcutta and South India rice; in the latter places it is scalded and when used for cooking with curry has a better consistency and is more liked by coolies. Erom Rangoon there are three kinds of rice, so-called, imported; (1) Cargo Rice—the raw article: (2) Chips, or broken rice, obtained from the mills, and (3) Rice meal, the finer grindings which are used mainly in the manufacture of dog-biscuits. Looking at the imports of Rangoon rice into Ceylon between 1887 and 1897, it will be seen that they vary between 108,000 and 174,000 bags; this all refers to the broken rice or chips, given as (2) above, which is locally imported solely for the making of hoppers and sweetmeats—while in Europe and elsewhere it is taken largely for the manufacture of starch. In 1897, when there was a scare of plague in Calcutta and it was thought that our rice supply from that quarter might be hampered, it was decided to send Commissioners from Ceylon to Burma to select some quality of raw rice which would be suitable for our coolies and could take the place of the Calcutta article; the result of this was that over 250,000 bags of Rangoon rice were imported in 1898 as against 136,709 in 1897. But circumstances were entirely against the new plan and several local firms who took up the matter found the business unprofitable and went back to former ways. First, the cooly was not used to the Rangoon rice; special instructions were issued as to cooking, but were not followed (who ever heard of a cooly forsaking the old culinary methods with his daily food?); chetties, annoyed by the Rangoon imports, kept the coolies up to these complaints, and they had to be listened to; but—most cogent argument of all—the "plague" in Calcutta was a mere scare as far as the rice trade was concerned, and with a huge crop, prices came tumbling down and the old favourite from the Indian capital thus became cheaper than the new stuff, as well as being better liked. And so, in 1899, a normal condition of things has been resumed, the imports have dropped one-half; and these, we learn from special enquiries, are only of the broken rice, used for consumption with other than the pure rice form.

The rice trade with Calcutta has for sometime past been largely in the hands of Chetties; but in June, 1898, a representative of the well-known firm of Grunberg Bros. of Calcutta and Singapore came to Colombo to see what could be done here in the matter of underselling the Chetties, who by their ring had kept the prices above the normal. In October 1898 a branch of the firm was established here and the result was that by competition the prices of rice, as largely fixed by the Chetty community, have been brought gradually down. We learn further that of recent years, or rather month, the Chetties have found that the old profits cannot be made in this trade and the profession of l c l rice-dealers is passing more into the hands of Moors and Bombay Parsees; while the old lords of the rice market are having greater recourse to the pastime of money-lending, for which the special colonial mania for running into debt offers such terrible facilities in the matter of victims, both young and old, in the East.

In conclusion we may express the opinion that only a rise of price in Calcutta is likely to cause a return to Rangoon raw rice, the trade in which at this port has partically ceased for 18 months, and even then it is doubtful if a slight rise would make very much difference. Burma, it is true, has an immense extra crop to get rid of this year; but from recent Rangoon circulars

it is not thought there will be much difficulty in disposing of it. Strangely enough, in spite of the famine that stalks through the length and breadth of India today, Rangoon finds it a hard matter to send any of its surplus to the nearest chief port. The jealousy is great at Calcutta, of the grand supplies from Burma and almost unconquerable; and there is still less possibility of Rangoon rice ever being brought to Calcutta, and re-exported as the Calcutta article: experts would detect the difference at once. From all appearances then it seems that direct from the city on the Hooghly Ceylon will continue to draw its largest supplies of rice, the nearer portion of the Indian continent sending about half the quantity that comes from Bengal. Of other sources Penang alone attracts attention, but the trade from that port is scarcely capable of any marked development in the near, or even distant future.

IMPORTATION OF RICE INTO CEYLON IN 1899:

A NORMAL YEAR.

Since the revision of the Customs Tariff, rice is reckoned in cwt. and not bushels as before, 2½ bushels being calculated at 164 lb.; but we put all in bushels. The importation last year showed a slight decrease on 1898, but an increase on 1897.

1899.	Quantity Imported. Bushels	Quantity entered Home consumption. Bushels	1899.		Quantity Imported. Bushels	Quantity entered Home consumption. Bushels
January	590,486	590,486	July		693,758	693,758
February	644,128	644,128	August		640 477	640,477
March	552,425	551,582	September		752,820	751,980
April	756,787	756,630	October		586,933	586,933
May	507,488	506,640	November		797,832	796,070
June	630,116	630,116	December		536,680	538,326
			Total	1899 ..	7,689,930	7,687,126
			,,	1898 ..	7,704,546	7,881,646
			,,	1897 ..	7,354,690	7,354,690

OUR RICE TRADE.

IMPORT OF RICE IN BAGS INTO COLOMBO BETWEEN 1877 AND 1899.

	1899	1898	1897	1894	1893	1892	1887	1877
Calcutta ...	1,860,020	1,721,801	1,672,068	1,419,376	1,569,195	1,538,674	1,058,000	1,897,144
Southern India ...	869,823	525,263	763,636	749.649	404,468	640,205	707,848	311,679
Rangoon ...	177,777	350,627	136,709	173,508	160,479	125,505	109,763	5,033
Chittagong ...	...	2,511	...	...	200	...	...	733,555
Ganjam ...	...	...	...	3,303	...	...	...	1,750
Akyab ...	...	...	...	...	...	...	...	...
Golpalore ...	6,118	...	...	63,197	66,109	...	2,480	...
Singapore ...	3,765	7,965	8,053	30	825	15	60	8,200
Bombay ...	9,664	38,249	13,290	7,662	14,223	1,454	1,999	380
Moulmein ...	...	...	...	...	...	.	...	29,790
Balasore ...	...	..	...	...	...	...	...	...
Penang ...	20,961	66,740	16,282	1,076	7,104	...	...	...
Pooree ...	9,589	33,018	4,000	15,344	20,549	14,564	12,730	...
Maldives ..	...	...	...	...	...	...	...	...
Bassein ...	...	...	...	...	...	...	...	3,500
Dhamnerah ..	...	...	...	...	...	...	...	15,400
Saigon ...	...	...	...	...	...	...	...	12,140
China ...	8,275	21,696	1,078	...	5,225	515	...	1,500
Aden ...	...	...	..	...	...	...	...	...
Hongkong ...	...	...	3,230	...	20	28	...	...
Japan ...	3,210	15,550	5,735	60	30	...	...	...
Kurachee ...	...	...	...	...	601	...	...	...
Pooree ...	...	...	4,000	...	..	...	..	...
Pondicherry ...	4,920	201	6,923	...	..	...	..	...
False Point ...	...	...	15,764	..	..	...	..	...
Madras ...	17,699	3,885	8,490	...	..	...	...	...
Tranquebar ...	12,820	3,132	...	...	..	...	...	...
Minicoy ...	5,893	..	..	..	...	...	...	...
Porto Nova ...	1,033	...	...	...	...	...	...	..
Cuddalore ...	2,883	...	...	...	...	..	...	...
Karikal ...	7,247	...	...	...	..	...	..	...
Beta ...	200	..	...	...	...	...	...	...
Total..	3,031,975	2,790,638	2,459,266	2,433,205	2,249,028	2,320,960	1,892,880	2,343,871

SCIENCE AND BUSINESS IN FORESTRY.

WE are getting more practical every day; and high time we did, looking at the way other nations are catching us up, and even stalking ahead of us in some matters. And there are few things more hopeful and encouraging than the combination of Science with Agriculture. Some of our correspondents, looking far ahead, had insisted many years ago, that the Royal Botanic Gardens at Peradeniya should become self supporting! A dairy established on the rich grassy banks of the Mahaweliganga, would probably have secured this end; but such a notion might even now cause good Dr. Thwaites to turn in his grave! Dr. Trimen was scarcely less conservative as to the scientific character of his charge, though he discussed weather and crops, new products and old, with courage and wisdom in his eminently readable annual Administration Reports. The present Director of the Botanic Gardens has certainly gone farther in a practical direction, than any of his distinguished predecessors: and we may, by-and-bye, find Mr. Willis blossoming forth as the Head of the Agricultural Department, while as a first step, he is likely to take the School of Agriculture under his wing. Then his hands are already greatly strengthened by having as his assistants or allies, men of the experience and attainments of Messrs. E. E. Green, Carruthers and Kelway Bamber, and there should be a good time coming for agriculture in the island with these dauntless scientists ready to take the field against any enemy of plants and crops that may show itself from the animal or vegetable kingdom.

We have, from time to time placed before our readers or commented on, information from India bearing on the same subject. There is, however, another matter on which we have much in common with India, and that is Forests; and we have had for some years a very capable specialist at work among us from the adjoining Continent. But India, too - in parts at least—is still groping for light, and its experiences and efforts have still their practical uses for us in Ceylon. The Bengal Forest Department is evidently not as far ahead as its sister establishments—only 45 per cent of Government Forests in Bengal having working plans, against 88 per cent in the North-West Provinces and Oudh, and as much as 97 per cent in the Central Provinces. Bengal has, therefore, been called on to move forward—to prepare working plans and find markets for the produce of its forests. So long as the Government has not full information of the potential supply, it cannot control the market in any way; and the Lieut.-Governor rejects the excuse that the lack of information is due to paucity of officers. If that were so, officers should not have been lent for miscellaneous services elsewhere; and now all such transfers must cease until Bengal is abreast of other Provinces in working plans! To facilitate progress, the working plans are to be less minute and elaborate, so that they may be susceptible of alterations and additions from year to year; and the following dictum is one that all specialists would do well to keep in view:—

"Forest Officers must realize more than they do, that they are the agents of a great commercial undertaking, and that as such, they are not merely the scientific protectors of an important property, but active exploiters, whose business it is to seek and develop markets for the produce that is ready for use."

As a beginning, a central depôt is to be established in Calcutta "to foster the exploitation of miscellaneous forest produce in remote portions of the province," and, among others, the mica industry is to have special attention paid to it. Altogether, Sir John Woodburn seems intent on making matters "hum" in the Forest Administration of Bengal; and it is quite possible that Ceylon too may benefit from a similar stimulus?

CEYLON COOLY IMMIGRATION AND THE NORTH ROAD—MANURING TEA.

A proprietary planter in a high district, writes after the following rather "wild," fashion:—

Now is the time when coolies come down the North Road, and people who have nothing cannot afford a matter of ten rupees. As to advances, money sent is always retained by the kanganis who return saying they cannot get coolies and casually say put the amount against me. That's the sole reason advances are not now given out. The law gives us no redress, but only says recover your money by civil suit. We cannot get money sent to the Coast to those who would use it in coming over. Our immigration agency is a farce; it is absolutely of no use whatsoever. Give us an agency where money can be sent for *bona fide* coolies and get estates some protection, then there will be lots of money forthcoming. The wily kangani, as you call him will keep the money whether he comes by Tuticorin or the North Road. What we want is a free inlet for people to come on their own account. When need drives them, they would soon utilize it and knowing it come again. In my opinion it is the kanganis who are keeping coolies out of the country for their own ends. In days gone by coolies would have flocked down the North Road in thousands on their own account during their famine, but now this is denied. [But has our correspondent not seen that for years, fewer and fewer coolies have been coming by the North Road and that the enormous immigration of 1897-98 came through "advances" by steamers?—ED. *T.A.*]

But, on the other hand, an even more experienced planter says:—

Cooly Immigration—I fancy the great cutting down of coast advances after the too liberal giving out of same has a great deal to do with the sudden decrease in immigration. There is now a tendency to go in for the old style of modified coast advances. It is no use manuring, if you have not the labour to pluck the leaf, and I fancy Mr. Joseph Fraser, our Manuring expert, is too shrewd a man to recommend the application of manure to give 200 lb. tea extra per acre, unless he is satisfied that his constituents have plenty of labour available.

COCONUT PLANTING would seem to be going ahead in the Fiji islands, to judge by a letter on page 604; but then there is the liability to have young and even old clearings swept away by periodical hurricanes, from which Ceylon is so wonderfully free.

TEA AND COLONISATION.

Our Southern contemporary, *Planting Opinion*, in quoting our leader in a recent issue on "Famine Colonisation and Tea," says "*Indian Gardening*," appears to lean towards a great scheme of State colonisation, remarking that if this were established, and planters assured of a regular supply of labour, it would be possible to pass a regular stream of agriculturalists through the tea gardens to the land. We need scarcely point out, however, that success would depend largely, if not mainly, upon the regulations enforced, and with the Assam Emigration Bill in mind, we are disposed to hesitate before arriving at the conclusion that a State scheme is desirable. Certainly, 'there is no reason to doubt that effect could be given to such a scheme if the Government would take it in hand, abandoning its present merely restrictive attitude and adopting instead a spirit of hearty co-operation.' But is there not grave reason to doubt whether such co-operation can be expected from a Government that endeavours to control the scale of pay as between employer and employed, when it does not itself figure as one of the employers? The answer to this question should come from the North. We need only remark that to us it appears an anomaly and a scandal that the Government of India should so persistently manifest a desire to interfere between the planter, employer, and his emplyes, when it does not even pretend to have any concern for the relations of employer and employe in other industries—such, for instance, as the enormous mill industry that has been developed in India, or the still more important agricultural industry, which affords examples with which the planting industry cannot vie, of what might strike impartial economic scientists as an abuse by the employer of the helplessness of the employed. Again when labour is required for the construction of State or State-aided railways, what restrictions are imposed on the migration of labourers? We are not suggesting that Government should be consistent, for we value too highly what little reputation for sanity we possess. Our sole aim is to hint that inconsistency and eccentricity might be kept within bounds even where the administrative measures of the Government of India are concerned." Our contemporary is evidently afflicted with the historic doubt, whether anything good can come out of Nazareth. We have already had occasion to complain that the Government's Intelligence Department on these questions is not very efficiently worked, but beyond this we do not see reason to go. With full information before it, we believe the Government will give a large measure of justice in time to our industries; and it is the province of the press to see that the deficiencies of official intelligence departments are supplied. At the same time, perhaps, it might be as well for the press to set a good example to Government in dealing fairly and temperately with the questions at issue, and in avoidance of imputations of bad faith.—*Indian Gardening*, Feb. 8.

TEA BULKING AT THE PORT COMMISSIONERS' WAREHOUSE, CALCUTTA.

We have much pleasure in giving publicity to the following from Mr. Apjohn, Chief Engineer in the Port Trust, which explains itself. The views to the Calcutta Tea Traders' Association on this subject will be found in another column:—

To the Editor, "Indian Gardening."

Dear Sir,—Your leader in this week's *Indian Gardening* expresses approval of the introduction of local tea bulking, but gives vent to doubts as to whether the bulking can be accommodated in the Port Commissioners' Tea Warehouse unless it be extended, and you deprecate the bulking being conducted at the Kidderpore Docks. It is proposed to have bulking plant at the Kidderpore Docks in the new tea-shed being provided for the reception of garden teas sent for direct shipment, and it is for such teas that the Commissioners were asked to provide local bulking, and the Kidderpore Docks is the proper place to conduct it.

For sale teas the bulking must, of course, be in the Tea Warehouse, where plant will also be provided, and it will not be found that this plant will take up a large portion of the floor space which, as you rightly state, is at present in much demand. One of the great advantages of my system of bulking is that but little space is required for its accommodation. Teas to be bulked are brought to the machine from where stacked in the Warehouse, the chests are then opened and their contents poured into the bulker, the empties sent down by a slide to the ground-floor where they are fed to the power packer and delivered ready for closing. All the floor spaces occupied by the bulker and the operations connected with it allowing ample room for temporarily stacking teas brought for bulking. Opening the chests and closing again on the ground floor does not exceed 6 per cent of the floor area of the Warehouse. The bulker and power packers would be quite capable of dealing in a week with the largest number of chests ever sold at the weekly sale.

Several tea experts who have considered the matter agree with me that the provision of bulking facilities will in time tend to economy of space, when it is recognised that bulking can be effected much more quickly than the present laying down to draw samples, and in time it will become largely the custom to have teas bulked on arrival in the Warehouse before sale, which will not only save time, but afford better samples than are now obtained by laying down each chest and drawing a sample from it. Teas laid down for the drawing of samples occupy for each chest an area of 6 square feet for an average time of 24 hours, whereas stacked to the usual height each chest requires only one square foot of floor space. If the laying down of teas was abandoned for bulking, the Tea Warehouse could accommodate quite three times as many chests as at present.

The business of the Warehouse is rapidly growing, and it is desirable that its accommodation should be increased, but the installation of bulking plant will tend to reduce, and not to increase the pressure on its resources.—Yours faithfully, J H Apjohn.

Calcutta, 2nd Feb. 1900.—*Indian Gardening*' Feb. 8

MINOR PRODUCTS REPORT.

Citronella Oil.—Ten lots have been sold recently at 11d per lb, c.i.f.

Cocoa Butter.—The auctions to be held in Amsterdam on February 6th will consist of seventy tons VanHouten's, twelve tons Helm, and four tons De Jong; while on the same date in London 110 tons Cadbury's brand will be offered.—*Chemist and Druggist*, Jan. 27.

"The Indian Forester."—We have received the January number, the contents are as follows:—Original Articles and Translations—The Production of Sandalwood by C D M'Carthy; Natural Coppice, by Sir Dietrich Brandis, F.R.S., K.C.I.E.; The Forests of Cochin China; Correspondence—The Treatment of Bamboos, Letter from C P Fisher; Is Poinciana Elata a wild tree in India? Letters from F Gleadow and Jaikrisna Inderji; A destructive Fungus on Xylia dolabriformis. Letters from R S Troup; Official Papers and Intelligencee—The Treatment of Rubber with Alum in Penang; Reviews—Forest Administration in the N.-W. P. and Oudh, during 1898-99; A list of the Trees and Shrubs of Pilibhit, Northern Oudh and Gorakpur; Extracts, Notes and Queries; Timber and Produce Trade; Extracts from Official Gazettes; Appendix Series.

Correspondence.

To the Editor.

PARADUA AND SUGAR IN CEYLON

SIR,—Your correspondent in Saturday's paper is surely mistaken in referring to Paradua as in the Kalutara District. Is it not in the Matara District? And did not good old J W Home acquire the mills there and himself bury a lot of money there? But as you say, the failure of sugar in the past does not necessarily mean its unsuitability for parts of the island in which it had never been tried, especially with improved methods of cultivation and new appliances for manufacture. What a man Home might have been had he not a yearning for great things, for ventures beyond his means? But he was a man of great grit. OLD HAND.

[His career in Ceylon was a romance.—ED. *T.A.*]

LONDON COCOA MARKET: PRICES LIKELY TO RISE.

London, E.C., Jan. 26.

DEAR SIR,—Thanks for your *Observer* of 5th January. In the paragraph on Cow Tail Hair, you print "in bales of 3,400 lb." It should be "in bales of 300 to 400 lb."

I read Mr. E O Darley's letter on "Cocoa" in Mexico with great interest, but I cannot make out his calculations. He speaks of planting his trees 15 feet apart=200 trees (about) to an acre. He then estimates 50 pods to the tree which gives (Ireckon) 4 lb. dried cocoa, not more. This would make 800 lb. dry cocoa per acre or 2,000 lb. per hectare, against the 4,500 or 5,000 lb. he speaks of. How does he arrive at his calculation?

Messrs. C M and C Woodhouse in their annual report on cocoa say: "The market opened with a generally quiet tone, but by the end of Feb. there was a moderate advance in value of all British Possessions kinds, which did not extend to those of foreign growth, and then, when the larger arrivals began to press upon the market, there was a steady decline for all descriptions, which prevailed till the middle of July. Subsequently the demand for West India and Ceylon decidedly improved, and this continued with occasional periods of flatness, to the end of the year, by which time prices showed a considerable advance for Trinidad and fine Ceylon."

These gentlemen give the following figures as the consumption in the different countries from which we have been able to obtain reliable information:—

	mths.	1899. lb.	1898. lb.	1994. lb.
United Kingdom ...	..12	34,013,812	32,087,084	22,441,000
Germany	..11	37,255,300	32,351,100	17,227,100
Holland ..	..11	28,923,600	29,086,900	19,896,300
France ..	...11	35,383,400	35,145,900	30,112,300
Spain ...	..11	12,467,500	9,592,300	1,166,800 (10 mths.)
Italy ...	...11	778,200	690,400	471,700 (10 mths.)
Belgium ..	..10	3,233,900	2,602,400	——
Austria ..	..10	2,636,300	2,337,400	——
United States	..12	35,260,000	21,095,700	15,940,500
		189,951,712	164,989,134	107,255,700

The Russian figures are not given, but this country which is, I believe, a very good customer of Ceylon cocoa, is I read also greatly increasing its consumption. The increase in the American demand is fabulous, 66 per cent in a year. It is true that 1898 may have been a bad year owing to the w r and other reasons, although with us the Boer war is stimulating our consumption, but even then it is a great jump. It is rather curious to note that by "the bag" the increase only shows a rise of 38 per cent. The figures being for New York:—

Imported, 210,272 bags in 1899 against 151,956 bags in 1898.

Consumption, 197,200 bags in 1899 against 140,638 bags in 1898.

This shows the average weight per bag in 1899 was 180 lb. against only 150 lb. in 1898 due to a much larger proportion of Trinidad cocoa (packed in heavy bags) being imported in 1899 than in 1898. From Trinidad direct 44,675 bags were sent last year against 32,952 bags in 1898 and I believe last year a good deal of Trinidads were shipped to the States from the United Kingdom than there were in the previous year.

At the public sales this week, 2,054 bags Ceylon cocoa were offered, and nearly all sold. At the sales alone 1,865 bags changed, and though since the sales holders are asking higher rates than buyers as yet care to give, there is no doubt those who have to buy must give way to the sellers, as there is so very little unsold. Other growths are still coming forward slowly. The "Cheniston" has arrived, however with 3,300 bags of Grenada cocoa which they are trying to get up for sale next week: but it will be a month I reckon (from the reliable information I received from Trinidad) before any such quantities of Trinidads are likely to be received. I think the following are about the fair values of Ceylons today:—Common to fair native 68s to 72s; good native 73s to 79s; fine (native 83s); small, fair to fine (estate) 63s 6d to 75s 6d; ordinary 67s 6d and 68s 6d; medium to fair 76s to 83s 6d; good to fine 84s to 91s. The sales include S, L, in diamond 68s 6d; MAKM 69s; MAK 71s; C in diamond 68s to 69s 6d; HMS & Co. in diamond 140 bags 70s; Kepitigalla 82s 6d and 84s; Ukkuwella, Lower Haloya 83s 6d; Hylton 84s; Patharagalla, Ingurugalla, and Maousava 84s 6d; 86s 6d was bid but refused for "Pallie"; Polwatta 85s, sold; Meegama 90s; Yattewatte 90s to 91s.

I should not be surprised before the year was out, owing to the war and the large increase in the general demand, to see cocoa very high; for in all probability the demand during the next three or four months when the crops will be coming in will be large enough to prevent any appreciable increase in the stocks, so that we shall have September come with depleted stocks and the few pickings that straggle in as usual at that time of year. Trinidads now are worth 81s to 83s for good to fine red and Grenadas 72s to 73s 6d. Guayaquils are also higher with very little on hand to offer.—Yours truly,

HAROLD HAMEL SMITH.

I enclose a cartoon I have drawn (I apologise for the quality) showing what I believe to be a very fair idea of the Mincing Lane opinion of last year's Liverpool cocoa market. —H.H.S.

COCOA.

London, E.C., Feb. 2.

DEAR SIR,—Letters received this mail from Trinidad, dated 18th January, still complain of the lateness of the crops, and the stores say it has caused them to have a very poor Christmas. Those, however, who were fortunate enough to have any cocoa obtained good prices, fine estate marks selling as high as $16 75 locally=84s in London. The weather in most quarters is still too dry, Port of Spain itself seems to be having more rain than the country. The Island had only shipped 3,276 bags to the 18th January (2,508 to Europe, 768 to U.S.A.) against 9,672 bags at the same time last year.

The cocoa sales went off this week very irregularly, the Government being again buyers, however, gave some growths especially Trinidads a very much firmer tone than would otherwise have been the case, but even they were cut out in several lots. This caused Grenadas and Dominicas also to sell well. The demand for Ceylon was the most irregular perhaps; but on the whole, especially as sellers were firm, the lots sold were fully up to valuations. Since the sales the news that some 2,000 bags Java offered on the 31st at Amsterdam had all sold considerably above valuations, also no doubt helped the market, for I was shown a lot of fair red native, mixed break, for which only 70s was bid at the sale, but had now been sold at 73s.

Judging from prices obtained at and after the sale I quote the following rates today for Ceylon's :—Common to fair native 67s to 73s, small fair to good 61s to 69s, mid red 75s 6d to 77s, fair red 78s to 80s, good red 83s 6d to 87s 6d, fine 95s. About 1,400 bags in have changed hands this week. Of other growths Trinidads went steady to 1s higher selling from 79s to 84s. The principal feature in this growth was the sale of some 400 bags good middling to good red 82s, which was only valued at 80s to 81s, Grenadas sold from 69s for fair red to 7 s for fine marks. The Guayaquils were nearly all bought in but since the sales about 1,000 bags have been sold at 72s 6d for 73s for Caraquez.

During the week ending 27th, 2,042 bags of Ceylon and Java were landed, and 1,562 bags were delivered, leaving a stock of 8,363 bags. As far as I can see about 800 bags will be offered up next week, when about 5,000 bags, of all growths, principally Grenadas, will be offered—as well as 110 tons of Cadbury's cocoa butter, and 100 tons of Shells.

I hear the Mazzawatte Tea Company are beginning to move into their new warehouses near New Cross, also that they have paid the Customs a cheque for £85,000 odd as duty on some six million lb. of tea.—Yours very truly,

HAROLD HAMEL SMITH.

A PLANTER'S ADVICE TO PLANTERS : CONCENTRATE AND CULTIVATE ONLY THE BEST LAND.

Coonoor, Nilgiri Hills, Feb. 9th, 1900.

DEAR SIR,—I find that here and in Mysore the advice contained in the long letter you did me the honor to publish, has been acted on. Poor lands are being abandoned, and the waste of labourers has been reduced. I had a long talk with one of the leading merchants of Bombay (largely concerned in the cotton industry at that city), and find that they are setting to work—either to reduce wages, or to get more work be done for those at present paid, and the movement has spread to the North of India. I only hope that the action of the Indian planters has spread to Ceylon. If they cultivate highly, and only the best land, they will, of course, economise all along the line ; and the key of the whole position, in other words, is the restriction of cultivation to the best land. What often happens here, and at home, is that money is made on the good, to be thrown away on the bad land. The President of one of our Mysore Planters' Associations tells me that my views have been almost universally accepted, except by a few who are entirely in the agents' hands. —Very truly yours,

ROBERT H. ELLIOT.

[We cannot speak of much abandonment of land in Ceylon as yet by our tea planters —"coffee" here is practically a thing of the past altogether—a few corners and a few fields of plantations may have been given up, but that is about all. On the other hand, there is little or no extension in fresh planting for this year; but in regard to "manuring" a good deal is being done, where there is labour, and as it is calculated that. if "judiciously" carried out, such manuring means an addition of 200 lb. tea per acre to the crop, we have to face the contingency of heavy additions to our exports, though no doubt a good deal of allowance has been made in the P A. estimate for 1900 which is 138,000,000 lb. against 129,894,156 lb. actually shipped in 1899. Mr. Elliot, we believe, however, is chiefly interested in coffee and cardamoms ? Of the latter, there is not much prospect of extended planting in Ceylon, suitable soil well sheltered being scarce.—ED. *T.A.*]

COCONUTS IN FIJI AND MEAT TINNING.

Feb. 10.

DEAR SIR,—Enclosed are cuttings from *Fiji Times* Editorial of 6th Jan. I cannot help thinking that the estimate of 10,000 acres being planted annually in coconuts by the natives is a gross exaggeration. It is worth enquiring about. The fact that Fiji has started meat tinning shews that cattle have wonderfully increased in numbers during recent years, far in excess of local requirements. The country is well adapted for cattle as I have often told you and they thrive and breed well there.

A large stock-owner in Fiji has just written to me saying he is very glad the tinning business has started and complaining that his fine fat cattle only fetch £5 a head at present time. They expect a heavier copra crop this than last year.—Yours truly,

PLANTER.

While the larger portion of the Windward Islands is almost solely devoted to the raising of coconuts, where something like 10,000 acres are being planted annually by the natives, and every tree preserved and taken care of, the main island, Viti Levu, comprising 2,500,000 acres, is devoted to the raising of sugar cane and fruit.

Another industry to be initiated for the first time in Fiji early this year is the tinning of meat. This would appear to be a step in the right direction and should largely assist stockowners to realise a better

price upon their herds. For some two or three years past New Caledonia has been engaged in the industry, and has been importing cattle from Queensland for tinning purposes, but consequent upon the tick pest at the source of supply the industry has been hanging fire. Once it has been demonstrated th t tinning meat as an industry will pay, and the many broad acres which at present remain idle will be devoted to the raising of stock.—*Fiji Times*, Jan. 6.

PLANTERS AND TOPICS OF THE DAY IN CEYLON.

Dikoya, Feb. 10.

SIR,—I write *re* several matters of interest to the planting community.

1. Ceylon Labour Federation.—I have followed with the greatest interest the career of the Federation, ever since its conception was first publicably introduced to the planting community by Mr. L. St. Geo. Carey of the Maturata and Hewaheta Planters' Association. The Federation is "good:" has done "good," and will do "more good:" any shortcomings in the working of it are not due to the Federation; but due to those members, who are too slack or too casual to lay breaches of the rules before the Federation Committees, and yet who will on the strength of what are often imaginary wrongs, run down the Federation, without trying to set right what they know to be wrong. I do not believe there is a man who could show just cause of complaint against the Federation, and though I know many who run down the Federation, just by "*summa*" talk, I have not yet met a man who could show that he had laid his cause of complaint before the Federation Committee, and yet had cause to complain. Let all members act up to the Federation rules, and prosecute before the Federation Committees all breaches of the rules, and all will be right. I agree with Mr. Lane that previous employers should be communicated with before steps are taken to employ coolies; but I would point out that this is not a Rule of the Federation, and so need not be done; and I feel sure that the majority would be opposed to the recommendatory resolution to that effect, passed by the Federation Committee becoming a rule, thus showing what is actually thought of the recommendatory resolution from a business point of view. That a tundu once given is good should be clearly understood by all Federation members, and what are called "perili" tundus should not be allowed by the Federation. All districts should have their Federation Committees, and no breach of the rules should be passed unreprimanded.

2. Ceylon S.P.C.A.—Now that the question of supporting this Society is before the Planting Community, we must hope that it will meet with every success. Could not the bigger Associations like the Dimbula P. A., Dikoya P. A., Northern Districts P. A., and Maturata and Hewaheta P. A. appoint representatives in each of the several districts they cover: thus Dimbula P. A., Dimbula and the Agras; Dikoya P.A., Dikoya and Bogawantalawa; Maturata and Hewaheta P. A., Maturata, Hewaheta and Deltota? Increased support means more Inspectors, and Inspectors are men with the time at their disposal, and the purse of the Society at their backs, and whose duty it will be to prosecute on behalf of the Society. Personal support, both moral and financial, is what the Society wants, and then perhaps we shall see less of the cruelty which is so rampant, like the cruelty in cattle branding, &c., &c. Most planters have no time to prosecute, whereas it will be the Inspectors, duty to do so, and to get more Inspectors, financial help must be given: hence the need of personal interest, throughout the planting districts in the work of the Society.

3. Railways and Labour Supply.—This is a very serious question indeed, and it is about time H.E. the Governor told us what practical steps he had taken to secure a Labour Force, sufficient for the works to be undertaken; so that the anxiety felt as to the possibilities of interference with planters' labour, should be relieved.

4. Rice Averages.—I have looked in vain for January's rice averages in all your issues up to date 9th inst. Could you not always make it a rule to publish the monthly rice averages of each month, during the first week of the following month. Many who, like myself, pay for rice on your monthly quotations, would be glad if you could do this.—Yours, &c., PRO BONO PUBLICO.

[Rice averages appeared in the *Observer* of 1st Feb., eighth page.—ED. *T.A.*]

TEA BUSH ROOTS AFFECTED.

Colombo, Feb. 13.

DEAR SIR,—I send herewith a portion of a tea bush (three-year old) from a high estate, which is dying from the root, and shall feel obliged if any of your readers can inform me the cause of same. Thanking you in anticipation,—I remain, dear sir, yours faithfully, E.

[The following is the report of the Entomologist.—ED. *T.A.*:—

The tea bushes just to hand. The roots are covered with some fungus—a white mycelium, which may be the early stage of thread blight. The trees have possibly contracted the disease from decaying roots of jungle trees or even large accumulations of buried prunings.—Yours truly,

E. ERNEST GREEN,
Government Entomologist.

Peradeniya, Feb. 15th.

P.S.—If your correspondents would send their specimens *direct* to this department, they would reach us in a better condition for study. It is very difficult to determine diseases after the plants have dried up.—E.E.G.]

COFFEE PLANTING IN QUEENSLAND.—Another Ceylon planter is added to the list of those who have settled in the Australian Colonies. Mr. Louis Battinson has taken up some coffee land (a few acres planted and some reserve) in the Cooktown division of Queensland and he reports no fungus nor bug, while crops are supposed to average 10 to 12 cwt. per acre; but the country is one where the white man has to labour for himself and where he enjoys it as well. There being a Customs Duty on coffee imported, the local grower has that advantage in his favour. We trust Mr, Battinson will make a success,

PRODUCE AND PLANTING.

ONLY THIS, AND NOTHING MORE.—Three firms in the City, Messrs. Appleton, Machin, and Smiles, Limited, Messrs. Peek Brothers and Winch, Limited, and Messrs. Joseph Tetley and Co., recently addressed a letter to the Chancellor of the Exchequer requesting him to make an early statement as to the intentions of the Government with regard to the tea duty, and pointing ont that great disorganisation of the trade was at present being caused by the large sums of duty being paid upon tea in anticipation of an increase. They have received the following reply :—" Gentlemen,—I am desired by the Chancellor of the Exchequer to acknowledge the receipt of your letter of the 23rd inst., asking the Government to take the earliest opportunity, on the assembling of Parliament, to announce whether or not the tea duty is to be increased in the present year. In reply I am to say that he thinks you will see on consideration, that for obvious reasons no information on such a subject could be given before the introduction of the Budget, for which the time has by no means yet arrived. He regrets to learn that there is any speculation in the tea trade of the kind to which you refer. The unwisdom of such action was proved last year in the case of tobacco. Yours faithfully, L. A. GUILLEMARD."

UNITED STATES TEA IMPORTATION.—The following circular, containing regulations as to the importation of tea, has been issued by the Treasury Department of the United States :—" As tea is now subject to duty, and as the original regulations fixing the penalty of the bond given by the importers thereof at one-fourth the invoice value of the tea was prescribed when on the free list, Article 1 of the Regulations of April 4, 1899, in regard to the importation and inspection of tea under the Act of March 2, 1897, is hereby amended to read as follow: The importation of any merchandise for sale as tea, which is inferior in purity, quality, and fitness for consumption to the standards fixed and established by the Secretary of the Treasury in accordance with Section 3 of the Act of March 2, 1897, is prohibited. Entries of tea will be made upon the ordinary warehouse forms, and the entry will contain the words, 'To be stored at —— pending examination under the Act of March 2 1897.' A bond shall be taken from the importer that such tea shall not be removed from the warehouse until released by the collector. This bond shall be under a penalty equal to double the amount of estimated duties on tea, and shall also be conditioned for the payment of all Custom House charges which may attach to the merchandise prior to its being released, exported, or destroyed, as the case may be, under the provisions of the law."

One of the leading Indian Tea Garden Companies in London recently received a communication from a country grocer, with the following modest request: " Have you an Indian or Ceylon tea that you can put in for 5d or 6d duty paid ? If so," says this ingenuous correspondent, " send samples and price list." This would-be patron of British planting enterprise should try Hamburg.—*H. and C. Mail*, Feb. 2.

THE BATAVIA QUININE AUCTIONS.

It has now been definitely settled that in the course of the present year five auctions will be held at Batavia, at each of which from five to six tons of sulphate of quinine are to be offered. The Bandong factory will therefore require a quantity of bark not less than 500 to 600 tons. At a meeting held on October 12th last, it was stated by the directors of the Bandong works that at that moment they had at their disposal sufficient bark to produce twelve tons of quinine, and during the meeting they secured options from various planters for further parcels estimated to produce nearly fourteen tons more, giving a total of twenty-six tons of quinine. This does not include any Government bark, so that it appears that there will be ample quinine manufactured in Java to meet the requirements of the auctions. The first auction will be held at Batavia on February 28th. The dates of the other auctions are unofficially stated to be April 25th, June 27th, August 29th, and October 31st.—*Chemist and Druggist*, Jan. 27.

THE TREATMENT OF RUBBER WITH ALUM IN PENANG.

Copy of a letter No. 1799, dated the 29th September 1899, from the Inspector-General of Forests, to the Assistant Superintendent, Gardens and Forest Department, Botanic Gardens, Penang.

I have the honour to say that I have read your letter of the 31st December last, to the address of the Director of the Royal Gardens, Kew, regarding the treatment of rubber during the process of extraction with alum, with much interest. During some rubber-tapping operations which were lately undertaken in Assam much inconvenience and loss of rubber was occasioned by the wet weather. It appears that the treatment adapted by you greatly facilitates the extraction of the rubber in wet weather, and that this treatment in no way affects the value of the rubber. I should feel much obliged if you would be good enough to favour me with a full account of the treatment, as I should like to have it tried in Assam.

Copy of a letter dated 18th November 1899, from the Assistant Superintendent, Gardens and Forest Department, Botanic Gardens, Penang, to the Inspector-General Forests.

I have only just returned from leave, or your letter of the 29th September would not have remained so long unanswered.

The report of the expert to whom the Kew authorities submitted the samples of rubber was that the alum treatment does not interfere with its value. You can either stir in a pinch of powdered alum or dissolve the alum first in water, I prefer the latter. You will find that by this treatment you will get out all the rubber there is without loss of time.—*Indian Forester*.

THE AMSTERDAM CINCHONA MARKET IN 1899.

A review just received from Mr. H A van Overzee, of Amsterdam, gives some interesting statistics and other particulars of the bark market at Amsterdam during 1889. The small shipments of bark in January and February caused a considerable rise in the prices at the early sales ; in fact the average unit, which in January was about 4·70c., rose in March to about 10·90c, an increase of about 130 per cent. When, however, it was found that the March shipments, and subsequently those of April also, were above the average, and that the previous small shipments were not due to scarcity, but to accidental causes, a reaction set in, and prices gradually dropped with continued large shipments, until in September, 1899, the average unit had come down to about 5·35. After this there was again an improvement, and at the last sale of the year the unit was, on the average, 7 75c. The improvement in the prices, notwithstanding larger shipments, would point to a steady increase in the demand for Java bark.—*Chemist and Druggist*, Jan. 27.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees. R. N. Lync, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price according to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——— per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Sterculia Acuminata.—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June. Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees. Shade and Timber Trees, Eucalyptus various varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—MESSRS. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address:	J. P. WILLIAM & BROTHERS,
WILLIAM, VEYANGODA, CEYLON.	*Tropical Seed Merchants,*
Lieber's, A.I. and A.B.C. Codes used.	HENARATGODA, CEYLON.

UPPER MASKELIYA ESTATES CO., LTD.

ANNUAL REPORT.

ACREAGE 31ST DECEMBER, 1899.

	Brunswick and Bloomfield.	Caskieben.	Total.
Tea in full bearing ..	446 ..	200 ..	646
Do not bearing ..	— ..	7 ..	7
Grass, Timber Trees, &c..	72 ..	— ..	72
	518	207	725

The Directors now submit to the Shareholders the accounts of the Company for the past year.

The crop realized amounted to 329,814 lb. Tea (being 29,814 lb. Tea in excess of the estimate) against 256,032 lb. secured in 1898. The average price realized for all tea sold, including the grant of 10 cents per lb. on green teas, was 42·86 cents per lb. The expenditure in 1899 on capital account amounted to R3,242·96 for new lines, and for additions to machinery.

After writing off 10 per cent on original cost for depreciation of Buildings and Machinery and a sum of R50 for bad debts, the profit for the year amounted to R42,340·17 equal to 12·10 per cent on the capital of the Company. To this falls to be added R624·36 brought forward from 1898, and surplus of R742·95 over the estimated value of 12,020 lb. 1898 crop, making R43,707·48 available for dividend. An interim dividend of 3 per cent was paid on 2nd September last, and the Directors now recommend the payment of a final dividend of 5 per cent, making 8 per cent for the year, and that the balance of R15,707·48 be carried forward to the current season's account.

The crop for this year is estimated at 300,000 lb. tea on an expenditure of R91,305·05 which includes the sum of R12,033 for manuring 310 acres.

The attention of shareholders is drawn to the accompanying notice of an Extraordinary Meeting to be held, to pass, if approved, a resolution empowering the Directors to pay an interim dividend, which power is usually given to Directors and obviates the necessity of calling a General Meeting of the Shareholders solely for that purpose.

In terms of the Articles of Association Mr. A E Wright retires from the office of Director, but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.

THE COLOMBO TEA TRADERS' ASSOCIATION.

REPORT FOR THE YEAR ENDING 31ST DEC. 1899.

The Committee have pleasure in presenting their report for the year 1899.

From many estates the packages are still very indifferent, especially where local woods are used. Of these, experience shows that Kakuna, Mango, and Imbul are particularly unsuitable.

The outturn of weights is now more satisfactory than last year, but there must always be trouble in the trade in this respect after sampling, so long as estates which do not bulk their teas, simply put in the bare weight stencilled on each package.

The general opinion of buyers is that the outturn of machine packed teas is better than those packed in other ways.

The larger portion of tea sold locally is encouraging, and the quantity shipped to America and Russia is still increasing, as is evidenced by the comparative figures for 1898 and 1899 given below. So far as Russia is concerned, the demand is almost entirely for leaf teas.

The total exports for the year were, as per Chamber of Commerce returns.—

	1899.	1898.
United Kingdom ..	103,851,614 ..	96,133,833
Australia ..	15,606,833 ..	15,126,891
Russia ..	3,949,740 ..	2,714,003
America ..	3,080,002 ..	2,180,188
Other Countries ..	3,309,457 ..	3,614,156
	129,797,646	119,769,071

The following figures show the quantity offered locally in public sale for the last four years, with the average price obtained for complete invoices sold.

	lbs.	Average. cents.
1896 ..	32,083,163 ...	41
1897 ..	33,886,809 ...	37
1898 ..	35,958,819 ...	35
1899 ..	38,377,318 ...	38

The following is the present Committee:—

THE CHAIRMAN OF THE CHAMBER OF COMMERCE.

BUYERS:—Messrs. Tarrant, Henderson & Co., F F Street, Darley, Butler & Co., and Finlay, Muir & Co.

SELLERS:—Messrs. Bosanquet & Co., Whittall & Co., J M Robertson & Co., and Geo. Steuart & Co.

The number of members belonging to the Association is 43, against 44 in the previous year.

The accounts for the past year made up to 31st December, 1899, and submitted to you shew a credit balance of R1,247·51.

BADULLA PLANTERS' ASSOCIATION.

ANNUAL REPORT.

Your Committee have much pleasure in submitting their annual report for the year 1899—the sixteenth since the formation of the Association.

During the year two Committee meetings and two general meetings have been held.

MEMBERSHIP.—Forty-seven estates and three private members are on the roll, being the same number as last year.

FINANCE.—The books of the Association are laid on the table for the inspection of members and show a balance of R156·29 at credit against a balance of R4·53 at the end of the previous year.

ESTIMATE OF TEA CROP, 1900.—The estimated tea crop from the district is 4,683,150 lb. as against 4,516,090 lb. in 1899—an increase of 167,060 lb. The total acrage in tea is 15,784 acres of which 11,821 acres are in bearing and 3,963 acres young tea. This shows an estimated yield for tea in bearing of 396 lb. per acre.

TEA.—The season was not a favourable one for tea. The rainfall being short and badly distributed throughout the year. Two periods of severe drought were experienced, viz., February and March and May to September. The latter was the most severe drought experienced for many years. Owing to these abnormal climatic conditions the estimates framed for 1899 were not realized on many estates.

COFFEE.—Fortunately the district is not dependent on this product now. Good crops were harvested on a few estates during the past year, but prices have fallen very low and green bug continues its ravages so that the prospects of this product are far from good.

MINOR PRODUCTS.—Cacao and cardamoms continue to be cultivated in the district. The latter product is being extended considerably.

MAIN ROADS AND BRIDGES.—Your Committee have pleasure in reporting that the improved conditions of the main roads mentioned in their last annual report has been maintained. Your Committee congratulate you on the completion of the extension of the Madulsima cart road to Cocogalla Factory: also on the completion of the very handsome cart bridge over the Badulla Oya at Taldena. Both these important works have been carefully designed and thoroughly well-constructed and will be of great benefit to the general public and to the estates they are intended to serve. Great credit is due to Mr. Christie, the Provincial Engineer, and his staff, for the highly satisfactory state of public works throughout the district. It may well and truly be said that never before have the roads in Uva been in such excellent order as at the present time.

NEW WORKS.—Your Committee are pleased to be able to announce that in response to a resolution passed at the last general meeting of this Association, His Excellency the Governor has ordered that provision for a bridge over the Badulla Oya on the

Badulla-Namunakula minor road be included in the estimates for 1901.

Your Committee trust that the extension of the important road from Taldena to Alutunuwara *via* Bubule will be undertaken at an early date and a cart bridge built over the dangerous Loggaloya, thus completing this most important and necessary link of connection with the lower portion of the Province.

MINOR ROADS have been maintained in a satisfactory condition throughout the year. The Chairman of the Provincial Road Committee addressed this Association with a view of reducing the number of minor roads in the district, but after full and careful consideration of this matter it was resolved that no reduction of these important lines of communication could be recommended at present.

AGRICULTURAL CHEMIST.—Mr. Kelway Bamber paid two visits to the district during the year. Members of the Association had an opportunity of meeting that gentleman on both occasions and were able to elicit a good deal of important information in connection with tea manufacture, &c., and your Committee look forward with interest to the receipt of Mr. Bamber's report which will doubtless contain much valuable information relative to our chief industry. The thanks of the Association are due to H.E. the Governor for the appointment of a Mycologist.

LABOUR.—The labour supply has been fairly good during the year, but there are indications that demand has overtaken supply and your Committee view with some apprehension the increased demand that must necessarily arise when the construction of the lines of Railway to the North and to Udapussellawa is begun. Your Committee earnestly trust that Government will take steps to recruit from outside the island all labour required for railway construction.

RAILWAY EXTENSION.—Your Committee regret that no progress has been made in the matter of railway extension during the year, but sincerely trust that the construction of a light line from Bandarawela as far as Passara will be undertaken before many years have passed.

BENEVOLENT FUND.—Your Committee regret that hitherto this fund has not received from members the support it deserves. They, however, trust that every member of the Association will become a subscriber to this most important fund during 1900.

IN CONCLUSION your Committee would earnestly impress upon every member of the Association, the necessity for continued efforts being made to obtain such reforms and improvements as may be of lasting benefit to the district.

THE KALUTARA COMPANY, LIMITED.

ANNUAL REPORT,

ACREAGE.

Tea in bearing	518 acres
Tea in partial bearing.. ..	140 do
Arecanuts, Grass, Ravines, &c. ..	10 do
	668 do
Forest	416 do
Total..	1,084 do

The Directors now submit to the Shareholders the accounts of the Company for the past year.

The crop secured was 305,433 lb. Tea against an estimate of 285,000 lb. while 5,833 lb. Tea was manufactured from purchased leaf. The average nett price realized was 36·89 cents per lb. against 33·08 cents per lb. in 1898. The expenditure on the estate amounted to 22·93 cents per lb. which included a sum of R5,347·27 for manuring.

The Rubber trees are growing satisfactorily and the supplies which were found necessary owing to damage by cattle are coming on well. Sinhalese are still prospecting for plumbago, but no definite arrangements have yet been made for working it.

After making full provision for depreciation of Buildings and Machinery, writing off a sum of R1,000 to Coast Advance Reserve Account and paying the interest on the Preference Shares, there remains a balance at credit of Profit and Loss Account on the year's working of R30,147·13, equal to 7·54 per cent on the capital of the Company. To this falls to be added the balance of R3,774·66 brought forward from 1898. During the year under review a further 20 of the Preference Shares were issued, making the total Preferential capital R27,500.

On 28th August last an interim dividend of 2 per cent was declared and the Directors now recommend the payment of a final dividend of 5 per cent, making 7 per cent for the year, and that the balance of R5,921·79 be carried forward to the current season's account.

The capital expenditure for the past year amounted to R10,981·38 on the upkeep of young tea not in bearing and additions to Buildings, including the final payments on account of Withering House.

The estimate of crop for this year from the Company's estates is 333,000 lb. Tea on an expenditure of R75,532·65, including the sum of R5,756 to be spent on manuring, while expenditure on Capital Account is estimated at R6,268·75, for the planting up of 25 acres with Tea and the erection of new lines which are much required.

During the year Mr. J G Wardrop resigned his seat on the Board and the remaining Directors appointed Mr. R S Templer in his place. On Mr. W H Figg's departure from the island Mr. Wardrop was re-appointed. In terms of the Articles of Association Mr. G H Alston now retires from the Board, but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.

THE RUANWELLA TEA COY., LTD.

ANNUAL REPORT.

ACREAGE.

Tea in full bearing	358 acres
Tea not bearing	16 „
Jungle and Wasteland ..	199 „
Total ..	573 acres

The Directors have now to submit to the Shareholders the Accounts of the Company for the past year.

The crop secured amounted to only 161,100 lb. Tea against an estimate of 200,000lb. The shortfall is mainly due to the deficiency in rainfall.

The average net price realized was 34·66 cents per lb against 30·90 cents per lb in 1898; the cost delivered in Colombo was 26·58 cents per lb, (which includes the cost of manuring, amounting to 2·22 cents per lb. This high cost per pound is attributable to the small crop.

In view of the fact that the balance at credit of Depreciation Account now represents about forty per cent of the original cost of Buildings and Machinery the Directors do not consider it necessary to write off anything further for depreciation at present.

After transferring the sum of R500 to Coast Advance Reserve Account and writing off a bad debt of R73·67, the profit for the year amounted to R10,543·01, to which falls to be added the balance brought forward from 1898, R1,381·26 and a surplus of R661·46 over the estimated value of 16,690 lb. of 1898 crop. The total available for distribution is therefore R12,585·73, and the Directors recommend that a dividend of three per cent be declared for the past year, and of the balance of R4,635·73 carried forward to the current season's accounts.

The estimated crop for 1900 is 180,000 lb tea on an expenditure of R41,763·93, which includes a sum of R3,616·84 for manuring.

During the year Mr. W H Figg resigned his seat on the Board, and the remaining Directors appointed Mr. G H Alston to the vacancy, who now retires, but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.

HIGH FORESTS ESTATES CO, LTD.

ANNUAL REPORT.

ACREAGE.

Tea in bearing ..	..	588 Acres
Do in partial bearing	..	246 do
Do do 1897	..	174 do
Do do 1898	..	132 do
Do do 1899	..	25 do
		1,165
Forest and Patna	..	467 do
		1,632 Acres

The Directors now snbmit to the Shareholders the Accounts of the Company for the past year.

The total crop secured during the year under review was 258,496 lh. tea (heing 28,496lb. in excess of estimate) which realized a nett average of 50·06 ceuts per lh., compared with 50·76 cents per lb.in 1898. This price may be considered very satisfactory in view of the lower prices which prevailed for good teas during the year.

After making the usual provision for depreciation of Buildings and Machinery and writing off R1,840 which was expended on a snrvey of a route to Padiapalella in 1897-1898, the year's working shews a profit of R53,564·10, equal to 5·79 per cent on the capital of the Company. To this has to he added the halance of R3,560·47 brought forward from 1898. An interim dividend of two per cent was paid on 28th August 1899, and the Directors now recommend the payment of a final dividend of three per cent, making five per cent for the year, which will leave a balance of R10,874·57 to be carried forward to the current year's working.

During 1899 in addition to the capital expenditure referred to in last year's report, the Directors considered it advisahle to start the erection of a new withering house, so that it might he completed in time to accommodate the iucreased quantity of leaf anticipated from March next onwards. The withering house is practically now completed, and it is anticipated will provide the necessary accommodation required for the increased returns from young tea for the next four years. The total expenditure on capital account amounted to R36,847·80, which included the npkeep of 552 acres not then in bearing and the opening up of a further 25 acres. During 1900 the expenditure on upkeep of young tea and the opening of a further 15 acres is estimated to amount to R15,339, while the erection of new lines and the completion of withering house and the cost of additional machinery will probably entail the expenditure of R7,300. The Directors do not anticipate having to make any further call on the holders of the part paid shares nntil January 1901, when funds will be required to cover the capital expenditure referred to above.

Little progress has been made in the negociations for improvement of transport arrangements, but, in view of the Uda-Pussellawa light railway having been sanctioned by the Secretary of State, efforts are now being made to obtain access to that line.

The yield of Tea in 1900 is estimated at 300,000 lh. on an expenditnre of R80,789·76.

During the year Mr. E J Young resigned his seat on the Board, and the remaining Directors elected Mr. W J Smith to the vacancy. In terms of the Articles of Association Mr. J G Wardrop now resigns his seat on the Board, but is eligible for re-election.

The appointment of an Auditor will rest with the meeting.

MAHA UVA ESTATES COMPANY, LTD

ANNUAL REPORT.

ACREAGE.

Tea in full bearing	..	598 Acres
„ in partial bearing	..	12
„ not in bearing	..	8
Cardamoms	..	89
Grass and Fuel	..	24
Total cultivated	..	731
Jungle and waste land, &c.		227
Total of Estate	..	958

The Directors now submit to the Shareholder the accounts of the Company for the past year.

The Tea crop secured, including tea made from 1,744 lh. purchased leaf amounted to 235,916 lb. (or an excess over estimate of 5,916 lb.) while the expenditure was less than that estimated.

The cardamon crop did not quite come up to expectations, and coffee crop amounted to 127 bns., but quality was very poor. The nett average prices realized for the tea and cardamons sold to date were 39·83 cents and R1·58 per lh, respectively; these prices compare with 42 cents and R1·71 per lb. obtained for 1898 crops.

After making the usual provision for depreciation of Buildings and Machinery, the amount at credit of Profit and Loss Account for the year's working was R25,944·14, equal to 8·65 per cent on the capital of the Company. From the halance of R6,595·39 brought forward from 1898 there falls to be deducted the sum of R28·74, heing amount overestimated for value of 466 lb. Cardamoms unsold at the end of 1898. The total amount available for distribution is therefore R32,510·79. Out of this an interim dividend of 3 per cent was paid on 2nd September last absorbing R9,000 and the Directors now recommend the payment of a final dividend of 5 per cent, making 8 per cent for the year, and that the halance of R8,510·79 be carried forward to the current year's account.

The estimates for this year are 244,050 lb. Tea and 6,000 lb. Cardamoms on an expenditure on the estate of R66,817·71, on which however it is hoped a considerable saving may be made if circnmstances are favourable, while R1,150 will he expended on Capital Account in roofing with iron two sets of lines.

The attention of shareholders is called to the enclosed notice of an Extraordinary General Meeting, at which it is proposed to alter the Articles of Association to empower the Directors to declare interim dividends without the sanction of a Geueral Meeting.

During the year Mr. E J Young resigned his seat on the Board, and the remaining Directors nominated to the vacancy Mr. W J Smith, who now retires from the Board in accordance with the Articles of Association, hut is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.

CEYLON FISHING CLUB.

REPORT ON THE LAST CONSIGNMENT OF BROWN TROUT OVA RECEIVED.

The Ova in the first layer of the box were fonud to be in good condition, only five to eight per cent were bad. This is a very good percentage. In the second layer the ova of one side of the layer had to be entirely thrown away as they were quite spoilt and about two-thirds of the other half were used. In the third layer about one-half had to be thrown away and from the other half only about one-third were put out, bnt these were badly affected with fungus.

This is one of the worst lots we have received, but there was one other lot which was worse or about the same.

The causes for this may, I think, be attribnted to the following: (1) Was the ice receptacle kept continually replenished during the voyage? When I took the hox into the boat, I found that there was a little ice in the receptacle, not enough for the ova, and I immediately put in some more ice.

The boatman who preceded me to the cool room told me that when he went there he found that the ice was just being put in the box.

(2) In the hottom of the box we found that the water which flows from the ice does not flow off rapidly as there is only one hole in the centre of the box and this hole was slightly higher than the level of the bottom of the box. The water could easily contaminate the last layer and it will in turn affect the layers above.

The layers are too long and I think that the weight of the layer presses on the layer beneath and thus crushes the eggs. Most of the eggs were found to be in masses closely joined together and completely spoilt. I think this is to a great extent caused by the weight of the layers above. The layers rest one above the other and when they are fairly heavy press on to the ova in the layer beneath. The rims of the layers are too narrow. The old large boxes had square layers with broad rims and it was impossible for one layer to crush the layer beneath. In case they cannot alter the defect it is advisable to revert to the former boxes as a very large percentage of the ova is crushed by this means.

THE OUTTURN.

The outturn of ova has been very low: only 450 alevins hatched out altogether, out of which 257 died and there are at present only 193 alevins. From the first layer 280 alevins hatched out and from the second layer 170 alevins hatched out. No alevins hatched out from the third layer.

The outturn from the top layers in the consignment for 1899, *i.e.*, since the new boxes were used, were also very unsatisfactory. The death rate has also been very high

Mr. Elhart then refers to appendix C., page 15 of the report for 1899, also drawing attention to the fact therein mentioned that the top layers did not hatch out.

PLANTING NOTES.

MESSRS. LIPTON, LTD., have secured the contract for the supply of 10,000 lb. of tea through the Ceylon Court Paris Exhibition for use in cup. There were eight tenders, we understand, and the samples were put to severe and repeated tests, and that of the Company named came out first on each occasion.—*British Trade Journal*, Feb. 1.

JAMES FRASER.—In all probability the father of Scotch gardeners has passed away in the person of the late Mr. James Fraser, gardener, who died at Castlehill, Turriff, on the 18th ult., aged ninety-eight years. Mr. Fraser was engaged by the late Dr. Adam, as gardener at Ardmiddle House, Turriff, in the year of the disruption, 1843, and for the long period of thirty-three years he conducted gardening operations at Ardmiddle with great acceptance by his employers.—*Gardeners' Chronicle*, Feb. 3.

THE PETROLEUM TRADE.—On page 613 we give an interesting statement, supplied by Messrs. Delmege, Forsyth and Company, regarding the present position of the world's supply of petroleum. Statistics are offered of the output from America and Russia during the past three years and the course of prices is also shown. All point to an increasing scarcity of the popular oil and consequently to a rise in prices which the poor must feel a good deal in what has now become so indispensable an article in every household.

THE SEASON OUTLOOK IN MADRAS.—The following is the Board of Revenue's telegraphic summary for the week ending the 17th February:—"No rain. Water-supplies are diminishing and generally deficient. Unless protected by irrigation standing crops are deteriorating. Harvest continues to yield indifferent outturn. Pasturage is scanty everywhere, but fodder is generally sufficient and cattle is normal. Prices continue almost unaltered. Four test works in Cuddapah attracted 917 men, 1,551 women and 688 children, total 1,156; also advances given to 350 looms employing 864 men and 668 women weavers."—*Madras Mail.*

BANANAS IN QUEENSLAND.—Brisbane, Feb. 5:—Banana growers in the Cairns district, who are almost exclusively Chinese, recently offered to pay the wages of an Inspector to overhaul their fruit before it left for southern markets, owing to the danger of a cessation of the trade, on account of the number of diseased bananas leaving the colony. This arrangement proved so satisfactory that they have since offered to pay the wages of a second Inspector. The Chinese have also bound themselves to pay a fine to the Josshouse of 1s per bunch for all fruit found infected, and, should this occur frequently, to accept the refusal of the Inspector to pass any fruit from that garden.—*Adelaide Observer.*

INDIAN AND CEYLON ROADS.—Our old friend Dr. Workman, has been writing in "Travel" for February, on "the adaptability of Indian Roads to Cycle Touring." There is one paragraph complimentary to Ceylon worth noting:—

So far as the cyclist is concerned, I should class Indian roads as fair-weather roads. Such as they are, good, indifferent, and bad, he can get over them during the dry season, but I have seen very few roads that apparently could be used for cycling during the monsoon rains. In respect of construction the roads of Ceylon are far superior to those of India, the metalling being more thoroughly done. I was able to ride many hundreds of miles in Ceylon during the monsoon, being frequently overtaken by drenching tropical showers, which flooded the roads, without being detained an hour for them to dry.

THE RAINFALL OF 1899.—The aggregate rainfall during the year just closed was deficient over the whole of England, the deficiency amounting to 6 inches in the Channel Islands, 5 inches in the south of England, and 4 inches in the east and south-west of England. There was a slight excess in most parts of Scotland and Ireland. The mean temperature for the year was in excess of the average over the whole area of the British Islands, the excess being greatest over the southern portion of the kingdom, although it was also very large in the north of Scotland. There was an excess of sunshine over the entire country, amounting to about 350 hours in the south of England, and exceeding 200 hours over the whole of England, except in the north-eastern district. In Ireland the excess was about 150 hours; but in parts of Scotland it was not so large.—*Gardeners' Chronicle*, Feb. 3.

COCOA MACHINE WANTED.—What is most needed, says the United States Consul at Asuncion, in reporting on the Cocoa Trade of Paraguay, is a machine which can remove the pulp and break the hulls of the fruit without cracking the kernel. A number of machines have been invented for this purpose, but as yet none has given satisfactory results. The Agricultural Bank has tried a French apparatus, but the cost is too great to enable it to be generally adopted. In one part of the apparatus the pulp is removed from the boll and this is then passed to another part, where there are three cylinders—one with grooves to hold the cleaned hull, another with longitudinal knife-like projections, and the third with transverse projections. This machine costs about $850. What is desired here is a machine costing, say, $35. It must be remembered in building a machine that some of the bolls are large and others small. The kernel, when cracked, becomes unfit for the market.—*British Trade Journal*, Feb. 1.

A SYNDICATE of London capitalists have sent out Messrs. Swinney and Bird, who have previously made considerable explorations in Pahang, with a view of obtaining land for mining purposes. These gentlemen have applied for concessions in more than one district of that State. They are also trying to obtain land in the independent State of Kelantan.—*PerakPioneer*, Feb. 14.

FARMING IN THE TRANSVAAL.—Says the *Sydney Mail*:—It is popularly supposed in Australia that the Transvaal and adjacent territories will offer a wide and profitable field for the exertions of enterprising men after the war is over. In some respects this supposition will doubtless be realised. But we must not forget that so far as business was concerned, there were better opportunities for pushing men in Johannesburg than in any other part of the world before the war. Also, wages of good, willing men were very high, and the average earnings of the white population were such as would be considered sumptuous even by Australians. Competition will probably be keen when the war is ended, and it is doubtful indeed if the commercial opportunities of the man without the capital will be as great as before. In another direction there may be good openings for experienced agriculturists. There are sound local markets, and Boer methods are not advanced. For the matter of that, there are not so many advanced farmers in Australia that we can afford a trek to Boerland. The Boer may be a ragged farmer, but he probably works on very cheap lines, and cheap production, however slovenly it may be, is a tough opponent. These are points that could be considered with advantage by Australian settlers later on.

INDIA-RUBBER (MEXICO) (LIMITED).—A meeting of shareholders was held yesterday at Winchester-house to consider what conserted action should be taken to recover the money invested by them in the company. The Chairman entered at considerable length into the position of the company since its incorporation in 1897. He reminded them that the prospectus estimated that the profits for the first year's working would be £70,000, and in the second and third year £80,000 and £120,000 respectively. The fact that during those three years only £275 had been derived from the estates in Mexico seemed to show that there was no foundation for such statements. At the recent action against Mr. Clough at Leeds Assizes the jury found that the statements contained in the prospectus were untrue, and that the defendant had no reasonable ground for believing them to be true in fact. The jury further found that Mr. Clough had been guilty of false and fraudulent representation to the plaintiff. In fairness he had to state that Mr. Clough was prosecuting an appeal, the hearing of which might possibly come on within the next six months. Replying to a question, the chairman said that there were 961 shareholders, representing 80,000 shares. Mr. Burton asked if the persons responsible for the prospectus were possessed of adequate means to recoup the shareholders. The chairman said that there was evidence that they were men of ample means. Eventually, on the motion of Mr. J Hess, seconded by Mr. Horner, a resolution was passed appointing a committee to co-operate with that elected at the Newcastle meeting, to consult with Messrs. Simpson and Simpson, and counsel, if necessary, as to the best way of enforcing liability against the directors, or others, responsible for the prospectus. —London *Times*, Jan. 20.

JAMAICA TOBACCO.—At Montpelier, the property of the Hon. Evelyn Ellis, an extensive factory for the manufacture of cigars is now in full working, the entire cigar being the product of Jamaica soil. Mr. Ellis has planted out sixty acres exclusively with seedlings of the famous Vuelta Abajo tobacco, obtained from the Botanical Department. The tobacco, cured on the spot, realized high prices in New York.—*British Trade Journal*, Feb. 1.

THE ADVANCE IN RUBBER.—A correction, which arrived too late for insertion, in the advertisement of Messrs. Lynch and Co., (Ltd.), Aldersgate Street, E.C., in last week's issue, slightly alters the reading in reference to india-rubber water-bottles. Instead of "No advance" being made in the price of these articles an advance of five per cent should have been notified. This is occasioned by the increase in cost of the raw material, but Messrs. Lynch intimate that no uniform advance will be made. Each article will be dealt with on its own merits, and they will make reductions and revert to old prices as soon as opportunity arises.—*Chemist and Druggist*, Feb. 3.

QUEENSLAND: DEPARTMENT OF AGRICULTURE. --A great deal of useful information is contained in the Annual Report of this Department, just received. Meantime we quote what is said in the chief report about our old staple :—

COFFEE.—Though this, like rice, is grown upon the coast side of the main range from Cooktown to the Tweed Heads, the tendency is towards cultivation in the tropics, where plantations are now being cultivated upon a commercial scale. It has only been within the last three years that the interest shown in this product has demanded the attention of the Registrar-General from a statistical point of view, but from that time the increase in area has each year shown a fair advance. Taking the last two years for an example, it will be found that in 1897 there were 180¼ acres of productive coffee trees and 130¾ of non-productive, and in 1898, 199 acres and 233 acres respectively. The figures show an evident advance in the area planted, and the information to hand points to the statistics of the present year being yet more favourable. The imports for 1898 were 170,886 lb., and upon that basis there is room for the use of 602 acres before we overtake our consumption, which, upon the present population of 498,523, is at the rate of ·456 lb. of coffee per head each year. The market in Europe, however, is good, and though we may not yet have learned how to offer our goods in the most attractive manner, the opinion expressed by the trade in London upon Queensland coffee is very favourable, and by the time we are in a position to place a fair quantity for export that method of preparing our coffee will have been attained, and we shall be able to compete with those countries wherein coffee-growing has been prosecuted for centuries. The appointment of Mr. Newport as instructor in coffee culture has given an impetus to this branch of tropical agriculture, and as he has also an intimate knowledge of what may be termed allied products, such as spices, the benefits to the farmers of the North will be greater than was anticipated. The death of Mr. E. Cowley, and the exigencies of the Diseases in Plants Act at Cairns has precluded Mr. Newport, up to the present, from giving that attention to instruction he would have wished, for the reason that he was retained in Cairns to supervise the nursery, and to attend to the inspection of fruit. Arrangements have, however, now been made to release him from that detention, and his services will henceforth be at the command of the coffee-grower. A report from him upon this subject is attached herewith.

THE PETROLEUM TRADE.

(Special Report.)

The year 1899 has been one of great revulion in the Petroleum trade, prices having shown very material advance, owing mainly to the many new and large uses which have been found for Petroleum products. Among these, Liquid Fuel for use outside of oil-producing countries is a large factor, while it must not be forgotten that the falling-off in the supplies of the Langkat Company's oil has created a void in the east which the production, certainly not increasing, in Russia and America, has found it difficult to fill.

AMERICAN.—The production of Crude Petroleum in America for the last three years has been as follows:—

1897	2,132,759,000	Imperial gallons,
1898	2,111,034,000	,, ,,
1899	2,058,656,000	,, ,,

The Exports were as follows:—

1897	975,515,000	Imperial gallons
1898	1,034,250,000	,, ,,
1899	1,082,345,000	,, ,,

That the Americans have exported to the utmost possible, in view of the improved prices, is evident from the following table:—

Remaining for home consumption per head of the population:

in 1897	18·16	Imperial Gallons
1898	16·92	,, ,,
1899	14·00	,, ,,

LANGKAT.—The supplies of illuminating oil from this source which, during 1898, reached approximately 5,000,000 cases, and which were expected to reach during 1899 nearly double that quantity of have, during the year, fallen off to such an extent that the monthly p oduction during the second half of the year averaged from 150,000 down to 120,000 cases, and today does not exceed the rate of 120,000 cases per month—thus leaving a large void to be filled.

RUSSIA.—The production of Crude Oil in Russia during the last three years was as follows:—

1897	1,883,810,000	Imperial Gallons
1898	2,216,700,000	,, ,,
1899	2,307,957,000	,, ,,

It must be borne in mind that the fast growing increase of demand for Liquid Fuel in Russia has absorbed a very large proportion of the increase, while the production at Baku is immaterial, seeing that the transport facilities by rail from Baku to Batoum are extremely limited, and during the year were more so than usual owing to the removal of a very large number of waggons by the Government Railway Authorities for purposes of repair. A larger number than usual of interruptions in the Railway were also experienced, while the increasing favour in which Russian Oil is held in Europe, and the consequently increased demand for it, have made a call for a larger proportion of the Oil received in Batoum than usual.

The total exports from Black Sea ports of Russian Oils, including Crude, Refined and Residuum during the past three years, have been as follows:—

1897	57,100,000	Poods
1898	68,701,000	,,
1899	69,738,000	,,

(N. B.—One Pood equals approximately 4·378 Imp: Gallons of Refined Oil).

In Russia, as also in America, although the high level of prices reached has stimulated boring to a large extent, nevertheless production has not been materially increased, as it is stated that by boring their Wells too close together, a new Well robs older ones of their production, and this is evidenced by the reduction in the number of new spouting wells in Russia.

VALUES.—The values in America have been as follows:—

For Crude oil	Jan. and Feb.	1899	$ 1·15	per Barrel.
	March to June	1899	1·13	do
	July	1899	1·21	do
	August	1899	1·27	do
	September	1899	1·43	do
	November	189	1·58	do
	December	1899	1·66	do
	January	1900	1·68	do

In Russia values of Refined oil per Pood were as follows:—

Free on Rail, Baku:—

January 1899	23½	Copecks per Pood.
February	22½	do
March to April	16½	do
May	19⅜	do
June to July	22⅝	do
August	25¾	do
September	24 9-16	do
October	30	do
November	38 11-16	do
December	47½	do
January 1900	55	do

In addition to this continuous but fast increase in values, has to be reckoned an increase in the Railway Tariff from Baku to Batoum of four Copecks, viz; from 12 Copecks to 16 Copecks per Pood, while the premium on waggons paid in Baku has gone from 3 to 18 Copecks per pood, thus bringing practically home the shortage of waggons and transport facilities.

Prices of Russian case oil have increased from 2s 7½d to 2s 8d in April to May up to 4s 4d at the end of the year—the last being a purely nominal quotation, as there were no sellers.

Today's parity for Bulk Oil is 4s 8d per case.

The same position continues today, although quotations are considerably higher.

American case oil has steadily increased in value from 5 cents per American gallon in January to 11 cents in December.

OTHER SOURCES OF SUPPLY.—Although other sources of supply than Russian and American were eagerly sought for during 1899, none came to such an advanced state that exports of Refined oil were made. The value of the Roumanian fields is very doubtful, but even if the value should turn out to be considerable, the geographical position is not favourable, and a very large cost would have to be incurred, and a very long time occupied, before the oil could be got to the sea-shore.

Borneo has made giant strides, but the difficulties encountered owing to the nature of the country and the climatic conditions have postponed the actual shipment of Refined oil, but the first cargo is expected to be available this month.

It will be seen, therefore, that while production in America and Russia has been practically at a standstill, there has been no production elsewhere to make up for:—

(1). The larger demand for Petroleum owing to its utilisation for fresh purposes; and (2) the material falling-off in the production in Sumatra. The obvious result was, therefore, an increase in values, which has been very material, and which has checked somewhat the extended use in Asiatic countries of Kerosene, so that the increased demand for Kerosene for native consumption in the Far East which has steadily been experienced during the last ten years, was not continued during 1899—which was felt to be a relief by all connected with the Petroleum trade, as it would only have increased the difficulties which were experienced during that year by all connected with the trade in supplying the demand.

COORG IN 1889-99:

COFFEE RAPIDLY DECLINING IN AREA: INDEBTEDNESS INCREASING.

WE have just received a copy of Report on the Administration of Coorg for the year 1898-99, which shows that the once favourite coffee district of Southern India is fast entering on "the sere and yellow leaf" stage for that staple. Once on a time, when the worthy Highlander, Donald Stewart, was regarded as "King of Coorg," no coffee district was more prosperous. From the detailed Report we quote as follows :—

COFFEE.—The total area of coffee land was 1,04,545 acres against 1,08,611 acres in the previous year. As explained last year this area includes a great extent of land which, though originally under coffee, is now allowed to remain waste by its owners as not suited for coffee. It also contains a considerable extent of Cardamom lands. Many of these waste lands, however, have been resigned by their holders during the year, the depression in coffee rendering them less saleable than before: hence the falling off in the acreage.

The area of assessed coffee lands held by European and native owners respectively is as follows :—

	No.	Acres.
European Estates ...	378	32,612
Native " ...	14,639	71,933
Total ...	15,017	1,04,545

COFFEE.—The coffee crop during the year was 4,558 tons against 2,500 tons in 1897-98. Although the crop was satisfactory in quantity, it, for some unknown reason, turned out to be, as a rule, poor in quality. Owing to this and to a glut of coffee in the market caused by large supplies from Brazil, wretched prices have been obtained and the industry is in a very depressed state.

TEA.—The tea planted in the Sampaji Ghant was not very successful, perhaps owing to the operations being somewhat hurried. Planting is being continued this year with every prospect of greater success.

CINCHONA.—The planting of cinchona has ceased in Coorg. There is a chance, should the present prices continue, of attention being again turned to this cultivation. An application was received for the right to bark some trees on one of the abandoned estates. The right was put up to auction, but only the small offer of R100 received.

Then the Commissioner makes the following remarks :—

The year's harvest was good, but prices ruled low. The coffee crop was also good; 4,558 tons against an average of 3,200 tons. Unfortunately the prices realized have been very disappointing, especially for the poorer sorts, owing to the home market being over tasked by Brazil coffee, and in spite of the good crop the industry is seriously depressed. In Padinalknad, where the coffee crop was bad and coffee itself threatens to die out, with the sanction of the Chief Commissioner, the postponement of half the assessment has been allowed.

It is trusted that the figures given above will not lead Government to believe that Coorg is at present a most prosperous Province. For such is unfortunately not the case. One may try not to take too gloomy a view of the prospects of the Province, but it is impossible not to feel that there is cause for grave anxiety. The Coorgs have been living for the last 20 years on borrowed capital. They have fallen into lazy and extravagant habits, as they themselves admit. They have borrowed on their lands, till they are hopelessly in debt, and cannot raise any more money even at 50% interest. Their families are increasing, but the nature of the country is such that the area of cultivation cannot be increased in proportion. The threatened failure of the coffee industry owing to the competition of the Brazils will also, if it continues, mean poverty to many a hitherto well-to-do Coorg family. The Coorgs are getting poorer and poorer and consequently discontented, and of course they blame Government, not themselves, for all their difficulties. There has been some talk of raising a Coorg Regiment. This is a project which, if carried out, will do good by affording employment to the young Coorg, who now too frequently does nothing but loaf round the toddy shops. But what is really required is some scheme by which the ryot could be given a chance of getting out of debt. At present he is hopeless and consequently reckless.

And on this the Chief Commissioner, Lieut.-Col. Donald Robertson, C.S.I., writes as follows :—

I am afraid we may look in vain for an agricultural revival in Coorg. Not only has there been no improvement since the termination of the period now being reported on, but the general depression may be said to have deepened; for though there will, it is confidently expected, be no famine, the rice crop has suffered in various parts and failed altogether in a few villages, whilst those coffee estate-holders who have been fortunate enough to secure moderate crops, are confronted with a discouraging outlook in respect to prices obtainable in England. Additionally coffee has entirely gone out, once flourishing gardens in large tracts in the West of Coorg containing now nothing but bare poles, and it is only the remarkable tenacity with which the Coorgs stick to their land, even though it may be commercially valueless, which prevents a large decrease in the land revenue demand. I confess that I am not hopeful that it will be possible to adopt immediately any remedial measures for removing the burden of indebtedness. The necessary reform should, moreover, originate amongst the Coorgs themselves. Their country has been pauperized by the introduction of such a ready means of becoming rich as presented itself some years ago in the cultivation of coffee, with the higher style of living which unfortunately resulted, and especially the facility for extensive borrowing which it afforded. It is now extremely difficult to obtain advances on coffee estates, and the Coorgs have nothing else to offer as security; if they mortgage their *sagu* rice lands (*jama* lands being inalienable) they cannot live. I carefully examined the very serious question of local indebtedness at my last visit to Coorg in February of this year, but was enabled to arrive at no satisfactory conclusion. The matter seems to be as yet hardly ripe for Government intervention nor is the situation so desperate as to call for extraordinary measures. There are, I believe, some signs that the Coorg character is slowly undergoing change in a recognition of the necessity for thrifty living and the abandonment of the foolish pride which has operated to prevent the people taking service, whilst it tolerated dissipation and laziness.

The case is one somewhat similar to that which occurred in Uva when coffee failed: the natives who owned coffee gardens were, for a time, hopeless and helpless. But by degrees they have come round and now find other products to growin their gardens.

RECEIVERS OF JAVA COFFEE in this city have been advised that the coming crops of that description of coffee are growing less satisfactory than heretofore, the flowering in many districts having been insufficient, so that not more than a small half crop for 1900 can be counted upon.—New York *Merchants' Review*, Dec. 1.

THE COFFEE INDUSTRY IN QUEENSLAND.

OPENINGS FOR PLANTERS.

Recent advices from Brisbane point to a marked development as a result of Government encouragement in the coffee trade of Queensland, and information is being circulated which should be of particular interest to small capitalists and others who may be considering the advisability of settling in the Colony, or of migrating from one part of the Empire to the other. The cost of the land would, we understand, vary considerably, according to the conditions under which it was taken up—as a homestead selection, agricultural, farm, or freehold land purchased outright. There is land open for selection all along the Queensland coast. The Brisbane Land Commissioner states that there were 50,000 acres of scrub land on the Blackall Range, within fifty miles of Brisbane, suitable for coffee or fruit growing, and open to selection at 2s 6d an acre as homestead leases to the first persons that came along. A few miles back from the coast at Mackay, Cairns, and other northern ports, freehold land may be purchased from 2*l* an acre upwards. Excellent sites, sheltered from the strong winds which prevail at certain periods of the year, can be chosen on the slopes of the coast hills, which, from their irregular conformation, are unsuitable for general agriculture, but which are all that could be desired for coffee culture. Should the site chosen be freehold land, it may be put down as a general average that 3*l* an acre would be the cost of purchase. The cost of cutting and burning off the scrub would not exceed 4*l* an acre. To grub out the heaviest stumps might take 3*l* or 4*l* more an acre, but this operation, to a man of limited means, is, to a certain extent, unnecessary, as the stumps may be allowed to rot away. Digging holes for the plants would increase the outlay by another 4*l*. The whole cost of preparing the plantation would be about 12*l* an acre. Taking, for instance, a plantation of thirty acres, the expenditure would be approximatley :—Cost of land, 90*l*; clearing (if heavily timbered) and planting, 360*l*; farming appliances, say 30; fencing, say 60*l*; total, 540*l*. There would be other contingent expenses, a dwelling-house, two horses and other items, the cost of which would depend largely on the settler's taste and disposition; and the expenses of living, keeping down weeds, and tending the young trees for three years, until they began to bear, would also have to be taken into consideration. Of course if he has been accustomed to manual labour, much of the above outlay would be avoidable with the help of one or two kanakas, or a couple of sons fit for field work. Opinions differ as to how many trees should be planted to the acre ; the estimates range from 700 to 1100. Experienced planters state that 1,000 are not too many where the soil is rich, the land well cleared, and economy of space has to be considered. At the end of three years the first berries appear, yielding approximately one-fourth of a full crop. In the fourth season about a half crop may be expected, and in the fifth year the trees are in full bearing. Each tree will yield 2 lb of parchment coffee, which means for 1,000 trees 2,000 lb of parchment. Taking the mean between the various estimated costs, it may be set down that the cost of picking will amount to ½d per lb of berry from the tree, or to 3d per lb of parchment coffee. During the past few years the selling price of the coffee locally has ranged from 7½d to 12d per lb. As importers pay about 9d per lb for inferior coffee from Fiji, it seems a fair average to estimate 9d as the ruling price of the local product, and at that figure European merchants have offered to buy Cairns and Mackay coffee in unlimited quantity. This would leave a balance of 6d per lb to the producer, which, at a yield of 2000 lb per acre, is 50*l*. Out of this return all incidental expenses would have to be deducted. Discounting all the estimates, disregarding the fact that growers in North Queensland have netted from 40*l* to 60*l* per acre, allowing for an increase in the expenditure, a fall in the price of coffee, and setting the net gain as low as 20*l* per acre, then the owner of a thirty acre plantation should find himself at the end of five years in receipt of an income of 600*l* a year.—*British Trade Journal*, Feb. 1.

MINOR PRODUCTS REPORT.

ANNATTO.—At the auctions good bright Ceylon seed brought 2d per lb, and another lot of 18 bags was bought in at 3½d. Privately, business a includes parcel of eight bags Ceylon seed at 2d per lb ex auctions of January 18th.

CINCHONA.—A parcel of 18 bales flat cultivated Calisaya bark catalogued for sale had been sold privately. Of Crowned and grey bark 62 packages were offered, and all sold at from 6¾d to 7d for fair brown Huanco quill, and 1s to 1s 1d for good Loxa.

COCA LEAVES.—Fair bright Ceylon leaves, the only kind offered sold at 1s 0½d per pound, and broken ditto at 7d.

EUCALYPTUS OIL.—In auction a parcel of four cases Citriodora, which had been previously offered, were held for 1s 4d per pound. Privately the market is somewhat quieter this week, with small sales at 1s 10d to 2s per pound for B. P. quality.

SPICES.—A good business has been done since our last report at steady to rather dearer prices. At auction on Wednesday the first arrivals of new crop Cochin ginger were offered, and sold at 32s per cwt for good boldish washed rough, slightly mouldy. New crop Calicut brown rough was bought in, a bid of 32s being refused; bold rough sold at 35s, and medium native cut, slightly wormy at 51s per cwt. There has been a good demand for Japan, and a fair quantity has been sold privately at 24s per owt. Bengal remains unchanged at 25s. Chillies are firm, a parcel of ordinary Zanzibar sold at 42s per cwt. A very nice lot of East India Capsicums, long red on stalk, sold at 39s 6d per cwt; some dark and mixed being bought in at 35s per cwt. Pimento sold at 3¼d per pound for ordinary to fair quality. Cinnamon Chips of good quality are scarce, and were held for 4d per pound. Pepper is dearer, Singapore black is offering at 6d per pound on the spot, and 6¼d for forward shipment. Tellicherry was bought in at 6¾d. Singapore white was bought in, but sales have been made privately at 8⅞d to 9 1-16d on the spot, and at 9¼d to arrive. There has been a good demand for Penang white at 8 9-16d, and 8⅝d is now wanted. —*Chemist and Druggist*, Feb. 3.

TROUT OVA FOR NUWARA ELIYA.

Another consignment of 10,000 trout ova of the brown species for the Ceylon Fishing Club was brought from England last month by the German mail steamer "Koenig Albert." The consignment was from the firms of Messrs. Andrews and Andrews of Guildford. Shortly after the vessel's arrival, Mr. Elhart went on board and took charge of the ova, proceeding to Nuwara Eliya by the same night mail train. The ova will be placed in the hatcheries and the results will be awaited with interest, the more so as the last lot got out was not so successful as it should have been.

A NEW RUBBER.

THE HANCORNIA OF ST. PAUL, BRAZIL.

(*Circular of Messrs. L. P. Barretto and Son, of Piritura, Saint Paul, specially translated.*)

The rubber furnished by the latex of these trees is a product of the first order equalled only by the *Hevea* of the Para.

In every respect, the Hancornia should be preferred for extensive culture. While the Heavea, like the Manihot Glaziovii, cannot go far from the tropics, under penalty of perishing, or of giving poor results, the Hancornia stretches from the equator to the 36th parallel South: it braves the tropical sun as well as the frost of our cold temperate zone.

The Hevea require soil rich in humus and in water. They have aquatic roots three quarters of the year. The Hancornia, on the contrary, require poor, dry soil: prolonged damp kills them.

Unfortunately, the germinative faculty of Hancornia seeds is very short: it fails after 12 or 15 days, and is impossible to send them to Europe. We have striven to find some means of conserving them.

Another difficulty has hitherto hindered the transport of these plants to other regions, namely the nature of the physiological *rôle* of their "sucker," an essential organ of nutrition during the first age. The least disturbance of this "pivot" or sucker during the first stages or in potting would kill the plants. But we have succeeded, after countless experiments, in overcoming this difficulty, and can deliver thousands of plants in Europe prepared and packed so that they can continue their journey to Africa or Asia. Three kinds are available: 1st, Hancornia speciosa, a kind known for some time, giving from 1 to 5 kilo per foot and per year. Good edible fruit; 2nd, Hancornia with a globular fruit, new, from the coldest zone of the State St. Paul, and giving from 5 to 10 kilo, good fruit. 3rd Hancornia with (pyriform) cone-shaped fruits (Hancornia Barrettoi, Nandin) recently discovered, from our warmest zone, rejoicing in soil neither too dry, nor too arid. It is the king of rubber trees giving up to 15 kilo of the finest rubber with one incision. Delicious fruit. Plants should be despatched between April and September.

THE ABYSSINIA BANANA MUSA ENSETE.

We are indebted to the Director of Kew for the photograph of a bunch of fruits of Musa Ensete. Flowering examples may now and then be seen in the houses at Kew. The bunch of fruits now figured was forwarded to Kew by a Covent Garden agent, who had received it from the Azores as a "peculiar Palm fruit, which might be obtained in quantity from that island." The diameter of the bunch was 12 inches. The fruits were not mature, consequently they did not contain the large seeds which this species generally produces abundantly. In this respect, and also in the fruit being coriaceousdry, and inedible, M. Ensete differs from the Banana proper, M. sapientum. The soft inside of the "stem" (really the folding bases of the leaves), is, according to the traveller Bruce the best of all vegetables. When boiled, it has the taste of the best new Wheat-bread not fully baked. Only the white "heart" of the stem is eaten; this is well boiled, eaten with milk or butter, and it is wholesome, nourishing, and easily digested. M. Ensete is a native of Abyssinia and equatorial Africa, but it is now widely distributed in the tropics. Young plants of it are used for summer effect in the London parks. According to the *Kew Bulletin*, the total weight of a single plant grown in the tropics is about a quarter of a ton.—*Gardeners' Chronicle*, Feb. 3.

PRODUCE AND PLANTING.

INFERIOR TEA CHESTS.—Grocers not infrequently complain of the bad condition of the tea chests they receive. This is a strong argument in favour of the use of patent tea chests. The grievance was made the subject of a resolution at the Grocers Association to be sent to tea importers. At a General Purposes Committee of the Federation of Grocers' Associations, held at Birmingham last week, Mr. Pitts proposed the following resolution on behalf of the Northampton Association: "That the members of this Association desire to bring before the General Purposes Committee the condition of tea chests as now used (more especially those containing Ceylon tea), green sappy wood being employed in their manufacture, thereby depreciating the value of the tea, and would urge upon the General Purposes Committee the desirability of making advances in the proper quarter with a view of obtaining a remedy." Since the matter was brought to his notice, he said he had made inquiries, and he found that there was a tendency to pack tea in chests made of green sappy wood. The grievance was due to unsuitable timber being used in the manufacture of the tea chests for the Indian and Ceylon plantations. The remedies suggested were that the planters must more carefully select and dry the timber from which they made the chests. The members of his own association were of opinion that there was just cause for serious complaint, as there was considerable loss sustained by the tea dealers and retailers. If this was a grievance then it was their duty to find a remedy for it. They might add to that another grievance—and that was in regard to charges for wrappers on chests and packages. They were charged at the rate of 1s for a chest, and 9d for half a chest, and he held it to be a most unjust charge. It did not cost the importers anything like that amount, and why they should want to make a profit out of the traders in that matter was unaccountable. For his own part he never paid these charges, and he always deducted half the charge, though some members paid the full amount. Mr. James seconded the resolution, remarking that Mr. Pitt's statement, that he only paid half the amount for the wrappers, was a lesson to him, because he always paid in full, and he certainly thought it a most exorbitant charge, and one that should be considerably reduced. Councillor Gower suggested, as a representative of a tinplate district, that Mr. Pitts should advocate the use of tin chests instead of wood. Mr. Jump said he had not personally had experience of any of the bad chests, but he had noticed that some of the Ceylon chests broke up very easily. The wood seemed to have contracted, and in some cases the tea was slightly damaged. He would suggest that they should bring the matter before the attention of the Indian and Ceylon tea importers in London, and he had no doubt that it would be productive of beneficial results. Mr. Pitts agreed that the resolution should be sent to the various associations of tea importers, and the resolution was carried unanimously.

THE VICEROY'S VISIT TO ASSAM.—If, as cabled from India, the Viceroy is to pay a visit to Assam next month it will be a historic occasion, no previous Viceroy having visited the province. His Excellency, it is said, is going right into the interior, to Gowhatty, for the purpose of seeing the actual condition of the tea plantations.—*H. & C. Mail*, Feb. 9.

TO TEST IVORY FOR GENUINENESS.

As ivory is extensively employed, and costs about six shillings per pound, it has been attempted to substitute a cheaper substance having the same appearance. For about forty years an article has been in use in this industry which has its origin in the vegetable kingdom, being derived from the nut of a palm-like shrub called Phytelephas macrocarpa, whose fruit has a very white

and exceedingly hard kernel, which can be worked like ivory. One hundred of these fruits only cost about four shillings. Their use for buttons and small articles offers great advantages, and the "ivory" can be passed off as the genuine article, the resemblance beingso great that it is sold at the same price. It can be coloured also just like genuine ivory. M Pasquier, of Liege, now gives a practical method to distinguish the two varieties of ivory. It is the following :—Concentrated sulphuric acid applied to vegetable ivory will cause a pink colouring to appear in about ten to twelve minutes, which can be removed by washing with water. Applied to genuine ivory, this acid does not affect it in any manner.—*The Family Herald.*

THE TALGASWELA TEA CO. OF CEYLON. (LIMITED)

THE ANNUAL REPORT.

The report of the directors was as follows :—

Approximate acreage of tea cultivated	..	516 acres.
Not weeded		
Cinnamon	..	50 ,,
Forest, Chena, &c. ..	..	1,473 ,,
	Total	2 039 ,,

ACREAGE.—In October last 210 acres were taken out of cultivation, upon the recommendation of the Visiting Agent, who reported that the bushes were stunted; and, owing to the large number of vacancies, the yield from this portion of the estate was inadequate as compared with the cost of upkeep and cultivation. This will effect economy in working, without, except very slightly, reducing returns. The area specified in tea is still however nominal, owing to the inclusion of swamps and ravines in acreage statement as retained in cultivation.

The Directors beg to lay before the Shareholders their Twelfth Annual Report with a duly audited statement of the Company's affairs on the 31st December, 1899.

Mr. R. Morison last visited the estate on the 30th and 31st December. His report is attached for the information of the shareholders.

The yield for the year was 148,902 lb.: against and original estimate of 160,000 lb., and a revised estimate of 145,000 lb., dry weather being responsible for the shortage. It was all sold locally, at an average of 34·92 cents per lb., against an average of 34·71 cents for the preceding year. The demand for Ceylon teas in the local market during the year has, on the whole, been satisfactory, a very noticeable feature throughout having been the good prices made by teas of medium and lower quality.

The expenditure on manure was R4,363·11, equal to 02·74 per lb. of made tea, and was debited to revenue account. After paying for this and writing off the usual depreciation on buildings and machinery, the balance at the credit of profit and loss account is R4,070 96, which, in view of the heavy expenditure on manure recommended by the Visiting Agent, the Directors strongly recommend the shareholders to carry over to a new account, they being strongly of opinion that to declare a dividend in the present position of the company would be suicidal.

The estimate for the coming season is 160,000 lb. and the Directors are fully alive to the importance of keeping expenditure down to the lowest point compatible with efficiency and proper cultivation. The Directors feel assured that the only method of making this property pay is to cultivate highly and to manure heavily, and they are prepared to follow out the recommendations made by the Visiting Agent in his last report relative to the manuring of certain fields.

PLUMBAGO.—An offer of £1,000 with a five per cent royalty was made for an option for six months on the mining rights of the property, but the Board thought the offer insufficient, and it was declined. In view of possible developments in connection with plumbago, the Directors think it would be advisable for the Shareholders by consent to authorise them to make such arrangements as may be compatible with the interest of the shareholders,

Messrs. W MacGregor and J A Henderson were elected Directors at the last General Meeting; and of these Mr. Henderson retires by rotation, and does not offer himself for re-election, as he is going home. The Directors recommend the appointment of Mr. Morison, the Visiting Agent, in his stead.

The appointment of an Auditor is left to the meeting.

THE VISITING AGENT'S REPORT.

In reply to your post-card asking for an abridged report on Talgaswela, I think that the following might be taken as the expression of what appears to me important at the present times on Talgaswela.

MANURING.—As previously reported, 40 acres of No 1 was manured in June-August, 1899; while 60 acres of the same field, the 22 acre field, and 4 acres of No. 5 had prunings buried along with basic slag. The appearance of all these fields is very satisfactory, and the fields will I think fully justify the cost of manuring by shewing paying returns within the 12 months, if the work is now completed by manuring in the alternate lines to those in which prunings were buried. This work should be done by applying the manure in long narrow holes 6 inches deep up middle of alternate lines, or by forking in up middle of alternate lines. I recommend 800 lb. per acre as follows :—

lb. per acre.			per ton.	per acre.
500	W Castor Cake	at	68·88	15·37
130	Basic slag	at	54·63	3·17
85	Sulph. of Potash	at	171·00	6·48
85	Blood Meal	at	152·50	5·79
800				30·81
	Tranp. 6 Appl.			4/10·00
				40·81 per acre.

In future working I would very strongly urge the *burying of prunings* as described in previous reports, each hole having added to it on top of prunings about one-half pound of basic slag. [See report of 30th March, 1899.] The present conditions of the tea bushes is so largely due to want of organic matter in the soil, and that want is a point of such vital importance in the considerations of any of. scheme cultivation, that the burying of prunings (the only means available within practical limits for increasing this organic matter) appears to be little less than an absolute necessity. This is emphasized by the fact conclusively proved by chemical analysis that each pruning left unburied deprives the soil of essential fertilizing ingredients to an extent equal to one, two, or three full manurings according to the vigour of the bushes dealt with; in other words, the non-burying of prunings may, in certain circumstances, and at one single pruning, be equal to the throwing away of fertilising matter represented by six years' outlay in manuring on a liberal scale.

A point of much importance as an aid to any scheme of cultivation which may be adopted is that the actual acreage in tea should be clearly defined. An essential element in any system of manuring is the checking of cost against returns obtained, and this is of course impossible with undefined fields. In such fields data which will clearly shew whether and how much manuring pays is impossible, and any work done must be subject to adverse criticism. Without advocating any elaborate detailing of acres, I therefore think a survey which would place the actual tea in the plan in your fair sized fields such as Mr. Symonds recommended for working purposes is a most desirable thing and necessity if cultivation is to go on.—I am, dear sir, yours faithfully, (Signed) R. MORISON,

Neboda, 6th Feb., 1900.

THE CLAREMONT ESTATE CO., LTD.

THE ANNUAL REPORT,

ACREAGE.

		Acres.
Tea in bearing	.. ..	200
Tea in partial bearing	..	46
Forest, Ravines, &c.,	..	90
		336

The Directors submit herewith the Balance Sheet and profit and loss account duly audited for the year ending 31st December, 1899.

The yield for the year was 81,281 lb. against estimate of 85,000 lb. costing 24·54 cts., laid down in Colombo, inclusive of up-keep on the 46 acres New Clearing from which only some 4,000 lb., were secured.

Estimate for 1,900 is 90,000 lb., to cost in Colombo, 25·83 cts.

The Tea was all sold locally realising 34·97 cts. per lb., nett.

Mr. A Orchard retires by rotation and offers himself for re-election.

The election of an Auditor rests with meeting and Mr. Guthrie again offers his services.

In view of the present position of affairs and the near approach of the due date of the Mortgage for £3,500, the directors hope that as many of the shareholders as can attend will come to the meeting.

NEBODA TEA COMPANY, LIMITED

THE ANNUAL REPORT.

ACREAGE:

Tea in full bearing	.. ..	157 acres.
„ in partial bearing	.. ..	226 „
„ 2 and rising 2 years old	..	112 „
Total Tea	..	495 acres.
Forest and Waste Land	.. ..	240 „
Total	..	735 acres.

The directors submit their report and accounts for the year ending 31st December, 1899.

The total extent of the Company's property is now 735 acres, the previous total of 666 acres having been added to by the purchase of 69 acres of forest and chena near Narthupana.

The crop secured, namely 184,322 lb tea was sold in Colombo at an average of 35·09 cents per lb., as against 33·33 cents the price obtained for crop of 1898 of 126,840 lb.

The tea in full bearing yielded as follows:—

On Narthupana .. 755 lb. per acre average.
On Neboda .. 522 „ „

and the cost of production was 22·67 cents per lb. or without manuring, 19·88 cents.

Profit in the year's working amounts to R22,651·62. Of this amount R7,830 was disbursed in November 1899, in payment of an interim dividend at three per cent in the Company's Capital, and the Directors recommend that the available balance, namely R14,821·62 be disposed of as follows:—

In payment of a Final Dividend of two per cent R5,220·00. And the balance to Reserve Account R9,601·62.

In terms of the Articles of Association Mr. Robert Morison retires from the Board of Directors, but, being eligible, offers himself for re-election.

The appointment of an Auditor resists with the Meeting.

HORREKELLY ESTATE COMPANY, LIMITED.

THE ANNUAL REPORT.

The Directors have pleasure in submitting the accounts of the Company for the year ending 31st December, 1899, shewing, after writing off R5,901·95 for depreciation on Buildings, Plant and Machinery, a profit of R19,714·89, which, with the balance of R848·14 brought forward from 1898, gives a total of R20,563·03 available for distribution.

The Directors recommend that a dividend at the rate of 5 per cent on the Capital of the Company be declared. This will absorb R20,000, and leave a balance of R563·03 to be carried forward to 1900.

The working of the estate for the years 1897, 1898 and 1899 compares as follows:—

	1897.	1898.	1899.
	R	R	R
Expenditure on Estate & in Colombo office...	32,066·69	37,014·85	36,754·67
Number of Coconuts produced ...	1,400,835	1,437,885	1,305,429
Quantity of Coir Fibre made ... Ballots	28,553	35,474	28,324

Two Directors—Messrs. F. J. de Saram and Stanley Bois retire by rotation, and are eligible for re-election.

The Shareholders have to appoint an Auditor for 1900.

INDIARUBBER IN QUEENSLAND.

The following from the *Brisbane Courier* will be of interest to those who may contemplate taking up an industry that if carefully attended to may lead to an increase in the articles of production from this colony (New South Wales):—"The news from Cairns that a number of local men are arranging to begin operations in the manufacture of indiarubber is important. The raw article can be obtained from indigenous trees in the shrub, and is said to be of first-class quality. What is perhaps, more important, the supply is inexhaustible. One of the chief values attaching to the recent New Guinea concession was the practically unlimited quantity of rubber there obtainable. To find, therefore, that a similar condition of affairs exist within easy distance of a port like Cairns, is to say the least, encouraging. Then, as regards the industry itself, its outlook is as bright as it possibly could be. The marvellous demand for bicycles of late years has given an immense impetus to the rubber trade. Indiarubber being also a highly perishable article is another important factor in the question of supply and demand. The demand will always exist, so the supply must be kept going. There is one consideration, however which these Cairns men will find obtruding on their notice sooner or later. That is the question of cheap labour in collecting the article. This must be considered when it comes to competing with others. In New Guinea, for instance, labour is cheap and on the spot. Here in Australia we have practically none of this native labour. The nearness to a port for shipment may counterbalance this advantage which New Guinea rubber traders would derive from a handy labour supply. Our Department of Agriculture has during the year been trying by a series of articles to direct attention to this industry. It will also place another string on the Cairns bow in raising that town into a place of much importance in the future."

RICE-CROP IN SOUTHERN INDIA.—Here is the latest official summing-up :—

The result is that the estimated outturn amounts to nearly 1,940,000 tons of cleaned rice, which is, on the basis adopted, about 30 per cent. less than what may be regarded as a normal crop and is 29 per cent. less than the estimated yield last year. The bearing of these figures on the question whether there is likely to any exportable surplus avilable may be judged by the fact that on the balance of imports of paddy and exports of rice during the ten years ending in 1897-98, the Presidency showed a surplus of 23,976 tons of cleaned rice, and during 1898-99 one of 49,251 tons; but this result was only rendered possible by importing on the average 88,365 tons of other food-grains for the ten years, and 74,933 tons during 1898-99. This year there has already been a very large excess of grains exported over that imported, and the yield of the "dry" grains has over very wide areas been comparatively poor. They are, in regard to the food supply of the Presidency, of greater importance than the paddy crop.

TEAS AT PUBLIC AUCTION.

A FAULTY SYSTEM.

The practice of rushing teas through at public auction, and the effect on prices, is dealt with by a writer in the "Produce Markets Review," who, under the head of "Combination," refers to certain allegations about which more light is needed. He says: "The recent fall in the price of the lower sorts of teas is currently said to be mainly due to an agreement on the part of a few large buyers to withdraw from the market. As a result of this belief the importers have met this refusal to buy by reducing their offers. In an ordinary state of things this would, no doubt, be a remedy for any combined attempt to affect prices, but in tea it is useless, because the supplies will simply accumulate, there being no means of disposing of them except at public sales. Buyers, therefore, know that, although offers may be scarce for the moment, they are only deferred, and that all wants will be satisfied a little later on. Whether the present alleged combination exists or not, and whether it has had, as is generally believed, so heavy an effect upon the market, we cannot say. At any rate, the allegation brings to light a fresh danger in the present system of public sales. A very few large buyers, as things are, undoubtedly have to some extent the market at their mercy. This should not be the case, and it is simply due to a faulty system. As we have often pointed out in detail, the present plan of forcing off all teas at public sale, and practically directly they arrive, is most injurious to the interests alike of the importers, and of the wholesale trade. It may tend, no doubt, to give a partial monopoly of the market to advertising houses, who must sooner or later recover from the growers some proportion of their 2d. or 3d. per lb. for advertisements, while the rest is charged to the public (a total charge that raises the average price some 20 per cent., and proportionately checks the consumption, again to the detriment of the planter). We hold that the present deplorable position of tea in this country is mainly due to the failure to supplement the public sale system by a proper proportion of sales by private contract, which are absolutely necessary if an article of fancy like tea is to fetch proportionate prices for its various grades and qualities. The reply of the brokers is that a considerable proportion of tea is already offered by private contract; but this is done in a manner which chokes off the bulk of the demand. An offer is made of an entire invoice, consisting of a variety of qualities at once, and the parcels are not subdivided, so that buyers, to get something they may want, have to take perhaps a lot of tea which they have no wish to buy for stock. Surely this is unreasonable, for it really destroys any advantage that might generally be derived from private purchases. It is replied that it would be unwise to let buyers, as it were, pick out the tit-bits of consignments, for the rest of the parcel would suffer. Sellers have, however, a complete safeguard against this in the prices they would accept and there would be no compulsion to sell as there is, more or less, at the present time when goods are put up to public sale. If, instead of withdrawing their supplies, sellers had simply decided to offer the qualities affected by private sale, and at reasonable rates, they would, while breaking down any combination, have at the same time relieved the market. Instead of this, they are only heaping up the supplies. It may be said that a combination might just as well extend to private purchases, and that it does so at the present moment, but such attempts at restriction of trade cannot be maintained except under the opening given by the obsolete public sale system. With regard to the currently reported motive for the alleged combination, we can say nothing here, except that if A sins against B, it is rather hard of B to set to work to punish the importer C, who has absolutely no part or lot in the causes of the quarrel."—*H. & C. Mail*, Feb. 9.

PEARL SHELL FISHERIES OF THE DUTCH EAST INDIES.

Shells constitute one of the most important articles of exportation from Macassar. Up to the beginning of this decade they were sought almost exclusively by natives, fishing in the shallow waters in the bays, without using any diving apparatus. In 1893, according to the United States Consular Agent at Macassar, Celebes, an English company sent a schooner and some luggers to the Aroo Islands to try exploitation in deeper waters. This company appears to have had a good measure of success, for its fleet left the archipelago only when forced by a Dutch law of 1894, to the effect that only inhabitants of the Netherlands and Netherlands India, or companies established in these countries and under the Dutch flag, should be permitted to engage in pearl fishing. In 1896 the Eastern and Australian Trading Association of Amsterdam began operations which, however, do not appear to have been successful, for the company liquidated in 1898. In the meantime, residents of Dutch India were beginning to pay more and more attention to the shell fisheries, and Europeans, Chinese and Arabs endeavoured to make arrangements with the native chiefs, in whose territorial waters shells were supposed to be, and who generally granted the privilege of fishing for a fixed sum in cash, or a per-centage of the quantity fished. Such contracts, however, were legal only after the sanction of the Governor-General of Dutch India, which has been accorded without charge. Shell fishing is at present carried on on the east coast of the Aroo Islands, on the east coast of New Guinea, on the Halmaheisa and the islands adjacent, on the east cost of Celebes and the Timor group. An undertaking on a large scale is the Djoempandang Maatschappy, established at Macassar in 1898 with a subsidised capital of £12,000, for fishing in the Timor waters, with a fleet of one schooner and ten luggers. The company has succeeded in securing apparently valuable concessions. The chief market for mother-of-pearl shells is Paris; only small quantities are shipped to London, Hamburg and Amsterdam. There were exported in 1896 about 150 tons; in 1897, 200 tons; and in 1898, 250 tons. There is no doubt that 1899 will show a further considerable increase. Notwithstanding this augmentation, prices have been fully maintained. Aroo shells sell at Macassar at £140 per ton; Timor, Ceram and New Guinea and Celebes shells at £80 to £100. Fishing is allowed during the whole year by the Government, but is occasionally prevented by the monsoons. Besides mother-of-pearl, there are also found in the archipelago cheaper varieties, which are obtained exclusively by the natives and used in Germany and England for button manufacture, etc. Of bunda or black-edged shells there is an export of about 18 to 100 tons yearly. Green snail shells are exported to the extent of at least 100 tons yearly and exports of mussel shells amount to about 30 to 50 tons annually.—*Journal of the Society of Arts*, Feb. 9.

PEABERRIES AND MALE COFFEE PLANTS.

Dr. D. Tomatis, commenting on a paragraph in the May number of this Journal (1899) on the subject of male coffee plants writes:—

"As our Government Botanist, Mr. F. M. Bailey, states, the coffee plant is neither *diœcious* nor *monœcious*, but beyond doubt *hermaphrodite* as clearly shown by the examination of its flower. Why should the abnndance of *pea-berries* fruit on a tree indicate that it is a *male*? Is not peaberry fruit all the same? And still more a peaberry seed germinates as readily as a bi-lobed berry. The paragraph says that the cause of peaberry fruit is not definitely known. I am surprised at this statement, as it is very easy to find the cause, which is in the poverty of the soil and the dryness of the weather after the blossoming time, as through these two causes the young fruit could not be fully formed, developed, aud nourished; hence only one lobe grew, and the germ of the other became abortive and atrophied, and consequently the single lobe or grain grew in a roundish form, and the fruit, being a single-grained berry, is richer in the essential aroma. If the ground he rich, season favourable, tree well trimmed and pruned, and blossoms thinned, very few peaberries will be produced."

Reporting on the question raised in the paragraph and in the above letter, Mr. Howard Newport, Instructor in Coffee Culture, says:—

PEABERRIES AND MALE COFFEE PLANTS.

In the accompanying letter on this subject, sent on to me for an expression of opinion, I fail to see where the question arises as to why the abnndance of peaberries on a tree should indicate that it is a male.

On referring to the article in the May issne of the departmental *Journal* quoted by the correspondent, it would seem that the first mention of the idea was in the form of a contradiction. It is later contradicted by the Colonial Botanist, and is in itself a contradiction. The amonnt of peaberry on a tree has nothing whatever to do with the sex of coffee.

Peaberry is the result of the failnre, for some reason or orther, of its fellow-germ to fructify. There are naturally in the embryo berry two cells and it wonld appear that under certain circumstances one of the cells, on coming in contact with the pollen, will fructify while the other will not.

That it is so is clear on examination of the peaberry where the atrophied germ is discernable, and its envelope of parchment skin, folded together, still in its place within the "pulp." The reason why the pistils should convey the pollen to one ovule and fail to fructify the other, is the point that is not thoroughly understood yet, and not the state of the tree in which it is most liable to this condition, as your correspondent seems to think.

The peaberry is a mal-formation, and generally takes place when the tree is weak or in a state of low vitality, and this condition may be brought abont by nnfavourable conditions of soil, climate or cultivation. A tree overbearing will prodnce a larger percentage of peaberry than one with a more moderate crop, even though conditions of soil and climate are as favourable as oould be desired.

The shape of the malformed growth is somewhat as yonr correspondent states. It was thonght at one time that it was the production of a special variety of coffee-bnsh—at any rate, by those who had to do only with the cured article; and there are many yet that still adhere to this fallacy, due chiefly to the fact of its being graded separately.

Pea-berry obtains its higher value in the market chiefly on account of the advantage of its shape in roasting. Being easier to roast uniformly, it is snpposed to contain a greater percentage of caffeine or aromatic properties, but this is exoeedingly donbtful. Its presence on the tree is of donbtful advantage also. A large percentage of "P.B." grade —indicating, as it does, impaired vitality—although its price is enhanced, is yet a long way short of the value of the double bean in the normal growth.

As a seed for propagation, "P. B." germinates readily, but repeated experiments have been able to show no advantage in the growth, stamina, or bearing capabilities of its production over that of the bi-lobe; nor does the plant raised from a peaberry show any special tendency to produce peaberries.

"MALE" TREES.—The coffee-tree is, as is well known, hermaphrodite; it is also well known that in such cases generally the contact of pollen from another tree or blossom obtains better resnlts than its own pollen. It may be, therefore, that the peaberry is due, to a certain extent, to continned self-fertilising of the plant or "in-breeding."

It is supposed that the plant commonly called the "male" coffee-tree is due to this cause. However this may be among seedlings in a nnrsery, there is always found a small percentage of plants that appear with long narrow leaves, eyes closer together than ordinary, and a smaller and more stunted growth altogether.

In cnltivating these in the field, it is fonnd they bear very little, although they blossom freely. (I have never yet met with one that did not bear at all). The flower is somewhat smaller than that of the ordinary tree, bnt would structnrally appear to be identical. It is supposed that the want of fertility is due to some malformation of the stigma or ovules, since the pollen is perfectly fertile when applied to other blossoms.

This tendency to prodnce blossom that will not fertilise, yet will fertilise others, has earned for this long-leaved tree be sobriqnet of "male" coffee. Whether the presence of snch trees in an estate is Natnre's own remedy for a too long-continued oonrse of "in-breeding," and is, therefore, of advantage, is a moot point. Generally the plant is cousidered nseless and nnnecessary (since the other trees, being hermaphrodite, can do without it), and since it bears so little, is not considered "worth its keep." It is, therefore, usually picked out and thrown away as early as it shows the tell-tale narrow long leaf in the germinating bed or nnrsery.—*Queensland Agricultural Journal.*

ENGLISH QUININE.

(To Editor "Chemist and Druggist,")

Sir,—On page 231 of your issue of February 3rd you quote from an interview alleged to have been held by a correspondent of the *Commercial Intelligences* with Mr. Elliot, of Toronto, in the course of which he is reported to have said, "We sell more German than English quinine because it is cheaper and purer." Whether Mr. Elliot is accurately reported or not we do not know, but we do know, that our quinine always passes the Codex Français test easily, whereas a reference to a German list will show that this quality is charged 2m. per kilo more than Ph. Ger. 11, which is the ordinary German quinine of commerce.—We remain, dear sir, yours truly, HOWARDS & SONS.

Stratford, near London, E. Feb. 8.

—*Chemist and Druggist,* Feb. 10.

NOTHING LIKE RUBBER.—It has been suggested that the soldiers in South Africa should be supplied with india-rubber sleeping dresses for out-door sleeping in the wet and cold nights of South African climate. A trooper, who procured a piece of very thin india-rubber sheeting and put a drawing string through the top of it, found the advantage of such an article as a night covering. It kept him as warm and dry as possible, and when folded up he wore it during the day time round his waist, where it looked like a belt. —*India-Rubber Journal,* Feb. 5.

Correspondence.

To the Editor.

NOTES ON CEYLON BOTANY:—NO. I.

DEAR SIR,—With reference to the cuttings from the *Pioneer re* Indian Botany, which you have kindly sent me for perusal, I think the history of Ceylon Botany will bear an interesting comparison with that of our neighbouring continental flora, inasmuch as the former dates back to a somewhat remoter period.

The Sinhalese, as a race, have been credited with being "natural botanists," and supposed to have possessed in pre-European times some systematic classification of their plants, as so many of their vernacular names would, indeed, seem to indicate. Those of us who have had any acquaintance with plants in other countries cannot but be struck with the comparatively intimate knowledge which the Sinhalese have of their native plants and their uses, as well as with the wealth of vernacular plant-names, which, unlike so-called English names, have the merit of being usually descriptive; many of the botanical names of Ceylon plants are, in fact, mere Latinisations of the vernaculars; as, for instance, *Elephantopus* Sinhalese "Et-adi," meaning elephant's foot-print); *Kokoona* ("Kokoon" of the Sinhalese); *Ipomœa Pes tigridis* ("Divi-adiya" tiger's foot-print); *Naravelia* ("Uara-vel" of the Sinhalese) &c. A fact which also suggests the precedence of Ceylon over India in early botanical operations is, that so many plants which are as common on the Indian mainland as in Ceylon are named *Zeylanica*. But

"What though the spicy breezes
Blow soft o'er Ceylon's isle"

and figure conspicuously in its ancient history, the earliest record of scientific interest in regard to the Flora of Ceylon, dates from about the middle of the 17th century. Thus the credit of pioneer botanical work here, as in India, belongs to the Dutch, the Portuguese having left no testimony of any special interest being taken by them in the botany of the island.

Prior to 1660 a Mr. Hartog was sent on a botanical expedition to Ceylon by Dr. Sherard, a leading botanist of his time; but the results of this undertaking are not of much consequence. The first important contribution to the knowledge of Ceylon Botany was made by Mr. P. Hermann, a distinguished scientist of his period and a medical officer of the Dutch East India Company by whom he was engaged in 1670-77 to "describe the plants and spices growing in the island." This was about twenty years before the advent of the *Hortus Malabaricus*, the first published record of Indian Botany. It may easily be imagined that Hermann's task was beset with many difficulties, the interior of Ceylon being then dangerous and practically impenetrable to Europeans, but he succeeded in making a dried collection of plants comprising about 600 species, chiefly in the neighbourhood of Colombo and Galle. This nucleus herbarium, having changed many hands in Europe and been "lost for about half a century," was ultimately purchased by the celebrated Sir Joseph Banks for 75 guineas, and is now an important botanical relic in the British Museum, London.

Hermann supplemented his specimens with manuscripts and drawings intended for publication; but unfortunately the scientific world of his age did not gain by his labours, the result of which was not published till 1717 (22 years after Hermann's death) in the form of *Museum Zeylanicum*, an 8vo. volume with the plants arranged alphabetically under their native names with Latin descriptions. This may be said to be the foundation of the Botany of the East Indies.

A second collection made by Hermann, combined with Mr. Hartog's material already referred to, furnished the basis of the *Thesaurus Zeylanicus*, a 4to. volume issued in 1737 by Professor J. Burman, an enthusiastic botanist of Amsterdam. This was a creditable production in its time, containing 110 well-executed illustrations, with the vernacular names arranged alphabetically above copious Latin letter-press.—Yours truly,

X. Y.

NO II.

DEAR SIR,—Some years later, in 1745, Hermann's herbarium fell into the hands of the illustrious Swedish botanist, Chas. Linnæus, who after two years' careful study of its contents published in 1747 his *Flora Zeylanica*, a small 8vo., in which Ceylon plants are for the first time arranged on the famous sexual system invented by Linnæus himself and which bears his name. This book contains in Latin, a concise view of the progress of Botany from the restoration of learning in the 16th century. The great author has expressed himself thus on the vegetation of Ceylon:—"A delicious climate has granted to this island plants of such variety and value, that scarcely any soil can vie with it for the abundance of its aromatic productions. The pastures are scented with basil (*Ocymum*, 'Maduru-tala' of the Sinhalese) and its wood with cinnamon, cardamoms and flowers of the most exquisite colour, structure and fragrance."* The fact that Linnæus in his epoch-making book, *Species Plantarum* (1753), referred to the Ceylon species as *types*, renders Hermann's herbarium of special scientific value.

Dr. C P Thunberg, the celebrated botanical traveller, and Danish Physician, whose name is commemorated in the beautiful genus *Thunbergia*, visited Ceylon in 1777-80, and was followed in 1782 by Dr. J G Kœnig, the "Father of Modern Indian Botany," who made an important collection of plants in the lowcountry, which he afterwards bequeathed to Sir Joseph Banks and it is now in the British Museum.

Whether in the cause of science or of the system of Government monopoly which was then in vogue, it is recorded that the Dutch had about the middle of the the 18th century commenced an experimental garden in Slave Island, worked by slave labour—hence the name "Slave Island" of today. But this venture had apparently but a short existence.

Thenceforward for three quarters of a century scientific interest in the Botany of Ceylon seems to have languished. With the advent of British rule in 1796 it was recognised that a proper acquaintance with the vegetation of the island was necessary for the due development of its resources, and that the best means of inciting a desire for such knowledge, as well as of introducing and experimenting with new and useful products, was by establishing a duly equipped Botanic Garden.

Accordingly a site was chosen at Peliyagoda, on the Kelani River, and in 1799 Mr. J Jonville

* This passage is probably Heber's justification for his "spicy breezes."—ED. *T.A.*

was appointed Superintendent of the first Botanic Garden in Ceylon. Formerly Jonville was "clerk for Natural History and Agriculture;" being a versatile man and an artist, he made a valuable collection of plants, with drawings, which is now in the British Museum. In 1810 the Botanic Garden was transferred to Slave Island, the site being named Kew (by which name it is still known), in honour of the well-known London establishment of that name.

To give the new institution a practical as well as scientific character, it was in 1812 put under the charge of a qualified "Resident Superintendent and Head Gardener," viz: Mr. William Kerr—a shrewd Scotchman and a pioneer of Botany in the East—who was transferred from an appointment in China. Kerr brought with him, it is said, a number of Chinese and Japanese plants, though obviously but few if any of these could have thriven in a climate like that of Colombo. He, however, introduced successfully into Europe several interesting plants from the Far East, and his name is commemorated in the beautiful shrub *Kerria Japonica.* In pursuance of his love of exploration, Kerr was the first botanist, if not the first white man, to ascend our famous Adam's Peak. At that time, over a great area of what is now cultivated and domesticated, the jungle held sway in

Savage pride and dignity,
Proclaiming right of native liberty,

so that malarial fever was rampant, and Kerr succumbed to it in 1814, after a residence here of only two years. During his short regime the honorific title of Royal Botanic Gardens was bestowed on this department, and in 1813, the site in Slave Island being found too limited in extent and liable to floods, he secured the transference of the botanical establishment to Kalutara, the situation chosen this time being a sugar estate of 600 acres, which also proved unsuitable for a Botanic Garden. X. Y.

THE CEYLON ANACONDA.

DEAR SIR,—Could you kindly inform me as to what part of Ceylon is the Anaconda snake found. Dr. Annandale's English Dictionary (1886) says of Anaconda: "The popular name of two of the largest species of the serpent tribe, namely a Ceylonese species and a South American species, both growing to a length of over 30 ft."—Yours truly, PYTHON.

[The Ceylon Python or Rock Snake is thus referred to in "Tennent's" Natural History :—

The Python.—The great python* (the 'boa," as it is commonly designated by Europeans, the "anaconda" of Eastern story), which is supposed to crush the bones of an elephant, and to swallow the tiger, is found, though not of such portentous dimensions, in the cinnamon gardens within a mile of the fort of Colombo, where it feeds on hog-deer, and other smaller animals.

The natives occasionally take it alive, and securing it to a pole expose it for sale as a curiosity. One that was brought to me tied in this way measured seventeen feet with a proportionate thickness: but one more fully grown, which crossed my path on a coffee estate on the Peacock Mountain at Pusilawa, considerably exceeded these dimensions. Another which I watched in the garden at Elie House, near Colombo, surprised me by the ease with which it erected itself almost perpendicularly in order to scale a wall upwards of ten feet high.

The Sinhalese assert that when it has swallowed a deer, or any animal of similarly inconvenient bulk, the python draws itself through the narrow aperture between two trees, in order to crush the bones and assist in the process of deglutition.

—ED. *T.A.*]

* Python reticulatus, *Gray.*

CEYLON FISHING CLUB.

TWO INTERESTING LETTERS.

The following two letters were read at the meeting of the Fishing Club held on Tuesday, at the Hill Club, Nuwara Eliya :—

Calsay, Nanuoya.

The Hon. Secretary, Ceylon Fishing Club, Nuwara Eliya.

DEAR SIR,—I emptied my Rainbow trout pond, and turned 14 into Ambawela stream yesterday. A few I have kept in a pond at this Bungalow. This is a disappointing result out of 76 fry put in on the 27th of April last. The trout were in good condition, and were from 5 to 7 inches.—Yours faithfuly,

G. G. ROSS CLARKE.

North Cove, Dec. 22, 1899.

The Hon. Secretary, Ceylon Fishing Club, Nuwara Eliya.

DEAR SIR,—On Dec. 11th, I emptied the large stewpond on the Horton Plains, and captured 130 fish, ranging in size from 2 to 6½ inches. Thirty were turned into the river close by and 100 were carried down to the lower water and turned into Tryers' Pool and adjacent water. They were all strong fish. I have reason to believe that some of the fry escaped from the pond shortly after they arrived and I have seen young fish in the stream below the pond that would correspond with the size they should have reached. I shall be obliged if you will send me a cheque for R23·75 being the amount I paid for shrimps and food for the fry.—Yours truly,

(Signed) T. FARR.

A CEYLON TEA REPORT FOR 1899 has just reached us from Messrs. Tarrant, Henderson & Co. We quote one paragraph:—

Taking the year as a whole, it has been a favourable one for producers. The average price throughout for tea has been good. The unfortunate element, however, in connection with the industry, is the fact that demand has more and more continued to run upon lower grade teas. The craze in every part of the world appears to be for "Teas for Price," to the neglect of better grades. This is extremely unfortunate from both a producer's and a consumer's point of view, and is due very largely to the large distributing and advertising firms competing with one another and advertising blends at very low prices. This is much to be regretted, as the larger proportion of lower grades of Indian, Ceylon and China teas are quite characterless, and can give but little satisfaction to the consumer, while the better classes of tea, as a rule have a distinctive character and flavour, and people who have once tried them do not care to go back to the rubbish put before them by the trade. We may say without hesitation, that the difference between teas selling at 7d a lb. and 9d a lb. in Mincing Lane, in point of intrinsic value at present, is quite 6d per lb. so that it is unfortunate that the public do not realise that by paying a little more for their tea they would get so much better value.

PASSARA PLANTERS' ASSOCIATION.

SEVENTH ANNUAL REPORT.

Chairman.—J J Robinson.
Secretary.—W S Taylor.

Committee.—(Passara). J J Robinson, W S Taylor, G K Deaker, J C Tribe, R A Hope, J B Cotton, J Duncan. (Madulsima). J M Mason, R Webster, W M Kelly, F Hall, R Gatehouse. (Monaragala). J H Betts, J H B Cockburn, S J Sparkes. (Kandy). Chairman, Secretary and G K Deaker.

Hospital Visitors.—(Badulla). G K Deaker, James Duncan. (Lunugala). R Gatehouse, F Hall.

Thirty Committee.—G K Deaker.

Register.—The number of estates on the Register is 42; compared with the last year there is a decrease of two.

Meetings.—During the year under review, there have been four Committee Meetings and four General Meetings; these have been very well attended, which goes to show the interest taken by members in the affairs of this Association.

Finance.—The Books of the Association are laid upon the table for the inspection of members, and your Committee have much pleasure in bringing to your notice that the amount standing to the credit of the Association with the Bank of Uva amounts to R413·56. Last year's accounts were duly audited by Mr. Cotton.

Tea Crop.—The Estimate for the current year of 1900 is 3,298,800 lb. off 8,395 acres in bearing and 1,852 not in bearing. This gives an average for tea in bearing of 393 lb. per acre and speaks well for the climate and general suitability of this part of Uva as a tea producing country. Prices have been fairly maintained throughout the year and your Committee would impress upon you the many advantages to be derived from placing as much Tea as possible on the local market. The weather during the year was most abnormal, and much against the growth of leaf; we passed through two severe droughts and though the actual fall of rain for the twelve months was satisfactory, yet the distribution of this was calamitous.

Cocoa.—Your Committee regrets that the outturn of Crop for this product for the year has been very disappointing and would attribute this serious decrease of crop to the ravages made by the canker and Pod disease which so virulently attacked the Caraccas. Mr. Carruthers treatment as laid down by him, as well as also various other experiments, have been tried, but with very indifferent results; and your Committee view with every satisfaction the late appointment made by His Excellency the Governor of Mr. Carruthers as official Mycologist to the Island. Your Committee take this opportunity of expressing their gratitude to His Excellency for thus moving in this matter and probably saving an industry which is now going through such a precarious crisis. Your Committee view with pleasure the formation by the Parent body of a Cocoa Committe and hope this step will lead to much usefulness and that a fair proportion of the funds at the command of the Kandy Association will now be set apart for furthering the interests of cocoa growers, who, so far, have not had the pecuniary assistance which they have every reasonable right to expect.

Coffee.—Your Committee would congratulate the fortunate owners of Arabian coffee upon the fine crop gathered during the year; the weather for this product was everything that could be desired with the result that the returns for 1899 have been excellent.

Other Products.—A considerable acreage has been planted under Rubber and Coconuts in the Monaragala district and the growth of the same gives great promise for its future success, which will probably lead to further extensions.

Roads and Bridges.—Your Committee have every reason to feel proud with the progress made in the matter of roads and bridges during the year under review. The Wellawaya-Mupane cart road has its bridges now completed and the wheel tracks metalled throughout. The last bridge completed, namely the Kirinde Oya, was a work of great magnitude and reflects the greatest credit upon the officers in charge. The Madulsima grant-in-aid cart road is now open for traffic as far as Dunedin Factory and is much appreciated by the estates at that end of the district. It having been pointed out to the Government by your Association that the breadth of the Kumbalwella-Passara cart road was insufficient for up and down traffic, room has been found in this year's Supply Bill for widening the road at intervals every quarter of a mile. Your Committee have been urging Government to construct a cart road from Passara to Atiput in the interests of the large native population residing in that neighbourhood, who at the present moment have no profitable means for transporting their produce to the nearest market. Your Committee are given to understand that the present Government Agent as well as two former Uva Government Agents have already urged the necessity of a cart road being constructed to connect these two points. The Association is further to be congratulated upon the endeavours made by their worthy representative on the Provincial Road Committee for the great improvements on our Minor Roads, especially in the obtaining of a grant whereby the Nukkala and Hulanda Oya rivers are to be bridged. Arrangements have been made with the Government which provides for the P. W. D. Bungalow at Namunakula being now opened to the public as a resthouse. Your Committee are also pleased to state that there is every probability of a new resthouse being erected close by the cart road at Buttale (Hospital). The endeavours made by your Committee urging the Government to construct a hospital at Mupane, we regret to say, have so far failed, but they yet believe that the Government will realise that the health of the native community is of greater importance than the consideration of the extra outlay involved in erecting this very desirable and much required building.

Unofficial Police Magistrate.—Mr. J M Mason was made an U P M and J P for the Province of Uva on the representation of your Association to Government which doubtless will be much appreciated by our Madulsima members. A considerable amount of crime was unfortunately observable at the commencement of the year, especially round about the Lunugala district, but thanks to the prompt measures taken by our worthy Government Agent, it was speedily stamped out.

Labor.—Your Committee view with a certain degree of alarm the tightening of the labor market and the consequent substantial increase in the advances now being given out. This doubtless is greatly owing to the heavy public works about to be commenced by Government, who, so far, have stood aloof from importing their own labor, preferring to engage the planters' cooly: if this continues, your Committee much fear that the results of this policy will be disastrous to our enterprise.

Tramway.—Your Committee view with much satisfaction the sanction given by Government for the construction of the Kandapola Light Feeder line, as, in the event of this scheme proving profitable our Light Feeder Line from Bandarawela via Passara to Badulla has been promised next attention by Government.

Mr. Bamber.—This gentleman officially visited the district twice during the year and your Committee look forward with great interest to his forthcoming Report, which it was expected, would have been in our hands ere this.

The Relationship between the Parent Body and the Thirty Committee.—Your Committee are of the opinion that the time has now arrived for these two important bodies to be separated and each possess their own Chairman, as they feel that the duties are too onerous to be discharged by the one officer. It seems unfair to expect one Chairman to devote

the necessary time that is required in attending to the business connected with these two important bodies.

GOVERNMENT OFFICIALS.—In conclusion, your Committee take this opportunity of asking you to express your thanks to our worthy Government Agent, Mr. Baumgartner, for the very great interest he has always shewn for advancing the prosperity and development of this province: Your thanks are also due to the Provincial Engineer and his staff for all they have done for us during the year.

HIS EXCELLENCY THE GOVERNOR.—Your Committee take this opportunity of congratulating His Excellency Sir West Ridgeway upon his complete recovery from his late serious illness and feel sure they are only echoing the voice of this Association in heartily welcoming him back to the Colony.

CEYLON CONTINGENT.—Your Committee wish here to record the pride they feel, in that four gallant members from this Association have joined the Contingent which is now on its way to fight for our Queen and country; we heartily wish them "God Speed" and a safe return back amongst us.

PALMERSTON TEA COMPANY.

ANNUAL MEETING.

The Directors have now to submit their Fourth Annual Report and Accounts being those for the year ending 31st December last. The yield of Tea during the period has been 208,828 lb., costing cts. 28·08, as against cts. 29·55 last year, and realising 45·63 as against 46·12.

As will be seen from the accounts the net profits for the year amount to R23,727·24 after writing off the sum of R5,318·10 for depreciation on Factory and Machinery. An interim dividend of 2½ per cent was paid on 7th August absorbing R10,250, and the Directors recommend that a final dividend of 3 per cent be declared, making a total of 5½ per cent for the year and leaving a sum of R1,177·24 to be carried forward.

Mr. W Sandys-Thomas visited the estates in Jan. and found everything generally in a satisfactory condition. A copy of his report is annexed for the information of the Shareholders.

In terms of the Articles of Association Mr W Sandys-Thomas now retires from the Board but is eligible for re-election.

The appointment of an Auditor for the current year rests with the Meeting.

By order of the Directors,
BOIS BROTHERS & Co.,
Agents and Secretaries.

ACREAGE OF THE ESTATE.

	Queensland.	Palmerston.	Total.
Tea in Bearing ..	254	205	459
Young Tea ..	4	—	4
Total Tea ..	258	205	463
Jungle ...	19	—	19
Timber ..	—	7	7
Grass, &c. ..	4	—	4
Total Acreage ..	281	212	493
			493

	Lbs.		Per Acre.
Yield off Queensland ..	116,099 Tea	—	456 lb.
Palmerston ...	93,584 ,,	—	456 ,,
Total off 459 Acres Tea ..	209,683 lb.		456 lb.

Expenditure per pound of tea as per Reports is as follows, after deducting Capital Expenditure on buildings:—

Queensland	28·21
Palmerston	27·07

N. B.—Included in Queensland is the sum of R4,700 spent on Manure, which is equal to 4cts. per lb. on Queensland Tea.

It is curious that the yield off the two Estates should be the same per acre. Palmerston with manure will, I am sure, increase in yield more than Queensland has done as the soil is better, except on small patches here and there where Palmerston is poor.

MANURING will be continued on Queensland and commenced on Palmerston, on Queensland about 70 acres will be tackled, and on Palmerston about 40 Palmerston will also do about 15 acres with cattle manure.

CAPITAL EXPENDITURE. On Palmerston none is required during the coming year, but on Queensland a new Roller is wanted.

The cost of Tea per pound after deducting the expenditure on capital account for buildings, *i.e.*, R4,131, comes to 28·08, as compared with 29·55 in 1898 and 32·18 in 1897.

Both Estates are in good order throughout.

Coolies are sufficient on Queensland, and on Palmerston the extra 30 coolies wanted will soon be supplied.

The estimate for 1900 is as follows:—

Queensland ...	125,000 lb.
Palmerston ...	98,000 ,,
Total ..	223,000 lb.

AUSTRALIAN OYSTERS' CULTURE.

Australian oysters are cheap and plentiful, being retailed in Sydney at from sixpence to one shilling per plate or bottle. The consumption is enormous, lasting throughout the year, and amounting to several millions of bivalves annually. The whole of the New South Wales coast is admirably adapted for oyster culture. The climate, the nature of the coast line, with its innumerable inlets and creeks, and the natural existence in several varieties of the bivalve itself, all combine to mark its suitability for the culture. At the present time, for the purpose of oyster culture, the Colonial Government grant leases of the foreshores of tidal waters, which may be defined as between the mean high and mean low water mark. The rental is 20s. per annum for every 100 linear yards. The maximum length for which a lease may be obtained is 2,000 yards. There is but little doubt, says Mr. Coghlan, the New South Wales Government Statistician, that the establishment of "parcs," like those which may be seen along the coasts of France and Belgium, where oyster culture is conducted on scientific principles, would be remunerative, as the demand for this delicacy is great, and continually increasing. There is, indeed, a wide field for remunerative employment in this direction, and experts in the art of oyster culture would find every possible facility placed at their disposal. During the year 1897, 14,701 bags of oysters were obtained from the tidal waters of the colony, being a satisfactory increase on the takes of previous years; while in addition to this supply, 2,767 bags of oysters were imported from other colonies, their value being set down at £3,103. In 1898 the quantity imported was 7,110 bags, value £5,322; of which 6,236 bags came from New Zealand, 550 bags from Queensland, 282 bags from South Australia, 30 bags from Victoria, and 12 bags from Tasmania. A bag of oysters contains 3 bushels, and at the beginning of 1899 the price per bag of good oysters in Sydney ranged from 35s. to 40s.—*Journal of the Society of Arts*, Feb. 9.

COTTON IN THE FAR EAST.

Although the first Cotton Mill Company started in Ceylon had to be wound-up, and although on the adjoining Continent most of the once flourishing Cotton Mills are having a very trying time of it, yet there are places in which the cotton mill industry continues to yield fair returns. Indeed, it is in the very ability of Japan and China,—which were till lately the best market, if not for cotton goods generally, at any rate for yarn,—to compete with the old centres of the mill industry, that a special danger now lies. Skilled labour is nowhere cheaper than among the Yellow Races; and it may be doubted whether apter learners and nimbler fingers for delicate work can be found anywhere in the wide world. It is in the readiness with which mechanical knowledge is acquired in the Far East, and in the conversion of the consumer into the producer that Lancashire has found its greatest drawback. The Indian mills were trouble enough with their command of cheap labour, and they undoubtedly compelled contentment with smaller profits than were at one time reaped; but so long as the millions in the Far East remained customers, there was no ground for alarm. Now, the spinning and weaving industry has made considerable strides in Japan which is becoming less and less a purchaser of the cotton goods and yarn which it formerly absorbed in large quantities. It is, however, from China that experts apprehend the greatest danger. Foreign capital has done somewhat to give the industry a start; but now the local capitalist has begun to see prospects of profit in the industry! And what wonder, if the three foreign-owned mills in Shanghai are able to declare dividends varying from 3½ to 7 per cent, without working full time? It may be that the work done is chiefly in the coarser yarns, but these are said to be superior to those turned out in both Bombay and Osaka, and the native capitalist in starting on his own account. The uneasiness of Bombay is, therefore, easily understood.

SUGAR IN QUEENSLAND.

The total quantity of sugar exported from Queensland for the seven months ended January 31, amounted to 96,825 tons as compared with 119,668 tons in the corresponding period of last year.—*Sydney Mail*, Feb. 10.

Dr. W Maxwell, a Honolulu sugar expert, who has just completed his investigation of the sugar industry in Queensland, as well as a number of prominent gentlemen connected with the industry, were entertained at Parliament House by the Premier and the members of the Ministry.—Ibid.

PLANTING NOTES.

Planting on the Johnstone River, Western Australia.—A settler, writing on 1st February, reports :—"We have both small patches of coffee, but not in bearing yet. This district goes in for nothing but sugar and bananas; rice, arrowroot, pines and lemons are being tried; tobacco is a failure owing to blue mould on young plants."

Free Exploitation of Vanila, &c.—The official journal of Costa Rica publishes a decree authorising the free exploitation of sarsaparilla and vanilla, as well as of all other vegetable products found in national forests, except timber.—*B, and C. Druggist*, Feb.

Cheap Tea Wanted!—One of the leading Indian Tea Garden Companies in London recently received a communication from a country grocer, with the following modest request: "Have you an Indian or Ceylon tea that you can put in for 5d or 6d duty paid? If so," says this ingenuous correspondent, "send samples and price list." This would-be patron of British planting enterprise should try Hamburg.—*Planter*, Feb. 24.

Amazonia Rubber and Trading Company (Limited).—The directors, in their annual repotl to December 31 last, submitted at the generar meeting held yesterday, state that the net profif for the past year amounted to £3,299. whereot £1,171 has been absorbed by the interim dividend paid on July 25, 1899. The directors now recommend £1,527 to be paid in completion of a dividend at the rate of 20 per cent. per annum on both preference and ordinary shares for the year ended December 31, 1899, £250 to be placed to reserve fund, and £349 to be carried forward.—London *Times*, Jan. 31.

Tobacco Growing in Ireland.—A prospect of a new industry for Ireland has been opened up by the Irish Agricultural Organising Society, which has shown that tobacco can be profitably grown at Donaghpatrick, in County Meath. The experimental crop raised has been cured and manufactured, and is now being sold by an Irish newspaper at 4½d. per ounce through the post. Competent judges have pronounced the Irish weed an excellent smoking tobacco. and the whole cost of production was but 4d. per lb. Allowing for duty at 2s. 8d., this tobacco, sold at 5s. per lb., would show a profit of no less than £264 per acre. The revenue authorities are strongly opposed to the cultivation of tobacco in the British Isles, and an experiment made some years ago on Mr. Faunce de Laune's estate, in Kent, was most unfavourably regarded. It would be a curious coincidence if the two chief importations of Sir Walter Raleigh should combine for the benefit of the distressful country.—*Daily Chronicle*, Feb. 9.

Petroleum Export Statistics.—The export statistics of petroleum during the past three years show some notable changes in foreign requirements. The export movement reached its maximum in 1897, with a total of 994,297,000 gallons, the succeeding year showing a falling off of 7,817,000 gallons, and last year a further shrinkage of 35,456,000 gallons. Foreign writers have attributed this decrease entirely to the increased competition of Russian oil, but a closer study of the production and movement from various sources of supply proves that the decrease in the exports of American petroleum are not due to direct competition with the Russian product. The production of petroleum in Sumatra, Roumania and Galicia has made rapid strides during the past few years and the product of these sections has displaced just so much oil which would otherwise have been supplied from America or Russia, or in part from both of these petroleum producing countries.—*Oil Paint and Drug Reporter.*

ON TOMATOES.

[BY AN EXPERT.]

"LYCOPERSICUM ESCULENTUM' otherwise tomato, sometimes called love apple, a singular name surely. Most readers doubtless know the tomato belongs to that brilliant natural order the Solanaceæ, than which, very few natural orders are of greater economic importance. The potato, tomato and the brinjal will be quite sufficient to fix its great importnce to mankind, and then there is the chili: hy the fates what would India be without its chilies? Now the tomato is just one of those excellent things that somehow or another India is very backward in growing: and of all countries on the face of the earth, the one it ought to he abundantly grown in, by reason of its excellent and very well recognised action on the liver and spleen, and general dietetic value. Personally, and notwithstanding Dicken's famous tomato sauce, I am of opinion the cooking of the tomato is a mistake. Plucked when just barely ripe, cut up and eaten just as one would apples, the tomato is delicious, with a fine, firm and crisp flavour, and then in the form of a well concocted salad it is matchless. But it is important the tomato be gathered when just barely ripe, nicely coloured and no more. When quite ripe it rapidly developes a characteristically mawkish flavour that is not nearly so agreeable, at least to my taste, which is a long and extensive one with tomtoes. Furthermore, it is good practice to gather tomatoes, not more than two-thirds ripe, as it greatly helps heavily laden plants to perfect the entire crop. And they finish the ripening just as well off the plants, to the cosiderable relief of the remainder. As a proof of what tomatoes will do in this way, I may say as I write I have about a maund slung up to the roof of my room, a few beauties of perfect form, would weigh over a pound each, but they are green—there is just a suspicion of whitish coloured green, which is the first intimation of colour coming on: under the simple influence of the fire in the room, they will slowly colour. I cannot say the flavour will be so good as when allowed to two-thirds ripen out of doors. But when I commenced to write this paper there was frost and ice out of doors, and so a knowledge of this ripening of tomatoes off the plants, enabled me to enjoy my maund of tomatoes in spite of destroying frost and ice outside

Now why on earth does not India produce at least one million maunds of tomatoes every year? Why indeed a million maunds, why not ten? It is easy of accomplishment if the "how to do it" is known and of that there shall be no excuse before I leave the subject. The tomato is one of those things that have fallen into the hands of the hybridiser and the raiser—and the hybridiser and raiser is one of the most undoubted and greatest benefactors of his race; and so it comes about that to-day we have not those ugly, ridged and furrowed, crumpled-up fruits of olden times, but on the contrary brilliant-coloured, beautifully formed fruits of perfect outline, handsome as exhibtion apples. The consumption of tomatoes for London alone goes into tons daily and one mammoth grower alone turns out some dozen tons a week and that too from glass structures, of which he had some time ago considerahly more than a hundred of great length. Now if we take into accoount the high cost of labour, the numerous rates and taxes and the great value of the land, which is no distance from London, and the considerable cost of such an array of glass structures, this one man alone must have spent enough to purchase many sqare miles of land in India. And it pays too, not however by reason of long prices, nothing of the kind, that is the point I wish to emphasise—it is simply due in the main to the scientfic culture, and the enormous crops; such as one never sees in India. Hence I want to point the way for the Indian gardener to go and do likewise, without all the heavy expenditure of glass, high price lahour, &c; and with the model winter climate of India on the plains the tomato should be everywhere abundant and cheap and should pay the producer and the consumer very well indeed.

I hear some reader say "Oh! but anybody can grow tomatoes" and that is quite true: they will grow themselves, in fact, if you only plant them—that however is not the way to produce either quantity or quality; and it is quantity combined with quality that pays in most things. We will therefore set aside slipshod methods, and come to a simple yet scientific method that will give exceptionally fine fruits and plenty of them.

VARIETIES.

I may say at once the varieties are very numerous, but by no means so numerous as the perusal of half a dozen seedsmen's catalogues would lead you to suppose. We all have our little failings and your seedman is nothing lacking. Hence it comes that some tomato is one seedsman's "conqueror," another's "*ne plus ultra*," or Robinson's "Invincible," and as a simple matter of fact this tomato is Brown's, Smiths' and Robinson's leading line in tomatoes: a very fine thing you will find it described, and it is probahly quite true; hut if you buy it from the three it is a hundred to one you will get one kind of tomato. Here is a practical illustration. Some eleven years ago a very fine tomato was brought out, called Empress of India; I have grown that tomato ever since, and it is very fine: even today, brilliant in colour, beautifully shaped, and fine in quality, and large. Now I find some difficulty in finding Empress of India in the lists; it has undoubtedly slipped out of a lot altogether, but another kind is pretty general and variously termed perfection: that I have grown and I find it simply my true friend Empress of India Tomato, and about a quarter of a hundred of other kinds grown are largely synonymous. The tomato grower will do well therefore to select a real good type and stick to it, and prove the improvements so-called one or two at a time, and on no account be deluded into a multitude of varieties.

SEED SOWING.

Having made a good selection, sow in hoxes or pots, I find hoxes much the best. The tomato is a considerable time in coming into fruiting from seedlings, therefore sowing should he arranged for in good time, and the boxes may conveniently be ahout four inches deep. Into the boxes put half an inch of drainage, such as cinders, and on this a couple of inches of good garden soil, of a light sandy nature. Now make up a mixture of fine soil, and thoroughly decomposed manure and leaf soil in equal parts, mix all well together and fill in the boxes to with in half a inch of the tops. Firm regularly and moderately, and make all perfectly level with a piece of planed board, and water down the soil. They are now ready for sowing, which should be done carefully. The tomato seed is a large one, and it will he much the best plant to place each seed separately ahout half an inch apart; in this way every seed will have an individual chance, and come up strong, much superior to a hox sown at random, and generally much too thick. Having carefully placed the seed, sift some fine soil over it to depth of two-eighths of an inch, give another light watering, and transfer boxes to some dark warm place, until the seed has germinated, carefully watching the while that the soil in the boxes does not get dry. As soon as germination is seen to be ensuing the boxes may be transferred to the open absolutely free from shade.

PRICKING OFF THE SEEDLINGS.

As soon as the seedlings are strong with a pair of good leaves and another pair in progress, they should be pricked off into other hoxes somewhat deeper. Ordinary kerosine boxes cut in half answer well. Here however the previous proceedings should be reversed as regards soil, and the rich mixture of manure, light sandy loam and leaf should go into the box first, and there may with advantage he two-fourths of manure, one of leaf soil and one of loam to the depth of half the box, on top of this any good light friable garden soil will do. Into this mixture, transplant the seedlings three inches apart

shade for a few days and then transfer fulll into the sun. Attend carefully to watering, and allow the plants to grow unrestrictedly until the boxes are pretty full of roots, in fact what the horticulturist terms slightly root bound. There is a distinct object in this, namely, to induce the plants to show flower much earlier than they otherwise would do so, but the moment the buds can be seen, it will be time to consider their permanent quarters.

PREPARATION FOR PERMANENT PLANTING.

Now the man that can grow good potatoes, should also be able to grow good tomatoes, and if the soil is known to be a good potato soil it will for certain suit tomatoes admirably. For in spite of the very great difference between a potato tuber and a tomato fruit, there is in all other respects a close similarity between the potato plant and the tomato plant, so much so that one can be grafted quite successfully on to the other and *vice versa* and the potato plant will in this way yield a crop of potatoes below ground and tomtoes above it. Furthermore, the tomato, like the potato plant, demands abundance of potash for its vigorous existence: and also like the potato it is a very fine and profuse rooter, therefore hard lumpy soil is ill-adapted to its requirements. The soil should therefore be thoroughly cultivated to the depth of at least a foot or more, and be fine mealy soil, in order that the fine roots may move freely through it and abstract all they require in the early stages of the plants. If the soil is admittedly a good and fertile one, no manure need be added to it in the operation of digging, if however through cropping, or any other cause, the soil is impoverished, a good dressing of thoroughly rotted manure should be added; and if the scrapings of virgin jungle land is available, this is an admirable and valuable manure for the tomato plant.

PLANTING OPERATIONS.

Having thoroughly prepared the soil, and obtained the first indication of flower buds, the plants are now ready for permanent planting, and the exact method to be adopted comes up at once for consideration. The best method of all for the production of fine quality large tomatoes is on single stems, that is to say, one plant, one stem, and therefore no laterals; but this will the better be made clear by an example. Suppose the cultivator selects a piece of ground fifty feet wide, and a hundred long, and plants one foot apart in the lines, and the lines one from the other three feet apart—the plot will require 1,600 plants, and this number may be so planted for single stem plants; or each plant be allowed to carry two, or at the most three stems each, but it comes to much the same thing as the three stems will require room, and there must be a roduction in numbers to allow for this, and the fruits, moreover, are not calculated to come so fine on three stem plants, as on one. I would therefore select the best and most profitable method for exceptionally fine fruits, namely, single stem plants. Accordingly large sized drills, or small trenches may be got out and the first flower buds got as near the surface as possible, in order that the fruiting may begin from the bottom, it may be advisable to lay some plants in slanting to effect this end, which is a very good plan. Any buried stem will be certain to root later on, which is no disadvantage whatever. Suppose this example is carried out, there will be sixteen rows of 100 plants each one foot apart and three between the rows or lines. And this involves a system of training, each plant being grown perfectly vertical. No doubt the best and most economical method in the end is by posts and strained wires; two terminal posts, and one in the centre for each line; but failing this posts may be driven in at intervals six feet long, or more, and by a system of horizontal and vertical lacing of split up bamboo hurdle or gate fashion a substantial training fence be made, and easily taken down, and the wood stored for another season when done with merely leaving the permanent post in the ground, or even these may be taken up, Having planted the young plants previously soaking the boxes before transplanting and doing the planting well, we come to a thorough system of after management.

PRUNING AND TRAINING.

Now whether the grower elects to have one, two or three shoots to each plant; all else should be regulary and systematically destroyed as it appears: with every new point there will inevitably be a couple or three lateral shoots: the moment these are large enough take them out and at the same time secure the plants as they grow to the trellising with a loose tie. In practice this work will be very simple, but it should on no account be neglected at any time; but regularly and systematically attended to, and the lateral shoots taken completely out when quite small; then no other growth can ensue, if it does it must be removed. At intervals all up the main stems there will appear a vigorous bunch of flowers at about nine inches to a foot apart. Now even the best kinds of tomatoes are in the habit of giving some faulty flowers: do not allow these to waste the energy of the plants, but take them out with a fine pointed pair of scissors. This will not be extensive work, but nevertheless should be attended to, and this work will go to the end of the chapter. There will thus be a given number of main stems, and nothing else, absolutely nothing else should be tolerated for a moment. It will happen that some leaves branch out and become very long: these too may be reduced if they crowd each other, taking away one or two pairs of the leaflets. But this must not be overdone, as healthy vigorous foliage is essential to the plants; but the tomato produces such a superabundance under good cultivation I never allow the leaves to crowd each other, and even take some away altogether. When the plants have made good progress and have five or six bunches of developing tomatoes on them, the important question of manurnig and feeding comes in.

MANURING.

The time has now arrived to give the plants a heavy mulch of thoroughly rotton manure, available as immediate plant food. The roots will very speedily come for this manure, and eventually fill it with a regular network of roots. It should be laid on three or four inches thick, and as more and more tomatoes are produced, this manure will be of the greatest possible value. Should the plants become in any way dryish, give a good soaking of water, or better still weak liquid manure, and have the manure slightly trodden at the same time in order that the goodness may be squeezed out. And should the weather continue, rainless the plants may be watered once a week in a similar way. Treated in this way the manure immediately becomes available for the fruit, and practically that alone, and this method will be found far superior in results to heavily manuring the ground in the first place, which is mainly provocative of a rampant growth that serves no purpose, but on the contrary produces long jointed growth, and demands a graet deal of extra pruning. These are the two great factors in successful tomato culture namely, a rigid system of pruning and strict confinement to main stems, and powerful manuring expressly and solely for the benefit of the fruit as distinguished from the plant itself, and by this method, moreover the fruit ripens in regular order commencing from the bottom, and continuing upwards until the plants become no longer profitable. A most important point is to see the manure is of real value and very thoroughly decomposed. In proportion as it is so will be seen its effect on the character of the fruits.

A CALCULATION.

Now estimates are proverbially dangerous things, like prophecies very much, but I am going to venture on a modest one, that is, for certain within the practicable, provided this method of culture is faithfully carried out. And we will carry the quoted

example through: a plot of land 50 by 100 feet; plants or single stems, total number 1,600 at three by one foot planting; five seers of tomatoes per plant—and all of the finest quality be it noted; five by 1,600—8,000 seers of tomatoes. at four annas per seer gives R2,000. But I have in mind that my readers are not ready-made experts. There is much of routine only possible from keen enthusiastic experience, and so I'll reduce this estimate for the planter and the amateur by fifty per cent—that is, the yield, and call it 2½ seers per plant at R1,000. Now I am absolutely at a loss to know how the grower is going to spend R500 by way of expenditure on this culture and everything connected with it to the sale of the produce, but it is conceivable he may do so. Still he has cent per cent profit and that should satisfy the most exacting. This is exclusively applicable to the plains. I would here warn the hill gardener against any heavy speculation in tomatoes, because he has to grow through the monsoon season and that is quite another thing, as I happen to know to my own cost very dearly.

EXAMPLE.

In 1897 I was going to make a small fortune, and had 4,000 plants all grown as detailed here. They got through the rains pretty well, until nearing the end of September, and hung like ropes of onions, to the extent of very many maunds; hundreds of the fruits weighing over a pound each, of faultless shape, and with the colour just developing in all directions. Then there came quite unexpectedly over a foot of rain in twenty-four hours, and I was congratulating myself on how well they had stood the downpour, when lo, on the third day, black spots appeared; on the next day it had developed fifty per cent and ere a week was up, the entire crop was an absolute mass of disease, a total failure and a dead loss.

CONCLUSION.

Like the potato the tomato plant will not thrive in a wet or swampy soil, neither is excessive moisture at any time a blessing. It delights in a well drained, friable, easily worked soil, abounding in potash salts. It may not be generally known that tomatoes are excellent things for cleaning metal with, and taking out stains, &c, due to the potash absorbed by the fruits from the soil. I should suppose too that it is the potash they contain that accounts for their excellent action on the system, at least to a considerable extent. It is therefore an excellent medicine and delicious food, far too little understood and appreciated in this country, and should, I venture to think, be recommended and extended in its culture everywhere, seeing, as I have endeavoured to show, that it could be produced on the plains above all places in quantity and quality, and very far from being a non-profitable crop if the best form of culture is once understood.—*Pioneer*, Oct. 9.

DESCRIPTION OF FERTILIZER MATERIALS.

Indirect Fertilizers.—A stimulant or indirect fertilizer is one which does not in itself furnish directly to the soil any needed plant-food, but whose chief value depends upon the power it possesses of changing unavailable into available forms of plant-food. The stimulants or indirect fertilizers which have been most commonly employed are lime, gypsum and common salt.

Gypsum, or land-plaster, known also as calcium sulphate or sulphate of lime, in some manner aids the process of nitrification, by which ammonia and the nitrogen or organic matter are converted into nitric acid and nitrates. It also acts upon the insoluble forms of potash and other elements of plant-food, converting them into soluble and available forms; it is of value on certain soils to certain crops, such as clover, peas, lucerne and similar plants.

Quicklime or burnt lime, or calcium oxide, commonly called lime, produces changes in both the physical and the chemical character of soils. Freshly burned lime acts chemically upon soils by decomposing vegetable and mineral matter already present in the soil and changing them into forms which are available as food for the plant. Thus, lime acts upon insoluble mineral substances containing potash, etc., and converts them into soluble forms. Lime aids in the decomposition of animal and vegetable matter, such as vegetable mould, stable manure, etc. and tends to convert them into available plant-food. In using lime, care should be taken not to use too large quantities at a time, and, ordinarily, it is best to use it in connection with liberal applications of nutritive fertilizing substances. Lime can be used to advantage on freshly drained swamp-lands and also on lands newly cleared.

Common salt has an indirect fertilizing value which is mainly due to the fact that it has the power of changing unavailable forms of plant-food, especially potash, into available forms.

Danger of Using Stimulant Fertilizers.—It should be kept in mind that these stimulant fertilizers—that is, gypsum (or plaster) lime, and salt,—are not used for the plant-food contained in them; hence, as used, they do not furnish needed plant-food. The chief value of their use lies in the fact that they can change unavailable into available forms of food-plant. It can readily be seen that, when stimulant fertilizers are used exclusively for a term of years, the soil each year loses nitrogen, potash and phosphoric acid, which are not replaced. The inevitable result of such treatment is the exhaustion of these important food constituents from the soil. This affords an explanation of the question often raised now as to why the application of lime does not give such results in crop yields at present as in former days. When lime was the only fertilizing material added to soils for years in succession, it was possible to produce increased crops, so long as there was in the soil enough compounds of nitrogen, potassium and phosphorus to be rendered available by the action of the lime. When, therefore, these forms of plant-food were largely removed, there was nothing for the lime to act upon, in order to increase the supply of available food material. The lime furnished needed no food, but simply helped the crop to use more rapidly the store of plant-food present in the soil.

Direct Fertilizers.—Direct fertilizers contain forms of plant-food, which contribute directly to the growth and substance of plants. Such materials may contain either nitrogen, or potash, or phosphoric acid compounds, or any two, or all three of these forms of plant food.

Nitrate of soda, known as "Chili saltpeter," is found in large deposits which have been formed in the rainless regions of Chili and Peru. Good commercial nitrate of soda contains from 15½ to 16 per cent. of nitrogen.

Sulphate of ammonia is formed from waste materials produced in the manufacturing of illuminating gas or coke. Sulphate of ammonia contains about 25 per cent. of ammonia, which is equivalent to about 20½ per cent. of nitrogen.

Cotton seed meal is the product fromed by removing the oil from cotton seed by pressure, after which the material is dried and ground. Cotton seed meal contains about 7 per cent. of nitrogen, 3 per cent. of phosphoric acid, and 2 per cent of potash. The hulls of the cotton seed also possess considerable fertilizing value.

Tobacco stems are the refuse from tobacco factories. They contain usually from 5 to 8 per cent. of potash, 2 to 3 per cent. of nitrogen, and a small quantity of phosphoric acid.

Dried blood consists of blood obtained from slaughtering animals; it is prepared for market by evaporating, drying and grinding. The color varies from red to black. Dried blood contains from 10 to 15 per cent. of nitrogen.

Dried fish, scraps and ground fish consist of refuse from fish-oil works and canneries; it is dried

and ground for market. Dried ground fish, of good quality. contains from 7 to 8 per cent. of nitrogen together with as much or more insoluble phosphoric acid.

Meat-scraps, tankage, etc., are slaughter house refuse, dried and ground. Good tankage contains 10 per cent. or more of nitrogen and often 10 per cent. or more of insoluble phosphoric acid.

Nitrogenous guanos are formed in dry regions. The Peruvian guano was rich in nitrogen, containing 7 per cent. or more. They usually contain 7 to 12 per cent. phosphoric acid and about 1 per cent. potash.

Bones consist mostly of calcium phosphate of lime, which constitutes from one-half to three-fifths of the weight of the bone. The remaining portion is a soft, flesh-like substance commonly called gelatin. It is distributed throughout the entire mass of bone, and is rich in nitrogen. When bones are burned, the nitrogenous matter is driven off and only the mineral portion or phosphate of lime remains. Bones, such as are used in making commercial fertilizers, contain 4 to 5 per cent. of nitrogen, and from 20 to 25 per cent. of phosphoric acid, about two-thirds of which is insoluble and approximately one-third available.

Bone-ash is made simply by burning bones in the open air. The nitrogen is lost in burning, and the chief constituent is insoluble calcium phosphate, equivalent to 30 to 35 or more per cent. of phosphoric acid for the most part insoluble.

Bone-black, known also as bone-charcoal, is extensively used in refining sugar. After it has been used several times, portions becomes useless for refining purposes, and are then sold as a fertilizer. It is made by heating bones in closed vessels; the fat, water and nitrogen are driven off, and the bone-black remaining consists mainly of insoluble calcium phosphate and carbon or charcoal. Good bone-black may contain 30 or more per cent. of phosphoric acid mostly insoluble.

Bone-meal goes under various names, such as ground bone, bone-flour, bone-dust, etc., Raw bone-meal contains the fat naturally present in bones. The presence of the fat is objectionable, because it retards the decomposition of the bone in the soil, while fat itself has no value as plant-food. The presence of easily decaying nitrogen componnds in bone hastens, in the process of decomposition, to dissolve more or less of the insoluble phosphate. Bone-meal should contain from 3 to 5 per cent. of nitrogen, and from 20 to 25 per cent. of phosphoric acid; about one-third to one-fourth of the latter appears to be in readily available condition. Raw bone-meal generally contains somewhat more nitrogen (1 to 2 per cent.) and rather less phosphoric acid than steamed bone-meal. The fineness of the meal affects its value; the finer the meal the more readily available it is for plant-food.

Phosphoric Guanos, or Rock Guanos—Guanos generally consist chiefly of the dung of sea-fowls, though the term is applied to other animal products. They are generally fonnd in beds resembling earthy deposits. The guanos which are called phosphatic contain little or no nitrogen. Their phosphoric acid is generally in the insoluble form. These guanos come mainly from certain islands in the Pacific Ocean, and from Caribbean Sea and West Indian Islands. The phosphoric acid in guanos is very variable, ranging from below 15 to over 30 per cent.

Rock phosphates are known under several different names which generally designate the localities from which they come, as South Carolina Rock, Florida Rock, Tennessee Rock, West India Rock, etc. Other forms of mineral phosphates are known under the names of apatite, coprolite, phosphorite, which are found in various places in America and Europe, and some of which are used in making commercial fertilizers. The rock phosphates are extensively used in making acid phosphates. When ground to a very fine flour-like powder, rock phosphates are called "floats." Rock Phosphates contain usually from 25 to 30 per cent. of insoluble phosphoric acid and some as much as 35 to 40 per cent.

Acid phosphates are known under severel different names, such as superphosphates, dissolved bone, dissolved rock, dissolved bone, black, etc. Acid phosphates are formed by treating some form of insoluble phosphate of lime, as rock-phosphate, bone, bone-ash, etc., with sulphuric acid. By this treatment there are formed soluble phosphate of lime and gypsum (sulphate of lime) in nearly equal proportions. Superphosphate made from rock phosphates may contain from 12 to 18 per cent. of available phosphoric acid.

Thomas slag, also known under several other names, such as basic iron slag, Thomas scoria, Phosphate slag, etc. It is a by-product formed in the manufacture of iron and steel from certain kinds of iron ore containing phosphorus compounds. It usually contains between 19 and 20 per cent. of total phosphoric acid, with 6 to 7 and more per cent. of available phosphoric acid.

Cotton seed hull ashes were produced in the Southern State of America at the cotton seed-oil factories, where the hulls, after being removed from the cotton seed, were used as fuel. Such ashes contain from 15 to 25 per cent. of potash, in addition from 7 to 10 per cent. of phosphoric acid. This material is not commonly found now.

Kainit is the most common products of German potash mines. It is a mixture of several different compounds, containing 11 to 13 per cent. of actual potash, together with about 35 per cent. of common salt, also magnesia salts.

Muriate of potash, also a product of the Stassfurt mines, is the main source of supply for potash for commercial fertilizers in our market, and contains 50 to 53 per cent. of actual potash.

Sulphate of potash is a product of the German mines. The product found in the market contains from 48 to 51 per cent. of actual potash.

Sulphate of potash-magnesia is known also as double manure salt or low grade sulphate of potash. This material comes from the German mines and contains 26 to 28 per cent. of actual potash. It also contains 23 to 36 per cent. of sulphate of magnesia.

Carbonate of potash-magnesia contains about 18 per cent. potash and 19 per cent magnesia, both as carbonates. It is practically free of chloride. It is also a product of the German potash mines.

Wood-ashes contain more or less potash, which is present chiefly in the form of carbonate. The amount of potash in commercial wood-ashes varies from below 4 to 7 per cent., the average being under 5 per cent. Wood-ashes also contain between 1 and 2 per cent. of phosphoric acid.

The following are inferior sources of nitrogen. They are very slowly available, and should be used only where immediate effects are not sought. In some states the fertilizer laws either prohibit the use of these substances in fertilizers or demand that these goods shall be specified when used in making mixtures.

Hair is obtained from slaughter houses; it is often mixed with dried blood and other forms of animal matter. It contains about 15 per cent. of nitrogen.

Hoof-meal and bone dust are by-products containing 10 to 15 per cent. nitrogen and about 2 per cent. phosphoric acid. They are sometimes treated with superheated steam or with sulphuric acid, the treatment rendering the nitrogen compounds more readily available.

Leather scraps and leather-meal are waste products of various factories. When treated with superheated steam and dried or roasted, they can be finely ground. They contain 7 to 8 per cent. nitrogen.

Farm-produced Fertilizing Materials.—Stable or farmyard manure consists of the soil and liquid excrements of animals fed on the farm, mixed with straw and wasted products of the farm.

Horse manure is difficult to mix thoroughly with litter on account of its being very dry. It is called a "hot" manure, because, on account of its loose texture, it easily undergoes decomposition or fermen-

tation, producing a high degree of heat. On this account it is very liable to lose more or less of its nitrogen in the form of ammonia.

Sheep and Goat manure is quite dry, and is commonly the richest of farm-produced manures. Like horse manure, it undergoes fermentation easily and is classed as a "hot" manure. It is similarly very liable to lose ammonia.

Pig manure varies greatly in composition, but is generally rich as compared with other farm-produced fertilizer materials, and contains considerable water. In decomposing, it produces but little heat, and is, therefore, called a "cold" manure.

Cow manure contains, as a rule, less fertilizing materials than any of the producing manures. It contains a large amount of water, and, in decomposing, generates little heat.

Poultry manure contains a comparatively large amount of all the different forms of plant-food, being especially rich in nightrogen and potash. It undergoes fermentation readily, and loses nitrogen unless properly treated with absorbents or preservatives.

Generally speaking, manures produced from working or fattening animals contain 90 to 95 per cent. of the fertilizing constituents contained in the food. In the case of animals which are neither increasing in weight, nor giving milk, the amount of fertilizing materials in the manure will be nearly equal to that contained in the food eaten. The foregoing statements pre-suppose that all the dung and urine are saved, a supposition that is not often true, considering the manner in which stable manure is commonly treated.

Perhaps the elements of manures least understood is the humick matter, of which ordinary manures contain from 16 to 20 per cent. The litter used in bedding stock furnishes much of this, and the quantity depends upon the nature of the material used. —*Journal of the Jamaica Agricultural Society.*

MOCHA COFFEE.

The American Consul at Aden discusses, in a recent report, a statement which is frequently made; and which has been repeated quite recently, that no genuine Mocha coffee reaches the European or American markets from the Arabian ports. The Consul says this statement is quite erroneous, for the books of his own Consulate at Aden, and of the Consular Agency at Hodeida show that over 5,000,000lb of Mocha coffee were invoiced from these places to the United States last year, not to speak of the quantity sent to Europe. But it is said that, though nominally shipped from Arabian ports, it is really coffee grown elsewhere, and then shipped to Aden to be reshipped as Mocha. This suggestion is also erroneous, as appears from a letter from the British authorities at Aden on the subject. It is true that parcels of coffee from Java, Singapore, and other places are landed in Aden, but, according to the official communication above mentioned, these parcels are bonded in the warehouses of the owners at Maala, and the key lodged in the trade registration department. "When the owner desires to export, a peon of the department is sent with the key to count the bags and bring them to the wharf. As the merchant or owner can have no access to his goods unless accompanied by the peon of the department the transfer of the inferior bean to Aden for mixing with that of Mocha or Harrar is hardly possible." The consul adds that an examination of the Customs authorities' reports shows that foreign coffees are promptly re-exported to other ports, being landed at Aden for transhipment only; while the precautions in Turkish Arabia to prevent mixing are equally stringent. No doubt Mocha coffee is mixed with inferior beans in Europe, and sold as genuine Mocha, but it is hardly possible that an importer buying in an Arabian port could get anything but genuine Mocha or Harrar coffee.—*Chamber of Commerce Journal.*

BARK AND QUININE FLOURISHING.

Even the smallest buyer of quinine, be he a pharmacist, should be interested in the commercial course of that most important of all drugs—quinine. The year 1899 has been a remarkable one in the history of both the crude bark and the finished alkaloid. Java, which has for years left every other country far alway behind in the supply of cinchona, has this year again beaten its record. It has exported about twelve and a-half million pounds of bark, nearly all to Amsterdam, where it has been bought up chiefly by quinine manufacturers who will be able to make from the quantity named 625,000 pounds of quinine and other cinchona alkaloids. Think of it, ten million ounces of quinine practically all sold in a single year. This is not all the world requires in a twelvemonth, but the remaining fifth or fourth of its needs are met from India, Ceylon, Africa and South America.—*B. and C. Druggist*, Feb. 2.

AMSTERDAM BARK MARKET.

At the auctions to be held in Amsterdam on the 15th instant 4,606 packages of ledger, officinalis, and hybrid barks will be offered, as well as 513 cases, 625 bales and 89 serons of succirubra, making a total of 5,833 packages, containing 513,644 kilogrammee (say 505 tons) of bark, equivalent roughly to 25¼ tons (nearly 900,000 ounces) of quinine sulphate. The first hand stock of bark in Amsterdam on January 23rd was 2,606 packages of Government property and 7,246 packages of private bark, a total of 9,852 packages, including that to be effered at the auction on the 15th instant. The shipments from Java for January are reported to be 660,000 English lb.—*British and Colonial Druggist*, Feb. 2.

A New "Rubber Plant."—The *Semaine Horticole* of January 13 publishes an illustration and a figure of a new species of Ficus, signed F. Eetveldiana, L. Linden. It is a moderate-sized tree, growing in the Belgian Congo. The leaves are on long slender stalks, the blades cordate oblong. It will form a fine shade tree in the tropics, and grows rapidly under cultivation.—*Gardeners' Chronicle*, Feb. 10.

Lupins for Green-Manuring.—A *Bulletin*, by J. Burtt Davy, from the University of California, has been issued with the above title. The author gives a bad character to all species of this plant, saying that:—"The Yellow Lupin is considered much more poisonous than the large White, and the Perennial Lupin less so than any other species. In using any species for forage, great care must be taken not to use much at a time, especially of the seeds, and not to use a Lupin ration without intermission. In the event of any cases of "lupinose" appearing, the use of Lupin should be abandoned entirely. Lupin should never be used exclusively in a ration. For forage purposes the Lupins, therefore, do not appear to offer any advantages over other leguminous crops, except as winter growers, and they are certainly more or less dangerous, and not to be recommended indiscriminately."—*Gardeners' Chronicle*, Feb. 10.

AGRICULTURAL AND INDUSTRIAL CONDITIONS IN PARANA, BRAZIL.

Of the three great southern states of Brazil (Rio Grande do Sul, Parana and Santa Catharina), Parana is the least developed. Its area is 85,438 square miles, and its present population, exclusive of the Indians, is about 250,000, 55 per cent of which is colored.

Topographically, the state may be divided into two zones, representing the strongest possible contrast; the littoral zone, situated between the Atlantic ocean and the mountain range which runs from north to south, parallel with the shore—the Serra do Mar; and the mountain zone extending west from there to the Parana river. The narrow strip along the seashore, as a rule, is swampy and unhealthy, the temperature varying between 10° and 35° C. (50° to 95° F.). The altitudes of the table-lands vary from 200 to 1,200 meters (656 to 3,936 feet). The sanitary conditions are very favorable, except where, as in Curityba and Lapa, the soil and water are, for want of proper drainage, poisoned by sewage. The climate is excellent. The average temperature is 17° C. (62° F.) for the sub-tropical part of Parana; in the table-lands the thermometer sometimes (in July) falls below the freezing point.

The harbor of the state—Paranagua (with Antonina)—is connected with Curityba, the capital and distributive centre, by a railroad, which constitutes a masterpiece, not to say a miracle, of engineering, and on its way up the mountains (over 3,000 feet) leads through scenery of unparalleled beauty and grandeur.

It is to be regretted that none of the many pleasure-seekers, travellers, tourists, artists, and students who annually migrate from the United States to France, Italy, Egypt, Germany, and Switzerland find it convenient to visit this beautiful and highly interesting American country, which could be made so easily accessible.

The railroad leading from Paranagua to the interior (Compagnie Generale de Chemins de fer Bresiliens) was built, with French capital, by the celebrated Brazilian engineer Texeira Soares. It comprises the following sections: East from Paranagua to Autonina, 16 kilometers (9.9 miles); west from Paranagua to Curityba, 102 kilometers (63.37) miles); and from Curityba to Serrinha, 71 kilometers (44 miles); thence north to Ponta Grossa, 107 kilometers (66.48 miles), and south to Rio Negro, 89 kilometers (55.3 miles). There is a branch from Restinga to Porto Amazonas (over 12 miles) connecting the railroad with the Iguassu and its tributaries along which the more important colonies are situated. The development of the Iguassu valley is yet in a very primitve state, but this district is destined to have a great future.

The Iguassu river, a tributary to the Parana, is about 800 miles long, but 220 miles are navigable—the section between Porto Amazonas to Porto da Uniao. Although the latter is at present only a little village of about 1,000 inhabitants, there is no doubt in my mind that it is one of the future big cities of Parana; that ere long it will be a large railroad center, outgrowing Curityba, and will control the trade of the most important part of this promising young state. The construction of a railroad from the coast of Santa Catharina through the rich and very populous German colonies Blumenau and Joinville, northwest to a point connecting with the Rio Grande and Sao Paulo road (now in course of construction) and the Iguassu region is a question of a few years; and both these lines will have to touch Porto da Uniao, which place will also be the terminal point of the proposed extension of the Parana trunk line from Restinga Southwest along the Iguassu. After those railroads are completed, trade and commerce along the Iguassu region and within the fertile plateaus in the west of the state will be rapidly developed, and the bulk of the import and export trade of Parana will probably move by way of the Santa Catharina ports—Itajahy and Sao Francisco—more cheaply and quickly than by way of Paranagua-Curityba.

Parana, like the two other south Brazilian states, is crippled for want of capital and proper immigration. Since emigration from Germany has practically ceased, the progress of southern Brazil is retarded.

Serious mistakes were made in the colonization of Parana. Until recently, immigration into Brazil was largely subsidized by the state and the national governments; but it seems the men who had charge of that function were not careful enough in the selection of the material with which they colonized. Large sums of money were wasted and undesirable elements brought to the state in great numbers. Guided by the fear that any one class of immigrants might become too influential by concentration of its forces, some of those formerly in charge of the colonial system located the ninety colonies in such a way as to put the most heterogeneous elements into the closest proximity, intersecting small parcels of one nationality with small parcels of another—Austrian Poles with Russian Poles and Italians, Germans with Russian Poles, Italians with Prussian Poles, etc. Thus the colonial map of Parana presents the aspect of a German-Latin-Slavonic crazy quilt, a fact which is not conducive to a homogeneous development of the commonwealth.

Of the 250,000 inhabitants of the state, about half are natives of Brazil, 40,000 are German, about 40,000 are Italian, 35,000 are Polish (Austrian, Russian, and Prussian), and the rest are of Spanish, French, and other origin.

The import trade is almost exclusively in the hands of the Germans. It amounted in 1897 to $[illegible],000,000 in foreign goods and about $175,000 in domestic goods. There were imported 362,000 kilograms (798,000 pounds) of coffee from Santos and Rio; 46,000 kilograms (101,400 pounds) of tobacco from Bahia; large quantities of dried beef and tongues from Rio Grande do Sul, Argentina, and Uruguay; canned goods and preserves from Germany, either direct or through dealers in Rio. Of manufactured articles, there were imported from Germany machinery, rails, iron, hardware, barbed wire, porcelain, china, earthen ware, lamps, pharmaceutical preparations and implements, cutlery, clothing, gents' furnishing, leather and leather ware, shotguns and revolvers, glassware; from the United States, druggist's supplies and coal oil; from Norway, 837,000 kilograms (1,845,300 pounds) of pine wood. Importation from France has almost entirely ceased. The cotton piece goods were imported from England, which country also furnished the entire supply of coal.

The export during 1897 consisted chiefly of yerba mate (Paraguay tea), some hard wood, and an experimental shipment of hides and horns to France. Two-thirds of the yerba mate exported ($1,500,000) went to Argentina and Uruguay and almost one-third to Chile. Unfortunately, none was exported to the United States. For various reasons, the import of mate into the United States ought to be encouraged. From my observation and personal experience, I feel justified in recommending its use as an excellent stimulant and nerve tonic. It is preeminently a temperance drink, and the temperance societies in the United States could do a very useful work by helping to popularize it. Yerba mate, or Paraguay tea as it is called abroad has all the stimulating and sustaining qualities of Chinese tea or coffee, without the detrimental effect caused by their constant excessive use—affection of liver and kidneys, irritation of the nervous system etc.—and it is very cheap. The great masses in Uruguay and Argentina including the famous gauchos (cowboys) of the great prairies, who drink it constantly instead of water, tea, or coffee, hardly ever use alcoholic stimulants. Intoxication is a rare occurrence there. It is almost incredible what hardships they undergo and how vigorous they are, while often for a successive number of days they use nothing to sustain them but mate.

Aside from the sanitary benefits, in helping to develop the mate industry in Parana, we would secure commercial advantages of great importance. The natural resources of the state of Parana are very

considerable, but as yet, little has been done to develop them. Only a comparatively small part of the state is under the influence of civilization; commerce is in its infancy, and the few industries represented in the state (16 mate mills, 7 small breweries, 3 foundries, 12 barrel factories, some little soap-making shops, a few tanneries, and a furniture factory in Curityba) are all in a very primitive condition. The only exception is a large match factory in Curityba, which is well equipped and does a very profitable business.

Although the soil on the highlands is fertile, containing excellent grazing land, and the climate very favorable, the animal industry—cattle, hog, and sheep raising—is very far from what it ought to be. For want of systematic care and regeneration, the cattle are degenerating and the pastures are neglected. During my travels through the interior of Parana, I found, even in districts with large herds of cattle, milk or fresh butter a rare luxury. They would rather go without milk than trouble themselves to milk the cows.

Agriculture and horticulture are in the same state of inertness, suffering from want of capital, deficient means of transportation, bad roads, and scarcity of help.

A very laudable effort to create a new industry, not only in the state of Parana, but throughout Southern Brazil, has been made by a teacher, Mr. Emil Schenk, of Curityba, who is working hard and successfully to establish rational bee culture. He travels, lectures, and publishes a paper to propagate this work, for which there is an excellent field throughout southern Brazil. I have induced Mr. Schenk to introduce American hives, implements, and machinery appertaining to apiculture. They have given good satisfaction and will undoubtedly, in the course of time, help to secure numerous orders for the specialists (in Ohio) from whom they were bought. Mr. Schenk deserves the fullest encouragement for his intelligent and public-spirited devotion to this good cause.

Commercially and industrially, there is no trace of American influence in the state of Parana; it is therefore doubly gratifying that American intellectuality is represented, highly and ably represented, in another direction—popular education. This report would be incomplete if it did not mention the splendid service rendered to the cause of humanity, Americanism, and good education by the two ladies who conduct the Presbyterian mission school in Curityba—Miss Mary P. Dascomb and Miss Elmira Kuhl. For over a quarter of a century they have devoted their high qualities of heart and mind to the mission work in Brazil, and came pioneering to Curityba over ten years ago. Their school now contains three hundred pupils of all nationalities and is prosperous and successful beyond anticipation.

EUGENE SEEGER.

Consul-General at Rio de Janeiro. Washington, October 17, 1899.

MOTH ESSENCE.

According to the *Neueste Erfindungen und Erfahrungen*, the following makes a splendid moth preventer:—

Take of Spanish pepper...	...	100 parts
——— Turpentine oil ...	...	50 ,,
——— Camphor... ...	...	25 ,,
——— Clove oil	...	10 ,,
——— Alcohol, 96 per cent	...	900 ,,

Cut the Spanish pepper into little bits, and pour over them the alcohol and oil of turpentine. Let stand two or three days, than decant and press out. To the liquid thus obtained add the camphor and clove oil; let stand a few days, then filter and fill into suitable bottles. To use, imbibe bits of bibulous paper in the liquid, and put them in the folds of clothing to be protected.—*Nat. Drugg.*

KEW'S FAMOUS GARDENS.

It is almost impossible to imagine a pleasanter retreat on a hot summer day than the Botanic Gardens at Kew. From the time that Sir William Hooker became Curator of the Gardens they have flourished exceedingly. Sir William, who died in 1865, was succeeded by his son, Sir Joseph Hooker; the present Director is Mr. Thiselton-Dyer, C.M.G., F.R.S.

There is nothing quite like Kew in all the wide world. It forms the botanical centre of the British Empire with its fifty or sixty Governments. There is only one British Empire, and there is only one such institution as Kew Gardens—nothing quite like it anywhere. It is not merely that the Gardens are very large and exceedingly beautiful, though in both these respects Englishmen may well be proud of them. They have a total area of nearly 250 acres, a staff of nearly 200 hands—to say nothing of a good many first-rate hands among them—somewhere about three or four acres of glass, and to keep it all going involves a yearly outlay of £20,000. That which meets the eye or comes within the ken of the ordinary visitor to the Gardens is only a part, and by no means the most important part, of the establishment.

It is a huge BOTANICAL CLEARING HOUSE a, centre of exchange, a wealthy and munificent nursing mother for all the minor establishments of the kind throughout the British Empire; it is a depot to which they can confidently apply whenever they want instructions, or plants, or seeds; it is a fountain head of information for anybody who needs it; and though, naturally enough, Kew gives the first place in its consideration to the British possessions, is on terms of friendly open-handed intercourse with all the world, freely exchanging its treasures with any public garden anywhere under the broad canopy of heaven.

In the sanctum of the Director there are cupboards full of correspondence in all sorts of languages, and from all parts of the world. Ceylon, it may be, finds its coffee plantations being ravaged by disease, submits a specimen of the mischief going on to the experts of the physiological laboratory here, and asks for advice. A merchant in the City has received from some odd corner of the earth samples of an unfamiliar fibrous plant, or one which it is believed may yield a new vegetable dye. He can go to Kew and learn all about it—what the plant is, where it grows, and whether it has already been utilised, and with what results. India some year's ago had no cinchona tree from which to extract the invaluable quinine. Kew suggested that it might very well be grown there, and sent out a stock of plants, and now India yields enormous quantities of quinine. The same has been done for other British dependencies, and quinine, which at one time fetched sixteen shillings an ounce, sells now for four or five.

It is always spring and it is always summer and autumn in one part of the world or another, and all the year round there keep coming into this great central depot parcels of seeds and growing plants cunningly packed in Wardian cases, many of the most dainty and delicate of the denizens of earth's fairest regions turning out on the tables here perfectly fresh and flourishing after travelling perhaps many thousands of miles from the other side of the world. The invention of the Wardian case—an invention only about fifty years old—has greatly facilitated the transmission of growing plants between England and the Colonies, and helped to disseminate fruits and flowers and "economic" plants generally throughout the world. The young nurslings are enclosed in a box, well watered, and tightly shut down under glass, and many of them will thrive better in this limited space than they are found to do afterwards in the magnificent great glasshouses of Kew Gardens.

Plants by the way, do not always take kindly to these great conservatories. They sicken and pine, and it is found necessary to maintain at Kew a small cosy structure, familiarly known in the Gardens as "the hospital." In the great houses it is extremely difficult to maintain the atmosphere at an equable and genial temperature. The plants suffer from the inrush of cold winds through the opened doors, and from the impact of the heated air on the under side of their leaves, but perhaps some day the prisoners in the glass-houses at Kew may have their homes warmed in the manner adopted for sick prisoners at Wormwood Scrubbs, where the cells are heated by hot air carried in at the top and sucked out at the bottom. This would warm the upper sides of their foliage just as the sun does, and no doubt be better for them. As it is, the more delicate plants frequently have to go into hospital, or they would die, as indeed many of them do outright.

At the south end of the Gardens is the Great Palm House, which was built in 1845, at a cost of £33,000. It is 362 feet long, 100 feet broad and 66 feet high, and contains nearly an acre of glass. Inside it is easy to imagine oneself in a tropical forest. Palms, tree-ferns, and others of like kind flourish here: and the visitor may note the date-palm, the betel-nut, the cocoanut, the upas-tree, the bamboo, the cotton-plant, the coffee-shrub, the tamarind and the clove. East of the Palm House is the lake, and westward stretches an avenue through the Arboretum nearly three quarters of a mile long. This is known as Syon Vista, the Duke of Northumberland's estate being within view on the opposite bank of the Thames.

The famous RHODODENDRON WALK, which is one of the chief sights at Kew, runs parallel with the Thames, and is situated near the north-west corner of the Arboretum. The variety of colour here displayed—seen at its best, perhaps, in June—is to those only acquainted with the somewhat stunted shrubs common in private gardens, a relation of unexpected beauty. In its way, the Rhododendron Walk is as famous as is the avenue of horse-chestnuts in Bushey Park, though it has not attained the dignity of being identified with any particular Sunday. The Arboretum used to be separated from the Botanic Gardens proper by a wire fence; and until a few years ago, to the unscientific male visitor, the chief distinction lay in the fact that in the former smoking was permitted, whereas in the Gardens it was prohibited.

The "ARBORETUM"—the original Royal Pleasure Grounds—is a kind of nursery in itself. Here for the past two centuries, experiments have been made in the acclimatisation of trees and shrubs from various foreign countries, and all our parks and public gardens have been enriched and beautified by the additions that this portion of Kew Gardens has made to our botanical wealth. At one extremity of the Arboretum there is a considerable plot of ground parcelled out in squares snugly shut in by thick hedges of privet and holly. Here are nourished thousands of young foreigners, by-and-by to be planted out in the open grounds, but, at present, too delicate to stand our biting winds. Near this nursery are the filter beds, by which all the water supplied to Kew Gardens is filtered. It is drawn in from the Thames to the great lake in the Arboretum, pumped up into the filter beds, then forced up into tanks in Richmond Park, and thence supplied to Kew by gravitation.

To distinguish it from others, the MUSEUM at Kew Gardens is known as museum No. 1. Consisting of three floors and Italian in style, the building faces the Palm House, the large and picturesque lake lying between the two structures. The Museum was begun in the early fifties, and it was extended in 1881, so crowded had it become with the vegetable economic products and preparations of scientific interest sent for exhibition within its walls. Food, drugs, fibres, timber, are among the varied and carefully classified specimens, and in some cases the processes of manufacture are illustrated. It has been well said that the aim of the authorities is to explain in this Museum everything of interest to botanists which the plants, while alive, cannot set forth.

So many are the attractions of these beautiful Gardens that it is difficult to select any particular house for special notice. Popular favour has indicated the Water-lily House as certainly one of the most interesting. It is situated near the large Palm House already referred to, by the pond at the south end of the Gardens. The tank is 36 feet in diameter, and contains many rare varieties of water-lilies. From centre rises a very fine Papyrus plant. In addition to the numerous lilies, the Sacred Bean of Egypt, the Telegraph Plant of India, the Sensitive Plant, and other curiosities, are to be found in the house, which is well calculated to arouse the interest of even the most ignorant visitor. The famous Victoria Regia Water-lily, of which so much is heard, grows in another building.—*Cassel's New Penny Magazine.*

MINOR PRODUCTS REPORT.

ARECA NUTS.—Offered, 117 packages. Sold, 37. These were cheaper, a drop of 5s to 7s being experienced. The prices were from 15s 6d to 17s 6d.

COCOA LEAVES.—Offered 5 packages. Sold 5. Ceylon leaves of Huanoco character sold at 1s 0½d, and broken small at 7d.

CITRONELLA OIL.—Offered, 4 packages. Sold 0. These were bought in at 1s 1d.

CINNAMON.—In auction, on Wednesday, 254 packages were offered and 23 sold at ⅜d for wild without reserve.—*B. and C. Druggist*, Feb. 9.

CINCHONA.—The Nederslandche Veem cinchona department at Amsterdam report the shipments during January, 1900, from Java to Europe, at 615,000 Amst. lb against 509,800, 1899; 956,000, 1898; 390,000, 1897; 970,000 1896; 657,000 1895; and 893,000 1894. The total amount of bark to be offered at the Amsterdam auctions on February 15th, weighs 513,644 kilos., containing 23,504 kilos. quinine sulphate, with an average percentage of 5·04 per cent., against 5·30 per cent in the January auctions, and 5·38 per cent for the ten auctions of 1899.

COCOA BUTTER.—For the 70 tons offered at Amsterdam on Tuesday, there was a brisk demand. The auctions opened at 94½c, advancing rapidly to 120¼c, the average price being 105·45 per half-kilo. Twelve tons of Helm brand sold at 100c to 105¼c, and 4 tons de Jong at 100c to 100¼c, while 5 tons Mignon were bought in. In London auctions 110 tons Cadbury's brand sold at 1s 4½d to 1s 5½d per pound, the average being a fraction over 1s 4⅝d against 1st 5 9-16d in January.—*Chemist and Druggist*, Feb. 10.

INDIA-RUBBER is produced by the landolphia of Africa, and the French have made large plantations of it, but there has been a difficulty of getting the gum from the bark as well as from the leaves. M M Arnaud and Verneuil, in a paper to the Academie des Sciences, Paris, describes a new method which extracts good rubber from the bark.—*Globe*, Feb. 9.

TEA &c. NOTES FROM WYNAAD.

(*From a Correspondent.*)

Wynaad, Feb. 25.

FORMER CEYLON MEN.

Since you published your last "Notes" from this district, we have lost two of our most popular and respected residents, who were formerly in your island :—Messrs. Stewart Robinson and W Q Wright. The former had gone home for a year, "on private affairs," while failing health compelled Mr. Wright, to seek a change to England, under medical advice. Both gentlemen took a prominent part in all local athletic gatherings, and their friends look forward to their return with favorable anticipations. On the other hand, we have had the pleasure of welcoming Mr. W Parry from Ceylon, the proprietor of the "Sentinel Rock" estate at Vellera Mulla.

"OUR GROWING TEA INDUSTRY"

in South Wynaad continues to make most satisfactory progress, all the clearings planted in 1898, having come on extremely well, with a minimum of vacancies; while the lands opened in the past monsoon, bid fair to equal the former in every particular. Another fine factory has been added to those previously erected in the country, Messrs. Parry & Co. of Madras, having added such a building to their splendid Pioneer Tea Company's block, at Vellera Mulla last season. Dr. George Watt, Reporter on Economic Products to the Government of India, who paid a brief visit to South Wynaad, towards the close of last year, was especially impressed with the capabilities of the district, in soil and climate, for the profitable cultivation of tea, and highly eulogised the older fields which he was afforded an opportunity of inspecting. Dr. Watt appears to have formed the opinion, that when the older tea already opened, as well as that more recently planted in Wynaad, reaches full bearing capacity, that the average yield will rival the most productive tea districts in India; at the same time he is credited with having discovered and identified the 206th blight with which the tea bushes in Asia is attacked, but up to date, local proprietors do not appear to have been disquieted by this new enemy, and as most of the tea in Wynaad has been planted in detached blocks, with fallow lands dove-tailed in between the gardens, there is reason to assume that an epidemic is less likely to overrun the country, than where an unbroken stretch of the tea bush obtains.

PRICES.

At the same time the opinion is held by competent judges, that the prices realised by Wynaad teas, during the last 12 months, are by no means as satisfactory, as was to be expected from a country which has been so highly eulogised for its advantages in the profitable growth of tea.

In connection with this subject, it is a singular coincidence, that the breaks of tea sold in London, from gardens under the immediate control of Wynaad planter whose experience of tea manufacture is covered by the last quinquennium, have *generally*, if not *invariably*, secured higher prices, at the same sales, than the produce of properties, solely under the ægis of experienced Ceylon tea planters who have settled in this district. The following quotation from a South Indian journal conveys a fair impression of this subject:—"Wynaad is represented by 'Chulika,' 'Richmond' and 'Kanombyle,' as also by 'Perrengodde,' 'Erramacullee' and 'Perindotty.' The first three properties' teas all realized an average of over 8d for considerable breaks, while the latter trio are quoted at 6¾d, 6½d and 6¼d respectively. The former group are entirely supervised by old Wynaadians, while the last-named are bossed by Ceylon men." "Perindotty," in these figures, boasts "wooden spoon." as its produce *invariably* figures at the *foot* of the lists. But as the managing proprietor, who came over here in 1896 publicly asseverates, that his domain returns an annual yield of 500 lb. of made tea per acre, which he places f.o.b. for 4d, and disposes of in Mincing Lane for 6½d on the average, while he successfully "places" all his coarser grades of tea locally, amongst native buyers at 5 annas per lb., his ambition would appear to be satiated and he is to be congratulated on the result, in so far as his own balance-sheet is affected; but, to the dispassionate on-looker, it is obvious that as long as the public sale-lists of Wynaad teas are weighted with produce of the class under reference (Perindotty), the average for the district works out at a figure, which conveys an imperfect impression of the capabilities of Wynaad for growing high-class teas. A well-known resident in Ceylon, who has enjoyed the widest opportunities of forming an accurate opinion on these topics, holds the view, that under really skilful manufacture, Wynaad teas should average fully 2d per lb. in excess of the usual sale prices! In the contiguous Nilgiri district of Wynaad, some very fine young tea has been planted within the past two years, while the older fields have been described as equal to anything of the kind in S. India, sales from such properties averaging up to 9d in London.

HOW TO DEAL WITH LABOUR.

There is one point to which the attention of Ceylon men, who may contemplate settling in the Wynaad, should be specially invited, viz., to the unwisdom of taking the law into their own hands, in dealing with local labourers where the standard of work accomplished by the latter falls below what they have been accustomed to look for, in your island, where the discipline in force is entirely different from that ruling in this part of India. Irrespective of the view held by the Wynaad planters, that it is distinctly cowardly for an Englishman to strike an Indian cooly labourer simply for indifferent work, planters who resort to such drastic methods will soon realize that they will not merely drive away their labour, but lose the capital invested in enlisting such people, with the result that their properties will be overrun by weeds, and they themselves will have earned an equivocal notoriety, which is likely to prove a formidable handicap for the residue of their stay in the country. We have a couple of such instances unfortunately in South Wynaad, to substantiate these views.

COCONUT PLANTING ON N.-W. COAST OF CEYLON.

MARAWILA, Feb. 27.

The drought has been broken this month by two falls of rain we had on the morning and eve ing of the 25th inst., measuring ·85 cents of an inch. The rain was very welcome and was eagerly sucked up by the parched and dry soil. The price of copra and coconuts is keeping up. There seems to be a great demand for the former in Colombo, and agents of some members of the De Soysa family are buying up all they can and at high prices. The copra trade at Madampe and Chilaw is almost entirely in the hands of Chetties, who are very disinclined to sell the stuff locally even at tempting prices. The results of the drought of last year are apparent not only in small crops, but in lower outturns of copra and desiccated stuff per thousand nuts. Those who are paid at the mills for their nuts according to the outturn, find the outturn less than of the previous crop.

RAINFALL RETURN FOR COLOMBO.

(Supplied by the Surveyor-General.)

	1895.	1896.	1897.	1898.	1899.	Av of 30yrs.	1900.
	Inch.	Inch	Inch	Inch	Inch.	Inch.	Inch.
January ..	5·00	2·92	3·81	2·32	6·98	3·22	3·72
February ..	0·81	0·35	1·68	1·98	2·78	1·93	0·63*
March ..	1·84	5·64	3·66	4·21	0·88	4·78	
April ..	9·34	5·93	10·97	22·81	6·66	11·31	
May ..	10·09	9·31	8·30	5·80	17·73	12·09	
June ..	13·99	8·37	10·14	10·94	9·23	8·37	
July ..	0·52	2·85	5·24	6·15	1·11	4·38	
August ..	0·92	6·35	9·09	0·97	0·62	3·67	
September	4·09	10·99	4·58	6·90	1·48	5·01	
October ..	30·36	16·78	4·71	20·60	12 99	14·52	
November..	5·83	19.81	11·68	17·38	8·58	12·66	
December..	9·44	11·76	8·89	3-05	4·44	6·39	
Total..	92·23	101·06	82·73	103·11	73·48	88·33	4·35

PLANTING NOTES.

"KEW'S FAMOUS GARDENS"—are graphically, as well as popularly, described in our daily and *T.A.*, and certainly not too much is made of what British dependencies all round the world owe to Kew.

CEYLON TEA FOR AUSTRALIA.—The following from the Report of Messrs. Tarrant Henderson & Co. is not very reassuring:—

The following extract from a Melbourne circular explains the position, and shows plainly how Ceylon teas have lost ground during the past year:—"The most noticeable feature of last year's trading as regards this market has been the increased demand for Indians, at the expense of Ceylons. If Indians should displace Ceylons to any appreciable extent, the present demand for Chinas will most assuredly continue, if not increase, as a larger proportion of the milder flavoured Foochow teas would be required by blenders to counteract the more astringent properties of Indians, as compared with what is needed when Ceylons are more largely used. Demand runs principally upon teas up to 8d. Ceylons, owing to high costs and poor quality, as compared with Indians, have gone very much out of favour. The latter throughout the year have shown excellent value. Chinas have experienced a steady market, demand being entirely for clean liquoring sorts from 5½d to 6¾d, which has been fully supplied." The foregoing, we might say, does not apply to Australia only, but it also applies very largely to the United States, Canada and Russia, whilst to Europe generally, shipments have been disappointing.

* From 1st to 28th Feb. 0·63 inch, that is up to ·30 a.m.

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS OF JAN. 1900.—We append a Monthly Return of rain from which it will be seen that the highest fall was at Naulla in the Eastern Province, 21·40 inches and the lowest at Kayts in the Northern Province 0·38 inches.

WESTERN PROVINCE.

Negombo, Mr. Bucknall (6) ... 5·05
Kalutara Mr. Gregson (36) .. 4·93
Labugama. Mr. Bond (369) ... 15·21
Henaratgoda, Mr. Silva (33) .. 3·87

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,500) ... 7 53
New Valley, (Dikoya) Mr. Ward (3,700) .. 5 97
Helboda (Pussellawa) Mr. Anderson, (4,300) .. 5·30
Yarrow Estate, .. Mr. Peto (3,400) ... 5·98
Peradeniya Mr. ... MacMillan (1,540) ... 4·67
Duckwari, Mr. Edwin (3,300) ... 6·81
Caledonia, Not received (4,273) .. —
Pussellawa, Mr. .. Powell (3,000) .. 7·69
Hakgala, Mr .. Nock (5,581) ... 5·13
S. Wanarajah Estate, Mr. Tatham (3,700) .. 4·40
Padupola, Mr. Ward .. (1,636 ... 4·87
Mylapitiya, Mr. Rowland (1,707) ... 1·97

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) .. 3·54
Jaffna Mr. MacDonnell (8) 1·00
Mankulam, (N. Road) Mr. Walker (167) ... 2·99
Elephant Pass, Mr .. Kretser (7) .. 1·72
Vangalachettykulam, Mr. Oorloff (179) .. 2·10
Point Pedro, Mr. Chittampalam (24) ... 0·44
Jaffna College, Mr. Cooke (9) ... 1·86
Kayts, Mr. Kretser .. (8) .. 0·38
Kankesanturai Mr. .. Pararachasingha (10).. 1·18
Pallai, Mr. Kretser (24) .. 0·65
Murlkandy, (North-Central Road) Not received — —
Nedunkeni. Mr. Saumukam (122) ... 8·74
Chavakachcheri, Mr. Kretser (16) ... 1·22
Udupiddi, Mr. Hastings (35) .. 0·66
Marichchukaddi, Mr. Thamotharampillay (14) 1·55
Murungan, Mr. Ramalingam (52) 0·94
Vavuniya Mr. Walker (318) 3·52

SOUTHERN PROVINCE.

Ella Vella Mr. Adams (262) 5·36
Kekanadura, do (150) 1·45
Denagama, do (286) 4·17
Uduk irlwila Mr. Laurensz (235) .. 2·80
Kirama, Not received (260) —
Hali-ela Mr. Adams (200) 5·70
Tissa Mr. Peries (75) ... 3·92
Matara Mr. Adams (15) 2·95
Dandeniya, do (157) .. 5·27
Urubokka, Mr. do
Tangalla Mr. Fox (94) .. 4·20
Mamadola, Mr. Rodrigo (56) .. 2·58

EASTERN PROVINCE.

Irrakkamam, Mr. Bower (42) ... 16·28
Devilana, Mr. Vanderstraaten (136) 4·08
Sagamata, Mr. Bower (40) ... 13·63
Ambare, do (65) 11·92
Kanthalai, Mr. Carte (150) 3·21
Allai, Mr. Carte (95) 4·25
Rukam, Mr. Vanderstraaten (120) ... 6 45
Periyakulam, Mr. Carte (20) ... 5·61
Chadaiyamalawa, Mr. Robertson (57) 11·65
Kalmunai, do (12) 12·17
Rotewewa, do (30) 13·8
Lahugala, do (70) 14·70
Naulla, do (30) 21·40
Andankulam, Mr. Carte (41) ... 5·46
Manalpaddy, Mr. Vanderstraaten (21) 13·15
Maha-Oya-Tank, Mr. Vanderstraaten (190) 10·16

N.-W. PROVINCE.

Magalawewa, Mr. Dassaneiyake (176) .. 6·21
Maha Uswewa tank, Mr. Crabb (160) ... 3·70
Tenepitiya, Mr. Churchill (8) ... 5·80
Batalagoda, Mr. Fonseka — 4·95

N.-C. PROVINCE.

Kalawewa, Mr. MacBride (268) 6·40
Maradankadawala, Mr. MacBride (443) ... 3·97
Mihintale, Mr Drieberg (354) .. 5·63
Horowapotana, Mr. MacBride (217) .. 4·54
Madawachchiya, Mr. MacBride (285) .. 1·80
Topare, Mr. Jayewardane (200) .. 4·51
Minneriya Mr. Eves — 6·18

UVA PROVINCE.

Bandarawela, Mr. Tocke (4,000) .. 5·37
Haldummulla, Mr. Viramuttu (3,160) .. 7·70
Kumbukan, Mr. Emerson (446) ... 7·61
Koslanda, Mr. Emerson (2,258) ... 8·09
Tanamalwila, Not received (550) .. —
Bibile, Mr. Silva (680) 11·87
Taluena, Mr. Fernando (1,100) .. 7·30
Allutnuwara—Mr. Leembriggen (300) 11·72

SABARAGAMUWA.

Ambanpitiya, Mr. Caldicott (729) 4·05
Pelmadulla, Mr. Clarke 4·05 (408) 14·62
Kolonna Korale (Hulanda-oya) Not received (203) —
Avisawella, Mr. Jeffery (105) ... 6·16

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions.
Agra Ouvah Estates Co., Ltd.	500	900	925	925
Ceylon Tea and Coconut Estates	500	—	950 n'l	..
Castlereagh Tea Co., Ltd.	100	90	100	..
Ceylon Hills Estates Co., Ltd.	150	—	—	..
Ceylon Provincial Estates Co.	500	..	—	505
Claremont Estates Co., Ltd.	100	..	..	—
Clunes Tea Co., Ltd.	100	—	85	..
Clyde Estates Co., Ltd.	100	—	—	—
Doomoo Tea Co., Ltd.	100	—	60	—
Drayton Estate Co., Ltd.	100	..	150	..
Ella Tea Co., of Ceylon, Ltd.	100	—	72·50	—
Estates Co., of Uva, Ltd.	500	—	280	..
Gangawatta	500	...	..	—
Glasgow Estate Co., Ltd.	500	...	910	905
Great Western Tea Co.,	500	...	640	..
Hapugahalande Tea Estate Co.	200	—	.	..
High Forests Estates Co., Ltd	500	..	5·0	..
Do part paid	350	...	400	—
Horekelly Estates Co., Ltd.	100	..	—	..
Kalutara Co., Ltd.	500	..	375	—
Kandyan Hills Co., Ltd.	100	—	70	07·50
Kanapediwatte Ltd.	100	100	90	..
Kelani Tea Garden Co., Ltd.	100	40	...	..
Kirklees Estates Co., Ltd.	100	—	..	—
Knavesmire Estates Co., Ltd.	100	—	60	60
Maha Uva Estates Co., Ltd	500	..	425	400 xd
Mocha Tea Co., of Ceylon, Ltd.	500	...	610	610
Nahavilla Estate Co., Ltd.	500	—	475	...
Neboda Tea, Co. Ltd	500	500	..	—
Nyassaland Coffee Co. Ltd.	100	—	..	..
Ottery Estate Co., Ltd.	100	..	—	—
Palmerston Tea Co., Ltd.	500	—	400	...
Penrhos Estates Co., Ltd.	100	—	97 50	..
Pine Hill Estate Co., Ltd.	60	40		..
Pitakanda Tea Company	500	1,000	—	..
Putupaula Tea Co., Ltd.	100	—	120	—
Ratwatte Cocoa Co., Ltd.	500	—	.	..
Rayigam Tea Co., Ltd.	100	—	65	—
Roeberry Tea Co., Ltd.	100	..	—	—
Ruanwella Tea Co., Ltd.	10	—	00	..
St. Heliers Tea Co., Ltd.	500	500	—	..
Talgaswela Tea Co., Ltd.	10	25	—	25
Do 7 per cent. Prefs.	10	...	..	..
Tonacombe Estate Co., Ltd.	500	—	450	—
Udabage Estate Co., Ltd.	100	..	—	—
Udugama Tea & Timber Co., Ltd.	50	5	10	..
Union Estate Co., Ltd.	500	290	300	—
Upper Maskeliya Estate Co., Ltd.	500	..	475	—
Uvakellie Tea Co., of Ceylon, Ltd.	100	65	70	...
Vogan Tea Co., Ltd.	100	..	83	—
Wanarajah Tea Co., Ltd.	500	—	1145	...
Yataderiya Tea Co., Ltd.	100	—	397·50	...

CEYLON COMMERCIAL COMPANIES

Company.	paid p. sh.	Buyers.	Sellers.	Transactions.
Adam's Peak Hotel Co., Ltd.	100	—	—	..
Bristol Hotel Co., Ltd	100	—	85	80
Do 7 per cent Debts	100	105	—	—
Ceylon Gen. Steam Navgt. Co., Ltd.	100	200	..	200
Colombo Apothecaries Co., Ltd	100	..	145	.
Colombo Assembly Rooms Co., Ltd.	20	12 50	..	..
Do prefs.	20	—	..	..
Colombo Fort Land and Building Co., Ltd.	100	..	85	85
Colombo Hotels Company	100	..	294	—
Galle Face Hotel Co., Ltd.	100	—	150 xd	..
Kandy Hotels Co., Ltd.	100	..	—	...
Kandy Stations Hotels Co.	100	..	30	—
Mount Lavinia Hotels Co., Ltd.	150	150	200	..
New Colombo Ice Co., Ltd.	100	170	—	—
Nuwara Eliya Hotels Co., Ltd.	100	27½	30	..
Public Hall Co., Ltd.	20	15	—	—
Petroleum Storage Co.	100	—	—	—
Do 10 % prefs.	100	—	...	—

LONDON COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Alliance Tea Co., of Ceylon,	10	8—9	—	..
Anglo Ceylon General Estates Co.	100	—	35—40	..
Associated Estates Co., of Ceylon	10	—	3—5	...
Do. 6 per cent prefs.	10	..	7½	..
Ceylon Proprietary Co.	1	...	12·6—17 6	..
Ceylon Tea Plantation Co.,	10	—	24½—25½	—
Dimbula Valley Co.,	5	..	5½—6	—
Do prefs.	5	..	..	—
Eastern Produce and Estates Co.	5	...	5½—6	...
Ederapolla Tea Co.,	10	...	7—8	..
Imperial Tea Estates	10	...	5—6	..
Kelani Valley Tea Asson.,	5	..	5—6	..
Kintyre Estates Co.,	10	7½	7—9	..
Lanka Plantation Co.,	10	4½	4—5	..
Nahalma Estates Co ,	1	—	¼—½	..
New Dimbula Co.,	1	—	2½—3	..
Nuwara Eliya Tea Estate Co.	10	9¾	—	9½
Ouvah Coffee Co.,	10	7	—	..
Ragalla Tea Estates Co ,	10	—	10	..
Scottish Ceylon Tea Co.,	10	—	14—15	.
Spring Valley Tea Co.,	10	3	4—5	..
Standard Tea Co.,	6	—	11—12	..
The Shell Transport and Trading Company,	100	—	—	—
Yatiyantota Ceylon Tea Co.,	10	—	8—9	..
Yatiyantota pref. 6 o/o	10	10	—	..

BY ORDER OF THE COMMITTEE.

Colombo, March 2nd, 1900

Latest London Prices.

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, Feb. 27th, 1900.

COFFEE:—	
Estate Parchment per bushel	R7·50 to 9·00
Chetty do do	R6·00 to 7 00
Native Coffee } per cwt.	} R42·00
do F. O. B }	
Liberian coffee:—per bushel	R4 00 to 4 50
do cleaned coffee:—per cwt	R22·00 to 24·00
Cocoa unpicked:—per cwt	R38·00 to 42·00
do cleaned do	R43·00 to 46·00
Cardamoms Malabar per lb	R1·00 to 1·10
do Mysore do	R1·55 to 1·80
RICE:—	
Soolai per bag of 164 lb. nett	R9·00 to 9·25
Slate or 1st quality:—per bushel	R3·42 to 3·45
Soolai 2 & 3rd. do do do	R3·33 to 3·40
Coast Calunda	R3·87 to 4·00
Coast Kara	R3 75 to 3·87
Kazala	R3·28 to 3·30
Muttusamba Ordinary	R3·87 to 4·25
Cinnamon. per lb No 1 to 4	R ·52
do do 1 to 2	R0·65
do Chips per candy	R9[illegible]0 to 95·00
Coconuts Ordinary per thousand	R35·00 to 38 00
do Selected do	R36·00 to 40·00
Coconut Oil per cwt	R14·50 to 14·67½
do do F. O. B. per ton	R2[illegible]0·00 to 293·50
POONAC:—	
Gingelly per ton	R1[illegible]0·00 to 102·50
Coconut Chekku do	R85·00 to 87·50
do Mill (retail) do	R77·50 to 80·00
Cotton Seed per ton	R85·00
Copra per candy	
Kalpitiya do	R45·50
Marawila do	R43·50 to 44·25
Cart Copra do	R38 00 to 42·00 Scarce
Satinwood per cubic feet	R2 00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R28 00 to 30·00
Palmyra do do	R4·50 to 17·50
Jaffna Black Cleaned per cwt	R14·00
do mixed do	R12·00 to 13·00
Indian do	R8·00 to 1[illegible]·50
do Cleaned do	R10·50 to 17·50
Sapanwood per ton	R50·00 to 60·00
Kerosene oil American per cases	R8·[illegible]0 to 8·35
do bulk Russian per tin	R3 35 to 3·40
do Russian per cases	R6·75 to 7·00
Nux Vomica do per cwt	R2·00 to 3·50
Croton Seed per cwt	R30·00
Kapok cleaned f o b per cwt	R24·50
do uncleaned do	R6·00
Plumbago per ton, according to grade { Large lumps	R650·00 to 1000·00
do	R400·00 to 900·00
Chips	R250·00 to 650·00
Dust	R100·00 to 500·00

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)
Colombo, 26th Feb. 1900.

CARDAMOMS:—
All round parcel, well bleached per lb. R1·70
Do. dull medium do. 1·50
Special assortment, 0 and 1 only do. 2 25
Seeds do. 1 40

CINCHONA BARK:—
Per unit of Sulphate of Quinine 12; 1 o/o to 4 c/o

CINNAMON:—
Ordinary assortment per lb. 60c.
Nos. 1 and 2 only per lb. 66c.
Nos. 3 and 4 only per lb. 54c.
} Small supplies.

CINNAMON CHIPS:—
Per candy of 560 lb R95—Good supply.

COCOA:—
Finest estate red; unpicked per cwt R48·00
Medium do do per cwt R42·00 Nominal.
Bright native, unpicked and undried per cwt Nominal
Ordinary do do do Nominal

COCONUTS—(husked).
Selected per thousand R45·00
Ordinary ,, R41·00
Smalls ,, R28·00

COCONUT CAKE—
Poonac in robins f. o. b. per ton R80·00
Do. in bags none

COCONUT (Dessicated).
Assorted all grades per lb. 13¾c Nominal.

COCONUT OIL—
Dealers' Oil per cwt. R14·75—Sellers at R14·75
Coconut Oil in ordinary packages, f. o. b. per ton R330·00.—Sellers at R335·00

COFFEE—
Plantation Estate Parchment on the spot per bus. R9 00
Plantation Estate Coffee f.o.b. (ready) per cwt. R65
Native Coffee, f.o.b 42·00.

CITRONELLA OIL—
Ready do per lb. 65c—In drums of 800 lbs
do do per lb. —None

COPRA—
Boat Copra per candy of 560 lb. R45·50
Calpentyn Copra do do R46·50
Cart do do do R43 00
Estate do do do R46·50

CROTON SEED per cwt R30·00

EBONY—
Sound per ton at Govt. depot R175.—As per last Governmen Sales, Nov. 15th.
Inferior per ton at Govt. depot R120

FIBRES—

Coconut Bristle	No. 1	per cwt	R11
Do	,, 2	,,	8·00
Coconut mattress	,, 1	,,	2 75
Do	,, 2	,,	2·00
Coir Yarn Kogalla	,, 1 to 8		18 00
Do Colombo	,, 1 to 8		16 00
Kitool all sizes			38 00
Palmyrah			16·00

PEPPER—Black per lb 28c.

PLUMBAGO—
Large lumps ,, per ton R1000
Ordinary lumps ,, ,, 900
Chips ,, ,, 650
Dust ,, ,, 500
Do (Flying) 200
} Market weak; Very Limited transactions.

SAPANWOOD— per ton R60
SATINWOOD (ordinary) per cubic ft. R2·40

TEA—

	High Grown. cts	Medium. cts	Low Grown. cts
Broken Pekoe and Broken Orange Pekoe per lb	52	41	34
Orange Pekoe do	52	40	34
Pekoe do	43	37	32
Pekoe Souchong do	38	31	28
Pekoe Fannings do	33	31	29
Broken mixed—dust, &c. per lb	28	27	25

CEYLON EXPORTS AND DISTRIBUTION 1899-1900.

COUNTRIES	Tea. 1900 lbs.	Tea. 1899 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs	Cinnamon. Chips. lbs.	Coconut Oil. 1900 cwts	Coconut Oil. 1899 cwts	Copra cwts.	Desiccated Coconut lb.	Poonac cwts.	Coconuts No.	Plumbago. 1900 cwts.	Plumbago. 1899 cwts.	Ebony. cwts.	Sapanwood cwts.
To U K. ..	14739583	1162198	912	..	912	7880	52013	05135	24900	22322	10404	633	887057	..	805671	14955	116 3	...	700
,, Austria ..	1617	727	..	..	..	..	..	..	..	2220	851	260	..	...	..	.	..	..	260
,, Belgium ..	..	2683	27	..	27	63	...	16200	..		..	17974	...	14229	...	5791	3125	...	..
,, France ..	29494	31931	..	...	..	..	2323	5148	2	..	...	10274	207	...	..	..	306	220	..
,, Germany ..	59929	383 8	..	..	..	27	23900	65700	7175	2243	..	17255	60143	3513	100905	7873	10550	717	607
,, Holland ..	..	..	..	..	..	..	...	..	11200	..	..	..	...	.	...	-	...	...	...
,, Italy ..	533	1040	..	..	..	...	...	28700	...	..	205	506	..	..	1050	...	.	..	...
,, Russia ..	12301 9	..	15	..	15	...	..	..	...	..	..	24003	..	...	1590	...	..	..	..
,, Spain ..	6970	..	..	...	..	..	..	1300	..	..	..	..	...	...	..	..	...	..	..
,, Sweden ..	13665	7228	..	..	..	...	560	...	..	...	..	..	...	..	..	105	101	...	...
,, Turkey .	5 51	3024	..	..	..	..	600	...	..	...	..	..	...	..	..	...	..	...	...
,, India ..	10 711	111471	26	..	26	..	17337	..	.	8826	8310	..	...	..	4700	..	57	..	23
,, Australia .	193 9 1	2294 84	476	..	476	..	..	2700	7616	21	42	..	86272	..	..	210	1 0	...	.
,, America ..	1193274	5035 9	9	..	9	278	...	101800	44800	24246	16037	..	480355	...	..	59 22	37172	..	..
,, Africa .	12710	11799	..	..	..	..	1120	..	2408	...	..	..	..	...	318525	..	..	..	...
,, China ..	87343	188996	..	...	..	52	1800	...	...	..	21 2	..	13220	...	..	..	..	..	...
,, Singapore ..	11006	14044	..	..	..	405	..	..	..	...	17812	..	...	..	..	...	..	...	..
,, Mauritius ..	...	6170	..	..	..	..	...	...	..	..	..	...	...	..	...	..	...	..	...
,, Malta ..	3782	4391	..	...	.	..	..	..	.	...	...	...	..	..	..	..	..	..	...
Total export from 1st Jan. to 26th Feb. 1900	19569986	14842944	1465	..	1465	8705	99953	331023	162676	60378	55783	7894	1529155	17742	1232411	88256	63074	937	1090

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From Lewis & Peat's Fortnightly Prices Current, London, February 24th, 1900.)

☞ No Price Current having reached us by latest mail, we omit the usual quotations and fill with other matter.

THE VALUE OF THE PHILIPPINES.

AN ADDRESS BY SENATOR BEVERIDGE OF INDIANA.

"Mr. President, the times call for candor. The Philippines are ours forever, 'territory belonging to the United States,' as the Constitution calls them. And just beyond the Philippines are China's illimitable markets. We will not retreat from either.

"China's trade is the mightiest commercial fact in our future. Her foreign commerce was $285,738,300 in 1897, of which we, her neighbor, had less than 15 per cent, of which only a little more than half was merchandise sold to China by us. We ought to have 50 per cent, and we will. And China's foreign commerce is only beginning.

"The Philippines command the commercial situation of the entire East. Can America best trade with China from San Francisco or New York? From San Francisco, of course. But if San Francisco were closer to China than New York is to Pittsburg, what then? And Manila is nearer Hongkong than Havana is to Washington. And yet American statesmen plan to surrender this commercial throne of the Orient where Providence and our soldiers' lives have placed us. When history comes to write the story of that suggested treason to American supremacy and therefore to the spread of American civilization, let her in mercy write that those who so proposed were merely blind and nothing more.

"But if they did not command China, India, the Orient, the whole of the Pacific for purposes of offence, defence and trade, the Philippines are so valuable in themselves that we should hold them. I have cruised more than 2,000 miles through the Archipelago, every moment a surprise at its loveliness and wealth. I have rodden hundreds of miles on the islands, every foot of the way a revelation of vegetable and mineral riches. No land in America surpasses in fertility the plains and valleys of Luzon. Rice and coffee, sugar and coconuts, hemp and tobacco, and many products of the temperate as well as tropic zone grow in various sections of the archipelago. I have seen hundreds of bushels of Indian corn lying in a road fringed with banana trees. The forests of Negros, Mindanao, Mindora, Puauan and parts of Luzon are invaluable and intact. The wood of the Philippines can supply the furniture of the world for a century to come. At Cebu, Rev. Father Julio Segrera told me that forty miles of Cebu's mountain chain are practically mountains of coal. Pablo Majla, one of the most reliable men on the islands, confirmed the statement. Some declare that the coal is only lignite, but ship captains who have used it told me it is better steamer fuel than the best coal of Japan. I have a nugget of pure gold picked up in its present form on the banks of a Philippine creek. I have gold dust washed out by crude processes of careless natives from the sands of a Philippine stream. Both indicate great deposits at the source from which they come. In one of the islands great deposits of copper exist untouched. The mineral wealth of this empire of the ocean will one day surprise the world. I base this statement partly on personal observation, but chiefly on the testimony of foreign merchants in the Philippines who have practically investigated the subject and upon the unanimous opinion of natives and priests. And the mineral wealth is but a small fraction of the agricultural wealth of these islands.

"And the wood, hemp, copra and other products of the Philippines supply what we need and cannot ourselves produce. And the markets they themselves afford will be immense. Spain's export and import trade with the islands undeveloped, was $12,175,549 annually. Our trade with the islands developed will be $125,000,000 annually; for who believes that we cannot do ten times as well as Spain? Consider their imperial dimensions. Luzon is larger and richer than New York, Pennsylvania, Illinois or Ohio. Mindanao is larger and richer than all New England. Manila, as a port of call and exchange, will in the time of men now living, far surpass Liverpool. Behold the exhaustless markets they command. It is as if a half dozen of our states were set down between "Oceania" and the "Orient," and those states themselves undeveloped and unspoiled of their primitive wealth and resources. Nothing is so natural as trade with one's neighbours; the Philippines make us the nearest neighbours of all the East. Nothing is more natural than to trade with those you know. This is the philosophy of all advertising. The Philippines bring us permanently face to face with the most sought customers of the world. National prestige, national propinquity, these and commercial activity are the elements of commercial success. The Philippines give the first; the character of the American people supplies the last. It is a providential conjunction of all the elements of trade, of duty and of power. If we are willing to go to war rather than let England have a few feet of frozen Alaska, which affords no market and commands none, what should we not do rather than let England, Germany, Russia or Japan have all the Philippines? And no man on the spot can fail to see that this would be their fate if we retired.

"The climate is the best tropic climate in the world. This is the belief of those who have lived in many tropic countries, with scores of whom I have talked on this point. My own experience with tropical conditions has not been exhaustive; yet speaking from that experience, I testify that the climate of Iloilo, Sulu, Cebu and even of Manila, greatly surpasses that of Hongkong."

"Here, then, Senators, is the situation. Two years ago there was no land in all the world which we could occupy for any purpose. Our commerce was daily turning toward the Orient, and geography and trade developments made necessary our commercial empire over the Pacific. And in that ocean we had no commercial, naval or military base. Today we have one of the three great ocean possession of the globe, located at the most commanding commercial, naval and military point in the eastern seas, within hail of India, shoulder with China, richer in its own resources than any equal body of land on the entire globe, and peopled by a race which civilization demands shall be improved. Shall we abandon it? That man little knows the common people of the Republic, little understands the instincts of our race, who thinks we will not hold it fast, and hold it forever, administering just government by simplest methods."

In closing the Senator said: "Mr. President and Senators, adopt the resolution offered that peace may quickly come and that we may begin our civilizing saving, regenerating and uplifting work. Adopt it and this blood shed will cease when these deluded children of our islands learn that this is the final action of the representatives of the American people in Congress assembled. Reject it, and the world, history and the American people will look where to forever fix the awful responsibility for the consequences that will surely follow such failure to do our manifest duty. How dare we delay when soldiers' blood is flowing."—*American, Manila, Feb. 10.*

THE

AGRICULTURAL MAGAZINE,

COLOMBO

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for March :—

Vol. XI.] MARCH, 1900. [No. 9.

THE COCONUT INDUSTRY IN CEYLON.

ALTHOUGH the coconut palm has been cultivated and has flourished in the Island for centuries, its products did not until recently take as prominent a part as might have been expected among exports. The explanation is that the palm is slow of growth, taking from five to fifteen years, according to the character of the soil, to come into bearing, and not being in full bearing till ten to twenty-five years. In these circumstances, European capital which expects quiet returns such as coffee, cacao, tea, and cardamons yield, has not been largely attracted to it; and the experience of European planters in the Northern and Eastern Provinces, where only very small profits were derived owing to the difficulties of transport, was not such as to encourage investors. What the native plantations yielded, lessened by the enormous claims of home consumption, was therefore practically all that reached the market and was available for export and for manufacture at the hands of British merchants. Within the past ten to fifteen years, however, there has been an immense development of cultivation, partly through the growth in knowledge and enterprise of the Ceylonese themselves, and partly through the appreciation by Europeans of the fact that, though the returns from coconuts are low, they are surer than from any other industry, and that as an investment there is nothing to equal palm cultivation. The following figures from the exports statistics of the Island will show at a glance the immense development there has been in the coconut industry :—

	1861.		1898.	
	Cwt.	Value. Rs.	Cwt.	Value. Rs.
Coconut Oil ..	83,605	1,010,430	435,933	6,684 306
Do Poonac ..	No record.		216.620	897,426
Copra ...	27,279	163,680	506,277	6,328,462
Coir ...	43,163	308,640	183,931	1,767,345
Desiccated Coconuts ..	Not established		116,433	2,342,971
	Gals.		Gals.	
Arrack ..	393,355	267,870	65,902	153,064
			Nuts.	
Coconuts ..	—	79,960	12,027,714	541,247

The foregoing figures show not only the great advance made by every product of the coconut palm since 1861, but also the new uses to which the nut and its products are put. Thus, in 1861, either there were no exports of poonac (the kernel refuse after oil is expressed) or they were so small as not to be worth recording. Now they are sent away by thousands of hundredweights to various parts of the world, chiefly Europe, to fatten stock. The trade in desiccated coconuts is of very recent growth, and the exports have found a place in the commercial tabular statements only since 1891; now the kernels of about 40,000,000 nuts are annually deprived of their moisture after being sliced in desiccators, and packed in lead-lined boxes are sent to all parts of the world, including France, to be used for confectionery, &c.

The above items, however, do not exhaust the list of the products of the coconut palm sent away from the island. There is a trade in cadjans (or thatch) and mats made of the leaf, in coir mats and rugs made of the husk, in laths and rafters made of the wood, and in a variety of articles, useful and ornamental, made of the shell. Altogether the value of the exports of the products of the coconut palm cannot be far short of 19 million

rupees a year or 30 million francs. Nor, again, does this represent in any way the value of the coconut industry to the Island. It is the only great agricultural product whose home consumption is even larger than the export trade. It is impossible to state accurately the value of the products of the coconut palm used by the people of the country, in the construction of their houses and huts, in domestic utensils, in trade implements, in food, in drink, in medicine, in the absolute necessaries of tropical life, in luxuries, but, even on the moderate calculation that a family uses 1½ nut a day, the 700,000 families of which the 3½ million people in the island may be said to consist, would consume 383¼ million nuts. A calculation of the exports of last year showed that nearly 400 million nuts were sent away in the husk, in the shell, as oil, and after desiccation; so that the production of the Island cannot be less than 800 million nuts.

It is estimated that, including dwelling gardens, about 700,000 acres (280,000 hectares) are planted with the coconut palm. This acreage, at 75 trees to the acre and 20 nuts to the tree, should yield 1,050 million nuts; but a large number of trees are reserved for toddy drawing, and the distillation there from of the spirit known as arrack. The value of the arrack consumed in the Island (over a million gallons) has been computed in a recent official paper at R7,629,067, and of this sum the Government now receives R3,000,000 a year, or one-eighth cf the total revenue, by the sale of the monopoly of retailing the spirit to "renters." The importance, therefere; of the coconut industry to the people and to the country is beyond controversy; and the growth of the industry is steadily maintained.

PRACTICAL HINTS TO HORSE OWNERS.

BY A. CHINNIAH, G.B.V.C.

INTRODUCTION.

Ever since I started practising I have observed that it is very difficult to explain anything based on the rational practice of Veterinary science to a client who is not a horseman. Empiricism is all that is known to such. The empiric is always ready to put down anything and everything rational. The battle between empirism and rationalism will (as in the case of human medical practice) go on till people are forced by bitter experience to abandon the former for the latter.

As these hints are mainly intended for laymen, it is my desire to avoid technical language as much as possible, but if such terms are unavoidable, they will be explained in footnotes.

CHAPTER I.—STABLES.

Situation.—The stables should be located on a spot well raised from surrounding land, so that the floor will be as free as possible from moisture. It is important to see that no hindrance to the proper circulation of air is possible, and there is no reason why the stables should not be as well constructed and well placed as the master's residence, in point of aspect, situation and proper elevation. The distance from the other buildings to the stable should be at least 50 yards.

Floor.—Many horse owners in Ceylon favour granite or cement floors for their animals. The preference to this kind of floor is no doubt because it could easily be kept clean. The disadvantages of such flooring are, however, great, and hence their use should be discontinued. Brittle hoof, sand crack, sprains, &c. are the diseases that are brought about by such hard floors.

The best and the cheapest flooring for a horse's stable should be of earthy material, which is a poor conductor of heat and cold. Again, an animal when standing stamps his feet a good deal, and if this goes on on stone or cemented floors, the concussion is greatly felt; but when the texture of the material used is of a yielding nature, it is modified to a great extent. For the tropics a clay floor is the best, and it should be made as follows:—

For the top layer (to a depth of 6 or 8 inches) two parts of fine clay mixed up with one part each of sand and lime should be used. But the lower stratum should be made of good cabook or clay.

The clay or cabook should be spread over a depth of one foot, without any water being added and rammed in with a block of wood. After a day some water should be sprinkled over in the evening. The next morning more earth should again be rammed in and watered in the evening, and on the third day the same process should be repeated. The top layer (the composition of which is given above) should be spread over then, and treated after the same fashion for about three days, and then allowed to dry for three weeks, so that one full month is required to make a floor.

A floor made in this way will be found most satisfactory, but to keep it in good condition is very difficult, unless it is well looked after.

There are some animals that never stale unless they are taken out of the stable. This is an excellent habit, and one which should, if possible, be inculcated. The practice which is sometimes adopted of catching the urine in a bucket or chatty is a good one, but if this is not carried out earth should be sprinkled over the wet ground to absorb the moisture, and the spot brushed clean. The spots stained during the night should be scraped and then filled up with powdered clay, and patted down smooth. A boxfull of dry earth should be kept in a corner of the stable for this purpose.

The slope of the stable should not exceed 1 in 80; if above that it produces sprain, weakness of the loins, &c.

(*To be continued.*)

MODERN AGRICULTURAL SCIENCE.

The *Nineteenth Century* for November last contains an interesting and instructive article referring to a series of useful Agricultural Experiments, which are calculated to throw a good deal of light on agricultural practice:—

Some eighteen years ago the two founders of that New Soil Science were attracted to the study of soil bacteriology. One of them wa

Mr. John Hunter, F.I.C., F.C.S., Chemical Analyst and Lecturer on Agricultural Chemistry and Brewing Science. The other was Professor McAlpine, Lecturer on Botany and Botanical Adviser to the Highland and Agricultural Society of Scotland. The discoveries of Pasteur and other investigators as to the paramount importance of having the right crops of yeast plants in the production of beer were doubtless the means by which Mr. Hunter was led to recognise the equally great importance of having in the soil the right crops of soil bacteria. The nodules on the roots of the leguminosae were first investigated by Messrs. Hunter and McAlpine, and, as the results of a careful series of investigations and experiments, they demonstrated the fact that the bacteria in these root nodules did possess the power of absorbing the "free nitrogen" of the atmosphere and rendering it available for the use of the plant. The discovery of this property on the part of the nodule bacteria is usually ascribed to Hellriegel, but years before Hellriegel announced his discovery in 1886, Messrs. Hunter and McAlpine were teaching the same fact to their students, as the lecture notes of any of their students at that time can testify. After investigating the nature and functions of the bacteria in the root nodules of the leguminosae, Messrs. Hunter and McAlpine proceeded to carry out a series of investigations in regard to the nitrifying bacteria. At an early stage of their investigations they found there were several well-defined sets of bacteria concerned in the work whose final end is nitrification. They succeeded in isolating and cultivating the nitrous germs, and they also isolated what they believed to be the nitric germ, but in the case of the latter germ they were for a time puzzled to find that they could not from it, in any ordinary culture media, produce nitrates. By a happy inspiration they remembered the plan by which Napoleon was able to secure from the old mortar in the Paris stables a supply of nitrate for the manufacture of gunpowder, and they accordingly added a small supply of mild lime in the form of garden wall mortar to the culture media, with the result that the nitric germs produced nitrates speedily enough. These experimentors knew well enough before then that caustic lime would destroy the soil bacteria, and they therefore taught that the old plan of applying a heavy dressing of four to six tons per acre of hot lime was a huge mistake, while on the other hand a small annual, or at the outside biennial dressing of lime compost to the surface soil, where bacterial life was most active, was essential in successful and scientific manuring. They also found that these lime compounds in the surface soil served a further important use by preventing the soluble silicates being taken up by the roots of the plant, as these soluble silicates were taken up by the lime, and still more readily by the magnesium obtained from the lime, and then formed insoluble silicates which were retained in the soil, and did not diffuse into the plant, so that there was produced a non-silicated stem, or in the other words a cellulose stem, which would bend without breaking in the wind, while the non-silicated straw was much superior in value to the silicated straw. They ridiculed the old idea that soluble silica built up in the tissue of the plant gave strength and solidity to the stem, and they pointed out that silica was, to all intents and purposes glass, so that straw with a backbone of silica was a brittle substance which was very liable to be broken and lodged by the wind, and moreover was of very inferior feeding value. They also found that just as in the manufacture of beer or whisky, or in fact in any process of fermentation, great quantities of carbonic acid were produced, so through the operations of the soil ferments great quantities of carbonic acid were produced in the soil, and one great function of subsoil drains was to provide an outlet for the great amount of carbonic acid produced in the soil through the operation of the soil ferments. The same line of reasoning went to show that the commonly accepted doctrine as to capillarity required to be recast, and in fact that the whole of the old system of agricultural science as taught in the text-books commonly used, required to be pulled down and built up anew on a biological basis.

(*To be concluded.*)

THE SOLUBLE MINERAL MATTER OF SOILS.

By Thomas H. Means,

Assistant in Division of Soils U.S. Department of Agriculture.

If a piece of granite be exposed to the weather for a long time, changes will be noticed gradually taking place. The rock will whiten and finally fall to pieces, leaving a coarse powder without the slightest resemblance to the original rock. If the rock is weighed, it will be found that some of the material composing the rock has disappeared. This process of the breaking down of rocks has been going on for ages unnumbered, and to-day nearly all of the rocks are covered with a layer of rock powder or soil. While the rock is breaking down, or weathering, as it is termed, mosses and lichens begin to grow, and, as they die and give place to other plants, their remains decay and leave in the decomposing rock the black coloring matter which is called organic matter, and which in certain stages of decomposition is called humus. When the rock is all broken down and the organic matter, together with the humus, is mixed with the rock powder, there remains what is termed a soil.

Many chemists haved studied this weathering of rocks and the formation of soils, and all of them agree that in the process large quantities of the materials in the rocks are so changed by the weathering that they are rendered more or less soluble in water; then as the rainfall penetrates the rock and the rock powder, this soluble matter is gradually dissolved and washed out, accounting for the loss in weight of the decomposing granite.

Dr. George P. Merrill, of the United States National Museum, has examined a large number of rocks and soils, and has determined that rocks lose by solution from 10 per cent to as much as 98 per cent of their weight in passing from the solid rock to soil, that is to say, in the formation of an acre of soil one foot deep from 200 to 86,000 tons of the rock are removed by solution,

Rocks are composed of various materials, some of which in decomposing or weathering yield large quantities of soluble matter, while others yield little or no readily soluble matter; so that the rock is not dissolved as a whole, but the chemical action of weathering so changes some minerals that parts of them are made soluble. Thus feldspar, a common constituent of many of our rocks, is not soluble in water, but as weathering goes on under the atmospheric conditions, the mineral whitens, breaks down, and the insoluble kaolin (clay) and silica (sand) are left, while potassium carbonate is washed out in solution. On the other hand, quartz, the most common of all minerals, does not change during the weathering, but simply breaks up into finer particles of sand, very little of which is removed by solution.

With the formation of the soil this process of solution and removal does not cease, but as long as water is in contact with the soil grains there are chemical changes taking place and salts are being dissolved. Pure water will dissolve as much as one per cent of some of our soils, but the average amount dissolved will be much less than this, probably nearer one-tenth of one per cent.

The soils, like the rocks, are composed of various materials, and the water dissolves these just as it did the minerals of the granite. Some of the minerals contain plant food, some do not, and when all of the minerals containing plant food are dissolved and washed away, the soils become sterile and will not support plant growth. Plants need only a very small amount of mineral food at one time, but this small amount must be supplied throughout the growing season.

A number of chemists have made chemical analyses of the matter dissolved by water in various soils. They have shown that all of the minerals are more or less dissolved by the water, and that the solutions contain all of the mineral ingredients of a plant. The important plant foods, phosphorus, nitrogen, and potash, are present in small quantities in the solution, while lime is present in a much larger quantity in most soils. Should the plant foods be present in solution in large quantities, the first heavy rain would wash all out that were dissolved, and their value would be lost. The examination of large numbers of samples of drainage water has shown that phosphoric acid and potash are only washed out in small quantities, while nitrogen is removed nearly as fast as formed within the soil.

It was noted many years ago that a soil possessed the property of decolorizing solutions and of rendering foul water pure. This is well illustrated in our common custom of digging wells; the deeper the well the purer the water and the less liable to contamination from surface impurities. This simple fact of the power of sand or soil to take the coloring matter out of manure extracts was noted by chemists, who found, on further examination, that the phenomenon was much more general and of a far larger interest than was first supposed. It has been found that all soils possess this property to a greater or less extent. They remove soluble matters from solution and gradually release them again, so that at no time is any large quantity of matter present in solution. When a solution of potassium nitrate is poured through a soil the potassium is in a large measure absorbed and retained, while lime takes the place of potash in solution and is washed out as the nitrate of lime. Soils, in other words, decompose the salts and retain the alkaline portion (potash, soda) with the phosphoric acid, while the acid portions (nitric, muriatic, sulphuric, etc.) are removed with part of the alkalies and lime.

The great importance of this fact to the agriculturist can readily be seen. When a mineral fertilizer is applied to a soil, instead of being all dissolved and remaining in solution to be washed down into the subsoil by the first heavy rain, the plant foods are absorbed by the soil and gradually supplied for the use of the plant roots.

During a study of the soluble matter of soils in the Division of Soils several new methods and new apparatus have been used, and the results obtained have been of much interest to those engaged in agricultural research as well as to the practical agriculturist.

The soluble matter of soils may be classed under two general heads, (1) soluble mineral matter and (2) soluble organic matter. Under the first head are classified all salts and soluble compounds derived from the decomposition of rock or mineral parts of the soil. Under the second head are classified all soluble matter derived from plant and animal remains. The study has been confined almost entirely to soluble mineral matter, and only this class of soluble matter will be considered here.

There are three conditions in which a salt can exist within a soil, (1) insoluble; (2) soluble; (3) absorbed—physical and chemical absorption. Of these three conditions the first, in which the salts are insoluble, is of importance as a reserve, for there exists in this condition all of the undecomposed minerals with their stores of plant food. The term insoluble is used in a relative sense, for all the minerals are soluble in water to a slight degree. These minerals are constantly being decomposed, thus yielding their store of plant food in a more available condition for plant growth and furnishing supplies for continued fertility for a long or short time, accordingly as the soil contains much or little plant food locked up in insoluble form. In the second condition, in which the salts are actually in solution, they are, of course, in a condition in which the plant can most readily use them.

The absorption of salts has been briefly discussed in an earlier part of this paper. The condition of absorbed salts is one which has received much attention in recent years. There are two kinds of absorption, chemical and physical. The chemical absorption has already been treated in another paragraph, and the description which follows refers to the physical absorption. Any solid body placed within a solution has the power of absorbing or condensing upon its surface matter which is in the solution. These salts when absorbed or condensed seem to have little effect upon the growth of the plant. They are very slowly given up by the solids to the solution again as the soil is leached. Such physical absorption or condensing action varies with the condition of the surface, that is to say, whether it is rough or smooth, compact or porous, and it aslo varies with the extent of the surface.

Some salts seem to be more readily absorbed than others. In order to test the relative absorption of various salts which are found in soils, some experiments have been conducted upon the rapidity with which various salts could be washed out from a soil, in which there was no chemical action, but in which the salts were physically condensed, or absorbed bodily, much as a sponge absorbs water. The relative time of washing out the various salts was as follows.—

Relative time of leaching salts.

		Minutes.
Calcium chloride	...	... 1
Sodium chloride	...	... 2
Magnesium chloride	...	... 2
Potassium chloride	...	... 4
Ammonium chloride	...	... 8

In this experiment there is the foundation of some of the most important principles regarding the removal of any accumulation of salts. It is seen that the calcium salt was most readily washed out, while the ammonium and potassium salts were the hardest to wash out.

A LETTER ON RABIES.

DEAR SIR,—The following observations should be of interest to your readers, as cases of rabies may be said to be of daily occurrence in Colombo.

This formidable disease has a terrible importance, since it annually claims human victims in considerable numbers.

The symptoms induced by it are very painful for both onlookers and friends of the sufferer to witness.

There are two forms of rabies, the dumb and the furious. The cause is through inoculation by a previously rabid animal. In the early stage there is rise of temperature and all febrile symptoms. The dog seeks hiding places for itself.

In the dumb form of rabies the animal's eyes are dull, while there is a general distressed appearance, dark-coloured tongue and pendulous tongue and lower jaw. In this form the disease runs its course with special rapidity and paralysis supervenes. Face, back and hind limbs are successively invaded until at last the animal becomes completely paralysed.

There is gastric derangement and in some instances spasm of the digestive organs. The animal may collect straw, bedding, stones, &c., and press on it with a view of relieving these spasms. In one case in which I performed a post-mortem examination I observed an abscess formed on the belly which I attribute to the abovementioned fact.

In the early stage of the disorder there is increased sexual excitement and bitches are much less liable to be bitten than dogs. The howl of the mad dog, if once heard, will never be forgotten, and any description must necessarily be insufficient to convey its true character. It is an imperfect bark, followed by incomplete howls. The dog licks and bites himself and especially at the seat of inoculation, which is very irritating.

Any strangeness in the behaviour of a dog must be observed with suspicion. It is remarkable that in rabies the owner is the last person injured.

In the furious form the paroxysm of rabies is well-marked. The animal lies quietly when not excited; it dozes or sleeps soundly, but, if awakened, rises in a fury. "The wrath of the patient varies in different individuals and stages of disease; it either assumes the form of a blind fury, prompting the dog to fly at and worry any strange object, such as a stick inserted through the bars of his cage, or there seems a sort of 'method in his madness' which has been considered an 'instinctive desire to propagate the affection,' thus dogs are the special objects of aversion, and cats too excite the animal to fury, but later herbivora and then men come on the list of those to whom he will do mischief. It is remarked that in the case of rabid herbivora the greatest fury is felt toward dogs, and this is sometimes seen in the case of human beings. The fury is preceded by a period of strange restlessness, a quickness and irritability of the temper, and sometimes a remarkable amount of treachery. The animal is dull but watchful, and a very characteristic symptom is a tendency to snap at flies or other real or imaginary objects, after watching their course for a little time, as though to obtain a favourable opportunity for the act of aggression. While dozing between the paroxysms the animal often starts up suddenly and wildly."

After the febrile stage in the dumb form, the animal becomes paralytic, but in the furious form he is so much stimulated that he could traverse enormous distance. The pace adopted is a slow, dogged sort of trot; at first the animal may go from side to side, biting everything and anything he meets in his track, but soon he goes straight forward, attacking when opposed, and so it is essential that when we notice a rabid dog we should keep out of his path. Latterly the dog becomes exhausted, paralytic and dies.

Rabid animals drink water freely till the loss of swallowing power seen in the later stages. Even then he will endeavour to slake his insatiable thirst. The term Hydrophobia is a misnomer. There is profuse salivation only in the early stages, not lasting more than a couple of days, and there is vomition in the early stages. Foreign matter such as straw, hair, &c., are accumulated in the pharynx and stomach. It is due to the perverted appetite. Male dogs are most often affected. It is essential in this connection to mention that the saliva of a rabid animal, not necessarily through a bite, falling on the abraded surface of the body is quite sufficient to communicate the disease.

Neither man nor domesticated animals (quadrupeds or birds) are capable of resisting rabies inoculation. Any rabid animal, not only a rabid dog is capable of transmitting the disease to man and other animals.

Dog bites are generally inflicted on the legs except in the case of children, for they are more often bitten in the hands or face. A bite on the face takes a shorter duration to develop the symptoms and a bite inflicted over a protected part, unless such protection is very thin (such in thin trousers or cloth) there is very little likelihood of getting the virus.

The muzzling of dogs, especially during an epidemic of this nature, is very necessary, especially

in the case of the pariah dogs whose home is on the streets. The muzzling should be slackened when the epidemic passes away, for a watch or hunting dog, and in fact any dog is no dog with a muzzle on.

Yours truly,

A. CHINNIAH,

Veterinary Surgeon.

Mango Lodge, Colombo, December 22nd, 1899.

THE CLASSIFICATION OF FIBRES.

(DR. DODGE.)

Among the many wants of man there are two which in all ages and in every clime have been regarded as necessities—food and the covering of the body. The first is an absolute essential to life; the second, an adjunct either to comfort or appearance. In supplying the second necessity man has used the bark, stems, leaves and roots of trees, shrubs, vines, grasses and the fibrous growth often provided by nature to protect their fruits during the period of development; he has employed the skins of animals, their shorn hair or wool, and, lastly, the cocoons of the silk-worm. At first vegetable substances could scarcely have been employed, for primitive man was satisfied with the skin of an animal girded about his loins; but in time, with the dawn of creative intelligence, the filaments of bark and wool and hair were rudely twisted into threads and coarsely woven. These fibres twisted again into larger threads, as fish lines, when knotted together formed fish nets, with which he was enabled to secure food, or a number of these threads wrought together made him cordage. His wants increasing as his inventive faculties were more and more developed, and as he became more intelligent, he felt the need of various utensils in the domestic economy, and pottery, trays and baskets were fashioned from clay, from twigs of bushes or trees, from rushes and the leaves of palms and similar plants. And when canes or overhanging cliffs and rock shelters ceased to be his protection from the elements he learned to build huts and to tatch them with palms and grasses. Having now entered upon a domiciliary existence and new wants being created, mats and screens were woven from seeds and sedges or from strips of palm, and primitive man had entered upon a kind of barbaric civilization. Aboriginal man is primitive in all ages, and the age of his particular race and his environment fixes the scale of his civilization. If, in the early Stone Age, he threw across his shoulders or girded above his loins the skin of an animal slaughtered for food, it was because such rude dress satisfied his simple wants in this direction. And there are native tribes in Africa and Australia at the present time with no higher desires as to their raiment and who still dress in skins, and African Tribes who still adhere to Adam's costume—not fig leaves, but a girdle of evergreens and creepers or a leafy branch, as in the Obbo Tribe. But the economic uses of plants were bound to be learned by savage man in time, and skill was early acquired in preparing them for use. We find, therefore, among the uncivilized races all over the world that many species of fibre plants have become most useful for utensils, cords, and clothing which civilized man with all his intelligence and inventive genius cannot afford to employ commercially. It is true that the recognized commercial fibres represent those best adapted for use, and that many of them like flax, hemp, and cotton must be classed with the fibres of antiquity. They have established their places because they have been proved to be the best for the purposes for which they are employed and the others can only be considered as their substitutes or as simple "native" fibres. We have therefore two natural groups of fibres—the commercial species with their substitutes which are soon enumerated, and the vast group of the so-called native fibres, many of which might fitly be termed emergency fibres, because they are extracted and used at the moment when needed. These so-called native fibres are also interesting, however, and through our knowledge of some of them, or when a species finds its way to the outside world, a new commercial fibre now and then is brought to light. They are legion when taken collectively, and therefore in enumerating the many species found in the countries of the globe, it is very easy to secure a list that can only be stated in four figures.

We have seen that different forms of cellular structure compose the fibres derived from dicotyledonous and monocotyledonous plants, as well as the seed hairs, or other hairs, from certain species of both divisions of the vegetable kingdom. In general terms, therefore, fibre is composed of bundles of bast or fibro-vascular tissue in the form of long flexible filaments, such as flax, hemp, or manila, or of hairs such as cotton, capable of being twisted or spun into threads or yarns, to be subsequently manufactured into cordage or fabrics. In the economic employment of fibrous vegetable material it is often the case that the fibre bundles are not separated or sub-divided into such delicate filaments as compose the cleaned fibres of flax and hemp, but are used in a conglomerated mass, or even in a more primary form, as the whole stems of seeds or grasses, as in matting manufacture, where both fibrous substances and the celluar tissue and woody waste is used without further preparation than drying. Or, still broader differentiation is found in the employment of palm leaves torn into strips or the woody stems of such plants as the willow and sumac, which are coarsely woven or plaited into baskets and similar objects. These fibrous substances, however, are not always utilized by subjecting them to the operations of twisting, spinning, plaiting or weaving, but are employed in a mass as upholstery material for the stuffing of cushions, mattresses, and the like. Beginning with true fibrous material, such as tow or the waste from scrutching flax, hemp, &c., and the seed hairs of the many plants known as cotton and silk cotton, and coming down through the list we discover the use of mosses, leaves, and even finely sub-divided wood shavings or 'excelsior' as forms of stuffing or packing material. The last named are not fibre, though on account of their economic employment they are regarded as the substitutes of fibrous substances. Therefore, in considering the many species of plants which are employed for so many different uses in the industrial economy, one species oft-

times being utilized as a cheaper substitute for another, in order to show their relations, both botanically and economically, a division into classes is necessary, that the place and value of each form of fibre may be readily recognized. Several classifications will be found in the works relating to this subject, but after reviewing the 1,000 or more species of vegetable fibres and fibrous substances comprised in this catalogue, a new scheme of classification, considered chiefly from the economic stand-point, has been devised, and is presented as both simple and natural.

DETERMINATION OF AGE BY TEETH IN DOMESTIC ANIMALS.*

Horse.—The horse has 24 temporary teeth. The male has 40 permanent teeth; the female 36 or 40. The smaller number is more usual in females, due to the lack of the tusks. The temporary teeth consist of 12 incisors and 12 molars; the 4 centre front teeth, 2 above and 2 below, are called pinchers; the next 4 are called intermediate or lateral, and the next 4 corner teeth. The permanent teeth consist of 12 incisors, 4 tusks, and 24 molars. The dental star is a yellowish ring appearing next the enamel on the table or crown of the tooth. The following table shows approximately the changes of the teeth with age:—

3 to 10 days: Temporary pinchers and 3 molars cut.
40 to 60 days: Temporary intermediates or laterals cut.
6 to 9 months: Temporary corner teeth cut.
19 to 25 months: Leveling of temporary corner teeth.
2½ to 3 years: Pinchers replaced by permanent teeth.
3½ to 4 years: Intermediates or laterals replaced.
4 to 4½ years: Tusks cut.
4½ to 5 years: Corner teeth replaced.
5 to 6 years: Leveling of lower pinchers.
7 years: Leveling of permanent intermediate.
8 years: Dental star and notches in pinchers.
9 years: Dental star in intermediates.
10 years: Dental star in corner teeth.

Cattle.—Cattle have 20 temporary and 32 permanent teeth. The temporary are 8 incisors in the lower jaw and 12 molars. The permanent teeth are 8 incisors and 24 molars. Cattle have no incisors in the upper jaw. The table for cattle is as follows:—

At birth: Temporary incisors appear.
5 to 6 months: Teeth decayed on border.
6 to 7 months: Leveling of pinchers.
12 months: Leveling of first intermediates.
15 months: Leveling of the second intermediates.
18 months: Intermediate incisors become stumps.
2 years: Permanent pinchers cut.
2½ to 3 years: Permanent first intermediates cut.
3½ years: Second intermediates or laterals cut.
4 years: Corner teeth replaced.
5 to 6 years: Leveling of permanent pinchers.
7 years: Leveling of first intermediates.
8 years: Leveling of second intermediates.
9 years: Leveling of corner teeth.
10 to 12 years: Dental star in pinchers and intermediates.
13 years: Dental star in corner teeth.

Sheep.—Sheep have 20 temporary and 32 permanent teeth. The table for changes is as follows:

1 month: Milk incisors appear.
3 months: Milk incisors decayed on border.
15 months: Permanent incisors cut.
2 years: First permanent intermediates cut.
33 months: Second permanent intermediates cut.
40 months: Corner teeth cut.

Hogs.—Hogs have 28 temporary and 44 permanent teeth. The table for changes is as follows:

At birth: Temporary corner incisors cut.
1 to 2 months: Temporary central incisors cut.
3 months: Temporary lateral incisors cut.
9 to 12 months: Permanent corner incisors cut.
12 to 15 months: Permanent central incisors cut.
18 to 20 months: Permanent lateral incisors cut.

* Exact correspondence of the condition of an animals's teeth with its age is, of course, not to be expected. It is only hoped that the tables here given, and approved by the United States Bureau of Animal Industry, will aid in forming a reasonably accurate opinion in any actual case.

EVERYDAY HINTS FOR POULTRY KEEPERS.

ASHES UNDER THE ROOSTS.

Among the very best materials to spread under the roosts in the poultry houses are sifted coal or wood ashes. While they do not absorb as much ammonia as dried earth does, they answer the purpose well enough if used in sufficient quantity.

HOW TO KEEP EGGS FOR HATCHING.

As much as possible eggs for hatching should be kept so as to prevent the evaporation of moisture through the pores of the shell. If the eggs have to be kept any length of time, I have found it a good plan to place them in a box with plenty of bran; some people prefer that the large end of the egg should be upwards.

A BREED SUITABLE FOR MARKET.

Those who wish to raise compact, heavy, finely-trained broilers or fowls for market should try Dorkings. A cross of a Dorking cock on large hens, especially Brahamas or Cochin, makes not only a heavy carcass, but an attrractive one. Young hens in laying, excel in quantity, though perhaps their eggs are inferior for hatching purposes.

EGGS FOR HATCHING PURPOSES.

It is advisable to keep eggs intended for hatching above the freezing point, as when thoroughly

chilled the germ is either killed or so badly injured that the chick dies in the shell, or immediately after it is liberated. The egg should be turned once a day, to prevent the yolk setting and adhering to the shell.

NEW QUARTERS FOR POULTRY.

One mistake in poultry-keeping is in running the hens on the same plot of ground continually. It is stated that they will not do as well in the same quarters after running there a few years. That has been the experience of many, and they come to the conclusion that some cheap, but warm, shelter should be made, and every few years removed to an entirely new spot.

CLEANSE YOUR HOUSES.

Spray the hen houses with kerosine, says the "Rural Australian." This is better and cheaper than whitewash. A spraying bellows will soon pay for itself. The spray penetrates every crack and crevice, and it is so fine that a very small quantity of kerosine serves for a given surface. This method of cleansing hen houses is cheap and effectual.

CUT THE WINGS.

It will do a hen no harm to have her wings clipped if she is a tramp, and it will prevent her from visiting the garden as often as usual. The proper way is only to cut one wing. The two longest or flight feathers may be left, cutting all the shorter ones. When her wings are folded the shortened feathers will not be seen.

DON'T STARVE THE FOWLS.

Hens that are starved seldom lay, and hens that are made and kept too fat never lay. The way to be sure of eggs is to strike a happy medium between the extremes, and keep them in good condition. It is not often that poultry need stimulants, and when they do it is from a lack of good attention, pure water, clean food, and clean quarters. It is not often that disease in any form attacks well-kept poultry yards.

SOFTSHELLED EGGS.

In the majority of cases softshelled eggs are caused by the hens being too fat. To remedy this stop feeding corn, and furnish wheat, oats, and barley. If the cause is simply a lack of lime, place old plaster, pulverized bones, or crushed shells, where the hens can pick at them. A little air-slacked lime can be put in the drinking water until the evil is remedied. Crushed bones, green or dry, is an excellent egg-producing food.

THE VALUE OF DRY LEAVES.

A correspondent in an American paper advises the readers to gather fallen leaves before they get wet and sodden, and store them in a dry place. There is nothing like dry, dead leaves in the poultry-house or shed. The hens will scratch them over and over again, until they (the leaves, not the hens) are worn out, and the exercise the hens get in scratching is what they need to keep them in good health, while necessarily confined to their limited winter quarters.

THE CAUSE OF MANY DISEASES.

It is not cold so much as dampness that brings about disease in the poultry-house. A duck will stay in the water half the time, and be perfectly healthy, but compel them to remain in a house on nights in which the floor is damp, and in a little while they will show the effects of it. Chickens can stand a hard rain occasionally, but a house that is damp and full of bad odours is a regular death-trap, and a breeder of diseases. Half the diseases of poultry are directly traceable to damp houses, and compelling the chickens to roosts where the air strikes them through cracks and crevices.

CHANGE THE FOOD.

Variety of food is absolutely essential to hens; but that is not a good arrangement of the variety which provides corn this week, bran next week, oats the next week, and wheat the following week. These are all good, but should be given at proper periods of the day, rather than during the several weeks of the month. Corn affords heat, and is fat-producing, and should be given sparingly the last thing in the evening so as to supply nourishment and warmth during the cold winter nights. The bran, with table scraps thrown in and all mixed with warm water, is best in the morning, and the wheat and oats should be in places where the fowls can scratch for them during the day.

FOUR FACTS.

In his work on poultry, Mr. Lewis Wright states the following are four facts gathered as the result of careful experiment and enquiry:—"1. The eggs of a young pullet are generally longer and more pointed at the small end than those laid by the same bird either later in the season or the next year. 2. These early pullets' eggs will produce, on an average, about the proportion of six cockerels to four pullets. 3. Eggs laid early in the season by older hens are also, as a rule, perceptibly longer and more pointed than those laid later in the season. 4. It is well known that cockerels oftener predominate in early broods and pullets in later ones.

NATURAL AND ARTIFICIAL RAISING.

The opinion is gradually gaining ground that chicks raised by hens are superior to those brought up in a brooder, says the "Farmer." It makes but little difference whether they are hatched under a hen or in an incubator, but no brooder has yet been made that will approach the hen for comfort. The fact that the hen that steals her nests, hatches and raises more chicks than those that receive so much attention is argument sufficient in favour of the hen over the brooder. One trouble with many persons is that they continually annoy setting hens in making them comfortable. This is especially true when the eggs are high-priced. An old, setting hen is a good deal like Little Bo-Peep's sheep:—"Leave them alone, and they'll come home, carrying their tails behind them."

CREAM CHEESE.

The following recipe is taken from the *Agricultural Gazette* (London):—

Take one gallon of sweet cream in a glazed earthenware vessel, heat to a temperature of 68 degrees to 70 degrees. If taken from a separator allow cream to stand from four to six hours to ripen. Add 15 to 20 drops of Hansen's rennet diluted with a little water; stir this in for 10 minutes, afterwards covering the vessel, and allow it to stand for 24 hours undisturbed in a temperature of 60 degrees; after this time it should be coagulated about the consistency of Devonshire clotted cream, and should be turned into a cloth and hung inside a vessel to drain in a circulating atmosphere of about 60 degrees. The cloth should be of coarse huckaback towelling, as it is thick enough to retain the cream and at the same time allow the whey to drain. The draining should continue for 18 to 20 hours, and during this time the cream should be scraped two or three times from sides of cloth to faciliate the separation of moisture. After this it should be turned into a fresh cloth and placed under weights of from 8 lb. to 12 lb. until dry enough for moulding, which generally takes from 8 to 10 hours. Before moulding, salt should be added at the rate of 1½ oz. to 2 oz. to the quantity.

On the same subject a lady writes to the *Cape Agricultural Journal*—

When in England I was for several years in the habit of making these cheeses three and four times a week.

This was not done at a public dairy, but was carried out on a fairly large scale on a farm then occupied by my husband.

I had several small wooden vats, about 6 inches long, 4 inches broad, and about 2½ inches deep. Small holes were bored in the bottom of the vats to allow the moisture to escape.

In the bottom of the vats was placed a strainer which had previously been wrung out in hot water—as hot as possible. After adding a small quantity of salt the cream was placed on that strainer, and another strainer (similarly prepared) was put on the top, laying it on the cream.

These strainers were changed night and morning, the fresh ones having of course undergone the scalding process, and this practice was continued until the cheese had arrived at the proper consistency. The time would necessarily vary according to the weather, but I usually looked for results after about three or four days.

The suggestions given in the *Journal* as to the addition to the cream of new milk, sugar, and rennet evidently refer only to the making of what is termed a new milk cheese, but that is a wonderfully different article from a *pure cream* cheese, which is indeed a great delicacy, and one which, in a climate such as that of South Africa, ought to be able to command very remunerative prices.

[We should like to see some of our upcountry dairies try cream-cheese making, for which there should be a demand; it might perhaps turn out to be more remunerative than butter making. Soft cheeses are made in India and sell fairly well.—Ed. *A.M.*]

GENERAL ITEMS.

In answer to a Northern correspondent *re* rice bran as a food for stock, we are enabled to give an analysis of the bran, which we extract from the *Jamaica Agricultural Journal*:—

Analysis of a sample of Jamaica Rice Bran.

Moisture...	...	... 10·54
Oil ...	...	... 4·33
*Albuminous bodies	...	... 8·91
Carbohydrates, &c.	...	... 43·09
Woody fibre	...	... 20·50
†Ash ...	...	... 12·63
		100·00

This would form excellent ration for stock but for the large proportion of woody fibre, which is entirely indigestible. The proportion of protein (nitrogen) is fair, somewhat less than cornmeal, but only half what wheat bran contains. The fat or oil exists in better proportion to the protein and carbohydrates for our conditions than in corn or cornmeal Still, unless this rice bran could be sold at one-fourth the price of wheat bran, it could not in any way supersede it on account of the proportion of the indigestible fibre which is an objection to its constant use as a single ration. If mixed to the extent of one-third with some strong condensed food such as cotton-seed meal, and the bloodmeal used for poultry or beanmeal, it might form a cheap and suitable ration for cattle, pigs, or poultry.

The *Danish Milk Times* has the following:—The question has been asked, "Ought milking to be done in a quick or slow tempo? To answer this a series of trials have taken place in Germany, one of which we herewith publish. On the farm where the trials took place were the same lot of cows—five in number—alternately milked by an elderly woman, who milked very slowly, and by a very able young milkmaid, who finished her work in a very much shorter length of time. The following figures give the milk-yield from the same number of cows, milked at the same time of day, in pounds:—

No.		Slow Milking.		Quick Milking.
1	...	32	...	38¼
2	...	34½	...	51¼
3	...	50	...	68½
4	...	40½	...	43
5	...	44½	...	50

As an explanation of this enormous difference it is said that by the quick milking the milk-glands were influenced so as to give a larger quantity of milk.

Malaria Prevented by Lime.—The opportunities afforded Chief Wiley, of the Chemical Division, United States Department of Agriculture, have led him to the conclusion that the libera- application of lime to all centres of infection would prove of immense benefit, by promoting the vigorous development of nitrifying organisms, thus securing a rapid destruction of organic matter and the conversion of the nitrogenous par thereof into nitric acid or nitrates; and thus it i that lime may indirectly prove valuable in dis

* Contains nitrogen. † Including silica.

infecting and destroying the germs of malaria in general and yellow fever in particular. Briefly, it may be said, lime promotes vigorously the decay of organic matter, chiefly by furnishing a neutral or alkaline environment in which the nitrifying germs, which are most active in the destruction of organic matter, exercise their most important functions.

THE LEGEND OF THE ORANGE BLOSSOM.—The wearing of orange blossoms at weddings is accounted for in various ways. Among other stories is the following very pretty legend :—"An African king presented a Spanish king with a magnificent orange tree, whose creamy, waxy blossoms and wonderful fragrance excited the admiration of the whole court. Many begged in vain for a branch of the plant, and a foreign ambassador was tormented by the desire to introduce so great a curiosity to his native land. He used every possible means, fair or foul, to accomplish his purpose, but all his efforts coming to naught, he gave up in despair. The fair daughter of the Court gardener was loved by a young artisan, but lacked the dowry the family considered necessary in a bride. One day, chancing to break off a spray of orange blossoms, the gardener thoughtlessly gave it to his daughter. Seeing the coveted prize in the girl's hair, the wily ambassador offered her a sum sufficient for the disired dowry provided she gave him the branch and said nothing about it. Her marriage was soon celebrated, and on her way to the altar, in grateful remembrance of the source of all her happiness, she secretly broke off another bit of the lucky tree to adron her hair." Since the plant was first introduced into Europe it has been customary for a bride to wear a few sprays of the orange blossom in her hair or somewhere on her wedding dress.

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A SKETCH OF THE HISTORY OF INDIAN BOTANY.*

BY SIR GEORGE KING, K.C.I.E. LL.D. M.B. F.R.S.

THE earliest reference in literature to Indian plants are, of course, those which occur in the Sanskrit classics. These are, however, for the most part, vague and obscure. The interest which these references have great as it may be, is not scientific, and they may therefore be omitted from consideration on the present occasion. The Portuguese, who were the first Europeans to appear in India as conquerors and settlers, did practically nothing in the way of describing the plants of their Eastern possessions. And the first contribution to the knowledge of the Botany of what is now British India was made by the Dutch in the shape of the 'Hortus Malabaricus,' which was undertaken at the instance of Van Rheede, governor of the territory of Malabar, which during the latter half of the seventeenth century had become a possession of Holland. This book, which is in twelve folio volumes and is illustrated by 794 plates, was published at Amsterdam between the years 1686 and 1703, under the editorship of the distinguished Botanist Commelyn. Van Rheede was himself only a Botanical amateur, but he had a great love of plants and most enlightened ideas as to the value of a correct and scientific knowledge of them. The 'Hortus Malabaricus' was based on specimens collected by Brahmins, on drawings of many of the species made by Mathæus, a Carmelite missionary at Cochin, and on descriptions originally drawn up in the vernacular language of Malabar, which were afterwards translated into Portuguese by Corneiro, a Portuguese official in Cochin, and from that language finally done into Latin by Van Douet. The whole of these operations were carried on under the general superintendence of Casearius, a missionary at Cochin. Of this most interesting work the plates are the best part; in fact, some of these are so good that there is no difficulty in identifying them with the species which they are intended to represent. The next important contribution to the Botanical literature of Tropical Asia deals rather with the plants of Dutch than of British India. It was the work of George Everhard Rumph (a native of Hanover), a physician and merchant, who for some time was Dutch consul at Amboina. The materials for this book were collected mainly by Rumphius himself, and the Latin descriptions and the drawings (of which there are over one thousand) were his own work. The book was completed in 1690, but it remained unpublished during the author's lifetime. Rumph died at Amboina in 1706, and his manuscript, after lying for thirty years in the hands of the Dutch East India Company, was rescued from oblivion by Professor John Burman, of Amsterdam (commonly known as the elder Burman), and was published under the title of 'Herbarium Amboinense,' in seven folio volumes, between the years 1741 and 1755. The illustrations of this work cover over a thousand species, but they are printed on 696 plates. These illustrations are as much inferior to those of Van Rheede's book as the descriptions are superior to those of the latter. The works of Plukenet, published in London between 1696 and 1705, in quarto, contain figures of a number of Indian plants which, although small in size, are generally good portraits, and therefore deserve mention in an enumeration of botanical books connected with British India. An account of the plants of Ceylon, under the name 'Thesaurus Zeylanicus,' was published in 1737 by John Burman (the elder Bruman), and in this work many of the plants which are common to that island and to Peninsular India are

* From the Report of the Sixty-ninth Meeting of the British Association for the Advancement of Science held at Dover in September, 1899.

described. Burman's book was founded on the collections of Paul Hermann, who spent seven years (from 1670 to 1677) exploring the Flora of Ceylon at the expense of the Dutch East India Company. The nomenclature of the five books already mentioned is all uni-nominal.

Hermann's Cingalese collection fell, however, sixty years after the publication of Burman's account of it, into the hands of Linnæus, and that great systematist published in 1747 an account of such of the species as were adequately represented by specimens, under the title 'Flora Zeylanica.' This Hermann Herbarium, consisting of 600 species, may still be consulted at the British Museum, by the trustees of which institution it was acquired, along with many of the other treasures possessed by Sir Joseph Banks. Linnæus's 'Flora Zeylanica' was followed in 1766 by the 'Flora Indica' of Nicholas Burman (the younger Burman)—an inferior production, in which about, 1,500 species are described. The Herbarium on which this 'Flora Indica' was founded now forms part of the great Herbarium Delessert at Geneva.

The active study of Botany on the binominal system of nomenclature invented by Linnæus was initiated in India itself by Koenig, a pupil of that great reformer and systematist. It will be convenient to divide the subsequent history of Botanic science in India into two periods, the first extending from Koenig's arrival in India in 1768 to Sir Joseph Hooker's arrival in 1848; and the second from the latter date to the present day.

The pioneer John Gerard Koenig was a native of the Baltic province of Courland. He was a correspondent of Linnæus, whose pupil he had formerly been. Koenig went out to the Danish Settlement at Tranquebar (150 miles south of Madras) in 1768, and at once began the study of Botany with all the fervour of an enthusiasm which he succeeded in imparting to various correspondents who were then settled near him in Southern India. These friends formed themselves into a society under the name of 'The United Brothers,' the chief object of their union being the promotion of Botanical study. Three of these brothers, viz. Heyne, Klein and Rottler, were missionaries located near Tranquebar. Gradually the circle widened, and before the century closed, the enthusiasm for Botanic research had spread to the younger Presidency of Bengal, and the number of workers had increased to about twelve, among whom may be mentioned Fleming, Hunter, Anderson Berry, John, Roxburgh, Buchanan (afterwards Buchanan-Hamilton), and Sir William Jones, so well known as an Oriental scholar. At the first it was the custom of this brotherhood merely to exchange specimens, but gradually names began to be given, and specimens, both named unnamed, began to be sent to Botanists of established reputation in Europe. Many plants of Indian origin came thus to be described by Retz, Roth, Schrader, Wildenow, Vahl, and Smith. Rottler was the only member of the band who himself published in Europe descriptions of any of the new species of his own collecting, and these appeared in the 'Nova Acta Acad. Nat. Curiosorum' of Berlin. A little later Sonnerat and other Botanists of the French Settlement at Pondicherry sent large collections of plants to Paris, and these were followed at a considerably latter date by the collections of Leschenhault. These French collections were described chiefly by Lamarck and Poiret. Hitherto Botanical work in India had been more or less desultory, and it was not until the establishment in 1787 of the Botanic Garden at Calcutta that a recognised centre of Botanical activity was established in British India. Robert Kyd, the founder of that Garden, was more of a gardener than a Botanist. He was, however, a man of much energy and shrewdness. The East India Company was still in 1787 a trading company, and a large part of their most profitable business was derived from the nutmegs and other spices exported from their settlements in Penang, Malacca, Amboina, Sumatra, and other islands of the Malayan Archipelago. The Company were also in those days the owners of a fine fleet of sailing vessels, and the teak of which these ships were built had to be obtained from sources outside the Company's possessions. The proposal to found a Botanic Garden near Calcutta was thus recommended to the Governor of the Company's settlements in Bengal on the ground that, by its means, the cultivation of teak and of the Malayan spices might be introduced into a province near one of the Company's chief Indian centres. Kyd, as a Lieutenant-Colonel of the Company's engineers and as Secretary to the Military Board at Calcutta, occupied a position of considerable influence, and his suggestion evidently fell on no unwilling ears; for the Government of Bengal, with the promptitude to accept and to act on good advice in scientific and semi-scientific matters which has characterised them from the day of Kyd until now, lost no time in taking steps to find a site for the proposed garden. Colonel Kyd's official proposal was dated June 1, 1786 and, in a despatch dated August 2, Calcutta Government recommended Kyd's proposal to the Court of Directors in London. Posts were slow and infrequent in those days, and the Calcutta Government were impatient. They did not wait for a reply from Leadenhall Street, but in the following July they boldly secured the site recommended by Colonel Kyd. This site covered an area of 300 acres, and the whole of it with the exception of thirty acres which were subsequently given up to Bishop Middleton for an English college, still continues under cultivation as a Botanic Garden. Kyd died in 1793, and in the same year his place as Superintendent of the Garden was taken by Dr. William Roxburgh, a young Botanical enthusiast, and one of Koenig's 'United Brotherhood.' Roxburgh had studied Botany in Edinburgh, where he was a favourite pupil of Dr. Hope. Desirous of seeing something of foreign countries, he made several voyages to Madras in ships belonging to the Honourable East India Company. In 1776 he accepted an appointment in the Company's Medical Establishment, and was posted to the town of Madras, where he very soon made the acquaintance of Koenig. Roxburgh was shortly after transferred to a remote district, a good deal to the north of Madras, then named the Northern Circars. The station of Samalcotta, which formed Roxburgh's headquarters during his sojourn in the Circars, stands on the edge of a hilly region possessing a very interesting Flora, and this Flora, he explored with the greatest ardour; and as part of the result of his labours an account some of the most interesting of its plants was published in London, at the East India Company's expense, in three large folio volumes under the title 'The plants of the Coast of Coromandel.' This was Roxburgh's earliest publication on a large scale. The first part of this book appeard in 1795, and the last not until 1819, *i.e.* five years after the author's death. The increased facilities afforded to Roxburgh after his transfer to a comparatively well-equipped institution like that at Calcutta induced him at once to begin the preparation of descriptions of all the plants indigenous to British India of which he could procure specimens. And so diligently did he work that, when he was finally driven from India by ill-health in 1813, he left complete and ready for publication the manuscripts of his 'Flora Indica' and of his 'Hortus Bengalensis' (the latter being an enumeration of the plants in cultivation in the Calcutta Garden). He also left admirable coloured drawings (mostly of natural size) of 2,533 species of plants indigenous to India. Seldom have twenty years yielded so rich a Botanical harvest! Dr. Roxburgh was thus the first Botanist who attempted to draw up a systematic account of the plants of India, and his book, which is on the Linnæan system, is the basis of all subsequent works on Indian Botany; and until the publication of Sir Joseph Hooker's monumental 'Flora of British India' it remained the only single book through which a knowledge of Indian plants could be acquired. Roxburgh was immediately succeeded in the Calcutta Garden by Dr. Buchanan, Hamilton, a man of many accomplishments, who had travelled from Nepal in the North to Ava and

Mysore in the South, accumulating materials for a Gazetteer of the Honourable Company's possessions. Dr. Buchanan was a Zoologist as well as a Botanist. He had published a valuable account of Mysore, Canara, and Malabar, and had collected materials for a work on the Fishes of India, besides having accumulated a large Herbarium, part of which may now be consulted at the University of Edinburgh. Prior to his death Buchanan-Hamilton had begun to write a learned commentary on Van Rheede's 'Hortus Malabaricus.' Many of his Nepalese collections were described in 1825 (a few years before his own death) by Don in his 'Prodromus Floræ Nepalensis.' Buchanan-Hamilton remained only one year at Calcutta, and in 1815 he was succeeded by Nathaniel Wallich, a native of Copenhagen, who, prior to his appointment to the Calcutta Garden, had been attached as surgeon to the Danish settlement at Serampore, twenty miles higher up the Hooghly. Wallich remained Superintendent of the Calcutta Garden for thirty years. In 1846 he went to England, and in 1854 he died. During his tenure of office in the Calcutta Garden, Wallich organised collecting expenditions to the then little-known regions of Kamaon and Nepal (in the Himalaya), to Oudh, Rohilcund, Sylhet, Tenasserim, Penang, and Singapore. He personally undertook in fact a botanical survey of a large part of the Company's possessions in India. The vast materials thus collected under his own immediate direction, and the various contributions made by others, were taken to London by him in 1828. With these were subsequently incorporated the collections of Russell, Klein, Heyne, Rottler, Buchanan-Hamilton, and Roxburgh. And by the help of a band of distinguished European Botanists, among whom may be named De Candolle, Kunth, Lindley, Meissner, Nees von Esenbeck, Von Martius, and Bentham (the latter in a very special manner), this vast mass of material was classified and named specifically. A catalogue of the collection was prepared by Wallich himself (largely aided by Bentham), and sets of the named specimens were distributed to the leading Botanical institutions in Europe, every example of each species bearing the same number. No description of the whole collection was ever attempted, but many of the plants belonging to it were subsequently described in various places and at various times. So extensive was the Wallichian distribution that, amongst the names and synonyms of tropical Asiatic plants, no citation is more frequent in Botanical books than that of the contraction 'Wall. Cat.' Besides the naming and distribution of this gigantic collection, Wallich prepared and published, at the expense of the same liberal and enlightened East India Company, his 'Plantæ Asiaticæ Rariores,' in three folio volumes with 300 coloured plates. He also contributed to an edition of Roxburgh's 'Flora Indica,' which was begun by the celebrated Dr. Carey of Serampore, descriptions of many plants of his own collecting. But the task of publishing his discoveries in this way proved beyond his powers, as it would have proved beyond those of any one who had only 365 days to his year, and less than a hundred years as his term of life! Carey and Wallich's edition of Roxburgh's 'Flora Indica' was brought to an untimely conclusion at the end of the *Pentandria Monogynia* of Linnæus. Wallich also began an illustrated account of the Flora of Nepal under the title 'Tentamun Floræ Napalensis.' But this also came to a premature end with the publication of its second part.

During much of the time that Wallich was labouring in Northern India, Robert Wight; a botanist of remarkable sagacity and of boundless energy, was labouring in Southern India, chiefly in parts of the Peninsula different from those in which Koenig and his band had worked. Wight was never liberally supported by the Government of Madras, and it was mostly by his own efforts and from his own resources that his collections were made, and that his Botanical works were published. The chief of the latter is his 'Icones Plantarum.' This book consists of figures with descriptions of more than two thousand Indian species. A good many of the plates are indeed copies from the suite of drawings already referred to as having been made at Calcutta by Dr. Roxburgh. The rest are from drawings made by native artists under his personal supervision. Ample evidence of the extraordinary energy of Dr. Wight is afforded by the facts that, although he had to teach the native artists whom he employed both to draw and to lithograph, the two thousand *Icones* which he published and described were issued during the short period of thirteen years, and that during the whole of this time he performed his official duties.

Besides this *magnum opus* Wight published his *Spicilegium Nilghirense* in two vols. quarto, with 200 coloured plates. And between 1840 and 1850 he issued in two vols. quarto, with 200 plates, another book named 'Illustrations of Indian Botany,' the object of which was to give figures and fuller descriptions of some of the chief species described in a systematic book of the highest Botanical merit, which he prepared conjointly with Dr. G. A. Walker-Arnot, Professor of Botany in the University of Glasgow, and which was published under the title 'Prodromus Floræ Peninsulæ Indicæ.' The 'Prodromus' was the first attempt at a Flora of any part of India in which the natural system of classification was followed. Owing to various causes, this work was never completed, and this splendid fragment of a Flora of Peninsular India ends with the natural order *Dipsaceæ*.

The next great Indian botanist whose labours demand our attention is William Griffith. Born in 1810, sixteen years after Wight, and twenty-four years later than Wallich, Griffith died before either. But the labours even of such devotees to science as were these two are quite eclipsed by those of this most remarkable man. Griffith's Botanical career in India was begun in Tenasserim. From thence he made Botanical expeditions to the Assam valley, exploring the Mishmi, Khasia, and Naga ranges. From the latter he passed by a route never since traversed by a Botanist, through the Hookung valley down the Irrawadi to Rangoon. Having been appointed, soon after his arrival in Rangoon, surgeon to Pemberton's Embassy to Bhotan, he explored part of that country, and also sent collectors into the neighbouring one of Sikkim. At the conclusion of this exploration he was transferred to the opposite extremity of the Northern frontier, and was posted to the Army of the Indus. After the subjugation of Cabul, he penetrated to Khorassan. Subsequently he visited the portion of the Himalaya of which Simla is now the best-known spot. He then made a run down the Nerbudda valley in Central India, and finally appeared in Malacca as Civil Surgeon of that Settlement. At the latter place he soon died of an abscess of the liver brought on by the hardships he had undergone on his various travels, which were made under conditions most inimical to health, in countries then absolutely unvisited by Europeans. No Botanist ever made such extensive explorations, nor himself collected so many species (9,000), as Griffith did during the brief thirteen years of his Indian career; none ever made so many field notes or wrote so many descriptions of plants from living specimens. His Botanical predecessors and contemporaries were men of ability and of devotion. Griffith was a man of genius. He did not confine himself to the study of flowering plants, nor to the study of them from the point of view of their place in any system of classification. He also studied their morphology. The difficult problems in the latter naturally had most attraction for him, and we find him publishing, in the 'Linnæan Transactions,' the results of his researches on the ovule in *Santalum*, *Loranthus*, *Viscum*, and *Cycas*. Griffith was also a cryptogamist. He collected, studied, and wrote much on Mosses, Liverworts, *Marsiliaceæ*, and Lycopods, and he made hundreds of drawings to illustrate his microscopic observations. Wherever he travelled he made sketches of the most striking features in the scenery. His

habit of making notes was inveterate; and his itinerary diaries are full of information not only on the Botany, but also on the zoology, physical geography, meteorology, archæology, and agriculture of the countries through which he passed. His manuscripts and drawings, although left in rather a chaotic state, were published after his death under the editorship of Dr. McClelland, at the expense of the enlightened and ever-liberal East India Company. They occupy six volumes in octavo, four in quarto, and one (a 'Monograph of Palms') in folio.

Another Botanist of much fame, who died prematurely in 1822, after an Indian career of only nine years, was Dr. William Jack. In 1814-15 Jack accompanied Ochterlony's army to the Nepal terai. He was transferred in 1818 to the Company's Settlement in Sumatra under Sir Stamford Raffles, and during the four years of his residence in Sumatra he contributed to Botanical literature descriptions of many new genera and species which were published in his 'Malayan Miscellanies.' His collections, unfortunately, were for the most part lost by an accident, but those which were saved are now in the Herbarium Delessert in Geneva,

(To be continued.)

COTTON CULTIVATION.

The following is the translation of an article specially contributed to the *Egyptian Gazette* by M. Y. K. Agathon, farm manager to H. E. Boghos Pasha Nubar:—

In accordance with your laudable desire to point out to land owners who grow cotton the means which science and agricultural experience show to be necessary to fight against or at least attenuate the disastrous effects which the scarcity of water this year might occasion, I will hear trace some of the means which each might employ. My own personal opinion with regard to the bad condition of the Nile, is that a large number of land-holders will lose the whole of their cotton crop.

In order to allow the cotton plant to resist without water for a reasonably long time I would give the following bits of advice to cultivators:

1. On sweet lands (*Ard Helou*), it is necessary to plough well into the ground. For this purpose European ploughs might be employed. If these are not available, the native plough (*Mihrat Beledi*) may be dragged over the furrow which has already been opened by the same instrument. The effect of this deep ploughing will be to allow the roots of the cotton plant to penetrate rapidly into the sub-soil, which, being always damp, will furnish the water necessary for cultivation.

It has often been remarked in Europe, especially in the south of France, in Italy, and in Algeria, that during years of drought good crops were always obtained on lands which had been deeply ploughed, whilst on those superficially ploughed the crop was almost nil.

2. Sow cotton seed as soon as the climate of the region allows of it, as the plant, sown in time and, not suffering from scarcity of water in the first phases of its vegetation, will send out numerous and deep roots which might well resist the dearth of water when the time of drought of long duration comes.

3 Dress and weed out the cotton fields as often as possible. It is usual to give three second dressings to the cotton plant during its vegetation, but I think that this year five and even six second dressings should be given. A popular adage has it that "two dressings are worth one watering or one dressing is equivalent to half a watering." This dictum is quite right as by dressing the earth we destroy the cappilarity of the soil, the effect of which is to "pump" its humidity. On clay lands in Lower Egypt, in about ten days after irrigation the earth cracks and shows fairly wide crevices; the strong rays of the sun penetrating into these crevices quickly evaporate the little humidity which the soil possesses, but when the earth is dressed frequently, these crevices no longer show, and owing to the solar rays in June aud July—the most critical time for cotton—not having any more hold on the sub-soil, the humidity which remains there prevents the drying-up, and, in consequence, the death of the plant.

4. When in June and July it is known that owing to the programme of rotation the cotton-fields will remain for 40 or 50 days without water on estates where there are chips or reeds, I would suggest that after irrigation the surface of the soil should be covered with a light bed of chips or reed. This bed would form a sort of shade, the earth begin no longer uncovered, the evaporation of the soil would be prevented, and the water given with the last irrigation would allow the plant to vegetate about fifty days without watering.

5. The digging of sakich wells might render great services on lands where water may be obtained pretty abundantly to a depth of five to six metres. Half a watering furnished by the sakieh might in certain cases save the crop, which otherwise would be lost without fail. I have myself just had recourse to this means. At Seguine near Mehallet Roh at a depth of six metres the water spouted out, like the creater of a volcano, and in less than half-an-nour the whole of the well, whose holding capacity was 300 metres, was filled with water.

These are a few means which I modestly put before Egyptian cultivators. The country, happily, does not lack in enlightened agriculturists much more qualified than I am, and if each of them, in the interest of the public, would indicate through the medium of the Press the means, other than those I have given here, of remedying the disastrous effect of the scarcity of water, he would assuredly render an inestimable service to the country. I trust that your confreres of Alexandria and Cairo will follow your laudable example and will themselves make an appeal to the enlightenment of agriculturists to save the country from a disaster without precedent in the history of Egyptian Agriculture in this century.—*Egyptian Gazette*, March 3.

BURNING WEEDS.

It is a mistake to let weeds go to seed in the garden or around the farm, under the impression that they can be destroyed if gathered in the fall and burned. In the first place, the job is apt to be forgotten until most of the weed seeds have been scattered. Even if a weed is burned its seeds may not be destroyed, unless a hot fire of brush is first made and the weed seeds are thrown on a mass of burning coals. If weeds are piled in heaps they burn slowly, and, as the seed falls to the ground it is protected from burning by the stratum of carbonic-acid gas that is found at the bottom of all slow-burning fires.—*American Cultivator.*

A LOUSE-PROOF ROOST.

The accompanying diagram from the *American Agriculturist* depicts a ratting good idea for protecting hen-roosts from invation by lice or ticks, which are becoming so troublesome in many parts of this Colony. The plain is simply to suspend the roosts with wire, as recommended a little time ago by Mr. McCue; but, instead of using, as he suggests, a bit of keroseney rag, get an old jam tin soldered on to each wire, forming a cup which can be kept filled with crude or pure kerosene, or even greasy water. The same arrangement might be used for hanging safes, to prevent the inroads of ants.—*Agricultural Gazette.*

COLOMBO SALES OF CEYLON TEA AND AVERAGES FOR 1899.*

Estate.	Quantity Sold. lb.	Average Price. c.	Estate.	Quantity Sold. lb.	Average Price. c.	Estate.	Quantity Sold. lb.	Average Price. c.	Estate.	Quantity Sold. lb.	Average Price. c.
Agra Ouvah	389000	51	Kirklees	135100	40	Havilland	86500	34	Dalukoya	59700	38
Vogan	344100	38	New Valley	132400	43	Dunbar	86400	49	Perth	59400	38
Polatagama	322000	37	Bellongalla	132000	34	Nakiadeniya	86300	36	Nugagalla	59100	38
Glasgow	320100	51	Aberdeen	130600	37	Mt. Everest	85000	49	Thedden	58700	38
Rayigam	312800	35	Tymawr	128400	45	Morankande	84000	36	Walpita	58100	38
Pallegoda	29[illegible]000	40	Geragama	128200	35	Little Valley	83900	39	Galkadua	58100	35
Brownlow	284000	42	Gangawatte	127200	42	Dickapittia	83700	40	Forest Hill	58000	35
High Forest	270000	50	Yarrow	127000	38	Siriniwasa	83000	35	Macaldenia	57500	39
Ganapalla	259600	36	Maskeliya	125800	43	Harrington	82900	47	Hatton	57300	48
Harangalla	256200	37	Minna	124900	45	Hatdowa	81700	34	Mary Hill	57000	37
Bandara Eliya	255600	40	Deniyaya	123700	38	Mousakelle	81600	38	Ambalawa	56700	35
Weyungawatte	255500	37	Gampaha	121700	44	Holton	80900	36	Honiton	56700	35
Myraganga	245600	37	Glengariffe	120400	41	Mahatenne	80600	35	Mapitigama	54800	38
Middleton	241000	51	Ellaoya	119900	38	Galphele	80200	36	Carney	54700	34
Eila	240780	36	Waitalawa	119500	40	Gonapitiya	80000	46	Nillicollawatte	54300	36
Glentilt	237350	45	Depedene	119300	35	Blink Bonnie	79800	45	Hapugasmulle	54100	34
Knavesmire	234000	38	Hangran Oya	118800	38	Maldeniya	79500	35	Hopewell	54000	35
Maha Ouvah	233700	43	Bloomfield	118000	43	Theydon Bois	79100	39	Bollagalla	53400	35
Glassaugh	232[illegible]00	44	Ambragalla	117700	39	Vathalana	78900	37	Dorankande	52400	36
Hayes	232000	41	Queensland	116000	42	Irex	78700	33	Labugama	52000	35
Tonacombe	230700	44	Ranasingapatna	115700	39	Murraythwaite	78650	36	Killin	51700	34
Arapolakanda	230600	41	Matale	115500	37	Nyanza	78500	41	Gallustain	51600	35
Mawilganga-			Neuchatel	115100	36	Matalawa	78500	32	Sirikandura	51300	35
watte	217500	36	Gonapatiya	113800	46	Citrus	77900	35	Orpington	50400	36
Erracht	209700	35	Ruanwella	113400	36	Drayton	77400	43	Massena	50180	37
Great Valley	199700	42	Harrow	112200	43	Claremont	76680	37	Bittacy	50000	45
Rondura	198070	36	Agra Oya	111400	41	Iona	76675	53	Ravana	49800	37
Clunes	196000	36	Morahela	111000	36	Digdola	76400	36	Whyddon	49100	41
Mt. Temple	195520	36	Ferndale	110600	41	Theberton	76300	36	Natuwakelle	49000	35
Penrhos	193500	40	Gallawatte	110400	38	Agra Elbedde	75700	45	Loughton	48900	35
Weeoya	191100	34	Rookwood	109800	39	Carfax	75200	47	Uda	48700	31
Mocha	187790	50	Killarney	109100	40	Ramboda	74000	39	Hopton	48000	40
Shrubs Hill	185900	39	Edella	108900	35	Amblakande	73700	36	Dryburgh	48000	37
Dunkeld	185700	43	Freds Ruhe	108000	34	Ravenscraig	73400	36	Ben Nevis	47920	46
Monkswood	184000	51	Galella	107960	40	Munukettia	73300	43	Cotswold	47800	39
Yataderia	182300	34	St. Heliers	105100	39	Nugawella	73100	37	Walton	47566	37
Clyde	179700	36	Kelaniya and			Scenagolla	72900	45	Melrose	47400	38
Pine Hill	178300	43	Braemar	104500	42	Glenalla	72800	34	Nahalma	47300	35
Templestove	176750	42	Dea Ella	103500	37	Columbia	72800	47	Pusella	47100	39
Ukuwella	176400	34	Lameliere	103100	41	Carberry	72500	35	Gonavy	46500	40
Ascot	175731	35	Naseby	102700	51	Ircby	71900	48	Hiralouvah	46000	37
Warakamure	173300	33	Deaculla	101400	43	Oonoogaloya	71500	39	Walahandua	45900	37
Waratenna	173300	34	Stamford Hill	99600	46	Mossend	70820	42	Mousakande	45800	34
Castlereagh	170000	42	Hanagama	99300	34	Roseneath	70500	37	Tyspane	45500	40
Roberry	168900	44	Inverness	99100	43	Mount Vernon	69700	50	Hentleys	45300	37
Ottery	168590	45	Yapane	97900	41	Salawe	69300	34	Oakham	44700	42
K. P. W.	167600	37	Palmerston	97400	48	Orion	69000	34	Coslanda	44500	41
Neboda	167300	36	Kincora	97300	41	Anningkande	68600	39	Gampai	43750	35
Torwood	166600	38	Mansfield	96100	46	Ingroogalla	68200	37	Beau Sijour	43600	32
Glencorse	165000	38	Gangwarily	92100	34	Farnham	68000	37	Elchico	43100	35
Putupaula	161200	38	Nabavilla	91800	46	Dambagastalawa	67900	42	Halwatura	42200	36
Hornsey	160000	42	Battewatte	91700	36	Lyndhurst	67800	35	Kandaloya	42000	37
Erlsmere	156600	40	Kilkenny	91500	36	Rowley	65300	42	Maligatenne	42000	29
Dammeria	156500	42	Kurulugalla	91100	34	Galapittakande	65000	41	Pansaltenne	41800	35
Woodend	156200	35	Coreen	91062	44	Cooroondoowatte	64800	41	Ratwatte	41700	38
Poilkande	151300	34	Mahanilu	91000	42	Strathspay	64800	41	Romania	41670	32
Chesterford	151100	37	Fairlawn	90400	44	Grange Garden	64400	40	Kitulgalla	41500	36
Nillomally	150900	43	Passara Group	90145	43	T'Villa	64066	34	Woodthorpe	41400	37
Marigold	147700	44	Hatherleigh	89500	34	Bargany	63500	43	Dartry	40800	28
Kelani	145100	37	Ferriby	89500	33	Corfew	62900	39	St. Leonards on		
Glendon	142400	38	Ingeria	88900	35	Koslande	62500	38	Sea	40700	34
Galoola	140400	43	Patiagama	87600	40	Dikmukalana	62200	36	Ancliff	40500	40
St. Johns	14[illegible]300	57	Annandale	87500	46	Narangoda	61900	35	Tembeligalla	40500	37
Kanangama	138850	30	Lonach	87200	38	Cleveland	61630	47	Devonford	40400	64
Doragalla	136300	38	Errollwood	87000	44	Scrubs	60500	44	Henegama	40270	30
Talgaswella	136000	35	Stisted	86600	38	Dalhousie	60200	43	St. Catherine	39500	35
Kotuagedera	135770	35	Monrovia	86600	35	Lower Dikoya	59900	37	Galkande	39400	33

* List published by the local "Times" re-arranged according to quantity sold.

Estate.	Quantity Sold.	Average Price.
	lb.	c.
Longford	38400	36
Hunasgeria	37600	32
Bogahagodawatte	37400	35
Stafford	37000	46
Wariatenne	36800	37
Bidbury	36600	39
New Peradeniya	36300	42
Blairgowrie	36500	26
Amblangoda	36200	40
Puspone	35700	40
Beaumont	35400	37
Meddakande	35000	38
Warwick	34200	43
Vincit	34200	34
Tiddydale	33900	33
Wewatenne	33700	35
Mausa Eliya	33600	39
Maragalla	33600	38
Rockside	32600	31
Malvern	32600	43
Pindeni Oya	32500	33
Maha Oya	31900	33
Bowhill	31600	38
Maddugeddre	31400	36
O'bode	31200	40
Rickarton	31100	47
Welgampola	30900	33
Baverley	30500	39
Parsloes	30400	39
Chetnole	30200	36
Mipitakande	30200	29
Kosgalla	29800	36
Tawalamtenne	29800	38
Charlie Hill	29700	35
Sapitiyagodde	29500	36
Akkara Totum	29200	31
Eladuwa	29000	33
Wilpita	28900	32
Evalgolla	28800	36
Castlemilk	28700	36
Blackburn	28600	35
Keengaha Ella	28540	35
Ossington	27800	33
North Matale	27600	41
Harrisland	27500	34
Gonavy	27300	37
Stockholm	27300	43
Gwernet	26800	37
Lauderdale	26800	33
Ewhurst	26500	35
St. Edwards	26100	37
Kadienlena	25900	29
Sutton	25900	49
Mandara Nuwara	25900	42
California	25700	31
Orangefield	25700	32
Polduwa	25600	31
Suduganga	25500	39
Choughleigh	25500	38
Paradise	25400	34
Gingranoya	25300	38
Bodawa	25000	36
Moragalla	24600	34
Birnam	24500	34
Batalgalla	24400	37
Razeen	24400	35
Yspa	24300	29
Silverkandy	23800	57
Weygalla	23700	36
Bokutua	23600	37
Bickley	23600	34
Agras Land	23590	33
Meddegodde	23500	36
Doonhinda	23300	42
Callander	23300	43
Illukettia	22900	33
Osborne	22800	40
Huanuco	22500	33
Florida	22500	32
Forres	22500	42
Tyegrove	22400	40
Monkton	22000	37
Horagola	21900	35
Yoxford	21800	35
Deniyayagama	21700	36
Abbotsleigh	21500	51
Dedugalla	21500	30
Sinnadua	21210	36
Monte Christo	21200	39
Koladeniya	20900	31
Frogmore	20800	47
Glenorchy	20600	50
Wewawatte	20200	35
Kosgama	20000	34
Syston	19800	38
Woodstock	18800	38
Torowatotum	18800	36
Kosgahahena	18500	27
Palwatte	18200	36
Kekuna Hena	18100	39
Aberfoyle	18000	38
Eilandhu	17100	35
Yaha Ella	17000	35
Rothes	17000	47
Kirindi	17000	41
Suriawatte	17000	34
Troup	17000	34
Colva	16800	33
Carendon	16800	33
Raven Oya	16600	36
Laurence	16500	40
Park Hill	16400	34
Kakriskanda	16300	36
Kotigalla	16200	29
Meddetenne	16000	39
Urugalla	16000	31
New Angamana	16000	29
Panapitiya	15800	32
Arslena	15800	36
Ettapolla	15700	35
Raxawa	15700	37
Shannon	15500	36
Primrose Hill	15500	35
North Pundalu-Oya	15410	38
Rozelle	15400	30
Maryland	15400	34
Auburn	15200	35
Ovoca A.I.	15100	31
Mahalla	15000	35
Glenalmond	15000	34
Kolapatana	15000	40
Hurstpierpoint	14900	30
Polpitiya	14800	34
Fairfield	14600	32
Oakham	14500	39
Hatanagalla	14420	37
Nonpariel	14000	42
Theresia	14000	38
Florence	14000	37
Goonambil	14000	34
Kerenvilla	14000	32
Donside	13900	32
Mutiyangoda	13900	30
Udapolla	13900	36
Kalupahena	13700	32
Woodlands	13600	39
New Galway	13600	50
Yatiyana	13500	35
Fetteresso	13200	52
Jack Tree Hill	13200	37
Pathulpana	13100	32
Kuduoya	13000	41
Yellatenne	13000	38
Dotel Oya	12800	38
Palmgarden	12700	33
Marguerita	12600	43
Alhamud	12100	30
Trewardena	11700	31
Horagaskelle	11700	34
Mora Ella	11400	38
Chapelton	11200	28
Shawlands	11100	35
Udabage	11030	39
Handrokande	11000	35
Graceland	10800	33
Unugalla	10500	38
Ettie	9800	26
Hemmingford	9720	29
Bovey	9700	36
Forest Valley	9500	39
Daphne	9500	33
Patirajah	9200	35
Derby	9000	34
Halloowelle	9000	36
Kahatagalla	8900	34
Nooranie	8900	27
Arduthie	8800	35
Manikwatte	8600	35
Ketadola	8600	33
Caledonia	8600	32
Galpotagama	8600	32
Nega	8500	33
Dehiowitta	8300	33
Haputale	8270	35
St. Julia	8200	30
Mount Clare	8100	37
Sadamulle	7600	33
Elemane	7500	36
Verelapatna	7400	47
Tientsien	7090	27
Ritni	7010	39
Katabolla	7000	20
Carlin Valley	6700	34
Venture	6400	35
Downside	6300	36
Ardlaw	6200	36
Meemora Oya	6200	31
Akoowatte	6004	24
Olahitagoda	6000	31
Comillah	6000	34
Wallasmulle	5500	32
Galatotta	5300	30
Raglan	5200	33
Walleyfield	5000	27
Mahagoda	4300	30
Glanrhos	4300	27
Mount Pleasant	4300	35
Ivies	3900	27
Peak shadow	3800	31
Allakolla	3500	25
Alutkelle	3100	31
Sirisanda	2700	24
Savernake	2700	22
Radella	2600	29
Radage	2500	31
Pussetenne	2000	24
Danawkande	1700	35
Glentaffe	1100	26
Ratuville	1000	24

NO. OF ESTATES SELLING TEA IN COLOMBO:

Rate of Increase.

Year.	Estates.
1894	90
1895	141
1896	248
1897	349
1898	442
1899	487

Weed-Killer—Mr. White, a florist, of Worcester, was proceeded against on January 16 in the Qneen's Bench Division by the Pharmaceutical Society for selling a weed-killer containing arsenic, he not being a person permitted by law to distribnte poisons. It appeared that the florist did not keep the weed-killer in stock, but sent on any orders he might receive to the manufactnrers, who executed the order, and gave him a commission. The connty court judge of Worcestershire held that the defendant, White, was, within the meaning of the Act, not the seller of the weed-killer. This decision was appealed against by the Pharmaceutical Society but the court, without hearing counsel for the respondent, dismissed the appeal, and npheld the decisiou of the connty court judge. The Society will have to be more careful in operations.—*Gardenrs' Chronicle.*

COFFEE IN QUEENSLAND.

REPORT OF THE INSTRUCTION IN COFFEE CULTURE.

Sir,—I have the honour to submit my Report. Having reported myself at your office on my arrival from India on the 10th of January of this year, I commenced my duties by leaving Brisbane on the 21st, and proceeding, under your orders, to Cooktown, with the object of working my way southward through the coffee-growing districts as far as Mackay, and compiling a report on the industry.

It so happened, through force of circumstances that I shall give in detail later, that I was prevented from carrying out the programme originally intended, and, instead of being able to return to Brisbane in a position to draw up and submit to you a detailed report upon the industry in the whole colony, I only got as far as Cairns on my southward journey, and have remained here since.

At Cooktown I was enabled, by the courtesy of Mr. Jas. Dick, to go round the district somewhat, and to see what land there was under the cultivation of coffee, and also to judge of some of the soils and lands in their vicinity during the week I spent there. I much regretted that I could not then spare the time to see the Bloomfield district as well as the McIvor lands, which, from what information I could gather, and judging by the nature of the land, climate, and soil that I was able to see, would seem to be well suited to the cultivation of coffee—even more so than the vicinity of Cooktown.

Coming further south, I had to miss Port Douglas, including the Mossman and the Daintree districts, in both of which places coffee is being cultivated.

Judging by the letters I have received appealing for information and advice from these ports, it would seem that a visit there as soon as may be would be of advantage to the industry and benefit to the growers.

The rainy season coming on, it was desirable that I should push through with the larger centres, and visit the rest later on when time allowed.

I arrived in Cairns on the 4th of February, and from that date until my receipt of your telegram of the 8th March, requesting me for the time to confine my attention to other duties, I was assiduously visiting the coffee-growers and their estates, giving what information was required, demonstrating, to the best advantage in the short time I could spare to each, the necessary works that where due for execution at that time of the year, pointing out errors and omissions, explaining the theory and advantages of as well as the practical reasons for adopting the correct and more modern methods of cultivation, and making notes and collecting matter for the report to be submitted to yourself.

It will be seen, therefore, that my work in connection with coffee culture in this colony since I joined the Department has extended over a few days in January and but little more than the month of February—roughly speaking, for some forty days in all.

Being the only officer of the Department in the North, and on the spot when the last overseer of the Kamerunga State Nursery passed away, I was asked to take over charge pending the appointment of another overseer. Before this could be settled, the new regulations respecting the inspection of fruit and plants exported from this port came into force, and this complicated matters. The work of inspecting imported plants and fruit not being heavy, the appointment of inspector under "*The Diseases in Plants Act of* 1896" had until then been attached to that of overseer of the Nursery. The new regulation, requiring the examination of all bananas leaving this port for Victoria, made the work very much heavier; and there being no one else then available competent to carry out the examination for the minute signs of fruit fly in its initial stages, I was requested to do this work also. This necessitated my presence in Cairns on nearly every day in the week and on the wharf frequently until late at night. These matters have now been arranged, however, by the transference of the sub-overseer of the Mackay Nursery for work on the Kamerunga Nursery, and by the appointment of an independent inspector for the port of Cairns under the Diseases in Plants Act. I hope, therefore, while still making this my headquarters and the centre of my operations, to be free after this for work in connection with the coffee industry, I trust also that my headquarters will be permitted to remain in the centre of the coffee-growing districts and the scene of my operations.

In the short time I have hitherto been able to devote to my industry I have visited the districts of Cooktown, and, in Cairns, of Hambledon, Kuranda, Myola, and Atherton. I have not been able to finish the districts of Cairns yet, there being many more estates and growers to visit, including among them the two largest growers in the colony—the Hon. De Molyns and Messrs. Cutten Brothers.

I have visited 43 separate coffee-growers, representing some 200 acres of coffee. Many of these have only small areas, but I would submit these are as important as the larger growers, for it is on the success of the smaller ventures that the larger estates are opened and the large and prosperous industries built up.

With regard to *statistics*, I regret that I cannot as yet give any, since I have been able to go over so little of the land under the cultivation of coffee. As I go round I hope to be able to compile statistics. Those given to me, on my asking for them, in the Department's offices in Brisbane, showed some 283½ acres for 42 growers. This included Cooktown, Cairns, Nelson, Cardwell, Port Douglas, Daintree, Mackay, Yeppoon, St. Lawrence, and the Buderim range. Whereas I have visited more growers representing in aggregate two-thirds of the area mentioned, in the districts of Cooktown and Cairns (in part only). I therefore am of the opinion that when I can give exact statistics both the extent of the industry and the number engaged in it will be larger than the Department and the public are aware of.

With respect to *soils and climates*, I have seen only a small portion of the colony as yet, and it would be impossible for me to make any but the most general statements until I have been able to thoroughly go into the whole matter, and have seen and appreciated the conditions to be found in all parts. Bearing in mind this fact, I can still say that both the soils and the climates obtaining in this country are infinitely superior to those in which coffee is grown in many—and indeed most—of the coffee-growing centres of the world.

Labour.—This also is a question that needs careful consideration, and, having had to do with the matter of labour for coffee culture in other countries, I feel the more diffident in making any statement until I have been enabled to take up the subject and make myself thoroughly conversant with all its details. Without losing sight of this fact, I am of opinion, from what I have seen, that while undoubtedly a difficulty (of what magnitude I cannot yet say) it would seem to be much less than many are inclined to think and make it.

The cultivation of coffee has hitherto practically been carried on only in countries where labour is cheap; consequently it has obtained for itself a name as an industry that cannot be successfully worked without an unlimited supply of cheap labour. Sufficient consideration has not been given either to the reduction of the amount of labour necessary for the work or to the choosing of soils and climate where the bearing capabilities will be so favourable as to counteract a comparatively more expensive labour supply. Those intending to invest capital in coffee cultivation, having little or no practical experience of it themselves, rush to countries where labour is cheap, and there put up with conditions of climate and soil that are frequently exceedingly poor. In this country the conditions of climate are exceptionally favourable, and of soil such that very few coffee-growing countries can in any way compete with. I am therefore inclined to think that

economy of labour, by adopting modern and better methods of culture and thus reducing the cost of production; careful and scientific curing, allowing the produce to take its place as a high-grade article and bringing into competition its analytic qualities, which are high; together with the infinitely greater bearing capabilities that coffee here has over that of other countries, will enable Queensland coffees to compete favourably in the world's market, in spite of a disadvantage respecting labour.

The Market for Coffee.—There would seem to be a fear amongst some of the growers that owing to the recent drop in prices there will be no sale for coffee produced. In reply to this, and without going into details of imports and local sales, I would point out that the drop has been principally in the medium and low-grade article. Sir Frederick Able, in a letter that has already passed through your office, corroborates this when he says, speaking of the coffee market at the time of the arrival in England of the consignments of Queensland coffee sent last season: "Prices are depressed for all *except* the finest coffees."

So long as the coffee sent to the London market is a well cultivated and well-cured article, and therefore takes its place as a high-grade coffee, there is no doubt whatever about there being a ready market for it. Prices of low grades may possibly remain low, and even have a tendency to drop, but high grades will always sell well. Roughly speaking, about two-thirds of the world's output of coffee is low grade and only one-third high grade, and the low grades must make way for the finer coffees.

It has been remarked—and printed and published also—that the fault of Queensland coffees is in the *curing*, which means that while its analytic properties are high it is otherwise a poor sample. From what I have been enabled to see, this is undoubtedly so, but this is only half the truth. The root of the matter lies in the cultivation. A badly-cultivated sample will not, even with the best and most scientific curing, give the same profits that a well-cultivated sample will do, because in almost all cases it will have cost too much in production.

A coffee produced at 6½d. or 7d. per lb. and sold at 7d. or 7½d. does not pay to cultivate, or the profit is so small that the investment does not give even fair interest. When by good cultivation the cost of production is lowered to 4d. or 4½d., and the same article (putting better curing on one side for the time being is sold at 7d., or 7½d. the difference, amounting to £28 a ton, is readily appreciated.

By cultivation it must be understood that methods, times, and seasons are meant. The most excellent work—be it weeding, draining, pitting, digging, forking, staking, topping, pruning, handling, mulching, manuring, or even picking—if not done by good methods or at the right time and seasons, so as to save and economise labour as well as to give the greatest amount of benefit to the plant, amounts to bad cultivation, since it means enhanced cost of production.

For instance, a handling in the second year costing very little, would mean not only quicker and cheaper handling and a saving of labour in the third year—the two works together costing less than only the one operation in the third year—but enhanced stability and sturdiness of the tree, better and stronger wood, a direction of energy into the right channel and more, as well as a better sample of crop in the third and subsequent years.

The subject of statistics, soils, climatic conditions, markets (both local and open), values of present samples of coffee, methods of culture in vogue and modernised, the labour question as affecting the industry, the classes and varieties of coffee in the colony, &c., &c., I would request your permission to allow to stand over until I can make myself better acquainted with the conditions obtaining in the colony.

It will be evident to you that it would not be reasonable to go into details of such matters after only forty days' observation, and that statements respecting them should be applicable to the whole colony; whereas, with the limited time I have been able to devote to the colony, any remarks I were to record must necessarily either be evolved from hearsay or unconsciously biassed in favour of what I have been able to see. I would request that I be allowed to compile a full and detailed report either during the year or, should my other duties hinder an early drawing up of such a report, in time to be included in the departmental report for 1899-1900.

I would also suggest that it would be of advantage to the industry in general if I were to monthly submit an article on one of the many details of culture for the publication in the Departmental *Journal*, so arranged that they could be subsequently embodied in a pamphlet which could be issued as a bulletin for use of resident growers in a compact form. or for newcomers who intend opening out in coffee.

Since my work in connection with the industry has been, for the unavoidable and unforeseen reasons above mentioned, stopped temporarily, I have received many letters asking for advice and information, and also for visits to different parts. I have endeavoured to give what instruction I could by letter. an a good deal of my time has been so occupied. Giving instruction by letter, however, on very vague data, to be applicable to districts and conditions I have not seen, necessitates the mentioning of so many different methods necessary for as many possibly different conditions of climate, soil, &c., that a great deal of inapplicable matter has unavoidably to be recorded, and a great deal of time wasted.

I have already had correspondence with and also been interviewed by several newcomers, who, hearing of my arrival and appointment, wish to invest in and open up in coffee.

Information has been asked for from time to time by the Department both for different parts of the colony and for outside, and duly given, and an article published in the *Agricultural Journal*.

HOWARD NEWPORT.

Trial of Florida Velvet Bean.—Mr. F A Hunter of Halfway Creek (country of Clarence), reports having tried a plot of velvet bean alongside a plot of cow-pea. The seeds were shown in November. "The growth of the velvet-bean is enormous, covering a row of corn that is close with one mass of vine, while the cow-peas are only just running." In reference to this matter Mr. Valder remarks that while the Florida velvet bean is undoubtedly of great value in the Northern districts, it could not compare with the cow-pea for districts as far south as the Hawkesbury, for instance.—*Queensland Journal.*

Rival Tea Enterprise: Ceylon and India.—Whether the climate of Calcutta is inimical to any exertion over and above what is absolutely necessary for the actual carrying on of business, we cannot say, but one thing is certain, and that is that we are laggards in the race compared with our Ceylon brethren. Ceylon has been spending its money freely, and pushing its teas in all directions, with an amount of life and vigour which is bound to ensure success. We have done nothing like so much in comparison. We may some day have a rude awakening from our lethargic somnolence. Although we imagine we are slumbering in safe security and have no cause to fear any rivalry, we shall later on, probably, find Ceylon in fixed possession of markets which we should have captured long ago. When we read the reports of what the Ceylon planters are doing, and note how very energetically they are working to extend the consumption of their teas the world over, we cannot but help being struck with the want of energy and push we are displaying, in comparison, in our efforts to extend the consumption of our teas. The facts are so patent that further comment is superfluous.—*Indian Planters' Gazette*, March 17.

MICA-MINING IN BENGAL.*

DIFFERENT KINDS OF MICA, SIZE OF SHEETS AND VALUES.

By A. Mervyn Smith, M. Inst. M.M.

Position.—The mines described are situated between 85 deg. to 86 deg. 30 min. east longitude, and 24 deg. 25 min. to 25 deg. north latitude. The country is made up of a series of parallel ranges of low hills some 400 ft. above the surrounding country and 1,200 ft. above sea level. The direction of the ranges is east and west nearly; they form the boundary between the Hazaribagh district on the south, and the Gaya and Monghyr district on the north, being part of the Bengal Presidency, India.

Geology.—The country is made up of gneiss, grading into mica schists, tourmaline schists, hornblende rocks, quartzites, and a course felspathic rock resembling conglomerate with intrusive dykes of fine-grained diorite. The hornblende rock closely resembles the diorite, and weathers into similar rounded boulders. But this variety passes into a much coarser kind, in which "blebs" of white felspar are so close-placed as to give it a "banquet" appearance. The mica schists are strongly developed in this area, and are made up chiefly of white mica (muscovite) with here and there a little black mica (viotite) and red mica (lepidolite). This rock is highly schistose, breaking up into thin laminæ, and consists chiefly of small plates of mica, cemented together, with a slight admixture of felspar and quartz. It is this rock that contains the lodes that yield the mica of commerce. The gneiss and other foliated rocks have a nearly east and west strike (about 5 degrees north of east and south of west), and underlie to the north at an angle of about 75 degrees. These rocks are classed in Indian geology as among the younger gneisses.

Pegmatite Veins.—Running with the bedding of the schists, from east to west, are numorous veins of granite (pegmatite) varying in width from a mere thread to 20 ft. The schists are in places faulted or thrown out of their normal strike. Tho pegmatite veins are subjected to the same "faulting," aud frequently at the point of "faulting" short north to south veins or "cross courses" of great width have been formed.

The veins are made up of amorphous masses of quartz, large crystals of pink felspar (orthoclase), and crystals or "books" of mica (muscovite). The quality of the vein varies with the nature of the adjacent rock. Near to the quartzites, the vein stuff is nearly pure quartz with little felspar and mica. Where the adjacent rock is highly felspathic, pink felspar crystals are the chief constituents of the lode; while we may look for a large predominance of mica, where the including rock is mica schist. This fact is of importance, as a knowledge of this peculiarity of segregation in the vein matter enables the miners to discriminate between the spots that will yield more or less mica.

In addition to these three chief constituents of the pegmatite veins, the following accessory minerals are sometimes found—tourmaline, garnet tin-stone and a columbite. The tourmaline is at times strongly developed. Near to the tourmaline schists, large massive crystals of black tourmaline are not infrequent in the lode, and occasionally crystals of tourmaline penetrate the mica books across the planes or lamination and destroy the value of the sheets.

The pegmatite viens in this district are apparently of aqueous origin and due to segregation. The following are some of the data pointing to this conclusion. 1. In many places the veins die out in depth and in length. 2. The vein matter partakes of the quality of the including rock, quartz, felspar, and mica predominating as the lode traverses rocks containing these minerals in excess. 3. The crystallisation of the vein matter varying within very short distances not being at all homogeneons, as one would expect in an igneous dyke. In places the crystals of mica are 2 ft. long, 18 in. wide, and 9 in. thick. Within a few hundred feet of either side of this spot the mica books are small and worthless.

Ages of the Mines.—The zone of mica-bearing rock has been worked for centuries by the Hindoos. Mica is largely used by them for ornamental purposes, such as inlaid work, tassels, flower, toys, and banners. The large clear plates are much used by native artists for portrait painting, as being extremely durable and not affected by heat or damp and impervious to the attaks of insects. The waste mica is ground to a coarse powder, and after being mixed with starch is applied to cheap cotton cloths to give them a sheen.

The great marts for mica for native consumption are Patna and Delhi. Dr. P. Breton, who visited these mines in 1826, found as many as 5,000 people at work at different mines. In 1849 Dr. McClelland gives the output as 100,000 maunds (a maund being 82lb.). In 1863 the statistical account of Bengal says 10,000 maunds were exported.

The Native Methods of Mining.—The native mines are of the most primitive kind. Open cuts along the outcrops of the pegmatite veins where books of mica are seen in any quantity. These cuts are continued down 20 ft. or 30 ft. till the sides become dangerous. No timbering is used to keep the sides from falling in, and frequently accidents happen and the miners are buried beneath the fallen walls of the reef. Where exceptionally rich stuff is met, and the vein-stuff is decomposed and soft to some 50 ft. or 100 ft. inclines are put in, and follow down the rich shoots of mica in a most tortuous course, zig-zaging about from side to side with the "leads" of rich ground. Long lines of women, near to each other and placed in double row from the warter level to surface, hand out earthern pitchers—called "gurrahs"—to one another; the full pitchers are handed up one line and the empties down the other. As many as seventy women are sometimes placed to remove the warter from a mine not 35 ft. deep in perpendicular depth. The incline, of course, was much more than this in length.

Where the reef is highly felspathic and of large size, decomposition extends to a quite hundred feet or more, and it is here that their largest mining operations are carried on. In order to ventilate the inclines and draw out the mica, perpendicular shafts, about 2ft. in diameter, are put in. The author counted as many as thirty of these circular shafts along the strike of the reef, and within a few feet of each other.

The miners are a local tribe called "Bandathis"; the men, women and children all working at the mine, when they have no agricultural work in the fields. Work is only conducted in the dry months (November to May). Immediately the rains set in they return to the tillage of their fields. Work is only condutcted in the day, beginning about 8 a.m., and giving over at dusk. When the veins are hard, yet sufficiently rich to pay for the labour, large fires are kindled aginst the face of the lode, and when the vein stuff is sufficiently heated, water is thrown on to it, when the sudden cooling causes the rock to shrink and crack. In these cracks wedges of soft iron, locally manufactured from the magnetite iron eres common in this neighbourhood, are driven and large boulders detached. The exposed books of mica are chiselled out and taken to surface. The books of mica are split into sheets of about ½ in. in thickness. All the rough edges and flaws are trimmed of by means of a sharp sickle (called "hasawah"), and then sorted according to colour and size. The sheets are in some cases very large, 24 in. by 18 in. being the largest in this district. In the Itakuri Mine, Nellore district, Machas, plates 60 in. by 40 in, have been obtained.

Present Method of Work.—It is only within very recent years that Europeans have taken to the mica industry. Mining is still conducted on purely native methods described above; and although 250 mines are at work in this district, on not a single one is machinery of any kind used, and certainly on none of the properties visited by me this year (1898) was there the least attempt at European methods of mining. The same wasteful, slow, and laborious system practised by the natives for hundreds of years

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* Paper read before the Institution of Mining and Metallurgy.

is still in vogue. Men are sent out during the rains to search for likely-looking outcrops of mica. The mica-schist being softer than the other members of this series of rocks, is eroded into valleys—the more quartoze beds making the ridges of hills. A certain amount of alluvium and talus from the adjacent hills covers the valleys.

After exceptionally heavy rain this surface deposit is washed off, and with it the decomposed felspar of the pegmatite veins, having exposed tufts of partially decomposed mica. The natives call these tufts "foo-foo" and believe that they grow during the rains, as they cannot account for their exposure at surface after a heavy shower, where there was nothing apparent before the rain. Having discovered several of these "foo-foo" spots, these are marked off for mining operations as soon as the dry season begins. Parties of men, women, and children are set to work on those outcrops, and the books of mica dug out, packed in loads of about 30 lb., and brought in at dusk to the central store.

Here several skilled men are seated on the floor trimming the mica before it is packed away for market. Before each man is a stout peg, driven firmly into the ground and protruding about 18 in. The books of mica are first split into plates about 1 in. in thickness, the mica easily splitting into laminæ of any thickness. The trimmers are provided with sharp sickles, and the point of this knife is used for opening the sheets. Imperfect laminæ are now peeled off the plates till both surfaces show a clean, even face. The plate is supported against the side of the peg, and the sickle drawn downwards to trim off the jagged ends and irregularities along the edge of the sheets of mica.

After trimming, the plates are sorted for the European market, the United Kingdom and America being the chief buyers. The sheets are first sorted according to quality, four kinds being recognised by the dealers.

1. Ruby mica, hard and tough.
2. White transparent mica.
3. Discoloured and smoked.
4. Black mica and flawed.

If 8 represents the value of ruby mica, 4 would be paid for white, 2 for discoloured, and 1 for black and flawed sheets of equal size. The sizing is as follows:

Special Sheets Measuring more than 50 Square inches.

No. 1.	Sheets of from	36	to 50	square inches.
" 2.	"	24	36	"
" 3.	"	16	24	"
" 4.	"	10	16	"
" 5.	"	6	10	"
" 6.	"	4	6	"

Quoting from a recent sale sheet at an auction in London, the following prices were realised:

Best Ruby. Number.	Per Pound. s.	d.
1	6	8
2	4	0
3	2	0
4	1	0
5	0	4
6	0	2

Specials bring as much as £1 per lb, according to size of sheets.

The sheets are trimmed irregulary into any shape they will take to clear them of flaws. Should square rectangular, or diamond-shape sheets be wanted, a special rate has to be paid for these to allow for the great waste.

The sheets are packed in boxes of 1 cwt., and transported on carts to the nearest railway station, 100 miles distant. From thence they go to Calcutta, and are shipped to London or the United States of America.

Market and Output.—During the year 1895-6, 8,913 cwt. of mica were exported from India, of which the mines under review contributed 8,835 cwt., valued at R995,000 or £66,000. The yield of the mines may be placed at double this figure, one-half being require for the Indian market, and that chiefly of the inferior kinds.

The export trade is a growing one, as the following figures will show:—

Exports.

	1892.	1893.	1894.	1895.	1896.
	cwt.	cwt.	cwt.	cwt.	cwt.
Bengal..	2,298	3,310	4,843	5,126	8,835

Hard, sound, ruby mica is much used for the doors of glass and steel furnaces where extreme heat is required. The mica is not affected by the extreme heat, and thus enables the workmen to look into the furnace and watch the crucibles of molten matter. Thin sheets are made into chimneys for incandescent gas burners, also for fire screens and for electrial purposes, as mica is an extremely bad conductor of electricity.

A method of cementing sheets of mica into a card board has been recently patented in Germany, and this cardboard is used for coating boilers, mica being a nonconductor of heat. It is also manufactured into helmets for fire-brigade men, packing for fireproof rooms, etc. Thinner sheets are made into envelopes for wrapping valuable documents.

Quantity of Mica Available.—At present India yields the bulk of the mica consumed in the Arts, and of this quantity nearly all comes from the district described. The pegmatite veins in this locality are numerous and of large size, and are in places extremely rich in mica, nearly one-third of the vein-stuff being of this material. The quantity of mica available is practically inexhaustible. The present method of mining is wasteful in the extreme and fully nine-tenths of the mica extracted from the mines is injured and rendered unfit for export. Thousands of tons of waste mica are to be seen at the mouths of the mines and at the dressing floors. Probably the new patented method of cementing mica into card-board may create a market for this. There cannot be the slightest doubt that when European methods of mining are introduced, the cost of production will be materially reduced, the waste will be much less, and a better quality of mica will be secured. At present only the decomposed, or partially decomposed, vein-stuff is mined. Here the mica must also undergo a partial decomposition, but, of course, not to anything like the extent of the felspar. In the hard vein-stuff the mica is hard and tough, and this class of mica commands a better rice.

Some of the veins yield black mica (biotite). This is largely used as a drug by Hindoos and Mohammedans. Reduced to a powder, it is supposed to be very efficacious in cases of dysentery. The sheets of mica are at times very queerly marked. In places one-half of each sheet will be muscovite and the other half biotite, the line of division between the two colours being a perfectly straight line, and there being no apparent change beyond the colour in the uniformity of the sheet. Other sheets, again, are marked with a chequered pattern in black lines, the lines being due to magnetite. Again, there are dendritic inclusions of white quartz between the laminæ. All markings take from the value of the sheets. The most esteemed colours are pure ruby, amber, light green transparent white. There is also a silver white, which the natives prize for inlaid work.

A demand for indian mica has lately sprung up in the United States of America. In 1895 the quantity taken was. 1,900 cwt., while in 1896 it was 5,076 cwt. Indian ruby is found to answer the purposes of furnace work better than the locally obtained mica.

[Altogether, the export from India in 1897-98 was 11,608 cwt. and from Ceylon in 1897 it was 166 cwt. —Ed. *T.A.*]

Riches.—It was a saying of Plato, that the only certain way to be truly rich is not to have more property, but fewer desires. For whoever is always grasping at more avows that he is still in want, and must be poor in the midst of affluence. Here is a philosophy which many of us can contemplate complacently.—*Journal of the Jamaica Agricultural Society.*

ORANGES: HOW I MANAGE TO HAVE RIPE ONES.

The following communication was sent to the Director of Public Gardens, who kindly forwarded it to us as likely to be of interest:—"All through the year this is the way I did it. I had an orange tree in my kitchen garden last year in full bearing, and when the fruits were about the size of a pigeon's egg I went to work and took off all leaving 30, I then dug a trench 18 inches deep around the tree just under the outer leaves where the rain falls and had the trench filled with pen manure, and then covered up, thus forming a ridge about a foot high around the tree, and shortly after the tree began to blossom on one side only, and put out 38 oranges on one branch. Shortly after I saw more blossoms appear on the next branch to the young fruits, and 21 more came out. Since then the tree has been constantly blossoming and fruiting out young oranges, one course after another right around the tree, I was however careless in noting what month it was last year when I started the work, all I know is, the first 30 oranges were ripe in December the 38 were ripe at the end of March, and the 21 I am eating now; and I am able to show any man to-day four different sizes of fruit, and blossoms on the tree also. I don't know if this is an exceptional case, being the first tree I have tried, but I think its worth mentioning and also worth trying.—E.A.K, Little London, P.O."—*Journal of the Jamaica Agricultural Society*.

WATTLE CULTIVATION.

A NEGLECTED QUEENSLAND INDUSTRY.

There are many portions of the mountainous parts of Queensland of which it is often remarked that the land is apparently fit for nothing—that it will not feed the proverbial goat; that the undergrowth of young gums and wattles will not even allow a dog's bark to travel. From a purely agricultural point of view, such country is undoubtedly useless as farming land; but there are few "bad lands" in the colony, provided they do not consist of sandy, swampy "wallum" country, on which something of value will not grow. Take the gravelly ridges so frequently met with on the coast. They are unsuitable for maize, which will ptoduce on good lands from £6 to £8 per acre, but they are the ideal home of the Sisal hemp, and of the mauritius hemp, which will produce £40 per acre. In like manner, the ridges and gullies of the Main Range are a favourite habitat of the wattle tree, which will yield from £25 to £30 per acre. During the winter season, the eye of the traveller amongst the ranges is delighted with the beautiful, feathery, yellow bloom of countless wattle-trees of different varieties.

Three varieties have been planted for the purpose of obtaining tan bark, but these only two are of commercial value. The third was an unfortunate introduction, and in New Zealand formed a large part of the earlier-laid-out plantations. It is comparatively worthless. This is the *Acacia dealbata*.

The second best is the Golden Wattle (*Acacia pycnantha*), the bark of which yields a large per cent. of tannin. But this does not form a large-sized tree, and from its habit of growth, throwing out many stems, more like an immense bush than a tree, it is more troublesome, and consequently more expensive to strip than the Black Wattle (*Acacia decurrens*), which grows to a respectable size and forms a good straight barrel. Wattle-bark is extensively exported from Tasmania and New Zealand. The price has fallen to £5 15s. per ton, whilst formerly the bark in bundles fetched £12 per ton. But it will pay at the lower price, once a plantation is established. It takes about nine years before a full return can be obtained.

The wattle, whilst doing well on poor soils, has no objection to a richer one, provided it be well drained. Hence on the naturally drained slopes and valleys of the ranges, plantations may be formed with almost a certainty of success. Bush fires will naturally do much damage, but the effects of these may be minimised by judiciously planting—leaving breaks between the blocks.

Inspector Clifton, of Auckland, New Zealand, describes the wattle plantations at Wairangi. He says the usual procedure in forming a wattle plantation is to fell and clear the scrub, plough, and work down roughly with disc harrows, and sow during the month of October.* Scald the seed, and sow at the rate of 1 lb. per acre. A great advance on this is to drill in ¾-lb. of seed with 1 cwt. of bonedust. Trees so treated are, at two years, equal to those of four years' growth sown without manure.

The cost of wattle-planting may be estimated as follows:—

	£	s.	d.
Clearing and burning, per acre...	0	7	6
Ploughing	0	7	6
Dics harrowing, one stroke ..	0	1	3
Sowing	0	0	9
Seed, 1 lb.	0	2	0
Harrowing	0	1	0
Total ..	£1	0	0

To this, with advantage, may be added—

	s.	d.
Second ploughing, at 6s. per acre.. ..	6	0
Bones, 1½ cwt., at £5 10s. per ton.. ...	8	3
Total.. ..	14	3

The returns may be estimated at—

	£. s. d.	£. s. d.
Per acre—10 tons of green bark= 5 tons dry, at £5 15s. per ton..		28 15 0
Expenses—		
Shipping 10 tons, at £1 per ton	10 0 0	
Weighing, carting, and strong 10 tons at 2s. 6d.	1 5 0	
Railage, about 5s. on 5 tons ..	1 5 0	
		12 10 0
		£16 5 0

From this has to be deducted rent, interest, &c.

Wattle-growing in New Zealand for the production of tannin bark occupies an area of about 4,500 acres in the Auckland district. The black Wattle (*Acacia decurrens*) is the only variety planted.

Wattle plantations do not increase greatly, mainly owing to the length of time which elapses before a full return can be obtained. There are, however, many settlers in Queensland, who have from 5 to 500 acres of poor open land, where scarcely any clearing is needed, and on which they might in spare moments put in a few hundred trees which would come in to benefit some members, of the family. We know of farmers who have occupied their land now for nearly forty years, and the portion of hungry, waste, untouched land lies hungry and waste to this day. Had this been planted ever so roughly with wattle-trees of the right kind, they would have been enjoying an income of at least £10 per acre for thirty years, and at the old prices that income would have reached £30 per acre.

At Lucindale (S.A.), Mr. Newman recently read a paper on Wattle Cultivation before that branch of the Bureau of Agriculture. He said had great confidence that this could be made one of the most profitable industries of this district, as the soil, climate, and the facilities for delivering the bark at a seaport are all that can be desired. He saw part of a plantation east of Adelaide stripped; the yield being 4 tons per acre, and enough small wattles being left to make another good yield in two or three year's time. The price obtained for the bark

* The scrub here alluded to is not the dense vine scrub with which we are familiar in Queensland, ED. *Q.A.J.*

was £5 4s. per ton in the field; the price paid for stripping was £1 5s. per ton, which included cutting the trees down and packing them in heaps; the landowner receiving £4 per ton clear, equal to £16 per acre. The land was of poor quality, being very stony and sandy. During the past ten years he had experimented in wattle growing in this district, and proved that they can be grown on almost any land that is over 3 feet above the level of the winter flood waters. A few months ago he stripped a wattle seven years old that gave over 1 cwt. of bark fit for market. Trees of that size standing 20 feet apart each way would give over 5 tons per acre. That trees was grown on a limestone ridge (red soil), and he had them of nearly equal growth on the fern hills (white sand). As there are thousands of acres of open fern land in that district almost useless for grazing, and eminently suited for wattle-growing, he would strongly urge leaseholders to give that industry a trial. Such land is leased at from ½d. to 2d. an acre annually. About four years ago he planted 1 acre of fern land, and now estimates the wattles on it to be worth £8 to 10. Although the wattle has never been systematically cultivated at Mount Benson, in the Kingston district, still it grows there over a considerable area, and last season no less than 1,200 tons of bark were stripped and send to market, the price received ranging from £3 15s. to £4 per ton; and as stripping costs £1 per ton, it means £1,200 being distributed amongst the labouring classes of the district, and about £3,500 amongst the landholders and teamsters. The bark grown at Mount Benson is deficient in tannic acid, consequently a lower price has to be taken. Where only a small area is to be planted, he found the following a good plan:—Commence at one side of the field, using a double-furrow plough, strike out the length of the piece to be planted, then mark out back again paralled with the first furrows and about 8 feet away from them, and so on through the field. Then take 1 lb. of good seed for each acre, place in a vessel and cover with boiling water, and allow them to soak for twenty-four hours, then drop them regularly along the ploughed stripes and cover with a harrow. The next year it will be necessary to thin out the plants in the rows to the required distance. Where large areas are to be cultivated it would save time and labour to have a box fitted to the back of the plough with a roller through it, and worked by a belt which the near wheel, and so made to drop a seed or two at each revolution, and a small harrow attached would complete the planting in one operation. One team should do 8 acres a day. About every 5 chains it is advisable to leave a strip 16 feet wide unplanted for the purpose of drawing furrows in summer to check a possible fire, and later on as a roadway for carting out the bark. He could not recommend broadcast sowing, as there is so much more labour in ploughing all the land, and the work of thinning out the young plants is very much greater. He would strongly advise that only seed of the true broad-leaf wattle should be planted, as it is doubtful whether it will pay to grow any other variety, the bark of which will be worth quite 20 per cent. less. Horses may be allowed the free run of a wattle paddock, but cattle should be kept out altogether, and sheep should not be allow in until the tops of the plants are out of reach, as they are very fond of the young shoots. He felt certain that if the bark had no market value it would pay well to plough fern hills, and sow 3 or 4 lb. of seed per acre broadcast, and keep all stock out for three years, by which time the wattles would provide a very large amount of feed for either cattle or sheep.

DOBBIE'S WATTLE-BARKING MACHINE.

This lately invented machine readily stripes the trees close up to the leaves far higher than could be stripped by hand. The speedy operation of the machine shows to special advantage on wattles from the thickness of walking-sticks up to 3 inches in diameter, indicating that where the crops of wattles were so abundant as to require thinning out, and were too small to strip by hand, it would pay to use the machine. It has been regarded as being quite evident that the machine would reduce the cost of stripping by at least 25 per cent. Moreover, by using the implement, stripping could be commenced much earlier and carried on much later in the season than is possible by hand. The machine itself has the appearance of a substantial roller mangle, the rollers being either metal or covered with metal. One man can carry out the whole of the operations; but it would apparently be still greater economy for two or even four men or boys to operate in conjunction with one another. In using the machine the wattles pass between the revolving rollers, thus receiving pressure upon two sides, which cuts top and bottom, and causes the bark to spring from the complete circle of the stem in two halves. It would appear from this that a very valuable addition has been made to the wattle-bark industry.—*Queensland Agricultural Journal.*

INDIARUBBER CULTIVATION.

BY SCIENTIFIC AGRICULTURE.

Malaya is the peculiar home and habitat of the guttapercha tree, but of late the cultivation of the Indian rubber tree has been recommended, and in parts even taken up by our planters. We need not go into the chemistry of the composition of the two substances, gutta and caoutchouc, but we may observe that the former tree is of slow growth and cannot be tapped in the way as rubber trees, owing to their having closed sacs, and not communicating tubes, containing the latex, and hence have to be almost destroyed or cut down to get at the commercial sap. Their natural order in Botany, too, is different from those trees which yield caoutchouc. Caoutchouc, or the true India rubber, is found in a number of orders, as the Moraceæ, Apocynaceæ, and Euphorbiaceæ. Some of these grow into magnificent trees, and others are mere climbers and vines. All these have the latex-holding tubes in the inner bark, some communicating with one another more freely than others and some yielding more than others. Of those, however, which have hitherto mostly entered into commerce, or which have hitherto yielded the most caoutchouc, only four varieties may be noted: the *Castilloa*, or panama rubber, the para rubber or *Hevea brasiliensis*, the ceara rubber or *Manihot glaziovie*, and the Assam rubber or *Ficus elastica*. Of these four, the two last may be neglected by us, as the ceara rubber tree does not seem to thrive in Ceylon, nor produce much, and the other, or Assam rubber, though it thrives, gives only a small yield. At the same time, it ought to be mentioned for both that a machine lately invented by Mr. Biffen, of Cambridge University, so does away with the labour and processes needful to separate and consolidate the rubber from the latex as to obviate the defect of small yield to a considerable degree; and it ought to be mentioned, for Assam rubber, that it is—possibly only in shallow soils—a great surface feeder, with great roots running in all directions for great distances half above-ground, and that all these roots, like some African varieties, yield the rubber. And for this reason, as well as that the tree thrives here, and we believe has already been begun to be cultivated, we may append two notes regarding it that may prove useful for planters. The first is that in congenial leaf-mould, shaded forest-soil in which there is a superabundance of moisture, any branch or twig simply cut down and thrown about will take root. The other is that the seeds, which should be fresh, should be sown in sheltered boxes or pots during the wet weather, the soil being composed of one part of half-and-quarter-inch brick pieces, one part of half-inch charcoal, and one part leaf-mould with a little dry cow-dung well ground; this last for top-dressing. The watering should be carefully managed, otherwise the seed and seedlings are rooted out and washed

away. Hence the necessity of keeping them under shelter from heavy rains. The boxes and pots should receive some light, and should never be allowed to get quite dry. From those nurseries the plants should be potted out singly when sufficiently high. There remain, thus, only two varieties, the *Castilloa* or Panama rubber and the *Hevea Braziliensis* or para rubber; to which we may confine our remarks. And here it may be observed that only till within three or four months back the latter, or para rubber was supposed, from its furnishing quantity for quantity, more and purer caoutchouc, to be the best to plant; whereas now, owing to Mr. Biffen's invention and the very much larger yield of latex—ten times as much in Ceylon—as well as fever and more simple incisions being necessary—thus immensely reducing cost and labour—the former, or *Castilloa* (Panama rubber) has come to be more thoroughly recommended for planters. Hence it is we see that most of our planters who directed their attention to this rubber cultivation have gone in for the para rubber. These will now see that it is the *Castilloa* or panama rubber which should be cultivated by them. In fact, in regard to this cultivation, which tree, which mode —as annual crops of seedling plants and twigs or as trees—and with machine and other inventions revolutionising past ideas, all are in such an unfixed, at the same time, progressive state that one object of this paper is to set this fact before our planters not only to enable them to be on the *qui vive*, but for them to adopt due caution and act calmly and not hastily. Of late years, there has been a great increase in the demand for rubber, prices have gone up and the subject has gathered round it quite literature of its own. Indeed, there is even a journal devoted to it, call the *India Rubber World*. Chemistry and mechanical invention, too, here, as in other similar preducts, have come in to aid in the manufacure, as we may term it, of the caoutchouc from the sap or latex, cheapening the production of the article, and taking up varieties of plants that were unprofitable before, or otherwise aiding in its production from twigs, &c. Indeed, it may or may not be known that Singapore itself at the present moment has a manufactory for expressing the juice or latex from leaves and twigs, which whether it be caoutchouc, or "viscin," to be further dealt with by chemists in Europe— is exported to Germany. And if to be further dealt with by German chemists—or whether it be not "viscin" but the true latex—there is here, in our very midst perhaps, the aotual solving of the most difficult and most nearly interesting point that remains yet unsolved in Ceylon. In any case we may proceed with our general preliminary observations. As we have said above, things must be proceeded with cautiously. As yet, the India rubber can only be recommended as a minor or by-product of a plantation. The chemical quest that is proceeding may usher in a new era of extracting the rubber from annual crops instead of having to wait eight to ten years for a tree to be sufficiently grown to be tapped. Experiments are now being carried on in London and Trinidad to secure rubber from year-old plants of tho *Castilloa elastica*. (We may note here that this is not the same as *Castilloa markhamiana* which seems to be the kind in Ceylon.) To quote from an article in the *India Rubber World*: —"It has been found that seeds sown broadcast over a prepared field will yield an abundant crop of young trees, which, at about a year old, can be cut and sent to a factory where, with ordinary machinery, eight per cent. of fine rubber can be extracted from the young shoots......This young tree crop, at present prices, would return an estimated profit of $200 to $400 per acre." This extraction of the rubber from young shoots has been done in the chemical laboratory, and it only remains to apply to the chemical production of rubber on a large scale. Besides the *Castilloa elastica* there are also a number of other varieties that may be named as yielding latex from leaves and twigs, such as the *Alstonia macrophylla*, which grows in Ceylon, and the *Alstonia plumosa* of Fiji. It has to be observed, too, that the rubber trees vary in their produce, just as most other plants, with change of habitat. These things will have to be observed and noted with respect to the Peninsula, and hence as well as for a variety of other strong reasons, it is to be regretted there is no proper Agricultural Department or Royal Experimental Gardens in a select locality, in the Federated States. Altogether, therefore, we may be sure that the cultivation of the rubber tree will enter on new phases in the near future. Root-tapping of some varieties may be more largely utilised; there may be annual young crops, the preparation of rubber from leaves and twigs, and the utilisation of a number of at present neglected plants by chemistry—all these are not only possible but probable. It may also be observed that in the matter of rubber, too, as in that of coffee, Brazil may be said to be the principal determining factor. The annual output of rubber all over the world, and which is all consumed, is put down at over 100,000,000 lb., and of this nearly half comes from Brazil, while most part of the rest also comes from Central America. Lagos, in Africa, has also lately taken a lead in the supply, while the great interior forests of the Dark continent, which have not yet been brought into the market, are also known to contain rubber trees of varieties.—*British North Borneo Herald.*

COFFEE HYBRIDS.

The *Revue de Cultures Coloniales*, in its last issue to hand, publishes an interesting note on "The Sterility of Coffee Hybrids" from the proceedings of the Agricultural Society of Kediri (Java) with an annotation by M. Maximo Cornu.

M. H. van Lennep, President of the Society, premising that it was desirable to discover whether by hybridisation it was not possible to obtain a race of coffee plants producing good fruit of superior quality, resisting *hemileia*, prolific and easy of multiplication by grafting is reported to have said. "How often, in looking at a superb hybrid coffee plant, have you not noticed, with regret, that a great part of the berries are empty and what few beans remain are altered and, by the fact, of inferior quality? It follows that hybrids afflicted as they are with these two faults, form a disadvantageous and little remunerative cultivation.

The bad quality of coffee gathered from these hybrids is above all attributable to insufficient fecundation. It is the more annoying as in general hybrids are distinguished by vigorous vegetation, a fine appearance, superb foliage on which *hemileia* does not seem to take hold, and a regular flowering, after which the plant fruits abundantly.

"It is thus with all the hybrids known, so far as I know," continues M. van Lennep, " and for this reason none have yet taken a serious place in cultivation. The problem has become urgent since the extension of vermicular disease (*maladie vermiculaire*) rendered impossible the replacement of individual Java plants dead of that disease by plants of the same species. The roots of the Liberian plant and certain hybrids alone resist *nematode* (vermicular disease).

Liberian coffee not being of easy sale, the idea arose of grafting Java coffee on the roots of Liberian, but the problem is not yet solved in that manner. "In practice," says M. van Lennep, " the operation of grafting is easy enough, the joining easily effected, the coffee is of good quality, but at low elevations at least, the development of the young trees does not seem vigorous enough, the grafted plant becomes feeble, and subject to *hemileia*; and taking everything into consideration, I hesitate yet to believe in the future of Java coffee grafted on Liberian roots. In elevated altitudes I cannot speak from experience.

How different is the aspect of hybrids grafted on Liberia! From the beginning, the development is so

vigorons that sometimes the graft appears more vigorous tban the stem; there is every indication of great vital force, *hemileia* does not appear at all, the joining is perfect.

But, as I have said above, the hybrids which I have seen show a large proportion of empty berries or of beans imperfect and spoilt. I possess different hybrids; there are some which produce, so to speak, not a single bealthy bean. Most of my plants, flourish vigorously, their foliage is fine, every year they are surcharged with fruit; without exception they furnish berries with soft pulp, equally easy to depulp with Java coffee. For some years it was believed that the hybrid "Klein Getas" (van Riemsdijk) constituted a happy exception and produced at the sametime beans abundant and healthy. I recognise willingly that the berry of that hybrid is a little more valuable than of the others which I know, and that the development of the plant is perfect. Nevertbless, it is not free from the great general fault, it gives too many sterile berries, "loos boon," and too many imperfect beans, nearly without selling value.

However, since variations are observed between hybrids, tbat is to say, that some furnish fewer abortive beans than others, I think it is justifiable to hope that the hybrid is susceptible of improvement. Further, that it is not impossible to obtain some day a hybrid that reunites the desired qualities —a well coustituted bean and a vigorous growth.

There would bo nothing for it, therefore, than to continue to propagate by means of grafts upon Liberia."

In the rest of his discourse M. van Lennep insisted upon the point, that in order to increase the chances of attaining the desired end, it would be necessary not to abandon hybridisation to the chances of nature, but to undertake, on the contrary, methodical experiments in attificial hybridisation. M. van Lennep had projected the creation of an establishment specially directed to that research, but the necessary official sanction was not obtained.

M. Maxime Cornu; the emineut *Professeur du Museum*, has kindly communicated to ns, says the *Revue des Cultures Coloniales*, the following observations *apropos* of the preceding note :—

"Botanists have loug recognised the general sterility of hybrid plants; they have also considered that sterility was a fundamental character of hybridity; but the experiments of certain scientific men, and above all the repeated operations of horticulturalists (who work witbout troubling themselves witb theories) have shown that that proposition is too absolute.

"The illustrious Darwin was remarked that fertility among hybrids is a charcter which is acquried in succesive generations obtained by the force of successive sowings.

"That method is a lengthy one, but continued with scieuce and sagacity, it may give important results. It should, however, be assured, in the first place, tbat the hybrid taken in hand really merits so much persevering attention, that it possesses beans of sufficient quality as well as a complete resistance to *hemileia*,

"Hybrids are far from necessarily possessing similarity between themselves; they may differ enormously one from the other and present altogether distinct individualities. They possess, in divers degrees, the characters of the parents; but these characters are sometimes mingled, sometimes juxtaposed. One may then hope, one day to obtain a form of hybrid which possesses the qualities of the two parents, for example, the robustness of *Coffea liberia* with the fine flavour of the *Arabica.* We should not be disconraged therefore.

"In order fo assure ourselves, hybrids shonld be observed in large numbers in a systematic manner, and studied individually. It is necessary to make reiterated experiments."

M. Cornu considers these experiments should be taken in hand by Government, as private persons have neither the leisure nor the facilities for such lengthy and uncertain operations.—*Planting Opinion.*

HOUSEHOLD HINTS.

Sweet Potatoes make fine potato-chips if used just as common potatoes are. To fry them after they are cooked, cut in slices, dip iu eggs and bread crumbs and fry as oysters. To make croquettes of sweet potatoes, take three teacupfuls of mealy baked potatoes, a table-spoonful of butter, a teaspoonful of lemon juice, the yolk of one egg, a gill of milk and salt aud pepper to taste. Work all together thoroughly with a fork, then form into round cakes, dip iu egg and crumbs and fry in smoking fat. If sweet potatoes are boiled for dinner, boil half a dozen more thau will be needed and then prepare them with a hot dish for tea, in the following way:—When cold, peel them and cut into long slices, about half an inch in thickness. Place the slices on a shallow dish that has been well-buttered, dredge lightly with flour, sprinkle over them two tablespoonfuls of sugar and balf a teaspoonful of ground cinnamon, then a little more flour and last of all some bits of butter and a cupful of milk. Cover and cook in a moderate oven until done, then remove the cover and crown slightly. A sweet potato pie is a fine tbing if rightly made and the following is a good recipe:—Mash enough boiled potatoes to make a cnpful. To this add a heaping table-spoonful of sugar, one of butter, a pinch of salt, half a teaspoonful of lemon juice and a cup and a half of milk. Bake with one crnst and put a meringue over the top in the usnal way, being sure to add a few drops of lemon jnice to it.

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An Easy Way to Clean Blankets.—Shave a bar of pure soap thin, put it in a small saucepan, cover well with water, and set over the fire to melt. Stain through a colander into a tub half-full of rain water, to which add half a pound of powdered borax. Stir this mixture thoronghly, and put two or three blankets in; let soak over night. In the morning stir the blankets with a stick, lifting up and down, but do not rub. When clean, and free of stains, press tbe suds from them, and put into a tub of clean luke warm water, rinse and pour off the water, add more, and rinse nntil clean. Then shake a squeeze, but do not wring. Hang the blankets on a strong clothes liue, aud let dry. When ready to take down, fold, sprinkle with powdered borax to keep away moths, and lay in a drawer or box. Blankets thus washed will not shrink, and will remain white and soft until worn ont.

Cinnamon has a marked antiseptic power. Even the scent of it is said to he fatal to microbes. A decoction should be taken freely by persons living in places affected with typhoid fever or cholera.

Virtues of Buttermilk.—The growing practice of utilizing the waste products of all manufactures has brought out the fact that bntter milk possesses many unsuspected qualities. A medical paper says its reputation as an ageut of superior digestibility has become firmly established. It is, indeed, a true milk peptone—that is, milk already partially digested, the coagulation of the coagulated portion being loose and flaky and not of that firm, indigestible nature which is the result of the action of tbe gastric jnice npon sweet cow's milk. It is of great valne in tbe treatment of typhoid fever, and, being a decided laxative, it may be turned to advantage in the treatment of habitual constipation. It is no less valuable in kidney troubles, from its diuretic qnalities. It is in great request for the treatment of diabetes, either alone or alternately with skimmed milk, and in cases of gastric ulcer and cancer of the stomach it can often be retained when no other food can. Chemical analysis shows that in its nature it greatly resembles koumiss, with the exception of which it is the most grateful, refreshing and digestible of the prodncts of milk. Moral, make your own bntter and drink the butter milk.

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Some Good Cooling Drinks.—Cnrrant Sbrub.—To one pint currant jnice add three pints cold water and sugar to taste; chill with ice. Lemon Tea.—Squeeze all the juice from one lemon, add sugar and

stir till dissolved, then put one scant tablespoon to each cup of tea (cold,) lay a thin slice of lemon in the cup, and if this seems too strong, add cold water till it suits, and of course some ice. Russian Tea.—Place two cubes of loaf sugar in a cup half filled with cracked ice, add a slice of lemon and fill up with cold tea. Ginger Punch.—One quart cold water, one cup sugar, half cup orauge and the same amonnt of lemon juice, half lb. ginger. Chop ginger, add water and sugar, boil 15 minutes, add fruit juice, cool, strain and dilute with water and cracked ice, Fruit Punch.—One quart cold water, two cups sugar, half cup lemon juice, two cups chopped fruit, one cup orauge juice. Boil water, sugar and fruit 15 minutes, add fruit juice, cool strain and dilute with ice water. Lemon Syrup.—Roll the lemons, then press the juice into a bowl, take all seeds out. Remove the pulp from the peels and cover with water and boil a few moments, then strain the water with the juice of the lemons. Allow oue lb. of white sugar to every pint of juice, boil 10 minutes and then bottle. Put a tablespoon or two of this iu a glass of water with cracked ice aud you have a pleasant cooling drink.

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HOW TO REMOVE STAINS.—Tea and coffee usually readily yield to the purifying influence of boiling water poured through the fabric so, too, do some fruit stains. An application of lemon juice and salt, with good sun exposure, is an old and in many instances an effective remedy. Greeu stains usually can be removed by dipping in alcohol, and an application of paste made of cream of tartar wet up with water will remove them when alcohol will not. So, too, cream of tartar and water will remove iron mold spots, drying on the grass iu the sun. If one application does not remove, repeat. Soaking in sour milk over night will usually remove ink stains, while the juice of a rice tomato is useful in removing stains from the hands. Kerosene will clean many stains from old cloth, brass or copper. Surfaces that would be marred by sand soaps can often be nicely cleaner with kerosene, followed by an application of hot soap suds. But the stand by when all other remedies fail to successfully remove stains from white fabrics is javally water. It is easily made, and once used no housekeeper will be without it. The formula is as follows:—Four lb. bi-carbonate of soda, and lb. chloride of lime pour over the soda, one gallon of boiling water, place over the fire and boil 15 minutes, then stir in the chloride of limo until thoroughly dissolved. Allow to cool aud settle, then strain through cloth, bottle and set aside to use. To remove stains, wet the stain in cold water, dip up and down until the spot disappears, then wash as usual. Do not use on colored materials, as it will destroy color. It will remove ink stains better than auy other preparation we ever tried. One teacupful of this liquid to a boiler of water whitens garments that have grown yellow from disuse.—*Journal of the Jamaica Agricultural Society.*

CHEMISTRY AND AGRICULTURE.

The following paper was read before the Farmer's Conference at the Agricultural College, Gatton, Queensland, June, 1897 :—

IMPORTANCE OF CHEMISTRY TO AGRICULTURE.

"Professor Warrington, in a lecture receutly delivered before the University of Oxford, draws attention to the great difference in the positiou of agriculture at the present day and a hundred years ago. He says—

A hundred years ago agriculture was an art, having only few points of contact with natural science. At the present time both the materials and the operations of agriculture have been so far examined and elucidated by patient scientific investigations that we may now give the title of agricultural science to this edifice of true theory

This is undeniably true, but agriculture will always remain an art if we consider that art deals with practical ways and means to accompalish certain things.

Science again gives us the explanation of these ways and means, so that really art and science have to work hand in hand to maintain agriculture iu its present eminent position.

The science which helped agriculture more than any other is undoubtedly chemistry.

No other science, electricity perhaps excepted, has made such wonderful progress in the present century as chemistry; aud there is hardly, in the present time, any occupation or industry iu which chemistry does not play an important part.

Let us briefly consider what chemistry is. You all know that man, with all his science and wonderful appliances, has never and will never succeed in creating matter, any more than he can destroy existing matter.

All the bodies which surround us, the air we breath, the food we consume, the clothes we wear, the earth on which we grow our crops, are all composed of a few distinct constitueuts, which at present cannot be further decomposed and which are called the elements.

Only a few of these elements exists in nature in an uncombined state. The most of them are combined in such a wonderful manner that no one would suspect such combination, judging only by the ordinary senses. Who would, for instauce, suppose that starch, cane-sugar and cotton are simply composed of carbon and of water. !

The science of chemistry has to come to our aid to tell us the nature of these combinations, and which elements take part in their formation.

Chemistry further tells us in which manner we can force the elements or combinations to unite and to form new bodies.

Chemistry also proves that all things are formed out of pre-existing matter. A plant which grows is not a creation but simply a transformation of other existing bodies. Again, when a plaut decays in the ground, or when a tree stump is burned, the bodies which took part in their formation are not lost by simply transformed into other bodies, which, in their turn, will again be assimilated by other growing plants.

Emerson, in one of his essays on farming, says—Who are the farmer's servants ? Not the Irish, nor the coolies, but geology and chemistry, the quarry of the air, the water of the brook, the lightning of the cloud, the castings of the worm, aud the plough of the frost.

That chemistry is to be the servant of the farmer is now universally recognised, and consequently we find amongst the staff of Agricultural Departments a large number of chemists.

In the United States a very great number of agricultural experimental stations and agricultural colleges exist, and I may mention that, for instance, at the New York Agricultural Experimental Station out of a total number of 16 officers 7 are chemists; at the South Dakota Experimental Station, and also at the Virginia Agricultural College out of 8 officers 3 are chemists; and at Alabama Agricultural Experimental Station 4 out of 11. In the Southern Colonies, besides, the agricultural colleges and experiment farms with their staff of experts, exist agricultural laboratories with chemists in charge and several assistants.

The work to be carried out at an agricultural laboratory is very large and of a varied nature, and consists chiefly in the following :—

Analyses of soils.
Analyses of waters, chiefly irrigation waters.
Analyses of manures.
Aualyses of foods and food-stuffs.
Analyses of dairy products.
Analyses of plants, fruits and grains.
Experiments with wheats and testing them as to milling qualities, &c.
Practical experiments in the field.

Investigations about stock-poisoning.
Experiment and analyses of insecticides.
Preservation of meal and other products.
Experiments and investigations in agricultural industries, as sugar, wine, tanning, &c., &c.

The value of soil analyses to the farmers has been much discussed. Some authorities deny all value, and others again put too much faith in it. The truth must lie somewhere between these two extremes.

Chemical analysis alone is very often misleading, and I have analysed soils which, according to the analysis, should be first-class soils; but which as a matter of fact would not grow anything on account of their heavy clayey nature. This adverse property would, of course, have been found out by the mechanical analysis, which at the same time would point out that these soils could be improved by draining or green manuring.

Very often the analysis of a soil shows its deficiency in certain necessary constituents.

It is principally the want of nitrogen for which many of our soils in Queensland suffer, and this perhaps, has to be attributed to adverse climatic conditions. The advantages of green manuring have been known for a very long time, but the scientific explanation of the fact that nitrogen is assimilated from our atmosphere by the help of the root-nodules of leguminous plants is only a recent discovery made by Professor Hellriegel. The active agents of this wonderful process are *Bacteria* found in these root-nodules.

Our farmers will find no cheaper or better way of supplying this want of nitrogen to their soils than by green manuring with leguminous crops; and the cow-pea (*Dolichos sinensis*), introduced from America by Professor Shelton, seems especially suited for this purpose, and yields excellent crops in different parts of this colony.

A crop of cow-pea grown in the Mackay district could be ploughed under after eight week's growth. This crop weighed 9·7 tons, (vines and roots) per acre, and supplied to the soil per acre 2·87 tons organic matter, 150 lb. of nitrogen, 35 lb. of phosphoric acid 96 lb. of potash; these ingredients representing a manuring value of £ 5 per acre.

The analyses of waters, chiefly water used for irrigation purposes, is important, as very often the water during its passage through the earth may take up constituents which are detrimental to plant life.

The analyses of artificial manures is undoubtedly part of the most important work of the agricultural chemist.

It is of the greatest importance to the farmer to know if he really receives value of his money spent in manures, and it is a great pity that the fertilisers Bill, regulating and controlling the sale of manures, was not passed by the last session of Parliament.

The farmer cannot afford to experiment with various manures, and in the choice of his manures he should be guided by the analyses and by practical results obtained at experiment stations.

Another important branch of the analytical work is the analysis of dairy products, foods for our own consumption, and feed-stuffs or fodder for our cattle.

Interesting experiments can be made with regard to the preservation of fodder in silos, which would show how far the nutritious value of the fodder is influenced by storage.

With regard to the testing of wheat, a large amount of work has been done in the New South Wales Agricultural Department by Dr. Cobb and Mr. Guthrie.

Of course it will be necessary to repeat these experiments with our own wheats. Over 300 varieties have been sown at the College farm. All of these will need testing, and this will involve a great deal of work during the coming year.

A great many interesting investigations can be carried out with regard to stock-poisoning, and to the yield of some of our native plants in volatile oils, valuable extracts, gums, resins, &c.

Very important also are experiments and investigation in our Agricultural industries, in which chemistry plays an important part. Amongst the foremost of these, stands our sugar industry.

The chemists is not only necessary for the cultivation of the cane crop by trying to improve its quality and quantity, and regulating and controlling the cutting of the cane, but he is also the principal man in the mill in order to control the losses and direct the process of manufacture. Other industries —as, for instance, preservation of meat, butter, and other products for export—will also come more or less under the control of the agricultural chemist.

But let us not forget that analysis alone cannot decide everything, and science alone is not sufficient for successful farming.

Experience and practice are absolutely necessary. The chief aim of the Agricultural College about to be started, is to teach our youths both the practice and science of agriculture, and thus to turn out useful, practical farmers, who can direct and investigate the why and wherefore of the necessary practical work by the elements of science."

[In the discussion on this paper it was stated that there was a general opinion among farmers that fertilizers put on land were apt to be largely carried away by draining—especially such chemical as nitrate of soda. Drainage waters had been analysed after such application and had been found to contain a large amount of fertilizing materials. Green manuring was strongly advocated and a dressing with "Cow-Pea" was stated to have a manurial value of £5 per acre.—J. H. H.]—Extract *Queensland Agricultural Journal*, July, 1897.

BARNYARD MANURES: WHAT THEY DO FOR THE SOIL.

BARNYARD manure and other vegetable matter decomposing in the soil have more or less indirect action as a manure in that they are instrumental in decomposing the insoluble mineral compounds with the result of making potash and phosphoric acid more available. Their action in this way, however, is only secondary and of minor importance. The leading articles used to improve the physical condition of soils are barnyard manure and other coarse residues of plants (such as straw, cow peas, velvet beans and green crops plowed under for manure) lime and ashes. Of these, barnyard manure and other material of its class, improve the water holding power of sandy soils because of their property of holding large quantities of water in themselves in much the same way that a sponge absorbs and holds water. Thoroughly mixed with clay soil they assist in making it, more porous and open. It thus becomes more permeable to air, less retentive of water and less liable to cake on dying. Vegetable matter has also a warming Influence on soils. Because of its dark color it makes them absorb heat more readily and by assisting the escape of water in clay soils reduces the cooling effect of the very large amount of evaporation which otherwise takes place. The purpose of barnyard manure and litter is improving the physical condition of soils will be best served by applying that which is more coarse and straw-like to clay soils. Lime and ashes improve the physical condition of sandy soils by binding the particles together and, especially the ashes, by filling the spaces between the sand grains with its fine particles. They improve the physical condition of clay soils by making them more porous and open.—*Journal of the Jamaica Agricultural Society.*

ROSE CULTURE IN TURKEY.—We learn from a Constantinople authority that in order to encourage the cultivation of Roses, and thus to assit in the production of perfumery (attar) through out the empire the Minister of Agricultre has distributed 100,000 Rose-trees, of good variety, to agriculturists in seven of the Turkish provinces. In addition to this, loans on easy terms will be made to such producers as require new apparatus and stills or these will be sold at the lowest possible prices to such as prefer to purchase outright. This assistance does not come too soon.—*Gardeners' Chronicle.*

RUBBER IN BOLIVIA.

Sir Martin Conway has just been lecturing before the Society of Arts, on February 2nd, on some of the Undeveloped Resources of Bolivia and from this we quote a very interesting chapter, as follows:—

It is only since 1878 or thereabout that the existence of rubber in the eastern forest region has been known. Legislation was passed in consequence of the discovery, defining the manner in which these lands may be acquired. A small annual rate per *estrada* must be paid to the Government, and the lands taken up must be registered with a map of the area. The annual rent may at any time be commuted at a fixed rate, after which commutation the land becomes the freehold property of the purchaser. If the annual instalments are not paid the land lapses to the Government. Thus the Mollendo rubber forests ought now to be owned on an indefeasible title, and many of them are so owned. The titles of others are defective, either because there has been irregularity in the payment of rent, or from mis-description in the deeds of registration. The map accompanying the register often includes a very much larger number of *estradas* than the claimant has scheduled or paid for; and this of necessity, for no one can count or correctly estimate the number of *estradas* in an area which has not been explored in detail. Again, the maps themselves are inaccurately surveyed. Thus a multitude of questions may be made subject of dispute. In other cases, I am told, persons have obtained legal possession of a number of *estradas*, patched about, and now claim to own all the land included between those *estradas*. The question of title is therefore one that in any particular case needs close investigation on the spot. Up to the present time, however, none of these titles have been contested, and it does not appear to be the interest of any individual to contest them, whilst the chief interest of the Government is to induce men of capital to work the forests, introduce immigrants, develop lines of communication, and so increase the general trade and prosperity of the country. It is not likely, therefore, that the Government will attempt to upset titles even if they are not absolutely satisfactory, provided that the forests in question are properly worked.

Time fails me to speak of the COFFEE, COCOA, AND COCOA PLANTATIONS of the sugar estates, and the vine-yards. I can only deal very briefly with the india-rubber forests. In the great eastern plain and low hills that flank the Rio Beni, and still more in the little explored districts to the north and north-east, are immense rubber forests, whose exploitation on any large scale is for the future. It cannot be undertaken profitably until the route to the Amazon is opened up and made easy. Some rubber goes that way, but the difficulties and distances are very great. That the day for this region will come may be prophesied confidently, for the enormous and ever increasing demand for rubber made by modern electrical and other industries, renders the development of increased sources of supply a very important matter. From a recently issued United States Consular Report on the Resources and Trade Opportunities of the Amazon Valley, I quote the following important passage:—

"I have learned that some accounts which have been written concerning RUBBER, although not entirely misdealing, have not been quite accurate. The impression created by the narratives of previous travellers who have been up the Amazon is that the rubber production is on a constant and endless increase. It is not generally believed, but it is nevertheless a fact, that the output is not likely to increase to any marked degree unless a much larger force of rubber gatherers is sent into the forests than has been employed during the past year or two. This is the opinion of the best informed rubber-plantation owners. Reports that the supply of rubber trees is inexhaustible are largely overdrawn. It is true that there is no fear of immediate scarcity of rubber, and perhaps there will not be for the next 50 years. It is believed in well-informed circles that hereafter there will be a gradual but steady shrinkage in the rubber product, unless the present force of rubber gatherers is largely increased, because in the first place, the trees conveniently located near the banks of the rivers are naturally the first to be worked and in consequence are becoming exhausted from constant tapping, the milk extracted being weaker each year; hence the shrinkage in such rubber is very great. In the second place, the rivers have all been worked inland for a distance of about three miles from their banks, and, in order to reach the so-called unexplored rubber forests still further inland, it will require much more time and necessitate three times as strong a force. Owners of rubber farms inform me that milk drawn from rubber trees five years ago possessed twice the strength contained in that extracted from the same tree today. The islands near Para are all over-worked. Good judges can easily recognise rubber drawn from overworked trees by its peculiar colour."

If, therefore, the supply of PARA RUBBER does not show signs of increase, the importance of developing other sources of supply becomes obvious. The following observations upon the forests of so-called Mollendo rubber are the result of my own observations and enquiries, in which I was much helped by Mr. M. Martindale, an English gentleman, whose acquaintance I made in La Paz, and whose long experience of the country was unreservedly placed at my disposal. I have recently heard of his tragic death. He was killed by the fall of a tree in the Mapiri forest.

In the European markets a certain brand of india-rubber is sold under the name of MOLLENDO RUBBER. Of course no rubber trees grow at or anywhere near the Peruvian port of Mollendo on the Pacific coast. The name applies merely to the rubber which is shipped from that port. All the Mollendo rubber comes from the Bolivian province of Larecaja, the forest-clad valleys of Mapiri, Tipuani, Coroico, Challana, Zongo, &c., which descend north-eastward from the Bolivian Cordillera Real. The rubber is brought over various passes to the Bolivian Puna, shipped from Chililaya on Lake Titicaca by steamer to the Peruvian port Puno, and carried down by the Arequipa railroad to Mollendo. All Mollendo rubber comes from the valleys above mentioned, and all the rubber produced in those valleys is exported through Mollendo. The statistics of the rubber exported from Mollendo thus form an impartial record of the production of the Cordillera valleys.

The following are the statistics of the Mollendo rubber exports for a series of years:—

	lb.
1893-4	37,587
1894-5	80,734
1895-6	251,341
1896 7	292,121
1897-8	491,087

The statistics of the year 1898-9 have not come to my hands, but the output was very much larger than in the preceding year, and the industry is gradually developing. The quality of Mollendo rubber, as judged by its price, is nearly equal to that of Para rubber, which is the best in the world. In the year 1898, Para rubber in the English market varied in price per pound from 3s 5¾d to 4s 4½d, whilst Mollendo rubber varied from 3s 4d to 4s 1½d. Considering the importance of india-rubber at the present time, it appears likely that some account of this little known forest region may be of general interest.

It must be borne in mind that the area under discussion does not include the Rio Beni and the region of the plains about it. The rubber that comes from the Beni is carried away to the eastward, and emerges into the light of commerce as Para rubber. It is only the forests of the lowest eastward Cordillera slopes that are comprised in the Mollendo district. The rubber trees there are stated to be of the *Siphonia elastica*, a large forest tree, approximately as big as an average English elm. These trees are self-planted. They grow in clumps, or *estradas*, of from 100 to 150 altogether, and these clumps rise well above the other forest trees, and can be seen from afar, so that the richness of any area can be judged by a general oversight from a commanding position.

In most parts of the world RUBBER-PRODUCING TREES grow in a swamp, a condition which renders rubber forests direfully inimical to human habitation. In this respect the Mollendo rubber forest is fortunate exception, for by all accounts it is not unhealthy; so, at all events, I was informed by an Irishman and a German, both of whom had spent the best part of from ten to twenty years in the forest. There are, of course, unhealthy places, but the forest is not generally unhealthy. The reason is that the trees do not grow on level swamps, but on the sloping sides of deep valleys or *quebradas*. For moisture they depend upon the almost constant cloud that hangs over them, and is formed by the cold air pouring continually down from the adjacent snowy Cordillera. This cloud is a geographical feature, and its lower limit appears to be the exact boundary of the Mollendo rubber forest. The upper boundary is a contour line at approximately the 3,000 feet level, above which altitude the tree will not grow.

The main valleys in the rubber zone are traversed by navigable rivers. The difficulty of transport begins at the upper limit of navigation, whence the rubber has to be carried by toilsome tracks over the high passes of the Cordillera. At present there are no roads and no mule-paths worth mention. There are a few tracks traversable by mules with difficulty. The best are the Mapiri and Tipuani trails which converge on the town of Sorata after surmounting passes of 16,000 feet altitude. The part of the forest which has thus far been best opened out is the area worked by these trials. Up to the present, therefore, Sorata has been the chief centre of the industry. The Challana and Zongo forests will not be properly worked till better tracks have been made over the two passes north and south of Mount Condoriri and down the respective valleys. Such mule tracks could be easily made at a relatively small cost. When that preliminary work is done the production of Mollendo rubber will rapidly ncrease.

At present the main impediment to the development of the industry is not the difficulty of carrying out the RUBBER, but of carrying in the necessary supplies; for it is important to remember that the forest region is practically uninhabited, and the amount of cultivation is very small. A tropical forest left to itself produces little food for man. At one or two points by the river banks, where gold-washing is carried on, there are small Indian villages; but the inhabitants are fully occupied, and have no time to spare for winning the rubber. Both labour and food have therefore to be imported from the high Bolivian plateau by the same route that the rubber retraces on its way to export.

We are thus brought to consider the important question of LABOUR. In the department of La Paz there are reckoned to be over 300,000 Indians, msot of whom inhabit the high plateau region. These people are agricultural labourers who work, under a kind of manorial system, for what corresponds to a very low rate of pay, a starvation wage, in fact. They cannot be described as an industrious folk, but they are extravagant, and their extravagance of expenditure on festivals and especially on festal raiment of a costly and gorgeous character, leads them to temporary emigrations from home, to which they are also frequently driven by dire necessity. They are wont under such circumstances to pledge their labour in advance, and their extraordinary honesty makes the avoidance of their pledge an event of extreme rarity. Employers needing labour secure the services of agents who visit Indian villa ges, and either directly or through the corregedors or presidents of the villages, enlist the required workmen. Payment is generally made in advance, for the Indian has to leave money with his family and to provide himself with food for the time of his absence in the forest. He transports the food either on his own back or on that of his donkey, and sometimes he takes his wife and family with him. He contracts either to work for so many days or to bring out of the forest so many pounds of rubber. The time spent by him on the journey to and fro is not paid for. In the case of a mine or other enterprise that has been running for some time, a certain number of Indians become habituated to working for it, but they generally do so only for portions of the year, returning at stated intervals to their homes for the purpose of pur suing the cultivation of their lands. All depends upon how the Indians are treated by their employers. If they are well treated they will return and bring others with them, even without payment in advance, if provisions are supplied to them at the place of labour. The system is not a very satisfactory one, and is not capable of indefinite extension, though undoubtedly if the forests were worked on a large scale, and the Indians were well treated and punctually paid, a change in their habits might be brought about. It is not, however, probable that the forest region could ever be colonised by plateau Indians, the difference of climate and level between the two countries being so strongly marked. Whenever an organised attempt is made to exploit the splendid forests on a large scale, foreign labour will have to be imported, and it will be necessary to seek Chinese coolies in San Francisco, or Italians from Buenos Ayres, or to fetch Hungarians from Europe. Such colonists would live in the forests and would cultivate the ground as well as work the rubber trees. Their labour would be supplemented by that of Indians, but a steadier industry would be the result.

THE METHOD OF EXTRACTING RUBBER is one of the simplest crafts in the world, and can be learnt by the most ignorant in no time. The process is as follows:—The workman, starting out very early in the morning (for when the sun is high the trees cease to bleed), carries with him a number of little tin cups, called *tichelas*. Arriving at a tree, he makes one or more small incisions in the bark, and below each attaches one of the tin cups by pressing it into the soft bark. The number of incisions that can be made in a tree at one time is variously stated. A strip of the bark all down the tree, one-third of the circumference in width, must be left unbroken, or the tree will be liable to bleed to death. The cup, of course, collects the drops of sap that bleed from the wound in the bark above it. Ultimately the wound in the bark is covered by a film of dry sap, which also is afterwards collected. The workman proceeds from tree to tree, attaching his cups, till he has tapped from seventy-five to one hundred and fifty trees in his *estrada*, according to his industry and the nature of the ground. After the hour when the sap ceases to run the man goes round again, carrying a tin vessel with a cover, into which he pours the milk that has run into the *tichelas*. When all the *tichelas* have been emptied, the man returns to his *barraca*. Some collectors tap the trees in the morning and return to collect the milk in the evening, whilst others tap in the evening and collect in the morn

ing. At the *barraca* the collector lights in his hut a fire of palmwood, with which the nut of the Montacu palm is mixed, if it can be obtained. He places a funnel over it to collect the smoke, and then, taking a kind of small wooden paddle (something like a squash racket bat) in his hand, dips the broad end into the milk, which covers it with a thin layer. He now holds the paddle over the fire in the smoke, turning its faces alternately to the heat. The layer of milk is thus rapidly smoked and coagulated into hard cured rubber. The paddle is then dipped into the milk again and the process repeated until a large cake has been formed. When the cake has reached a convenient size it is slit down the sides and stripped from the paddle. The figure-of-8-shaped lumps thus formed are ready for export. They still contain about 7 per cent. of water which gradually dries out in the next few months, and for which allowance must be made in weighing. In the Mapiri district, it is usual to cure the production of each day separately, so that each collector's work can be controlled. Moreover rubber so cured can be easily tested for cleanness and purity. Lower down the Amazon the custom is to smoke one day's rubber on top of the previous day's, making larger *bolachos*, into which dishonest workmen more easily introduce stones and other adulterations.

The average amount of rubber which one collector produces on one day is very variously stated. On the Lower Amazon 7 lb. daily is the figure quoted, on the Upper Amazon 21 lb. daily. In the Mollendo district the lower of these figures does not appear to be reached under present management. To this cured rubber must be added the scraps and remnants called *sernambi*, which include the cicatraces of the incision of the bark, the cleanings of the *tichcles*, &c. The amount of the *sernambi* is equivalent to about 10 per cent. of the smoked rubber; its price is from 15 to 20 per cent. less than the price of smoked rubber.

The *pica* or rubber-harvest is collected twice a year in the Mollendo forests, from April to July, and from October to March. It appears that a single tree can only be tapped during three months of one year, and then needs nine months' rest. If thus treated, and if a good broad strip of bark is left untapped from bottom to top, the health of a tree does not seem to be interfered with. For how many years it is possible to go on tapping a single tree we do not yet know. There is a tree in the barraca Cristina, in Senor Violand's San Antonio estate, which was stripped of all the bark on one side, and yet had yielded milk from the remaining bark during six *picas* in six successive years; the tree still retains a throughly healthy appearance. It is certain that the life of a tree, though annually tapped, is a long one, and exceeds the fifteen years which are required for the growth of a tree from seed, so that the forest may be perennially tapped, and will give a fairly constant yield when thorougly opened up and worked. This, however, implies that the trees are carefully handled; the yield of a mishandled tree falls off. The average yearly output of a fullgrown tree is variously stated. Some put it as high as 7 lb.; no one puts it at less than 3 lb. of cured rubber (after 10 per cent. has been deducted for drying).

The cost of production in Bolivian dollars for 100 lb. of Mellendo rubber in the Mapiri forest is as follows:—

	Dols.
Paid to contractor per 100 lb	73·00
Loss in weight, 10 per cent.	7·30
Freight from the forest to Sorata town	5·00
Commissions and road tolls	·60
Cost of administration	10·00
Sacking, packing, commission, and freight to Chililaya on Lake Titicuca ...	2·20
Freight, insulance, and incidental expenses to London	12·00
	110·10

Or reckoning the Bolivian dollar at 18d., the cost of 1 lb. of Mapiri rubber put in London is 19·82d. From the books of two other forest owners in the same neighbourhood I find a slightly higher cost, 20·16d. per lb. The present price of this rubber in London has now risen, as above stated, to 4s. 1½d. per lb.

Coming now to a consideration of the possible supply of rubber to be drawn from the Mollendo forests, we enter a region of conjecture, for of course the trees have not been counted nor even the number of *estradas*. A part of one estate has been recently proved to contain 6,410 *estradas* (961,500 trees), when, according to the original estimate, the whole estate contained only 500,000 trees. Five million trees may be taken as the lowest probable limit of the number of trees, whilst they may not improbably turn out to reach 10,000,000 or even more. Now in the year 1897-8 the amount of Mollendo rubber exported was 491,087 lb. which at 3 lb. per tree, represents the yield of only 163,695 trees, and the same number of days' labour at 3 lb. per man per day. If one Indian is taken as working for three weeks, this represents the labour of only 7,795 Indians out of a population of 300,000 in the department of La Paz. At the lowest reckoning, therefore, the output of Mollendo rubber might be increased 30-fold without planting a tree. How is this development to be attained?

Without going into financial questions concerned with any possible purchase of the estates and concentration of them under single management, a few essential features of the problem may be pointed out. To begin with, the first necessity is to make good mule roads over the high passes that lead from the town of Sorata and from the Bolivian plateau to the chief eastern valleys and down those valleys to the forests. These roads would, of course, be very useful to the gold miners, coffee planters, and others whose work leads them to the eastward. They are, therefore, rather work for the Government than for the rubber-forest proprietors; but the Government is poor and cannot afford to make them. If made at all, in the immediate future, the forest proprietors must make them. The main roads having been made, it is necessary to cut forest tracks from one *estrada* to another, as only the *estradas* easily accessible have yet been touched. This implies additional labour, wise oversight, and intelligent exploration.

At present all the food consumed by the rubber collectors has to be carried in to the forests from Sorata or the plateau—a great waste of labour. It would be perfectly easy to raise any quantity of food in the hot valleys, which are of the richest natural fertility; but such cultivation implies preliminary colonisation. As already stated it would be impossible to colonise these low, hot valleys with Indians from the Tibet-like plateau. Chinese coolies are the class most suited for such work. They could be obtained very easily from San Francisco. A nucleus of such men, who would soon become expert in working the rubber forests, would enable the industry of rubber collection to be far better organised than it is today, and opportunities of theft would be reduced. Large areas in these valleys which do not carry rubber are suitable for coffee plantations, and such plantations as do exist produce the finest coffee of South America, and some of the finest in the world, so that here also important future developments may be expected. What is true of coffee is true also of cocoa, for which a large local market exist among the Indians of Bolivia. Such developments of the rubber industry imply, not merely concentration or co-ordination of proprietorship, but skilled administration and scientific experience, which could only come in the wake of capital. At present everything is done experimentally, or by rule of thumb.

The Bolivian Government would certainly favour such an enterprise providing that roadmaking and

colonisation were an essential feature of it. With their help the business of recruiting Indian labourers would be greatly facilitated, for the village corregidors have much influence over the Indians, and can promote or hinder their enlistment or turn them in one direction or another very much as they please. Under any circumstances, however, the future of this region of tropical valleys, descending from the eastern face of the snowy Cordillera Real of Bolivia is certain to be prosperous, and its development will attract much attention.

From the Discussion which followed the reading of the paper, we quote as follows:—

THE BOLIVIAN MINISTER said: The production of rubber was even more important than the figures quoted would indicate. Sir Martin Conway spoke of 1,000,000 lb. as the export from Mollendo, but that did not include that exported by way of the Madera river, which was so considerable that it brought the total export in 1898 up to 3,100,000 kilos., or in value about £1,100,000.

MR. R. KAYE GRAY confirmed what had been said by the Bolivian Minister and Colonel Church, that the greater part of the rubber from Bolivia came down the Madera; the quantity which came down *viâ* Mollendo was insignificant. He had been to Lake Titicaca, but could not pretend to know the district. It was certainly a great advantage to have railway communication as far as the lake: but as that stood at an elevation of 13,000 feet and all produce had to be taken to that height, that route did not seem well fitted for commercial purposes. Some years ago he met Mr. Martindale, who was much interested in trying to develop the rubber industry on the eastern slopes of the Andes, and in discussing the matter with him he came to the conclusion that the labour question, including transport, was the chief difficulty. Still, Mr. Martindale had been able to do something, and the rubber was certainly very good, fetching about 2d. a pound less than the finest Para, and 3d. less than what was known as Bolivian rubber. The inferior quality and scraps probably did not pay for carriage. Being interested in rubber, and finding it very difficult to turn out electric wires and waterproof garments with Para rubber at 4s. 5d. lb., he should rejoice at any development of the production of good rubber.

MR. R. H. BIFFEN asked if Sir Martin Conway could assure him that the rubber trees he had spoken of were really the *Siphonia elastica* of the Amazon, because from the description given, it hardly seemed likely. As known in the Amazon valley, that species always grew on soil which was flooded part of the year, and when transported to Ceylon, where the situation was somewhat similar to that described in Bovilia, the trees did badly, and the yield fell off very much.

SIR MARTIN CONWAY, in reply, said he was not a botanical expert, and unfortunately the specimens he brought home were lost *en route*, so that he could not get them identified. The statement was based on the report of the British Consul, Mr. St. John, who visited Bolivia three or four years ago, and he said that he got his information from an expert, but he could not ascertain his name, and could not therefore affirm positively that the identification was complete. But it grew under conditions practically similar to a swamp, inasmuch as there was rain falling daily from a permanent cloud. It was a very unusual climate, if not quite unique. The amount of Mollendo rubber exported was not quite insignificant, for it amounted to over three million pounds; over half a million came from the small district over which alone he had an opportunity of examining, near Sorata. Of course the great forests in the neighbourhood of the Beni river could produce a vastly greater quantity than the little district he had mentioned, and its full development could only result from the opening up of the Amazon route. As for railway development generally, there was the line from Antofogasta to the shore of Lake Titicaca, and the whole area alongside it was very rich in minerals. Sicasica, half-way between Uroro and La Paz, was also a rich mineral district, but it produced practically nothing, for lack of means of transport. Even fuel had to be carried up if the mines were to be worked. He did not believe there would ever be a trans-Andean Railway. It had, however, only cost a few hundred pounds to make the mule tracks necessary to work the little district he had referred to. With regard to labour, there were plenty of Indians, but you cannot get them to stay at work more than three weeks at a time, and therefore it was very difficult to organise the proper cultivation of the rubber industry. It could only be done by importing colonists, who would not only look after the rubber, but cultivate the ground and provide their own food. —*Journal of the Society of Arts*, Feb. 2.

HOW TO PUSH CEYLON TEA ON THE CONTINENT OF EUROPE AND ELSEWHERE.

THE TRI-LINGUAL LETTER ON TEA;

OUR tri-lingual letter on "Ceylon Tea"—of which the "Thirty Committee" has given 10,000 copies to Commissioner Renton for use on the Continent of Europe, attracted a good deal of attention during our recent visit to central and northern France and Belgium, as also among London City merchants dealing in tea with the Continent. It may be of interest in view of the "Thirty Committee"'s order, to recapitulate some of the English opinions kindly given to us when we were trying to improve the circular letter; and at the same time to publish certain information respecting tea generally which should be of interest to tea planters. We first quote a sentence from the letter of Mr. Herbert Anderson, of the Dimbula Company:—

I thank you for yours of November 20th, enclosing copy of circular letter for the Continent, which is very much to the point, and ought to answer the purpose, especially as it shows how the revenue may be increased by absorbing our teas.

Mr. Anderson was good enough to point out a couple of misprints in our figures which were at once corrected. Mr. H. K. Rutherford was good enough to write:—

You are indefatigable in your exertions to advertize Ceylon, and this latest idea of having your article on Ceylon Tea translated into the continental languages is a very happy one, as it should undoubtedly draw attention to the advantages to be derived by foreign Governments in lowering the duty on tea. I return the paper and cannot suggest any alteration as it puts the matter in a very telling way.

Messrs. Fredk. Huth & Co. (Tea Department) 27, Mincing Lane, wrote:—

We have to thank you for your very interesting circular, the distribution of which on the Continent would be probably of assistance to the trade in general, but scarcely to the benefit of Ceylon teas only, as the dealers and packers no doubt will continue to buy such teas that suit their taste and pocket.

We now turn to a long communication sent to us on the eve of our departure from England, by a well-known London merchant connected with the Indian tea trade.

THE TEA CAMPAIGN IN AMERICA AND THE CONTINENT.

From the long letter of a London merchant closely connected with the Indian tea trade, we quote largely as follows and also give our reply to the same :—

Since I was in Colombo four years ago, I have had the *Weekly Observer* regularly, and came to the conclusion long ago that it would be a good thing for both of us to meet. I have always recognized the honest and good tone of your paper, in contrast to that of some special subject papers, the desire of which seems to be always to conceal the truth and write only what is likely to be palatable to their readers. There were a great many things in your letter of 6th October (published in your paper of 26th) which I should have liked to discuss with you, but which it is most difficult to deal with in correspondence without being tediously long.

TEA DUTY AND CONSUMPTION.

Now to take up your tri-lingual paper on Ceylon Tea. It will no doubt have some effect if it gets a good circulation, especially in German-speaking communities and in Russia. I do not quite agree with your argument that the increased consumption of Tea in the United Kingdom arises from the reduction of the duty,—at least so far as relates to the adoption of a uniform duty of 6d per lb. on 1st June 1865, afterwards reduced to 4d per lb. on 1st May 1890. There has no doubt been a very material increase in the consumption, but it has been a uniform and steady one practically throughout this century, and to my mind the increase has arisen very largely because of the higher and more extravagant scale of living which the last half-century has brought about. Tea 50 years ago was to a great extent a luxury of the rich ; today it is a necessary of the poor. Then a very material point in the question of increased consumption is the fact that not only has the first cost been reduced, but the distributive costs and profits have gradually been materially cut into, and consequently the retail selling prices are remarkably low, in fact, they are so low that I do not believe the abolition of the existing duty would have a great effect in giving a further stimulus to consumption, although of course, if the price were lower there would probably be a great deal of waste. I look upon the average consumption per head of the population as having now nearly reached its possible maximum, because an average allowance of 6 lb. per annum amounts to a great deal in the liquid equivalent. I consider that the higher average shown by the Australian and New Zealand Colonies does not mean more liquid tea. A great part of it goes in waste because of the rough-and-ready way of the colonial and because of the method of making. Besides, in those Colonies the consumption is almost entirely the lowest class of tea which can be got from China, India or Ceylon, the liquid equivalent from which is often not more than half what the Irish people get from high-class Indian Broken Pekoes, which do not cost double the price per lb. In proof of my argument that the increased use of tea in this country arises largely from the more extravagant living of all classes, I would refer you to the increase in the consumption of nearly all those goods which pass through a general grocer and provision dealer's stock, also of butcher meat.

Now as to forcing Tea on countries where it is not consumed at present. I am always amazed at the calmness and the confidence of many of your planters in regard to such things. I should say that if you took an average citizen of Europe who had never tasted beer, wine, spirits, tea or coffee, and experimented upon him, he would in all probability pronounce tea to be the most nauseous of them all. The more I travel among foreign peoples, the more I am convinced of the fact that the use of tea is very much indeed a matter of acquired taste. Children are gradually brought up to it and get to like it, but it is very difficult to convert adults from another beverage. You doubtless have seen in Italy the very infant at the breast being offered a sip of the sour wine of the country, and in Germany the tiny children drinking their lager beer with their parents, while in Russia you see them in family groups round the samovar. It seems to me somewhat like trying to stop Niagara to attempt to convert whole nations from the customs of centuries and a great deal of harm has been done in Ceylon and India by overproduction of tea, based on the idea that because the United States of America contain 90 million people (roughly presumed to be Anglo-Saxon, but really a nondescript horde representing all the nations and ways of living of Europe) there was a reserve ground of consumption there which in time might be expected to equal that of Great Britain. During the last 10 years I have over and over again protested against the use of the parrot-cry "Capture the American market," on the ground that there was no American market of material consequence. To begin with, the people of the United States are coffee-drinkers wherever they use hot liquid beverages. A certain proportion are drinkers of the pale, thin, pungent Green Teas of Formosa and Japan, while only a small proportion (principally immigrants from this side, or their descendants) are drinkers of Black Tea. The only market for us to capture was this Black Tea market, and we have been getting it all the time by the displacement of China Tea. It has come to us in a natural way, firstly by the constant inferiority of the China production, and secondly by the serious fall in the cost of Indian and Ceylon Teas, which have gone down to a level that China cannot compete with, in fact, the fall in prices has done far more for us in North America, in Russia and in Persia, than all our efforts of special missionaries and commissioners. The latter have too often only disturbed and interfered with the ordinary course of trade in the usual channels.

"I do not think we can ever make much headway in any of the Latin countries or in any of the Green Tea-using] districts, or in Germany and Austro-Hungary, but I have no doubt that we can make good progress in all the higher latitudes of Europe, particularly in Russia. As to Russia, it seems to me the most gross presumption on the part of some of your people to suggest to the Government of that Empire the reduction or the abolition of duty. It is merely a revenue duty, not a protective one (except in so far as encouragement is given to Russian vessels and to the development of certain new trade routes) and if we can get our Tea in on the same terms as the ordinary China Tea, I have no doubt whatever that we will gradually over-

come the conservativism of the large Russian distributors, as we had to do formerly with those in Great Britain, thus bringing about a gradual transition from the use of China Tea to that of Indian and Ceylon. The high retail selling prices of Tea in many European countries are merely caused by the fact of the very limited demand, and merchants there are largely of opinion that a reduction would not have any material effect upon increasing the consumption, the latter being a question of national taste.

"The whole of the Ceylon men are so comparatively new to the Tea business, that they are continually making discoveries of matters well-known to firms like my own, and it is a pity that they do not allow themselves to be rather more influenced than they are by some of the previous traditions of the Tea trade.

"I have not left myself much room to deal with your editorial of 26th October, and I would just say that the sending of Tea to other centres such as Manchester and Glasgow has been tried over and over again. I have had as much as 5,000 chests in stock in bond in Glasgow at one time, but the practica conclusion I have come to is that you must have one ruling market, and unless you wish to suffer heavily by being at the mercy of a limited outlet of buyers, you must have your Tea available to offer in that ruling market."

REPLY.

It will be seen that our correspondent does not require to use the prayer "Gie's a gude conceit o' one's-self," in regard to some of his opinions. From a reply, written to him by us on board ship we quote:—

"I have your long and interesting letter; but, I do not agree with you on several points. The way in which I have myself seen the use of tea increase among the French (the least likely of people to be converted) gives me great hope for the whole Continent of Europe and the United States. In 1878, the year I first visited Vichy, and saw a great deal of Paris and its people, under the auspices of a relative, Dr. MacCall, founder of the well-known Mission in Paris and other leading towns, when I enquired for tea. I was always referred to the "Pharmacy." I found a change for the better on my next stay in 1887; but now in 1899, there was not a grecer in Vichy (nor I may add in Paris) who did not hold tea; and much more, not a café or restaurant where they did not give it to you, if asked for, at any hour of the day: and *still more*, I saw French families of an evening frequently with the *tea* pot and cups before them, in place of coffee or wine, at the restaurants. Then, as to the United States: can you tell me why the tea-drinkers from the United Kingdom, who have gone by the 100,000 or 1,000,000 to the States, during the past 50 or 60 years, have become coffee drinkers? Simply, because they could not get the beverage to which they were accustomed at home, or rather the quality of tea from which to brew it. I crossed the Pacific in 1884, with the largest buyer of Japanese tea for the United States and he admitted that every pound was artificially 'faced' with deleterious stuff to give it the required colour, and that it would be far better if his countrymen drank pure Ceylon tea; but, he added, their taste won't change in my time (he was an oldish man) and I don't mind your using my opinion. Well, gradually, but surely, the Americans are being won over to English breakfast tea: the figures show a steady increase, and if only there had been no war tax on *tea*, the increase would have been greater.—You mistake my argument in the circular letter as to Russia: M. de Witte, the Finance Minister, has for some years, been trying to improve the condition of the people by getting them to drink tea in place of intoxicating drinks —he has been opening tea-houses under official auspices, or directly encouraging others to do so. Now my point is, that with so heavy a duty it is impossible for the bulk of the people to afford to buy good tea. The duty in Russia *now* is what it was in England when Queen Victoria came to the throne—2/1 a lb. The English duty is now 4d; but the revenue has lost nothing, but has rather benefitted. Now surely, for Russia to begin reducing gradually, should lead to the same result:—increased consumption and increased revenue. As a matter of fact, Russia has a differential duty, in favour of 'overland' teas, which is not fair to tea sent through Odessa. [This has since been rectified.] As regards the burdens on tea in London—between ship and retailer —don't you think an Association of all tea producers is required to investigate and reform the matter thoroughly? Tea seems to be placed at a great disadvantage as compared with coffee."

WANTED A TEA-GROWERS' ASSOCIATION.

LARGE BREAKS DEPRECATED.

JOCATIVE PROPOSAL TO ABOLISH BROKERS!

In regard to the closing remark in our last instalment, emphasizing the need of an Association of tea producers to watch over their interests, we have the following strong expression of opinion from another London merchant connected with Ceylon tea—an opinion which planters would do well to note and endeavour to act on:—

"I think a Tea-growers' Association is badly wanted, and that if it were properly representative of Indian and Ceylon (British) tea-growers, it would be of much advantage to the industry. The mere fact that the growers had organized their forces would have a wholesome influence on the Docks' Committee and Buyers' Association. Nearly every industry has its Association to protect its interests, and why not tea *growing*, as well as tea distributing and tea warehousing? The one weak point, as regards growers, in the tea draft fight was that their forces were much of the 'undisciplined-mob' order."

BIG BREAKS—WAREHOUSE CHARGES—ABOLISH BROKERS.

Finally, from a source whose identity for obvious reasons is not to be revealed, we have the following rather extraordinary if not amusing deliverance:—

"Very large breaks are not a good thing for the producer. They are only wanted by the big brokers and buyers in London to save themselves trouble. Breaks of moderate size bring the best competition in Public Auction.

"The warehouse charges will probably be at once reformed here, and there is another reform which I have jocularly suggested for many years, but I would on no account like my name to be associated with it, because so many of the Tea Brokers are intimate personal friends. I consider that as business is conducted now-a-days, there is absolutely no need of either selling or

buying brokers in the London market. Teas should never be printed iu sale unless the owners are prepared to take the value offered by the trade on the day they are selling them, therefore all that is necessary is one public auctioneer to knock down the lots mechanically and a clearing house to collect the proceeds in accordance with the conditions of sale. The whole of this work could be done for a trifling percentage on the value, in fact what goes now for lot money and selling expenses might cover it, and 1½ per cent. upon the total value of the Tea sold would be saved to someone."

Do away with the brokers! The time has scarcely arrived for that. Ceylon planters would rather vote for doing away with *the Blenders* and giant Tea Dealers?

TRAVANCORE TEA ESTATES COMPANY, LIMITED.

The following is from the report of the directors submitted at the third annual ordinary general meeting of shareholders, held at the office of the company on Feb. 21.:—

The directors have to submit the general balance-sheet and profit and loss account for the year ending September 30, 1899, duly audited. The net amount at credit of profit and loss account, including balance brought forward at September 30, 1898, after providing for general expenses, income-tax, &c., is £2,264 0s 8d. Dividends on the preference shares paid December 31, 1898, March 31, and September 30, 1899 (less income-tax), amount to £2,682 10s; less set aside in last account, £536 10s; leaving to carry forward to next year the sum of £118 0s 8d. The results of the past year's working have not materially differed from those of the previous year, as there was no appreciable difference in the amount of crop harvested. The average price for the teas sold in London was 7·18d per lb, as against 6·80d, and the rate of exchange 1s 4⅜d, as against 1s 4 3-32d for 1898. The tea crop was 390,885 lb, as against 382,661 lb in 1898, the yield being 342 lb per acre off a plucking area of 1,146 acres, as against 392 lb per acre the previous year off 975 acres. The coffee crop amounted to 280 cwt. In addition to the factories on Bon Ami and Pambanar, factories have been erected on the Mount and Munja Mully Estates, and these latter are expected to be in working order this month. A factory is now in course of construction on Kolie Kanum Estate, and these five establishments, when complete with machinery, will meet the requirements for the manufacture of tea from the 3,312 acres, of which only one-third of the acreage was in bearing last year. Debentures have been issued to the extent of £33,100, and a further issue will require to be made to bring the tea planted into bearing, and to complete and equip the factories. Mr. W. MacKenzie retires on this occasion from the Board, but being eligible offers himself for re-election.—*H. & C. Mail*, Feb. 16.

THE BOMBAY TEA ASSOCIATION, LD.

The ordinary general meeting of the shareholders of the above association was held for the first year at their premises in No. 26, Church Gate Street, last month, when a dividend of Rupees 7 1-2 per share was declared. The well-known millionaire and Banker, Mr. Purunmull Gulji Singanee, was elected one of the additional directors, and Mr. Fazulbhoy Joomabhoy Laljee, who retired by rotation, was also re-elected a director.

The directors in their report state that owing to the plague, and other unfavourable circumstances which resulted in dislocating and paralysing business of all sorts:—Your directors thought it advisable to suspend all active operations in reference to getting more shares of the company taken up by the public, and to wait till better times come. In the meanwhile your directors think that the result achieved so far is encouraging, and they believe there is a good field for a company like ours, and that if properly managed as they feel sure it will be under the careful and tactful supervision of their agents, Messrs. Morton Maju and Company, it will result in much benefit to the shareholders. It is with satisfaction that your directors state that in spite of adverse circumstances, additional shares to the value of Rupees 26,500 have already been subscribed.—*Times of India.*

PUBLIC SALES FOR TEA: THEIR ADVANTAGES.—We said the other day we should touch on other aspects of the public sale system for tea than that of the capability of the buyer, big or small, for combination with a view to lowering the demand, or for any other action with a similar purpose in view. But a correspondent now sends us a few remarks which so exactly sum up the situation as it appears, we believe, to most Colombo buyers that we have no hesitation in giving them prominence:—"To a certain extent it must be true that a big (very big) buyer has the market at his mercy. But what alternative would the seller suggest? Do without the big buyer?—and see where his prices would go! You have only to see what happens even in Colombo if, say, Russians are not buying much,—why the market is not nearly so 'brisk' and prices *may* shew a decline! But it would be unfair to say the Russians were combining to bring prices down. It is a far more galling thing than that, to them—namely, absence of orders! To my mind, the public sale system suits buyer and seller better than any other. It advertises the sellers' goods and gives the buyer the opportunity of seeing and tasting a good variety and making his choice in a way that he would'nt have by private contract. I doubt whether the enormous quantities of Indians and Ceylons which are sold in London could be handled in any other way but by public auction and if I were a broker I should certainly want more than one per cent brokerage if I had to 'worry round,' selling everything privately. With regard to offering a whole invoice privately, without the option of dividing, I should not blame the seller because in selling privately he does not know whether, if one buyer will take the leaf teas, another will take the brokens. Public auction obviates all this, as all the buyers are represented in the room and the various grades are easily divided amongst the various interests. In my opinion therefore the only system possible for dealing with the huge sales in London is that of public auction, believing as I do that in the long run it suits buyer and seller best."

PLANTING COFFEE, COCONUTS RUBBER; &c. IN THE STRAITS.

SELANGOR PLANTERS' ASSOCIATION.

ANNUAL REPORT FOR 1899

In presenting this their Seventh Annual Report, your Committee have to announce that 65 members are now on the roll of the Association, being only two less than last year, although seven names have been removed from the roll during the year through closing of estates, departure from the State and resignation. The attached statistics show an increase under cultivation of 1,172 acres, but of labourers of all nationalities a decrease of 178.

PLANTING PRODUCTS.—(*a*) COFFEE.—Estimates have for the most part been realized, but the depression of prices, complained of in 1898, continued during the past year, and the following list of prices realized for coffee during 1899:—viz., January $18.25, February $18.50, March $18, April $16.50, May $16.65, June $16.75, July $16, August $15.50, September $15.85, October $16, November $18, December $20.50: an average of $17.20 per picul for the twelve months—shows that there was no margin for profit; in fact, your Committee consider that the present good order of Selangor Estates is very creditable considering above prices, and that it has been a good, though trying, lesson to planters generally. During the year, until December, there was almost no demand for Liberian coffee in the European market, but since then there has been a distinct improvement.

There has also been a decided improvement in the quality of our coffee, owing, no doubt, to better machinery and greater care in curing, and your Committee hope that every member of the Association will do his utmost to help in this respect, so that still greater improvement may be reported at the end of 1900. Although some 300 acres under coffee were abandoned during the past year, it is satisfactory to know that the acreage cultivated under coffee by Europeans has not decreased, being about the same as at end of 1898, as for every acre of bad land abandoned there has been an acre of good land brought into cultivation. Mr. Heslop Hill has taken great trouble in procuring statistics which show that we can produce coffee in the Straits cheaper than it can be produced in Brazil, and this, taken with the fact that late London reports maintain that the demand has almost equalled the supply, make your Committee consider that the present outlook is more hopeful than it has been for a long time past.

(*b*) PARA RUBBER.—The low prices for coffee during 1899 stimulated the cultivation of this product very considerably, and no less than 1,600,000 imported and locally grown seeds were put into nurseries in Selangor, which have produced, say 1,000,000 healthy plants, all of which either have been or are being planted out. On all estates in Selangor where Para Rubber has been planted, it is doing extremely well, and, at present, it seems as if rubber was going to be one of the leading products of the State. There can be no doubt that we have much to learn about rubber, and it is satisfactory to report that through the representations of the U. P. A., F. M. S., the Federal Malay States Government have voted a sum of $4,000 in the 1900 estimates for the purpose of carrying out experiments with rubber and other products. There has also been some discussion about sending a practical man to report on Para and Castilloa Rubber in the countries where they are grown, and there is every likelihood that this will be done by the planting community even should Government not see their way to help. The planting of Para Rubber seed at stake has not, as a rule, proved a success, and even young plants are so liable to be eaten off by rats, crickets, and other pests, that the best and safest plan seems to be to plant stumps as thick as a man's forefinger, and cut long The white ants (termites) are Para Rubber's worst enemy, and your Committee hopes that any successful experiments in destroying these or any other pests will be reported to them

(*c*) GUTTA RAMBONG.—This rubber is indigenous to the Straits Settlements and up to the present does not seem to have received as much attention as it deserves from Planters. It grows luxuriantly and gives an enormous yield at from 10 to 12 years old (probably earlier) and no doubt the new coagulating machine will act on its milk in the same way that it does on that of the *Castilloa Elastica*, as reported in the Ceylon Botanical Gardens Reports (making it equal to the best Para). Up to last year it was rather difficult to get plants or cuttings which found a ready sale at from 15 to 25 cents each, but each plant put out for the last three years has been yielding 30 fold, and there are now thousands of rooted plants available at from 4 to 5 cents each, which is a very reasonable price. There should be about 500,000 plants available for next year, though probably not all for sale, as some planters are planting out all they can produce.

(*d*) CASTILLOA ELASTICA.—It has been almost impossible to procure seed of this rubber, but those plants already in the country are doing extremely well, and a large quantity of seed has been booked for 1900.

(*e*) COCONUTS.—A large acreage has been planted during the year, chiefly in the Coast Districts and the Kuala Selangor Oil Mill has been working steadily and turning out excellent oil and cake. The company have planted 200 acres this year. The growth of the coconut in Selangor has been pronounced by experts from Ceylon to be finer than anything in that island. This product is well worthy of attention.

(*f*) RAMIE.—So far, the only extensive experiments carried out with this product are those of Mr. C Baxendale on the Jugra Estate, Kuala Langat, which we hear reported on favourably and we hope soon to learn that he has proved the cultivation a success.

(*g*) MINOR PRODUCTS.—A very considerable area has been planted with plantains and kladi in conjunction with coffee and rubber, and both are favourably reported on as more than paying all expenses of upkeep on the land. During the year an attempt was made to establish a trade in plantains with Western Australia, but, on enquiry, the business proved to be so small that nothing came of it. We believe another effort is being made in the same direction, but have not yet heard with what result.

CINCHONA: CABLEGRAMS

AMSTERDAM, Feb. 15.

At the auctions of cinchona bark held today, over 6,000 packages were offered, of which 5,814 sold at an average unit of 10·65c per half-kilo. against 8 90c paid at the January auctions. The following were the approximate quantities purchased by the principal buyers :—English and American factories, who purchased the equivalent of 7,430 kilos. quinine sulphate ; Brunswick factory, 2,629 kilos ; the Mannheim and Amsterdam factories 5,201 kilos. the Frankfort-on-Maine and Stuttgart factories, 2,448 kilos ; and various buyers. 3,408 kilos. The prices paid for the manufacturing bark ranged from 12c to 93c per half-kilo, and for "druggists'" from 10½c to 86c per half-kilo. The tone was very firm.—*Chemist and Druggist*, Feb. 17.

TEA: KNAVESMIRE ESTATES CO., LD,

THE ANNUAL REPORT.

Your Directors have now to submit Accounts and their Report for the year ended 31st December, 1899.

The Accounts close with a balance of R17,483 54 at credit of Profit and Loss account, and the Directors recommend that a final dividend of 2½ per cent be declared, making with the interim dividend of 2½ per cent already paid, a total of 5 per cent for the year.

The dividend will absorb R10,375, and leave a sum of R7,108·54, which it is proposed to carry forward to the new season.

The crop for the year has turned out very short, only 244,636 lb having been secured against the reduced estimate of 300,000 lb. This shortfall is almost entirely due to the very severe drought experienced at the beginning of 1899 when the Estate suffered much, and never seemed to flush freely during the remainder of the year. Following this drought, the S.W. Monsoon set in very early with strong wind and too much rain, so that no sooner had the bushes recovered from the effects of the dry weather, than they were checked again by the wind and rain; in fact there was very little good flushing weather during the whole year. Over and above these unfavorable conditions, the Superintendent was hampered by having to transport his leaf to neighbouring factories during the busiest months of the year, owing to the new factory not being completed; the transport of material for the building also taking up a good deal of labor, so that during the month of April a little leaf was lost, although nothing to account for the great shortage of crop, the greater part of which occurred during the latter six months of the year.

Expenditure per lb. of made Tea is heavy, being 26-14 cents per lb., but this is accounted for partly by the short crop, and partly by having to pay neighbouring estates to manufacture our tea, and extra transport, &c., while the new factory was in course of erection.

To cover this, however, a sum of R16,184 82 was provided by the balance due on a Loss of Profit Policy, and if this sum be deducted from the estate expenditure, the cost of production becomes reduced to 19·53 cents per lb., which is less than the tea would probably have cost under ordinary circumstances. The nett value of the crop was 35·74 cents per lb.

The Estate is in good order and well supplied with labor. The estimate of crop for 1900 is 300,000 lb. of made tea at a cost of 21·55 cents per lb., which includes the cost of opening up a new clearing of 15 acres.

The old factory which was destroyed by fire has been replaced by a larger and better building with more up-to-date machinery. The new factory is complete in every respect, and well up to the requirements of the Estate. The amount spent on the new building and machinery over and above recoveries from the Fire Insurance Company is R17,506·72, which amount has been provided for out of the revenue of the Estate.

In terms of the Articles of Association, Mr. Wm. Anderson retires by rotation from the Board of Directors, but is eligible for re-election.

The appointment of an Auditor for 1900 rests with the meeting.

TEA: THE RAYIGAM COMPANY, LD.

THE ANNUAL REPORT.

Acreage:—

RAYIGAM.

Tea in bearing	...	362 acres.
,, partial bearing	...	264 ,,
,, not in	...	69½ ,,
Forest	...	504½ ,,
Total	...	1,200 acres.

ANNANDALE.

Tea in bearing	..	250 acres.
Forest	..	8 ,,
Grass	...	38 ,,
Total	...	296 acres.

The Directors herewith submit their Report and Balance Sheet with Profit and loss accounts for 1899. After writing off R4,838·38 for depreciation on Buildings and Machinery and R1,319·12 being the balance outstanding for preliminary expenses, there remains a balance of R39,779·63 available for distribution, out of which the Directors propose to pay a 5 per cent dividend absorbing R30,000, and to place R9,000 to a reserve for making provision for the reduction of the mortgage loan, carrying forward a balance of R779·63.

The crops of tea from both estates considerably exceeded estimates, that of Rayigam being 299,398 lb. exclusive of bought leaf, and of Annandale 92,846 lb.

The net prices realised for Rayigam and Annandale Estates teas respectively were 33·82 cents and 44·22 cents per lb. The teas were all sold locally.

The estimate of crop for the current year for Rayigam is 320,000 lb. as against 250,000 lb. for last year, and for Annandale 94,000 lb., as against 82,000 for last year.

Mr. Gordon Frazer having gone on leave, Mr G E Woodman was elected a Director to fill the vacancy on the Board during Mr. Frazer's absence from the Island.

Mr. Albert Rosling retires from the Board of Directors by rotation, but being eligible offers himself for re-election.

The election of an Auditor for 1900 rests with the Meeting.

THE CLYDE TEA ESTATES COMPANY, LD.

THE ANNUAL REPORT.

Acreage:—

Tea in full bearing	..	434 acres.
Young Tea	...	112 ,,
Jungle, &c.	...	169 ,,
Total	..	715 acres.

Your Directors beg to submit their Report and accounts for the year ending 31st December, 1899.

During portions of the year unusual droughts were experienced, a serious shortfall in crop resulting therefrom.

The quantity of tea made was: from estate leaf 173,040 lb. and from bought leaf 7,225 lb., against estimates of 235,000 lb and 5,000 lb. respectively.

The yield for the year equals 400 lb. of made tea per acre in full bearing.

The cost of estate tea, including transport but exclusive of manuring was R45,302·45, or say 26·18 cents per lb. The net amount realized for the total crop (180,265 lb.) was R64,402·53, an average of 35·73 cents as compared with 33·50 cents per lb. in 1898.

The expenditure on manuring during the year (R5,111·60) has been charged against revenue, and the following additional sums have been written off:—

R1,000 being balance of preliminary expenses.

R3,233·58 for depreciation in value of buildings and machinery at 2½ per cent and 10 per cent respectively.

The available balance is R7,637·09, from which the Directors recommend payment of a dividend of 2½ per cent absorbing R6,750, and leaving R887·09 to be carried forward to next account.

Under the Articles of Association, Mr. F M Laurie retires from the Board, and being eligible offers himself for re-election.

The shareholders have to appoint an auditor for 1900.

TEA: THE UDABAGE COMPANY, LD.

THE ANNUAL REPORT.

Acreage:—

215 acres in full bearing.
84 ,, 3 years old.
36 ,, 2½ ,,
164 ,, 1½ ,,

499 acres cultivated.
641 ,, available reserve.

1,140 acres more or less.

The Directors beg to submit to the shareholders the accounts for the year ending 31st Dec., 1899.

The crop secured amounted to 141,430 lb. made tea against an estimate of 145,000 lb. and realized R46,599·10 or an average of 32·94 cents per lb. against an expenditure of R34,687 06 or an average f.o.b. cost of 24·52 cents per lb. The cost of production for the year has thus been reduced by nearly cents per lb. while the average price realized is better by fully 2 cents per lb.

The balance at credit of Profit and Loss Account is R5,422·77 after providing for interest on advances for extensions and development of the Company's property amounting to R11,293 34. A new factory is in course of construction, and it is expected will be fully equipped and in working order shortly.

The estimate for the current season is (including 7,500 lb. of tea from bought leaf) 165,000 lb. made tea, and it is anticipated with the increased facilities for transport from the estate and an improvement in manufacture afforded by the new factory and machinery better results may hereafter be shewn.

Mr. Gibbon in his last report dated 9th February, 1900, states that the latest clearings are making excellent progress and will be a fine sheet of tea, and that the estate is in every respect in a satisfactory condition.

Mr. Thos. Hudson retires from the Directorate in terms of the Memorandum and Articles of Association, but is eligible for re-election.

It will also be necessary to elect a Director in place of Mr. G. J. Jameson who is leaving the island temporarily.

The appointment of an Auditor rests with the meeting.

TEA AND CACAO: THE KANDYAN HILLS COMPANY, LD.

THE ANNUAL REPORT.

Acreage:—

Tea in full bearing	320 acres
„ in partial bearing	32 „
„ in planted in 1897	58 „
	410 acres
Cocoa	90 „
Reserve land	810 „
	1,310 acres

The directors have the pleasure to present their Report for the season ended 31st December, 1899, together with a statement of accounts, duly audited for the same period.

The tea crop for the year including purchased leaf amounted to 177,027 lb., the quantity secured from the estate itself being 164,945 lb. against an estimate for the season of 130,000 lb., while the cocoa crop resulted in a yield of 110 cwt. 0 qr. 4 lb., which is about 20 cwt. less than the quantity expected at the beginning of the year.

The nett price realized for the tea was 35·70 cts. against 36·23 cts. in 1898. and the cocoa sold at an average of a little over R47 per cwt. all round.

The f.o.b. cost of the tea after allowing for expenses in connection with outside leaf works out at a little over 23 cts. a lb. which shews a very large reduction on the rates of previous years, and it includes the cost of sufficient manure for a 30 acres field about to be gone over.

The profit and loss account after providing for the debit balance of last year (R6,957·76) together with interest and other charges shows a sum of R9,535·74 to credit of the account which it is proposed to deal with as follows:—

6 per cent. dividend which will absorb	R7,500 00
Carried forward to next account	2,035 74
	R9,535 74

The financial position of the Company has been placed on a satisfactory footing by the issue of debentures to the value of R50,000, carrying interest at seven per cent. per annum, all of which were subscribed for by the shareholders.

The new season's estimates are based on a crop of 160,000 lb. of tea and 130 cwt. of cocoa, besides which there will again be some transactions in outside leaf.

The expenditure including the cost of manuring 100 acres of tea is computed at an f.o.b. rate of a little over 26 cts. a lb., and the cocoa crop works out at R29 per cwt.

The capital outlay in connection with the new season is estimated at R17,790, and provides for a Pelton Wheel installation which has been rendered necessary by the continued scarcity of fuel. It further includes the cost of a new sirocco and finishing off the extension to the factory, besides opening of, and planting with tea, another 25 acres of the reserve land. The balance of the money raised on debentures will be available for these improvements to the property.

Mr. J. N. Campbell retires by rotation and is eligible for re-election. Mr. G. J. Jameson, who was elected in place of Mr. Macindoe on his leaving for England also retires, and it will be necessary to elect a director in his place.

The appointment of an auditor rests with the meeting.

TEA: THE KIRKLEES ESTATE CO., LTD.

THE ANNUAL REPORT.

Acreage 31st December, 1899:—

Tea in full bearing	..	310 acres.
Tea in partial bearing	..	70 „
Tea not in bearing	..	48 „
New clearings about	..	10 „
Timber and cardamoms, about		105 „
Uncultivated land	..	174 „
	Total	717 acres.

The directors have now to submit to the shareholders the accounts of the Company for the past year.

The crops secured were 130,888 lb. Tea, 1,251 lb. cardamoms and 35 22-32 bushels coffee, while 7,809 lb. Tea were manufactured from purchased leaf. The price realized for the tea was 39 80 cents nett per lb. as against 39·33 cents in 1898, while the cardamoms sold for Re. 1·49 per lb. nett, as against Re. 1·62 per lb. in 1898.

After making ample provision for depreciation of buildings and machinery and setting aside a sum of R1,500 as a further provision to cover any possible loss of Coast advances, the profits for the past year amounted to R8,590·48, to which falls to be added the balance of R1,481·84 brought forward from 1898, less R8·10 realized short of the estimated value of cardamoms belonging to that year's crop.

An interim dividend of 3 per cent was paid on the 28th August last, and the directors now recommend the payment of a final dividend of 6 per cent. making 9 per cent for the year, and that the balance of R1,067·22 be carried forward to the current season's account.

The crops for the current year are estimated at 150,000 lb. tea and 2,000 lb. cardamoms, on an expenditure of R44,286·59.

In accordance with the articles of Association an issue of 350 cumulative preference shares of R100 each was offered to the shareholders by the directors in their circular dated 26th October last, but only 47 shares were applied for. The directors have however been able to place elsewhere 200 shares, and have decided not to issue the balance at present as negociations for the purchase of Beckington Estate have in the meantime fallen through. Payment has now been made for these shares and the loan of R25 000, appearing in the annexed accounts, was paid off on the 13 h February.

In terms of the articles of Association Mr. G. H. Alston retires from the office of director, but is eligible for re-election.

The appointment of an auditor for the current year will rest with the meeting.

CEYLON HILLS TEA ESTATES CO., LTD.

THE ANNUAL REPORT.

The Directors have now to submit their fourth annual report and the accounts of the Company for the year ended 31st December, 1899.

The crop secured was 425,603 lb. as against 389,649 lb. in 1898, and the cost of putting it on the market was 31·68, realising 36·36 per lb., as against 33·04 and 33·90 cents respectively in 1898.

While the yield was again short of expectations, it is satisfactory to notice an increase of 36,000 lb. over 1898, and the Directors would emphasize the fact that the hope expressed in last year's report, that the ground lost in 1898 would be recovered in the following twelve months, has thus happily been fulfilled to an appreciable extent, and this in the face of continued abnormal and adverse conditions.

The estimate for the current year is put down at 468,500 lb. made Tea, and Mr. Galton, when sending in his January report, says that prospects for the first six months of the year are extremely good.

Debenture interest has been paid for the half year ended 30th September, 1899, and the next payment will be due on March 31st next.

It will be noticed that the debit balance of R9,962·99 as on 31st December, 1898, has been reduced to R2,417·11 during the last year, the profit made in 1899 having thus been R7,545·88.

Mr. Galton reports in January that estates and buildings are in a generally satisfactory condition, but that labour is not so plentiful as he would like, though he hopes to get fresh labourers from the coast in March-April. Coast advances stand at R11,888·65 on 31st December, 1899, as against R16,913·67 the year before.

The Directors have decided to again relinquish their fees, and the Agents and Secretaries have agreed to respond with a like amount.

It will be noticed that the Company's form of accounts has been altered in so far as the amount written off for depreciation is concerned, the original cost of factories, buildings and Machinery being shown on the one side and the total amount written off for depreciation on the other.

In terms of the articles of association Mr. F Liesching retires from the office of Director, but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.

WAREHOUSE CHARGES FOR TEA.

If the London dock and warehouse-keepers think that the slight concession recently made in regard to their charges on tea will satisfy tea growers and importers they are under a false impression. A slight reduction is better than nothing, but in this instance it can only be regarded as a foretaste of further reform in the same direction. Feeling on the subject is strong, and the position is aptly described in the following comments which we take from the *Investors' Review* of February 10th :—

The writer in the *Review* says : "The 'ring' of warehouses known as the Tea Clearing House has informed the Indian Tea Association that the committee of the Clearing House have 'decided to recommend a reduction in the bulking and taring charges, and this recommendation has been duly confirmed. As near as possible the reduction appears to be some 25 per cent., the charge for bulking and taring packages of 90lb. to 129 lb—the average weight—being now 1s 1d. per package as against 1s 5d. in former days. To have obtained a concession at all is equivalent to an admission that the agitation on the part of tea importers was well founded ; but no one should imagine that the grace now bestowed will meet the needs of the case. Indeed, it is really very little in the nature of a concession, for it has been made rather with a view to meet new conditions produced by the events which followed the 'draft' dispute. The effects of that disastrous dispute still hang over the tea market, with the result that the dealers demand that every package of tea that has been re-bulked in London shall be tared. The cost of this operation was so great that the warehouses have met the market by reducing these charges. Apart from this matter, the abatements now granted will not weaken the agitation, because many of the energetic companies will obtain no benefit from it. A company that has paid particular attention to the bulking of its tea in India or Ceylon, and has so arranged it stares that an average tare will always suffice for the buyer, does not require to undergo this combined bulking and taring charge. This is the move now made, merely a little inducement offered to the companies to go back to the old slovenly ways, when such matters as bulking and equality of tares were ignored. We therefore imagine that the committee of the Indian and Ceylon Tea Association which is sitting upon this matter of warehouse charges will not be content with such a small crumb dropped from the rich table of the warehouse-keepers, but will press for a substantial reduction in all important charges, particularly the working charge and the rent. Independent testimony has satisfied all those connected with the tea industry that a reduction in the charges is reasonable and equitable, and if such concessions are not granted responsible men in the trade are quite prepared to carry on the struggle to the bitter end. The warehouse-keepers had therefore better agree to an amicable adjustment of the points in dispute whilst there is time, for if no redress is granted, the subsequent action of those interested in a reduction would cause a far greater decline in rates than is even hinted at now."

There are also some comments written in a similar strain in the *Produce Markets Review* of the same date.—*H. and C. Mail*, Feb. 16.

THE LONDON COCOA MARKET.

(*By Harold Hamel Smith.*)

London, E.C., 16th Feb., 1900.

In spite of the Government being in the market this week, prices, generally speaking of cocoa went easier, though to what extent it is puzzling to know as the reports vary in a somewhat remarkable degree. Some say Trinidads and Ceylons are steady, and others that they are down 2s to 3s. The truth is, as I think you will see by the prices I quote below, that of Trinidads the best marks were decidedly steady, but "middling" and "good middling" red sold at lower rates compared to 81s 6d and 82s for some "Belle Fleurs" sold last month. It is this class of Trinidads that went low this week say at 78s and 79s. As to Ceylons, except perhaps for the better qualities which seemed to be in less demand, and hence met with rather poor competition, the prices realised I think compare favorably with those of the previous week, and if it still sold at somewhat irregular prices, it was with an upward tendency this time instead of a downward one.

7,908 bags of all growths were offered at Tuesday's sale, of which some 4,000 bags sold, or about one-half. Trinidads sold up to 84s 6d for fine marks say Sta Rosa Scheult at 83s and San Jose Degannes at 84s 6d whilst "good middling" and "good red" as "Las Hermanas"

sold down to 78s. Grenadas went 1s lower, and in some cases perhaps even a little more, for only two lots sold at 72s, the bulk of the "fine red" which had been selling at 72s to 74s, only realising 70s to 71s. This week the Government did not buy any Grenadas, but were purchasers of about 700 bags of Trinidads at prices varying from 79s to 81s 6d. Of Ceylons nearly 2,000 bags were offered of which 731 bags were sold, at 60s to 63s 6d for "smalls," 78s to 83s fair to good red, 85s 6d to 87s for fine red. Native cocoa sold at 66s for common and 67s to 70s 6d for fair to good. The demand for this growth is evidently dull this week for I have not heard of any more having been sold since the sale, but I still think "very fine bold" red with a light break, would fetch a fancy price.

Cocoa butter is quoted a little higher in price being 1s 5¾d today.

Stocks still run very low, the stock of all growths being only 74,943 bags against 91,152 bags last year, and 113,918 bags in 1898, of these 7,400 late Ceylons, 15,172 Trinidads, 9,727 Granadas and 25,241 bags Guayaquil.

From all accounts I am of opinion that this year's supply of Cocoa, will be nearly as large as that of 1899. The Guayaquil crop may not be quite so heavy, but the small difference will be more than compensated by increased receipts from Africa, and perhaps Bahia, especially African where I hear the increased cultivations are beginning to tell up. This is just as well for with the consumption increasing as it is we shall want every pound of last year's supply, if, indeed, it will be sufficient to prevent prices a little later, going higher.

PADDY CULTIVATION: ITS COST AND PROFIT.

LARGE PROFITS?

(FROM A WYNAAD POINT OF VIEW.)

In view of the decline in values of coffee and tea in the European markets, as well as of the circumstance that a considerable extent of land suited to the profitable growth of rice is to be found in proximity to blocks which are under coffee and tea in India, it will be instructive to glance at the advantages resulting from utilizing such blocks for raising an article of consumption which lends itself so readily as a means of supporting the labour engaged, not merely on the tilth itself but in that devoted to the major products named above.

There are practically two methods by which rice, *i. e.*, paddy can be succesfully grown, namely, through indigenous labour, and by means of imported coolies. The former are accustomed as a general rule in South India, to be remunerated in kind, a man receiving for a full day's work approximately 4 lb. of paddy, a woman 3 lb., while one anna in cash is disbursed weekly to such of the former as may have worked for not less than six days in the week; and twice a year all bands expect to be presented with a couple of large coarsely woven white cloths, on the recurring anniversary of the two principal festivals, in March-April and in August-September. On the other hand, imported coolies are paid at the rate of 4 and 2½ as each daily.

It may be taken for granted, speaking broadly, that the average value of paddy in Southern India is R2 per maund of 82 lb., and upon this hypothesis the scale of wages payable to the imported labourer, (4 as per man) is more than double that earned by his indigenous confrère.

In framing an estimate of the outlay connected with paddy cultivation, it will consequently be fairest to strike an average, and debit the account with day labour at an all round scale of 3as. per diem.

Before scrutinizing the cost of cultivating paddy lands or bhil tracts it should be assumed that the ryot possesses upon a 30 acre block a herd of at least 40 buffaloes, the accruing manure from which will suffice to liberally fertilize the whole, once every second year (one-half of the holding being so treated annually), while the services of the animals are utilized (1) for ploughing, and (2) for threshing, *i.e.*, for treading out the grain.

Paddy, on the average, requires about four months to mature, but upon some tracts, two harvests can be annually raised. The following statement furnishes a schedule of the outlay incidental to cultivating 30 acres of wet land for a period of about eight months:—

		R
1	Herding 40 buffaloes at 6 annas per diem	90
2	Cost of 30 maunds of seed grain ..	60
3	Ploughing each acre six times (prior to seed sowing) a man taking three days to do the work each time, also labour for "bunding" the land ...	200
4	Sowing the seed	30
5	Application of manure	15
6	Reaping	30
7	Threshing and winnowing the grain ..	30
		455
	Value of Harvest representing a yield of 15 maunds per acre, amounting to 450 mds. at R2	900
	Value of straw	100
		1,000
	Deduct Expenditure	455
	Balance of profit	545

The yield of paddy varies considerably and ranges from 10 to 30 fold, but in this statement a return of only 15 fold is provided for, a result which may confidently be anticipated where the work of supervision is intrusted to capable hands.

From these figures it will be obvious that on ordinary land of the extent named properly manured and otherwise treated a return of 15 fold yielding a net profit of over 115 per cent. accrues, or deducting the pay of a native supervisor, 100 per cent. profit remains to the cultivator.

One maund of paddy properly cleaned and winnowed yields about 50 lb. of raw rice, the value of the latter as a marketable commodity being governed by the particular class of grain from which it was raised.

But assuming that an average is struck between the best quality and the commonest description of rice, a rupee purchases about 18 lb. of the latter, so that a rateable yield of 15 maunds per acre is equivalent to a crop of more than 750 lb. of rice worth R41-10-8.

These calculations are based on practical experience and may be thoroughly relied on as a moderate estimate of the probable profits acruing from the cultivation of paddy or holdings at an elevation of 2,400 feet above sea level and enjoying an annual rainfall approximating 80-120 inches, fairly well distributed. RYOT.

—*Planter*, February 24.

BRITISH NEW GUINEA.

AN AUSTRALIAN CEYLON.—This is the term applied to New Guinea by the Australians. The new colony, we learn, is at last to be thrown open to white colonisation, not through the agency of a British syndicate, but by the direct action of Government Administrator, Mr. Le Hunte, with the concurrence of the Australian colonies concerned. The terms on which land may be acquired after a certain date for settlement purposes have been issued, and it is prob-

able that the career of British New Guinea as an Australasian colony will commence simultaneously with the proclamation of the Australian commonwealth. The new colony, it is claimed, possesses many of the features on which the prosperity of Ceylon is based, and offers many advantages to the semi-tropical agriculturist, the general character of the climate being not unlike that of Northern Queensland. When British New Guinea became part of the British Empire, European settlement other than at a few points of the coasts could not be attempted with safety on account of the savage character of the natives, who naturally regarded the white man as an intruder. But like the Maoris of New Zealand and the inhabitants of Fiji, they are a singularly intelligent people, and, under the kindly yet firm rule of Sir William Macgregor and his successor, have learned to respect and confide in the sway of the white man. There is not the slightest risk incurred by a settler, unless he disregards official advice and seeks to penetrate the yet unexplored portions of the colony. The country is exceedingly mountainous, and as the more elevated regions become more and more accessible they will afford a ready means of escape from the summer heat of the low lying country. So far as can be ascertained, the country is one immense forest, abounding in valuable timber, and broken in places by vast alluvial plains, formed by the deposits of rivers in flood. The natives are mostly of settled habits, haviog large villages kept scrupulously clean. The native manufacturing industries include pottery and rope making, but the Papuans are an imitative race, and speedily acquire a knowledge of the use of tools and the simpler industrial arts. The Government of British New Guinea has for some time been engaged in securing places suitable for the beginning of European settlement, a large portion being bought from the natives. Each locality has the natural makings of a plantation—good soil, a plentiful supply of water, and accessibility from the coast. Each lot will be sold at a nominal price, subject to conditions intended to prevent its being secured for purposes of speculation. At present it looks as if gold-mining, sugar-growing, and cattle-raising are destined to become the leading local industries, but there are many branches of semi-tropical agriculture which can be successfully introduced, especially tea, coffee, and rice. Several varieties of sugar-cane indigenous to the colony are said to be disease-proof, while the ease with which luxuriant crops of bananas, yams, coconuts, mangoes, sweet potatoes, and other agricultural products are obtained by the natives fully illustrates the capabilities of the soil. There is a Customs tariff imposed, with numerous exemptions, for revenue purposes, but at present the whole of the New Guinea trade is in the hands of Queensland firms. As the development of the infant colony proceeds the Solomon and other island groups will inevitably become more or less influenced.—*H. & C. Mail*, Feb. 16.

COCOS-KEELING ISLANDS.

ALL-BRITISH CABLE MAY BE LANDED ON ONE OF THE GROUP.

The fairyland in the Indian Ocean, which is known as the Cocos-Keeling Islands, and belongs to a Scottish chieftain of the name of Ross, third monarch of the name, is suddenly assuming quite a new importance in the world.

The Cocos-Keelings are coral islands of the south-west coast of Java, which Clunies Ross the first found unoccupied three-quarters of a century ago, and colonised with a few Scots and some coolies. According to a Colonial Office report issued on Saturday the islands shipped away last year 800 tons of copra, the produce of four and a half million coconuts at £14 15s. a ton.

There are 615 people on the islands, and a school with two pupils—"rather above the average attendance," remarks the Commissioner; but the younger generation of the Ross family are taught English two hours daily by Miss May Ross. There are no police, and there is no need for them. The natives seemed to the consul more like the laboring class of Europeans bereft of alcoholic liquors and released from the struggle for existence than like natives without religious restraint.

They build good European boats under the instruction of the Ross dynasty, and they do not undervalue themselves. They are surprised, indeed, why the British Government does not give them men-of-war to build.

The home of this simple little community is likely to become a part in the "all-British cable" scheme viâ the Indian Ocean to Australia. The cables at present pass through Java, which is Dutch; but the Eastern Extension Australasia and China Telegraph Company proposes to land a cable on one of the Cocos Islands. The Commissioner, who is very enthusiastic about the scheme, says Mr. Ross, is prepared to grant the concession. He adds, urging the connection of the Far East by an Indian Ocean rather than a Pacific cable: India would be connected by an all-British cable. Then, taking an even more ambitious view of the possibilities of the case, he adds: It is probable that even without a subsidy a cable connecting Zanzibar with India, Australia, and Java, by way of Seychelles, Chagos, Cocos, and Christmas Islands, would become a commercial success if worked in conjunction with the African Trans-Continental line. If the tariff from Europe to Zanzibar was 1s. 3d. the rate to India might be lowered to 2s. 3d.—*Morning Leader*, Feb. 15.

MINERAL PHOSPHATES WANTED IN AUSTRALIA.—The Government of South Australia offers a reward for the discovery of payable deposits of mineral phosphates. The amount is £500 if found on Crown lands, and £250 if on private property. The discoverer will be entitled to a lease of 21 years of 648 acres of land. The conditions are that the deposits are readily accessible by rail or port; that the deposit is sufficiently abundant, and is available to the farmers at a payable price; and that the product is of good, marketable quality, averaging not less than 40 per cent of phosphate of lime. Half the amount will be paid when 200 tons have been produced, and the remainder when the second 200 tons have been produced.—*Melbourne Leader*.

CAMPHOR is an infallible remedy for chicken lice. When you make your nest and put in your eggs, at the same time place in the nest with the eggs, one camphorated ball, which is sufficient for the entire incubation, and your hen and little chicks will leave the nest free from all kinds of vermin. When you have placed the little ball in the nest, you need not bother any more. It will evaporate and get to be very small toward the latter part of the incubating, but never mind, it has done its work. It is a good idea to keep one of the balls in the nest where the hens lay, as it keeps them from having scaly legs as well as keeping them free from vermin. The camphorated ball is a little white ball and can be had from almost any drug store. I buy penny squares in Kingston, instead of the ball, and half a one is effective in the layers' nests.—*Journal of the Jamaica Agricultural Society*.

THE SEYCHELLES.

The Acting Administrator's report on the Blue Book for the year 1898 has just been published by the Colonial Office. Mr Brown's report shows a satisfactory state of affairs, the revenue having been the largest ever collected in Seychelles, and in excess of the expenditure by R39,791. The exports, less coin and bullion, amounted to R1,278 382, and the imports, less coin and bullion, to R889,041. The large increase in both exports and imports is due to the large vanilla crops of 1897 and 1898. Vanilla valued at R748,810 was exported in 1890.—*Commercial Intelligence*, Feb. 17.

THE BANK CLEARING-HOUSE" AND LOCAL BUSINESS.

The figures we append show an enormous increase in the mass of local business during the past fifteen years :—

	R.		R.
1885-86 ...	51,740,748	1890-91 ...	83,607,049
1886-87 ...	55,530,720	1891-92 ...	98,358,939
1887-88 ...	64,921,478	1892-93 ...	105,914,810
1888-89 ...	74,072,097	1893-94 ...	128,112,905
1889-90 ...	76,791,733	1894-95 ...	133,812,072

	R.
1895-96 ...	171,677,240
1896-97 ...	171,429,740
1897-98 ...	192,136,477
1898-99 ...	169,991,275
1899-00 ...	195,467,028

Since the "clearing house" was established, we have had the means of obtaining reliable statistics which indicate the steady revival of business and prosperity, mainly through the rise of the tea industry. Still, it would never do to attribute all the increase in the clearing-house figures to the growth of local trade. True, the value of our imports and exports show much improvement in the interval, as may be seen from the following comparison (the figures for 1898 being the latest published):—

	Imports.	Exports.
1885	R 45,132,340	R 35,782,400
1898	97,893,058	85,372,622
Increase	R52,760,718	R49,590,222

The increase here is also very notable; but at the same time a good deal of allowance must be made for the gradual change in the modes of business in Colombo. Far more cheques are used by natives and planters now than in "days of old.' Chetties and planters were notorious for dealing almost universally in rupees—and of course a great deal is done still in payment of coolies—whereas now cheques are readily accepted by the carpenter or other artificer, the cart contractor, rice-dealer, &c., &c. In 1885, we were slowly emerging from a period of great depression; the old Oriental Bank had collapsed the year before and its successor had by no means secured general confidence. Now we have five first-class Banks all doing a large business and all therefore contributing handsomely to the sum-total of the "clearing-house."

VISIT OF A JAVA PLANTER TO CEYLON.

We have had a call from Mr. Bley, a planter in the Samarang division of Java, and who has been out there for the past 22 years without ever visiting Europe. Mr, Bley has had a great variety of experience in his day, as a Sugar, Coffee, Tea, Liberian Coffee, Cacao, Nutmeg, Pepper, Kapok and Cinchona planter. Now he confines his attention chiefly to Liberian coffee with some Arabian, and cinchona with tea. Mr. Bley has enjoyed a fortnight in Ceylon very much, more especially in visiting Kandy, Peradeniya, Galaha, Mariawatte, Dimbula, Nuwara Eliya, Ragalla, and Bandarawela. Mr Bley would at once describe Nuwara Eliya as the remains of an old volcanic crater, so like is it to many such spots in Java. He finds that the cost of labour in Ceylon is a little more than he pays in Samarang, where, however, nearly all is done by piece-work. Mr. Bley states that he is troubled with a bad disease in his cacao in Java, which he has nowhere seen in Ceylon. It has not yet been scientifically described. Mr. Bley left for Europe last month by the N.D.L.S. "Kænigin Luise": we wish him a pleasant trip and visit and that he may return re-invigorated. Mr. Bley confirms our opinion that the people of Holland and adjacent Germany are beginning to drink tea very freely. Java, he thinks, will never become a great tea-growing country.

THE BRITISH ASSOCIATION.

The Report of the British Association for the Session of 1899 held at Dover reached us by a recent mail. It is a bulky volume of well-nigh 1,000 pages, besides lists of members, &c., and, of course, contains the latest in "Science." The only plan or plate is the "plan of Dover Harbour" as prepared to accompany their paper by Messrs. Coode. Son & Matthews. This bears considerable resemblance to the Colombo Harbour with two openings—one of 800 and the other of 600 feet. The area of the Admiralty division is 610 acres at low water; of the Commercial harbour 75 acres —together 685 against 640 acres for the Colombo harbour.—After the present "Notes on Ceylon Botany" are done, it will be interesting to reproduce "A sketch of the History of Indian Botany" by Sir George King, in our *Tropical Agriculturist.* Mr. Parkins' paper on Rubber, given in our Manual, is summarized; as also briefly "Notes on Indiarubber" by R.H. Biffen, Cambridge, and this summary we give as follows:—

Notes on Indiarubber, by R. H. BIFFEN, *Cambridge.*

Starch and caoutchouc appear not to occur together. Caoutchouc occurs as small particles in latex, and coagulation begins with their running together. Certain reagents will bring this about; but it is better to avoid all chemical processes, any of which do harm. Two physical processes are now being used. (1) The latex, mixed with water, is strained and churned; the thick cream which rises to the surface is pressed through rollers and converted into rubber. (2) The author's process consists in separating the rubber with a entrifugal apparatus. Details are given in the paper regarding the chemical properties of the different kinds of rubber obtained from *Hevea, Castilloa, Manihot, Ficus, Hancornia, Kickxia, Artocarpus*, and *Clusia*. The author also raises some questions of theoretical interest with regard to possible relations between caoutchouc, starch, and resin-bodies, and indicates lines for further inquiry.

CINCHONA AND QUININE.

These important staples are again in an interesting position, few knowing exactly what their immediate future on the market will be, and, opportunely, Messrs. C. M. & C. Woodhouse, the Mincing Lane cinchona-brokers, have issued a pink circular about them this week. After reviewing the markets during 1899, and tracing the market fluctuations month by month, they give reasons for the quite unlooked-for results which occurred last year. They say:—

In the first place, the rise in quinine caused the markets of Europe and the United States to be swept for supplies, and dealers, &c., were induced to part with their stocks to take advantage of the higher prices obtainable in London, with the consequence that the stocks in London have been increased by about 1,000,000 oz. This is, however, an operation that cannot well be repeated, and the trade everywhere must be proportionately bare of stocks. On the other hand, we might have expected the rise in prices to have checked the consumption to some extent; but, as far as consumption can be gauged from the exports of quinine, &c., from Germany, this does not appear at all to have been the case, but rather the contrary, for 210,900 kilos. (7,381,500 oz.) were shipped, against 200,900 kilos. (7,031,500 oz.) for 1898. Again, it was natural to anticipate that a unit value of about 11c. per half-kilo. would have induced the planters in Java and elsewhere to take advantage of the rise and hurry their bark to market, and thus the total supplies of bark would have shown a large increase over previous years; but this has not been so, as the total exports from the principal producing countries show no increase, even allowing for the quantity manufactured in Java and exported in the form of quinine. Further, the returns of the Java bark offered at auction in Holland show that there is a much larger proportion of succirubra and other barks of low analysis as compared with previous years.

The three main facts to be adduced from the above statement are (1) that less bark was shipped from Java last year (5,583,400 kilos, against 6,945,400 kilos in 1898); (2) that the exports of quinine from Germany increased by 381,500 oz.; (3) that there is an increase of 997,000 oz. in the London stock of quinine. In regard to the future of cinchona, Messrs. Woodhouse quote from Mr. Standen's report made after his visit to Java, and his opinion confirms their views that "consumption has at last overtaken production." The circular concludes with statistics of Java bark, and a three-years' summary of imports and exports of bark for United Kingdom and Holland, from which readers are left to draw their own conclusions. This year has opened with a very firm market for cinchona, and the tendency, both in London and Amsterdam, is towards higher prices. The London stock of bark is the smallest since 1894—viz., 16,099 packages; on the other hand, Amsterdam has a larger stock—viz., 14,387 packages, against 12,263 packages last year. Ceylon and British India are now sending us greatly reduced quantities, the imports last year being—Ceylon, 618,921 lb., against 975,784 lb., and British India, 2.000,000 lb., against 3,090,000 lb. So far this year there have been no shipments at all from Ceylon, and Java has sent but little—615,000 Amsterdam lb. for January. Another consideration is that the first Amsterdam auctions this year were small, as also was the one held on Thursday, so that another advance in the unit is extremely probable. This Messrs. Woodhouse surmise.

Since the beginning of the year quinine has been in a strong position, and all indications point to a still higher market in the future. There have already been three advances on the part of makers, from 1s 3½d to 1s 6d without engagement, the latest advance being made on Tuesday, when the makers of B. & S. and Brunswick, quinine added 1d. This advance, coming as it does immediately before the Amsterdam auctions, has puzzled the second-hand holders, but it is entirely due to the good consumptive demand and abundance of orders. The second-hand market has also been fairly active, the bulk of the transactions being for March delivery, commencing at 1s 3⅝d in January, and rising to 1s 5¾d, which figure has been paid this week for March delivery. The quinine-auctions to be held in Java on February 28 are expected to influence the market, and if they are successful the shipments of bark to Europe are bound to diminish, for Java's idea is to make and export quinine, and ultimately to keep all the bark they can.

We have confirmation of what we have said regarding the decreased output of cinchona in India in an important circular which we have received this week from Mr. J. E. O Connor, Director General of Statistics, Calcutta. This shows that, during the thirteen years ending 1898-99, the area under cinchona in India has fallen from 14,491 acres to 7.591 acres. At the end of the last official year, of the 7,591 acres of land under cultivation, nearly 82 per cent was situated in Southern India, the remainder being in Bengal; the latter comprising 1,373 acres in and near Darjeeling. Most of the area in Southern India is in the Nilgiris (4,531 acres), and there are 1,173 acres in Travancore, and smaller areas in Mysore, Malabar, and Coorg. In Bengal, the cinchona plantations, which are the property of the State, cover 1,303 acres. In the Madras Presidency, on the other hand, the industry is mainly in private hands, the State plantations covering only 874 acres. There has been a substantial decline in Bengal as well as in Madras, and in Coorg the cultivation has been almost entirely abandoned. The number of trees in permanent plantations has fallen in the same period from 28⅓ millions to about six millions, of which a little over four millions were classed as mature. Mr. O'Connor attributes the decline in cultivation to a fall in the price of quinine. He gives statistics showing the amount of bark collected and exported from Southern India (Madras and Bengal) from 1885-86 to 1898-99. For the past five years they were:—

		Bark Collected.	Exports (lb).
1894 95	...	2,027.629	1,737,318
1895 96	...	2,039,881	939,938
1896 97	...	1,491,506	321,478
1897-98	...	1,692 439	3,056,769
1898-99	...	997,001	1,361,539

The Bengal and Madras Medical Departments use between them at least 1,200,000 lb. of bark per year for the manufacture of alkaloids and galenical preparations, and are purchasers from private planters. These Departments are a factor in the cinchona-problem which is not generally reckoned with. The figures which we give indicate that they use about a twelfth of the world's present output of bark, which is reckoned at 16,000,000 lb., or 3,000,000 lb. less than a decade since. The fact should be specially noted that the Indian Government has come into the open market as a buyer; not for much—still, a buyer.—*Chemist and Druggist*, Feb. 17.

PLANTING NOTES.

SUGAR IN QUEENSLAND.—The report of Mr. Maxwell, a Honolulu sugar expert, deals comprehensively with the three districts of Bundaberg, Mackay, and Cairns. He thinks that the climatic conditions largely favour the industry in Queensland, particularly in maximum rainfall occuring during the hot weather, but speaks strongly of soil exhaustion in various portions of the colony. He also deals with the ratoon question, and considers continued growth without replanting conducive to many pests and diseases. He regards many portions of each district as suitable for irrigation, and condemns the system of extreme maceration in the manufacture of sugar. Three experimental stations should, he says be established—one in the Cairns district, one in Mackay, and the third at Bundaberg, the last named to be the chief experimental station.—*Sydney Mail*, Feb. 17.

WANTED: A LOCAL TEA STANDARD.—We have had the red-leaf tea sample sent us some days ago on our table; but it remains quite "sweet"—although very "coarse" ("a coorse kintra piece of wark") and the Brokers assure us the infusion was sweet and wholesome in this case: *but* that there are far worse teas sold sometimes in the local market and that "Merchant" and his colleagues (as members of the Tea Traders' Association) should make it their special duty to form and establish a "standard" below which no teas should be admitted into local sales or for export shipments.

"DO AWAY WITH THE BROKERS."—We omitted giving our correspondent, who is responsible for this "counsel of perfection," some of the reasons which render action in that direction very undesirable at the present time. It is well-known that leading broking houses act as great checks on the large blending houses in their buying of tea. The brokers take the trouble to distribute many samples in independent directions and before the sales they are the recipients of very numerous orders to buy, which often act as a great check on the big dealers, not allowing them their own way, but rather provoking a free and active competition.

BOTANICAL DISCOVERIES.—The "Colonial Garden" established at Vincennes last July is already, says the *Morning Post*, rendering important services to the French Colonies. M. Dybowsky, the director, informed an interviewer that he was at present engaged in studying the ko-sam plant, which had been found to be a marvellous remedy against the dysentery prevalent in hot countries. A discovery made at the garden was that the *eucomia almoides* contains 28 per cent. of gutta-percha. Plants have been sent to Tonquin, Annam, and North Africa, and it is confidently hoped that very important results will be attained. Incidentally M Dybowsky found that the bark of indiarubber trees contains 5 per cent. more rubber than the leaves and branches. All the Governors of the French rubber producing Colonies have been informed of the fact. The bark has hitherto been thrown away.—*British and Colonial Druggist*, Feb. 9.

ROYAL TREES.—In the vicinity of Frogmore there is a large number of ornamental trees scattered about the well-kept lawns. Amongst these are a Salisburia adiantifolia, planted by Princess Victoria Eugenie and Prince Maurice of Battenberg on the Queen's eightieth birthday; a deciduous Cypress, about 85 feet high; Retinospora obtusa aurea, planted by the Empress Eugenie, March 5. 1880; Tsuga Pattoniana, planted by the Queen of Denmark on December 1, 1875, about 13 feet high; Abies lasiocarpa (concolor?), planted by Princess Thyra of Denmark on December 1, 1875; Abies Nordmanniana, planted by H.R.H. the Duches of Edinburgh on March 11, 1874; Cupressus Lambertiana, planted by the Prince of Wales on March 24, 1864; Thuya gigantea, planted by H.R H. Princess Louise of Hesse on July 1, 1864; another of the same kind, on the opposite side of the path, 55 feet high; another Maidenhair Tree (Salisburia adiantifolia), planted in 1754; Thuya gigantea, planted by H.S.H. Princess Hohenlohe on March 16, 1857. Close to the mausoleum is a practically good-looking deciduous Cypress, and a fine Cedrus Deodara and C. atlantica. *English Arboricultural Transactions, vol. iv., part 2, p.* 207,

SUGAR FROM THE ALOE.—The *Kolar Goldfield News* says the famine-stricken people in India, in 1877, were seen to dig out the core of the aloe and boil it for consumption as food. The product was found to be exceedingly sweet, and the question is asked whether the aloe plant could not be used as a source of sugar. A gentleman is said to be buying land to the extent of 2,000 acres in the Kolar district for growing aloes.—*British and Colonial Druggist*, Feb. 16.

"OIL OF CHINESE (AND JAPANESE) WOOD" is extracted from the grains of a tree called *Aleurites cordata*, or in Chinese *Ying tzu tung*, which grows in rocky places, especially in the provinces of Hunan, Hupeh and Szechuen. The oil is used for making lacquer and waterproof oilcloths. It can be employed instead of linseed oil in painting, but for this purpose, according to the *Farben Zeitung*, it should first be boiled with a little oxide of zinc, minium or litharge, the temperature being kept over 200° Centigrade.—*British and Colonial Druggist*, Feb. 16.

LABOUR AND EXCHANGE IN INDIA AND CEYLON.—We direct attention to the incisive letter which we publish elsewhere from Mr. R. H. Elliot, of Mysore. The writer takes a gloomy view of the planters' future, more especially from the belief that "exchange" will be further forced up: but this, we can scarcely believe,—nor can we at all think that there would be the least hope of obtaining bounties in the planters' interests. But Mr. Elliot's writings are always suggestive and well worth reading.

CAUCASUS TEA.—According to a British Consular Report the tea grown in the Caucasus is inferior in quality and flavour to the Indian, Ceylon and Chinese teas; and the prices obtained have not been encouraging. There is great difficulty in procuring labour, and the expenses connected with tea planting are so high as to render profits dubious, especially in competition with Indian and Ceylon teas. And for the present at any rate, if the Consular Report can be relied on, Indian planters should feel re-assured about danger from the Caucasus. However the Russian Government, as stated in *Capital* of 1st instant, is undertaking experiments in tea cultivation in the Caucasus, and is offering favourable conditions to those embarking on it: and perhaps in time the situation may be changed for the better.—A. K.

PLANTING IN THE STRAITS.—COFFEE, RUBBER AND COCONUTS:—The annual report of the Selangor Planters' Association—the greater portion of which we reproduce on page 671—is a most instructive document and puts the position of our neighbours in the Straits in a very clear light. Altogether the 70 estates represented have 15,537 acres in cultivation, the crop estimated for 1900 (we suppose of coffee) being 25,636 piculs, and the labour return shewing 2,877 Tamils, 401 Chinese, 1,016 Malays and Javanese. Much useful work has been done by the body, of which Mr. W W Bailey is Chairman and Mr. Tom Gibson Secretary, besides what appears in our quotation; and we can only extend all good wishes to our brethren at the Straits, and say how pleased we are to see the Veteran pioneer Mr. T H Hill still to the fore.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees, R. N. Lyne, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price according to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——— per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

Manihot Glaziovii (Ceâra or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona *Seeds*.—Different varieties.

Sterculia Acuminata.—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June. Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, Eucalyptus various varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—MESSRS. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address:
WILLIAM, VEYANGODA, CEYLON.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
HENARATGODA, CEYLON.

"A FARMER'S EVERY DAY LIFE."

"A Farmer's Every Day Life"—is the title of "Cosmopolite's" latest contribution to our columns, given below. It is written at our special request and we know few men so able to do justice to the theme owing to a very wide experience, keenness of observation, and facility of expression, not to speak of the saving grace of humour which is so often visible. As a former Australian and New Zealand pioneer and bushman, an ex-Colombo merchant and still more, as an ex-Rangala planter, before taking to farming in Aberdeenshire, it must be seen that "Cosmopolite" has travelled over a wide field and that the conclusions he now lays before us cannot have been formed in haste, but are the mature results of much experience and observation. Practically the question discussed is that of a country *versus* a town life, and it is one that must come home very closely to planters in Ceylon, who may be intending shortly to seek retirement in the United Kingdom, or may be looking forward to such a consummation at no distant date. It must be extremely difficult after an active planter's life out here to settle down in town or suburbs with nothing, but a few hundred square yards of garden of one's own to traverse or overlook. "Logie" (Sir Græme Elphinstone) felt it so badly, albeit his residence was in the country, that he returned once more to "planting" and is now in the Malayan peninsula. Others who have gone "home" to settle down, have been very glad to get back to Ceylon on any terms, that is to secure a charge if possible; and if not to make a home on their own account. Now "Cosmopolite" comes forward and preaches that the proper course for the retired planter is to follow his example and become a farmer. Of the healthfulness of the life there can be no denial, and really that ought to count for an immense deal if there be children and a full household to think of. But, in our experience, gentlemen farmers—practical and hard-working as any Ceylon planters let us say—in Ross-shire and Morayshire, always grumble unless they can show a handsome percentage of profit on capital laid aside every year, without making proper allowance for the extremely healthful life enjoyed, or even for the economy in education and other items experienced, as compared with the colonist who has to see his family broken up and separated. Still, it cannot be denied that there are cases where even practical farmers have not been able to make both ends meet; where, indeed, they have had to dispose of their farming interest to prevent the disappearance of their capital altogether. We have two or three ex-Ceylon planters—hard-headed Scots even—who have come within this category,—men who like "Cosmopolite" would any day prefer

> To hear the lark sing
> To the mouse cheep,

—to live and work in the country, rather than be shut up in town or suburb and dawdle between their city brokers or agents and their club—an extremely disagreeable life surely to a man in the full vigour of life and who is willing to be useful in his day and generation. But how are such men to be recommended to take to "farming" if it cannot be shown to "pay"—not in the sense of the 8-or-10-per-cent.-profit-sharers; but to the extent of covering actual annual outlay and household expenses? Now, we trust "Cosmopolite" is going on in the further instalments of his Paper, with practical advice calculated to help Ceylon planters who may wish to follow his footsteps, to enable them to choose the right sort of farm to stock it properly and to choose suitable subordinates and to shew, generally, how to make "a fair start." Perhaps, too, we may have successful "farmers" in England, Wales, the South of Scotland and even Ireland (all e -Ceylon planters we mean) who may supplement "Cosmopolite"'s letters with specimens of their own experience and then, to finish up, we must endeavour to get contributions from a planter-settler in Tasmania, New Zealand, New South Wales or Victoria, the United States or Canada, and why not in South Africa? In this way "Cosmopolite," who is capable of criticising all such productions, will have started us on the way to much information of a varied and useful if not valuable character. A "Tea-farmer"'s life in Ceylon can scarcely be considered a permanency in the vast majority of districts, and especially if there be a family. "What should come next" is therefore a matter of much practical interest at all times, and we trust "Cosmopolite" and other retired Ceylon men will help us to answer it.

A FARMER'S EVERY DAY LIFE.

IN NORTH BRITAIN:—No. I.

(By Cosmopolite.)

Surprise has often been expressed that so many retired planters, merchants and civil servants from the East take, on their return to the mother country, to the glorious, most ancient but (by the British Government) most neglected profession of farming. With regard to planters one can see some reason in this choice: because having been accustomed to an out-of-door existence, they pine for a continuance of that same; but in the case of the others, it surely must be a matter of heredity—derived by them from the blood of their great ancestor, the original farmer Adam.

As a rule these amateur farmers, transported from the palm-fringed isle of the Eastern wave, or the banks of the Ganges, do not prove exceptionally successful in their new walk of life; but to a certain extent they seem satisfied with the healthy occupation they have undertaken, and do not complain more grievously than do professional farmers who have from infancy upwards grumbled as only a British farmer is entitled to grumble.

But having met many of these late-in-life agriculturists, I have been much distressed to find that they fail to see the humours of a farmer's life which blend with the numerous troubles and trials which beset these labourers in the corn field; and I have often felt inclined to draw attention to some of those amusing incidents which I, for one, cannot avoid seeing in my every-day life, and which

adds so much to the pleasure of living in this beautiful world of ours.

It is just 40 years since I began

A FARMER'S CAREER

and, although for a time, I took up the rôle first of Colombo merchant, and then that of a Rangala planter, the time came when I once more returned to my old love,—my old profession, - in the wilds of Buchan, where the East wind blows its best, and the cattle, sheep and turnips are unequalled in the world.

I know that the *Observer* is read regularly by farmers from our Eastern Empire, and also, of course, by planters who are still in the land of sunshine and tom-toms, but who intend at some future time, to adopt a farmer's life in the old country and in the hope that these notes of mine may catch their eyes, I intend giving some plain facts from a farmer's, life in Scotland, as seen by one who knows life in the East as well as in our Australian Colonies, and I trust that some of those who can see nothing but drudgery in a farmer's life may learn from my experiences that there is much of pleasure and amusement even in a bucolic existence which one can easily assimilate, if not a perpetual victim to those gloomy views which generally accompany a disordered state of the liver. And now having made these remarks by preface, let me commence a description of that life which I am leading, hoping my remarks may be of some interest to those Ceylon men now farming at home, and to those planters who, in the near future, intend to beat their paper umbrellas into scythes, and their pruning knives into sheep-shears.

There are many, especially of late years, who have given up country life and gravitated to the towns, giving as their reason for so doing that the life they had been leading was so deadly dull compared with the pleasant and joyful existence to be had in the cities.

But there is another side of the question which these renegades from the country seem to have overlooked, and I am just the one that can point it out to them, for I have lived 20 years in various cities in different parts of the world, and spent nearly twice as long a period in country districts, at home and abroad. With such practical experience to guide me I have come to the conclusion that

THE ENJOYMENTS OF A TOWN LIFE

are but small in comparison with the disagreeable irksomeness of civilization. To say nothing about the smells, noises, bad water, indifferent gas and a score of other unpleasant peculiarities of city life, there is the chronic state of ill-health in the children of the town, and the normal condition of ill-nature peculiar to all housekeepers. If a city man is detained later than usual at his club, or some other important place of resort, the look which he receives from his wife on his arrival at home, not to speak of her language, distinctly shows an active state of that lady's liver. If he is half an hour late for dinner, he is greeted with the question: "How do you expect servants to stay if you can't come home in proper time?" Exciting passages of that sort would never do with me; I would promptly go on strike. What is a paltry half hour to me, who was once three days' late for my dinner, and then had to eat it raw, as I could get no fire lighted, owing to everything being soaking wet with rain!

No, no, the pleasures of town life are as Dead Sea fruit—so sweet and delicious to the eye, so bitter and nauseous to the taste. My own school fellows, that I meet, who have spent their whole lives in a city, seem to me to have been dead from their birth, whilst those who have been resident in the country appear to have been very much alive all the time townsfolk never get any exercise worth calling by that name, for what they have consists principally in driving their own trap, or riding on the top of a fiery, untameable tram car. But ask the planters of Ceylon or the farmers of Britain how they account for their exceptionally good health, and they will reply that it is all owing to

THE WALKING

they have to do; for walking helps the general tone and improves the temper. People with thick boots, and the sense to wear them, generally have even tempers. There is nothing like walking ill-temper off; never mind what sort the weather is, go out and half tire yourself, and then hang up your water-proof and you will find yourself in a calm, forgiving mood unknown to people who stick in the house. Don't think I am mad: "Allah created the English mad"—but not the Scotch, and I have walked a good many tens-of-thousand of miles in my day, and know what I am writing about. Of course, we have much to growl about, farmers always have. If we have not got too much rain we have got too little, and if the rain comes just as we would wish it to, instead of being thankful for present mercies, we cast our prophetic eye into the future and declare that there will be a drought or a deluge next month. Farmers can never see a blight prospect, they are not built that way, and gloom and despondency are their portion. Of course, there are exceptions to every rule, and I claim to be one of the exceptions to this, for I do not go about the country with my jaw hanging below the lowest button of my waistcoat, as I remember some planters doing, in the days when coffee leaf-disease was rampant. And I know other farmers also who are quite content with things as they are, although, naturally, we would prefer better prices and a more generous Government, and these are the sort of agriculturists I would recommend farmers from the East to copy.

There are some people, however, who are never content—for example, a neighbour, who had been present at a very intellectual lecture which was given in our village, lately; when I asked him if he had not enjoyed and felt edified by it, replied:—"Weel I dinna ken that, but twa days' rain wid hae deen us a hauntle mair guid."

It has been asserted that the gloom and despondency, which is inherent in most farmers, is caused by the

BAD WHISKY

they drink. Not that they drink much, they cannot afford to do so, but there may be some truth in the assertion, for the whisky which is retailed to the farmers at markets and fairs, and which I have sampled, seemed to me to be a deadly poison, and went down my throat like a torchlight procession. Of course, I know that the average farmer is ill to please, and we had an example of this, only lately, in our own county. Lord Aberdeen, one of the most generous landlords in the kingdom, erected a magnificent fountain, in the village of Tarves, for the benefit of his tenantry; but these, instead of being grateful, assembled in a body, and pelted the unoffending fonntain with stones. Doubtless had his lordship laid on whisky to the fountain, instead of *aqua pura*, his tenantry would have exhibited rather different feelings than they did.

In this, the month of February, how pleasant it is to sit at

ONE'S "AIN FIRESIDE,"

listening to the howling of the wind in the chimney, and watching the snow flakes covering up trees and hedges, and lying twelve inches deep all over the face of the country, and to know that everything on the farm is secure, the stock housed and comfortable, and enough of turnips pitted and straw thrashed to last through a two-months' storm at any rate. I know that all Buchan farmers cannot be in this equable frame of mind, because there are some men who will never learn a lesson, but will continue year after year the unprofitable occupation of digging under the snow for turnips, which are, after all, injurious as food to the health of their stock, and the pulling of which is injurious to the temper of their men. For my part, with 100 loads of turnips pitted in the month of November, as I make a point of doing, I feel comfortable and ready for any emergency.

The heavy snowstorm, which has been raging for the past ten days, will do a lot of good, as it will clear the atmosphere of the wicked microbes of influenza, hooping cough, measles, &c. which have been rampant in all the towns and villages; whilst in the country it has put a stop to the epidemic of ploughing-matches which has been prevailing during the past two months.

THE CHAMPION PLOUGHING MATCH

of the district was held in a field adjoining my farm, when 42 ploughmen with their teams faced the music. Of course I graced the field with my presence, in spite of a perfect deluge of rain, which, however, seemed to create no inconvenience to the performers, who continued to plough away, without either coats or waist coats, and doing most excellent work in spite of wind and wet.

One of the judges impressed me very much with the thorough manner in which he performed his duties, bending down and examining every "furr," and calculating the depth, breadth and the levelness with the greatest care. Strange to say he was not an agriculturist but a tailor by trade, from a neighbouring village; dressed like a ship's cook in his shore togs, or a south sea missionary in uneasy circumstances, and his attitude, at times, reminded me of the Sphinx crouching in the desert; composed, intense, repressed in manner; whilst, every now and again, from his statuesque throat there proceeded a hoarse cough,—and little wonder, considering the drenching nature of the day. It was a stirring scene, and fully 1,000 spectators were present from near and far; for the day of the Champion Ploughing match is one of the red-letter days of the district, and one on which the farm hands all get a holiday.

At some ploughing matches I have heard bitter complaints from the competitors against the heat and brightness of the day, these declaring that they were "blin' fu' wi' sun." But no complaints of that kind were to be heard on this occasion

Dog-fanciers who were on the ground had a rich treat in the sight of an animal that appeared to me to be half terrier—the other half no breed at all—just dog. I have seen a similar breed of dog in those kennels of Oodispattu from which the

RANGALLA BOYS.

were wont to draw fresh couples for hunting the wily *mozel*. Report said that the Committee allowed this rare specimen of the canine race into the field, as a special attraction, without any payment whatever.

Had I been an artist I would have immortalised the scene, giving prominence in my picture to the Sphinx-like judge and the cross-bred dog.

CHINA TEA.

THE exports of China tea, in the season just closed, show a considerable increase, more especially to Europe and Russia in Asia:—

CHINA TEA—CLOSING OF SEASON.

The Season being finished, this is the final Circular. The total Export as per Customs Returns is:—

	1899-1900.	1898-99.	1897-98.	1896-97.
	lbs.	lbs.	lbs.	lbs.
Europe	*16,174,605	†12,976,578	‡12,607,188	12,994,298
Australia and New Zealand	6,094,660	5,818,934	4,447,217	6,208,357
United States & Canada	9,629,601	9,158,280	7,740,345	12,142,286
South Africa	1,223,245	1,417,703	1,257,944	2,577,719
Coast Southward	3,604,686	3,437,405	3,473,286	4,864,182
Coast Northward	7,421,853	5,910,040	6,361,542	13,720,934
	lbs.	lbs.	lbs.	lbs.
	44,148,650	38,718,940	35,887,522	52,507,776

* 1899-1900 including 604,300 lbs. Brick Tea.
† 1898-1899 ,, 294,044 ,, ,,
‡ 1896-1897 ,, 278,000 ,, ,,

"AN AUSTRALIAN CEYLON" is the latest title for New Guinea, just as "New Ceylon" was for North Borneo. With Australian capital and backbone so near, British New Guinea should go ahead rapidly under a liberal régime.

NEW TROUT-FISHERIES.

The following extracts from a paper in *Blackwood* for February (by John Bickerdyke) will be read with interest by many in Ceylon where so much is done to introduce Trout into our streams :—

At a time when agricultural land is in many places unproductive of income, while trout-fisheries, more particularly those in the neighbourhood of big towns, will fetch enormous rents, the utilisation of ponds, lakes, and streams as fisheries is well worthy of consideration by all land-owners who have water of any kind on their estates. There is a popular belief—like many others, a mistaken one—that trout cannot be reared except in running water. As a matter of fact, there is hardly any piece of unpolluted water, stagnant or flowing, in which trout may not be raised, provided the fish can obtain, either in the water itself or from the hands of the keeper, a sufficient supply of food.

But while a stagnant pool may be made a rearing-ground for large, lusty trout, it should be well understood that for these trout to naturally increase their species running water is necessary. This fact, however, need be no obstacle in the way of trout-culture; for where the fish in any pool cannot increase naturally, it is an inexpensive and simple matter to keep restocking the water from other sources.

In many large lakes trout, salmon, pike, perch, and eels live together on fairly amicable terms, each taking toll of the other, with the result that while trout are not plentiful, they are, on the other hand, very large and, as a rule, in splendid condition. There is, however, one great disadvantage in having trout with coarse fish in the water—the trout do not rise well. They may be taken by trolling all through the season, but if they rise at all, it is only when the may-fly, or green-drake as it is called in Ireland, brings them to the surface.

Exactly the same state of affairs may be found in rivers where coarse fish abound. The greater the number of coarse fish, the larger the trout, and the fewer the opportunities of the fly-fisher. These facts point very strongly, and indeed unmistakably, to the necessity for abolishing coarse fish from those rivers and lakes in which it is desired to have free-rising trout.

I would like here incidentally to comment on the mistake so many fly-fishermen make of returning to the water what they term out-of-condition trout. When black-looking, lanky fish of a foot or so in length are caught, particularly if about the middle of May is passed, the best thing to do is to knock them on the head, for they will surely be old or diseased, and are better out of the river.

In addition to taking out the coarse fish, the shallows of the stream should be harrowed and made as clean as possible—a process which may be repeated with advantage every summer. If there are any lay-bys where black, stinking mud has collected, the filth should be altogether removed and spread on the land. It makes excellent manure. Light-coloured, clean, sandy mud, on the other hand, harbours the larvæ of waterflies and other fish food, and should not be wantonly disturbed. Large reed beds, as I have said, are better put out of the way, for they are cover for pike. I do not mean by this the wholesale cutting down or sweeping away of all rushes, reeds, sedge, and weeds. A reasonable quantity of these growths is necessary to serve both as shelter for the trout and breeding and resting-places for the thousand-and-one small creatures on which the trout feed.

As trout, after they are introduced, will be found spawning in the autumn and winter, great care should be taken to leave the bed of the river, and the mud at its sides, carefully alone during that season. Nothing is more fatal to the healthy hatching of the eggs than disturbance of any kind, or the dirtying of the water, caused so often by men wading in the river, netting, dredging, and similar operations. I have not the least doubt that works and repairs carried on at mills during the spawning season entail the loss of thousands of prospective trout. The sediment in the dirty water sent down settles on the redds (gravelly shallows where the trout have been spawning) and chokes the eggs. A trout egg is a most delicate thing. It may be said to breathe in the water, being full of tiny pores from which carbonic acid gas is given off. If these pores are choked with the sediment deposited from the stream, the embryo within the egg is asphyxiated by its own carbonic acid gas which it is no longer able to get rid of. For this reason a trout-egg so near hatching that the eyes of the young fish can be seen, if placed in still water, will die in a few hours, the water immediately next to it quickly becoming charged with poisonous carbonic acid gas. The owner of a trout-stream should therefore use his utmost endeavours to maintain the purity and flow of the water during the spawning season. Once the fish are hatched and feeding, the sediment, and even a certain amount of sewage pollution, matters little. Indeed, in sewage-polluted rivers trout often thrive exceedingly, though they are unable to breed; and of this the Wandle, near London, is a remarkable instance.

Ponds and lakes into which no water flows are as useless for breeding fish as a polluted river; but such sheets of water may be treated in much the same way as the stream. In the first place, the coarse fish should be removed. Next, if the bottom is muddy and capable of being cleaned, the cleaning should be done, except in places where it is desirable to cultivate weeds, and with them the food of trout. When the water is ready for them trout should be turned in from time to time.

The sheets of water not included in the terms "river" and "stream," which are likely to yield the best results, are those which have naturally a gravelly bottom, with aquatic growths near the edges, and here and there rocks; and, secondly, pools which are capable of being emptied. These latter are mostly of artificial construction, and, as a rule, have been brought into existence, at some time or another, by means of a dam thrown across the course of some small stream, the object often being to obtain water-power. Even though the bottom be of mud, trout will thrive; but it is most desirable to occasionally draw off the water, dry the pond, and expose it to the air for a few months. The fish-culturists of Catholic times, when there were no means of transit for sea fish, and fastdays had to be provided for, used to grow a crop on the bottom of their ponds from time to time. The earthy bottom having been sweetened and purified by light and air, water was turned in, and fish introduced. The example is one to be followed.

Sheets of water which I should deem entirely unsuitable for trout are those which are very shallow, and in which the temperature rises considerably in hot weather. If there is a stream flowing through such a piece of water, and a considerable growth of weeds among which the trout can take shelter from the sun, then fish may thrive; but be it well understood that trout must have shelter, either under overhanging banks, in deep water, under weeds, among rocks, or behind old camp-sheathing. The reason why so many amateurs fails in their attempt to rear trout-fry is that they place them in quite shallow ponds of small area, exposed to the full light of the sun—ponds in which the temperature of the water varies considerably and quickly.

Lastly, I come to a consideration of the varieties of trout which may be introduced. This depends in a large measure on the locality and the food-supply, natural or artificial. In Sir Thomas Wardle's famous pool in Staffordshire an immense quantity of trout of various kinds are kept in a healthy condition in a pool of probably not more than an acre in extent. The growth of weeds is considerable, and the supply of water-snails, shrimps, and other natural food seems almost unlimited; but in addition the keeper throws in half a bucket or so of fish food every day, which is readily taken by the rainbows, fontinalis, Loch Leven trout, farios, and hybrids inhabiting the pool.

I have no hesitation in saying that for ponds and other enclosed waters, where the temperature in winter is not a very low one, there is no variety of trout so excellent as the rainbow (*Salmo irideus*

variety *Shasta*). These fish grow extremely fast; they are most beautiful in appearance; they fight and play as gamely as a sea-trout, and on the table they are far superior to *Salmo fario*, our own brown trout, or yellow trout, as it is called in Scotland.

What would be the result generally of placing rainbow-trout in rivers is not known; the experiment has not been tried in any river on a sufficiently large scale to test the suitability of the fish for unenclosed waters. It is feared that they would migrate and be lost, as was the case with the fontinalis. But from an experiment tried in the Dove, it seems that the fish in such a stream have remained until the third year of their age; and their continuance in the beautiful Derbyshire river seems probable, provided there is a sufficient quantity of food for them, and the water does not at any time get too cold. It may be taken as an axiom that fish which grow large quickly, eat greedily. To put such fish (among which rainbows may be classed) into a stream containing little food is decidedly a mistake. They are sure to disappear, not necessarily in consequence of migratory tendencies, but merely in search of food. A few rainbows have, so I understand, been placed in the Test, and many have been caught.

Having stocked our stream, loch, or pond, the question of preservation has to be seriously considered.

Last year Sir Herbert Maxwell was largely responsible for a bill introduced by Lord Balfour of Burleigh on behalf of the Government, in the House of Lords, where it passed its third reading. According to its provisions trout would have been protected from anglers and netsmen between October 15 in one year and February 28 in the year following, both dates inclusive. To sell or expose trout for sale between these dates would also have been an offence. I most earnestly beg all who value the sport of trout-fishing to support this measure, which will surely lead to a better stock of trout and improved sport for all classes of anglers.

THE CEYLON LORIS OR SLOTH.

PHOTOGRAPHED IN FIVE ATTITUDES—AWAKE AND ASLEEP.

We have received from Mr. W L H Skeen one of the most interesting set of photographs it has ever been our fortune to gaze upon. They are illustrations of the habits of that strangest of Ceylon animals, the "loris." Mr. Skeen had considerable difficulty in taking the shy little creature so often; but he managed to get five successful representations within four to five hours of different positions, and these shew (1) the loris in full activity climbing a tree with his owl-like face and bright protruding eyes most keenly observant; (2) loris resting between two branches, but still "wide-awake"; (3) loris in same attitude, but dropping off to sleep; (4) loris fast asleep—and doubled up; (5) loris sleeping in a suspended attitude. We can imagine how the heart of Frank Buckland or any similarly enthusiastic naturalist would be charmed with Mr. Skeen's most faithful and most interesting reproductions. Tennent has two fair engravings in his "Natural History"; and this is what he says of the "loris" (specimens of which we have seen occasionally hawked round Colombo for sale):—

The only other quadrumanous animal found in Ceylon is the little loris,* which, from its sluggish movements, nocturnal habits, and consequent inaction during the day, has acquired the name of the "Ceylon Sloth." There are two varieties in the island; one of the ordinary fulvous brown; and another larger, whose fur is entirely black. A specimen of the former was sent to me from Chilaw, on the western coast, and lived for some time at Colombo, feeding on rice, fruit, and vegetables. It was partial to ants and other insects, and was always eager for milk or the bone of a fowl. The naturally slow motion of its limbs enables the loris to approach its prey so stealthily that it seizes birds before they can be alarmed by its presence. The natives assert that it has been known to strangle the pea-fowl at night, to feast on the brain. During the day the one which I kept was usually asleep in the strange position represented on the last page; its perch firmly grasped with both hands, its back curved into a ball of soft fur, and its head hidden deep between its legs. The singularly-large and intense eyes of the loris have attracted the attention of the Singhalese, who capture the creature for the purpose of extracting them as charms and love-potions, and this they are said to effect by holding the little animal to the fire till its eyeballs burst. Its Tamil name is *thavangu*, or "thin-bodied;" and hence a deformed child or an emaciated person has acquired in the Tamil districts the same epithet. The light-coloured variety of the loris in Ceylon has a spot on its forehead, somewhat resembling the *namam*, or mark worn by the worshippers of Vishnu; and, from this peculiarity, it is distinguished as the *Nama-thavangu*.

* Loris gracilis, *Geof.*

CINCHONA: IN SOUTH AMERICAN FORESTS.

BY J. M. VARGAS-VERGARA, F.C.S., ETC.

(Abstract of a Paper read before the London Section of the Society of Chemical Industry, on Jan. 8.)

The recent rise in the price of cinchona bark has led to hopes that South America might again compete with India and Java. In former years, when Colombia exported cinchona, very few barks gave more than three per cent of sulphate of quinine, and fairly good samples contained 1·5 and two per cent.

The cinchona fever almost completely exhausted the Colombian forests, and trees now to be found in the woods cannot be more than twenty years old.

As the collection of the bark in bygone days was a very profitable business, samples were often mixed with all sorts of rubbish. The Quineros were not very particular as to the quality of bark, their chief aim being to obtain as many bales as possible, without any consideration as to its content of alkaloids. Hence the author is unable to determine whether there has been a favourable change in the constitution of the bark, or whether the increase in the yield of quinine is due to the extra care with which the extraction is now made. The following are some of his figures:—

		Quinine.	Quinine Sulphate.
Tuna (Doa), wild	...	4·20	5·72
Cuprea (Bucaramanga), wild		2·26	3·00
Ledgeriana trunk, cultivated		4·08	5·57
Do twigs	do.	0·85	1·17
Succirubra trunk	do.	4·91	6·70
Do. twigs	do.	3·87	5·27
Ledgeriana (old)	do.	4·78	6·53
Do. (new)	do.	4·86	6·63

The Colombian barks from the cold Andes are, according to Mr. Vergara, much richer in quinine than in the olden times, and the cinchonidine has almost disappeared from these barks.

The ledger, old and new, presents a curious fact, the old is the same bark as the new, but has been kept under unfavourable conditions, being exposed to the rain, wind and sun during some years, so that the owners thought this bark had become completely useless. However, on analysing it proved equal to the freshly gathered bark.—*B. and C. Druggist.*

THE TONACOMBE ESTATES COMPANY OF CEYLON, LTD.

THE ANNUAL REPORT.

The acreage of the Company's Estates is as follows:—

Tea in bearing ...	... 494	acres	
Tea not in bearing	... 96	"	
Tea seed bearers	... 3	"	acres. 593
Cardamoms in bearing ..	87	"	
" not in bearing ...	14	"	101
Reserved Forest	..	..	24
Fuel Trees ...	..	..	11
Chena and Patana	..	...	1,151
		Total ..	1,880

The total quantity of Tea secured during the year was 188,078 lb. which has been sold at an average of 42·74 cents per lb. net.

The total Cardamom crop was 9,791 lb. which realized R1·76 per lb. net.

The total expenditure on working account amounted to R59,407·19.

During the year the permanent improvements on capital account include the erection of a set of 12 room lines, the purchase and erection of a new Rapid Roller, and the completion of the tats on the ground floor of the new extension to the Factory.

The balance available, after providing for depreciation, amounts to R27,800·21, and the Directors propose to pay a dividend for the year at the rate of 5 per cent., absorbing R14,000, to place R13,000 to the credit of Extensions account, and to carry forward R800·21 to next account.

In pursuance of the Policy indicated by the Directors in their Report for 1898, Ten Debenture Bonds of £100 sterling each have been redeemed, the Debenture issue now standing at £6,000.

The coast advances have been still further reduced from R8,193·58 on 31st December, 1898, to R5,125·98 on 31st December, 1899.

The crops for 1900 are estimated at
200,000 lb. Tea,
9,000 lb. Cardamoms,
against an expenditure of R64,122·50.

During the year Mr. Cumberbatch and Mr. Figg resigned their seats on the Board, and Mr. R S Templer and Mr. G H Alston were appointed in their places.

Of the Directors the Hon. J N Campbell retires by rotation, but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.

CEYLON GAME PROTECTION SOCIETY.

ANNUAL REPORT.

The last annual report was laid before a general meeting held at the Hill Club, Nuwara Eliya, on 7th February, 1899. Since that date three general meetings have been held, viz., on 17th May in Nuwara Eliya, on 24th May in Kandy and on 16th Sept. in Nuwara Eliya and one Sub-Committee meeting on 17th November in Nuwara Eliya. In addition to this a branch meeting was held in Nawalapitiya with the sanction of the Hon Mr. Lee, Mr. P R Shand, being the moving spirit and Mr. Bailey, late Government Agent, C.P., presiding.

The attendance at the meetings generally has been very poor, but at the last general meeting a small working Sub-Committee was elected, to discuss correspondence and though only one Sub-Committee meeting has yet been called it is clear that the work of the Society will now be pushed through in a much more satisfactory manner. In this connection I might mention that the thanks of the Society are due to the Secretary of the Hill Club for his invariable courtesy and kindness in placing a room at the disposal of the Society when appealed to by the Hon. Mr. Lee.

BUSINESS.

One of the first subjects brought up for consideration by this Society was a resolution by Mr. Gordon Reeves that this Society ask for donations from visiting sportsmen. An amendment, that Government be asked to impose a tax on visiting sportsmen, was carried, but Government would not agree to impose the tax. During the past year numerous wealthy sportsmen have visited this Island and have enjoyed good sport and the following three donations to the Ceylon Game Protection Society have been received by the Hon. Mr. Lee:—

	£	R.	c.
From Comte Antoine Kharenhuller and Hans Bechinie	5=	73	50
From Comte de Raveneau and Comte de Martin Prey		30	00
From Mr. Paul Niedeck		100	00

—making in all R203·50, so that the Society does not meet with due recognition by the wealthy sportsmen who enjoy the result of the Society's work. Some definite tax *should* be imposed on visiting sportsmen

PROTECTION OF ELEPHANTS.

The Society asked Government to prohibit the capture of elephants or to raise the license for capturing an elephant from R10 to R100.

The Government met our request half way, by raising the license to R50.

The Society also asked Government to remit the amounts received for game licenses to the Society. This, Government said, they were unable to do, but at the same time they have raised the amount allowed for watchers at the Yala Sanctuary by an additional grant of R500 per annum and are going to allow two watchers in the Nuwara Eliya district at R180 per annum each. Watchers to be chosen by the Ceylon Game Protection Society. The Society has been paying for four watchers in the Sabaragamuwa Province and for two in the Nuwara Eliya district. The four watchers in Sabaragamuwa are said by the Balangoda Ratemahatmeya, Mahawalatenne, to be doing good work. The watchers in the Nuwara Eliya district are commonly decribed as being useless, and are accused of accepting bribes, &c., but I am of opinion that there is a marked decrease in poaching and even if the watchers do accept bribes, as most low-paid natives will do, still the mere fact that they *have* to be bribed must have a deterrent effect on poaching. It is almost impossible to check the watchers' movements though the Hon. Secretary makes an effort to do so by making him produce his book for superintendents to write their names in on his visiting the jungles in the neighbourhood of their properties.

Last year this Society asked Government to prohibit the *shooting* of sambur and deer in the forests lying along the ridges in the neighbourhood of Nuwara Eliya, the Elk Plains and the Horton Plains, at an elevation of over 4,000 feet, in fact where running to the knife can be and is indulged in. His Excellency the Governor issued the necessary prohibition, but the limits of the prescribed country are not very clearly defined and the result has been that some dissatisfaction has been expressed by sportsmen living in the hill districts where no elk packs are kept. I think this matter should be represented to Government and the limits of the prescribed country clearly defined.

His Excellency at the request of the Society, has graciously given permission that recognised packs of hounds be allowed to hunt in the forest reserves, on condition that each master of a recognised pack, register his name in the office of the Assistant Conservator at Nuwara Eliya. The prohibition of the export of deer and sambur hides which lapsed on 31st December, 1899, has been extended for another five years.

I learn from the Collector of Customs that the shipments of buffalo and other hides are always carefully examined and now and then deer and sambur hides have

been discovered mixed up with the other hides and the whole shipment has been confiscated. On 8th September, 1899, the Society was courteously and considerately invited by the Hon. the Collector of Customs to inspect a shipment of deer and sambur horns about to be shipped. A few Committee members of the Ceylon Game Protection Society who were able to attend did so with very interesting results. Though the proportion of *apparently* shed to apparently "cut" *i.e.*, killed horns, was satisfactory from a game protectionist's point of view, unfortunately the Inspecting Committee were convinced that a very large proportion of the so-called shed horns were what is vulgarly called "faked" being really "cut" horns.

There is small doubt that there is a tremendous illicit slaughter of game. The number of game licenses issued in the past year were 361, of which 175 were taken out by Europeans, leaving 186 among natives. This small number is proof that the low-country Headmen do not exert themselves sufficiently to check illicit killing of game. The repeated efforts of this Society to get a reform in the Game Ordinance which would put a stop to the indiscriminate slaughter of deer and sambur in the low-country, have not been hitherto successful, chiefly due, I think, to the fact that the members themselves are not agreed as to what is the best scheme. The Sub-Committee, however, drew up a scheme and issued it in the form of a circular to the Committee members for suggestions and the replies will be laid before the general meeting and it is to be hoped that some definite scheme may be elaborated for presentation to H.E. the Governor for his approval. That a reform in the present Game Ordinance *is* necessary, is allowed by the Government Officials themselves.

The country lying between Yala River and the Kumbukan Aar was proclaimed as a sanctuary, on 22nd February, 1899. The Government Agent, Southern Province, asked the Ceylon Game Protection Society for help towards paying for extra watchers during the close season, as it was then that poaching was rife. The Ceylon Game Protection Society granted them R500; but it was gratifying to learn that Government had allowed an extra grant of R500 and our contribution was returned to us. The thanks of this Society are due to that thorough sportsman, Mr. A. F. Broun, Conservator of Forests, for looking after the sanctuary, it being in charge of the Forest Department.

It is a common idea that Government Officials, as a rule, are more or less opposed to the interests of the Society. Far from this being the case, I am glad to say that the Ceylon Game Protection Society has invariably met with the greatest courtesy and assistance whenever it has been in the power of the officials referred to to give it, and from His Excellency the Governor downwards there is a decided wish to further the Protection of Game, should a really workable scheme be laid before Government; and the object of the Society should be to formulate such a scheme.

Subscriptions and Finances:—The total number of members on the roll is 231, of these 60 have not paid their subscriptions for 1899, and of these 60, 15 have not paid for 1898. At a general meeting in Kandy, held 24th May, seventeen members being present, it was decided to raise the subscription from R5 to R10. As there were only 17 members present and as the resolution did not, of course, refer to subscriptions for the current year, the Hon. Mr. Lee took upon himself to inform members that the subscriptions for 1899 was R5 as before and received over sixty letters protesting against raising the subscriptions. At the general meeting Mr. J Wickwar is bringing forward a resolution that the subscription remain at R5. As a glance at the balance sheet will show the funds are in a satisfactory state and with the additional help of R360 for watchers in the Nuwara Eliya district, the present year should see us doing more in the low-country as it is there that illicit slaughter is quite unchecked. I annex balance-sheet, which shows a balance to credit of the Ceylon Game Protection Society of R1,857·99 exclusive of say R300 due by members.

NORTH C DAVIDSON, Hon. Secretary, C.G.P.S.

BALANCE SHEET.

		R	c.
1899.			
28th Feb.	To balance as per balance sheet in Mercantile Bank ..	1,362	41
Do	To balance as per balance sheet in National Bank ..	53	00
Do	To balance Cash sheet ..	10	00
1900.			
28th Feb.	To Donations received during past year	203	50
Do	To Subscriptions received during past year ..	870	00
Do	To Interest allowed by Mercantile Bank	31	35
		R2,530	26
1900.			
28th Feb.	By Paid watchers ..	522	00
Do	By Printing, Advertisements, Stamps, Stationery, &c..	146	27
Do	By Bank Commission ..	4	00
Do	,, Balance in Mercantile Bank	1,776	49
De	,, do National Bank.	81	50
		R2.530	26

NORTH C. DAVIDSON, Hony. Secretary, C.G.P.S.
28th February, 1900.

COCOS-KEELING.—There are on the Island some magnificent specimens of *Cicsus Elastica.* The trees are about 10 years old—*British and Colonial Druggist*, Feb. 16.

VITICULTURE IN NORTH CEYLON.—The appended paragraph reminds us of an omission in discussing products available for our dry Northern regions. The late P. A. Dyke showed how the vine could be successfully grown on a small scale in Jaffna. Why should not the country from Anuradhapura Northwards suit it as well as Uruguay? The sooner Mr. Willis has an experimental pioneer vineyard established the better:—

THE VINE IN URUGUAY.—From a recent report by the Uruguayan Bureau of Agriculture, we learn that in the Carelones department, in 1896-97, there were 230.200 American Vines in nurseries, and 617.800 at the end of August last. The number of Vines transplanted and growing were, for 1896-97, some 149,000, and for the year ending in August last 196,334. The amount of Grapes produced in the department increased last year to 383,530 kilogrammes—showing that the pest of the phylloxera had actually increased the production, owing to the restoration of vineyards and the augmented acreage devoted to their culture. In the department of Monte Video the plants in nurseries, in 1896-97, were 1,288,800 of the American variety, and 2,826,100 in 1899. The Vines transplanted in the former period were 262,900, and in the latter term 104,300. The smallness of the latter figure, compared with the former, is due to grafting—there having been 12,700 Vines grafted in the nurseries, and 379,782 in the vineyards. The production of Grapes in 1897-97 was 938,400 kilogrammes: for last year the production was 1,481,740 kilogrammes. It will thus be seen that the joint vineyards have improved in production, notwithstanding the plague of the vine-louse, and this improvement is due to restoration of Vines and increase in number of vineyards.

Correspondence.

To the Editor.

NOTES ON CEYLON BOTANY.

NO. III.

Dear Sir,—Kerr was succeeded in 1816 by Mr. Alexander Moon, a zealous botanist whose ingenuity and industry did much to advance Ceylon Botany. After eight years' habitual study of the local vegetation, with but few opportunities, a scanty library, and no assistance, Moon published in 1824 his *Catalogue of Ceylon Plants*, a 4to volume containing over 900 indigenous and a number of exotic plants. This is the first book on Ceylon plants which gives specific names, the system of binominal nomenclature having been invented by Linnæus, a few years after writing his "Flora Zeylanica," which contains generic names only. Moon's Catalogue was a creditable work; it contains numerous notes of reference and a useful "Introduction to Botany," which being also ingeniously translated into Sinhalese is specially suited to local students; whilst appended is a Sinhalese Supplement, the names being arranged alphabetically in Sinhalese characters. In 1821 Mr. Moon selected the site, and formed the nucleus, of what has since become one of the most famous Gardens in the world, viz., the Royal Botanic Gardens at Peradeniya. Moon was an indefatigable botanical collector, and the magnitude of his collections may be estimated from the fact that they amounted to "ten cart-loads." Moon died in 1824 from fever, and to his memory has been dedicated, amongst others, the genus *Moonia* (now referred to under *Chrysogonum*) by Dr. Walker-Arnott. To the latter well-known botanist, though more particularly connected with the Botany of peninsular India in collaboration with Dr. Wight, must be given the credit of having elucidated many Ceylon species. In 1836 he published descriptions in Latin, of a collection of Ceylon plants made by Col. Walker, referred to below.

Although Peradeniya rapidly became the recognised centre of botanical activity, a spirit akin to botanical ardour was inspired in other quarters, and in 1824 the Ceylon Literary and Agricultural Society, the forerunner of the present Ceylon Branch of the Royal Asiatic Society, established an Experimental Garden at Fort Macdonald in Uva, which however had a short and unimportant history.

The next Superintendent of the Peradeniya Gardens was Mr. James Macrae, appointed in 1827, whose name is commemorated in *Dendrobium Macræi*. He added considerably, especially in orchids and grasses, to the herbarium collections of his predecessors, and supplied copious specimens and information to Dr. Lindley in England for his "Genera and Species of Orchidaceous Plants," an *8vo.* dated 1830-40. Following in chronological order, a name worthy of honourable mention amongst the ranks of amateur botanists in Ceylon is that of the enthusiastic collector Col. Walker, Military Secretary in Ceylon (afterwards Brigadier-General in India) from 1820 to about 1837 who with his wife, a gifted delineator and painter, made one of the most valuable collections of Ceylon plants ever got together. This collection, now believed to be in possession of the Royal Gardens at Kew, furnished the material, as already referred to, for a *4to.* volume by Dr. Walker-Arnott entitled *Pugillus Plantarum Indiæ Orientalis*, published in 1836. Mrs. Col. Walker's "Journal of an ascent to the summit of Adam's Peak" (in 1833) forms interesting reading in the *Companion to the Botanical Magazine* for 1836, Vol. I., as does also her account of an extended tour made by herself and her husband in the Southern Provinces in 1837, which is given in Vol. II. of the *Journal of Botany*, 1840.

In 1830 the Peradeniya office seems to have been again vacant, and was apparently not filled till 1832 by the appointment of Mr. J G Watson, who, being specially interested in orchids, made a dried collection of that family, discovering amongst others the ground orchid *Acanthephippium bicolor*. He however held office for only five years, and appears to have had two or three successors during the next five years.

The specific name "Championii" distinguishing several Ceylon plants, is in honour of Capt. Champion of the 95th Regiment, who was stationed here from 1838 to 1847, and afterwards killed at Inkerman in 1854. Champion made an extensive collection of indigenous plants, and was recognised as an authority on local botany, his advice and instruction being sought for and esteemed.

Mr. J W Bennett, F.L.S., Assistant Government Agent at Matara, having a taste for botanical pursuits, wrote in 1842 a *4to* volume on the *Fruits of Ceylon*; whilst in 1844 Mr. Simon Casie Chitty contributed to the literature of Ceylon Botany in the shape of a *Botanical Dictionary*, a *12mo.* intended to contain the names of all the plants of the Tamil flora, with their synonyms."

X. Y.

NO. IV.

Dear Sir,—The gradual increase to the herbarium at Peradeniya and consequently to new species, had in the course of 10 or 12 years, rendered Mr. Moon's Catalogue out of date, and the want of a revised edition was felt. Dr. Wight, the celebrated Indian botanist, and author of the voluminous *Icones Plantarum*, &c., when on a visit to Ceylon in 1836 undertook at the suggestion of Governor Sir R. W. Horton to supply this want. Accordingly all the material available at Peradeniya was duly despatched to him in India. The work could not have been deputed to better hands; but these—however, unfortunately for Ceylon—proved to be already too full, and the large quantities of dried plants were returned to Ceylon after an absence of eight years, without the object in view having been accomplished. To assist in the execution of this undertaking, Dr. George Gardner, shortly after his appointment in 1844 as Superintendent of the Peradeniya Gardens, was sent over to India to join Dr. Wight at Coimbatore, where he remained for a few months. Under the *ægis* of Dr. Gardner, who had already made himself famous by his explorations in Brazil and elsewhere, the history of Ceylon Botany may be said to have entered on a new era of activity. Gardner soon proceeded to travel all over Ceylon, collecting and describing native plants—and publishing the novelties—chiefly in the Calcutta "Journal of Naturel History," for the botanical editorship of which he was principally responsible. His enthusiasm as a collector may be judged from the fact that whilst recruiting health for a month on the Nilgiris he collected and dried about a thousand species on his "own account." Gardner's energetic career was, however, cut short by an apoplectic fit at Nuwara Eliya in March 1849, four years after his arrival in the island.

As powerful patrons of the cause of Botany—the grammar to successful Hoiticulture and Agriculture—the genera *Anstrutheria, Carria,* and *Mackenzia* (Strobilanthes) are worthy of reference, since they commemorate respectively Mr. Philip Anstruther, late Colonial Secretary of Ceylon ; Sir W. O. Carr, F.L.S., late Chief Justice; and Rt. Hon. J. A. Stewart-Mackenzie, Governor of Ceylon from 1837-1841, who himself made an impartant collection of Ceylon plants which he afterwards presented to the Kew Herbarium.

Succeeding Dr. Gardner in 1850, Dr. G H K Thwaites, F.R.S., arrived in Ceylon early in that year to take up the duties of the post which he worthily and uninterruptedly held for over 30 years, never having once left the island after his first arrival, so great was his devotion to his work. Thwaites had an early and special love for cryptogamic botany, which in Ceylon he soon extended to the phanerogamic flora. In 1858 was commenced the publication of his *Enumeratio Plantarum Zeylanicæ,* which was completed in an 8*vo.* volume in 1864. The cause of economic botauy also found in him a strong promoter, and during his administration the branch garden at Hakgala was founded in 1860, and that at Heneratgoda in 1876, each with the object of introducing and experimenting with products suitable for the respective districts represented; whilst one must also attribute to him in a great measure the establishment of cinchona cultivation in the island, the introduction of both the Para-rubber and Ccara-rubber tree, and of Liberian coffee. The genus of Algæ *Thwaitesia* was dedicated to him, and this was supplementd in 1867 by the foundation by Sir Joseph Hooker of the beautiful epiphytic genus *Kendricka,* representing the third of Thwaites' names.

Dr. Thwaites was elected F. R. S. in 1864, and made C. M. G. in 1878. He died suddenly in Kandy in 1882, two years after his retirement, and a handsome cenotaph memorial was erected to him in 1885, in a prominent part of Peradeniya Gardens, by public subscription, a similar recognition of services having already been accorded to the memory of his predecessor Dr. Gardner, in the form of a cenotaph in the Gardens. There is a memoir of Dr. Thwaites, with portrait, in the *Tropical Agriculturist* Vol. XIV, and a short notice of the life and death of Dr. Gardner in the "Journal of Botany" for 1849.

Succeeding Mr. Hartog, who held for three years (1874-77) the newly created office of Assistant Director at Peradeniya. Mr. (now Dr.) Daniel Morris, who is at present Imperial Commissioner of Agriculture for the West Indian Colonies, remained in the same capacity for two years. He was followed in 1880 by Mr. Marshall Ward, now an eminent Professor of botany in England, who was appointed for about a year only in the capacity of Cryptogamist for the purpose of investigating the coffee-leaf disease, *Hamileia vastatrix.*

X. Y.

NO. V.

DEAR SIR,—In Ceylon,

"Where spring perpetual leads the laughing hours,"

the pursuit of botany has offered fascination to ecclesiastics as well as civilians. The genus *Gleniea* has been so-named by Sir Joseph Hooker in honour of that zealous botanist Rev. S. O. Glenie, F.L.S., who, being resident in the Colony from 1859 to 1871 as Colonial Chaplain and Archdeacon, made large collections of indigenous plants, chiefly in the Eastern Province, sending them with notes to Dr. Thwaites for incorporation in the "Enumeratio."

Few amateur botanists have cultivated a taste for botanical pursuits with more signal success than the late Mr. W. Ferguson, F.L.S., officer of the Survey Department and brother of the eminent editor Mr. A. M. Ferguson, C.M.G. Besides numerous papers and correspondence on botanical as well as zoological subjects, he issued in 1850 a unique and instructive book on the *Palmyrah Palm,* an 8vo. pamphlet now very scarce. The *Scripture Botany of Ceylon* formed the subject of an interesting pamphlet by him in 1859, followed by an account of the *Timber Trees of Ceylon* in 1863, *Ceylon Ferns aud their Allies* in 1881, and a brochure on *The Grasses of Ceylon* in the same year. The study of low vegetable organisms had also an attraction for him, and his collection of Algæ was incorporated in 1887 in the *Catalogue of Ceylon Algæ* by Mr. George Murray, F.L.S., of the British Museum. Sir Joseph Hooker, Sir Emerson Tennent, Drs. Thwaites and Trimen, all acknowledged their "copious and mutually instructive communications" with Ferguson; and, as is a customary compliment to men of repute, Sir Joseph Hooker dedicated the genus *Fergusonia* to him.

Mr. W. Ferguson had a worthy contemporary in Mr. George Wall, F.L.S., who published in 1873, for private circulation only, his *Catalogue of Ceylon Ferns,* a 4to vol. which was followed by his *Check List of Ceylon Ferns* in 1879. Cryptogamic botany was his favourite pastime, and his private collection of Ceylon ferns was very large. The tower of the Victoria Commemoration Buildings in Kandy, now opened, has been erected to the memory of Mr. Wall, by the Planters' Association of Ceylon.

The present state of knowledge of Ceylon Botany owes undoubtedly more to Dr. Trimen, who succeeded Dr. Thwaites in 1880, than even to the labours of his illustrious predecessors. Assuming the duties of head of our Botanical Department at the age of 35, with an already established reputation in Europe as a botanist, he by his great acquirements and steady devotion to science rendered yeoman service to the botanical world generally for 16 years, his death, truly in harness, occurring in October 1896. From the outset the reorganisation of his department upon more modern and utilitarian principles received his special attention, simultaneously with the investigation of the local flora, collecting and describing new species and elucidating ones hitherto imperfectly understood. He was an authority on Quinology, and in 1883 was engaged by the Madras Government to report on certain problems connected with the Cinchona industry of the Nilgiris. In 1886 he issued his Systematic Catalogue of *Flowering Plants and Ferns Indigenous to Ceylon,* an 8vo. now out of print; whilst in 1888 he published his *Hortus Zeylanicus,* being a classified list of plants grown in the Royal Botanic Gardens at Peradeniya. As co-author of the voluminous and standard work *Medical Plants* by Trimen and Bently, he was *au fait* in medical botany, which he turned to good purpose by establishing in Peradeniya Gardens a Botanical Museum, containing collections of native and foreign drugs, fibres, timbers, grains, curiosities, &c. Branch-gardens were founded by him at Anuradhapura and Badulla in 1883 and 1886 respectively. The pages of various scientific journals, more particularly the *Journal*

of Botany, of which he himself was editor from 1870 to 1880, were frequently enriched by Trimen's contributions on Ceylon Botany, and "no less than fifty papers" stand under his name at the Royal Society, of which he was a distinguished Fellow. His *magnum opus* is, however, his *Flora of Ceylon*, which, unfortunately for the Colony, he did not live to finish. The completion of this work has, happily, been undertaken by the veteran Sir Joseph Hooker of Kew, Dr. Trimen having completed the first three volumes, with an atlas of plates, which bring the book as far down as Balanophoraceæ in the order of Bentham and Hooker's Genera Plantarum. Sir Joseph has creditably accomplished his task, the fifth and last volume being now finished. The plan of Trimen's Flora is acknowledged to be a model of what such floras should be, it being, as far as completed by him, characterised by the critical insight and terse lucidity which always distinguished the author.—Yours trnly, X. Y.

NO. VI.

DEAR SIR,—Though the real value of Dr. Trimen's "Flora" cannot well be estimated, more especially as Thwaites' "Enumeratio"—though superseding preceding works—is of use to botanists only, an idea of its merit may be inferred from the fact that "one principal object of the work is to enable observers to ascertain the name of any plant they may find growing wild;" afterwards learning "all that may have been written about it, appreciating its relationship with other plants, tracing its geographical limits, and intelligently investigating its properties and uses." In 1896, shortly before his death, Dr. Trimen contributed to the "Journal of Botany," Vol. XXXIV, *A Preliminary List of Maldive Plants*, with notes, based on a collection of plants sent him from the Maldive Islands, it being his intention to write later a *Flora* of these islands. Trimen's name is perpetuated in *Ficus Trimeni* and others; a tree of the last-named species forms a handsome object in Peradeniya Gardens. Vol. XXXIV of the "Journal of Botany" is dedicated to this *savant* and the same volume contains a memoir and a portrait of him.

In any account of the Botany of Ceylon it would be unjustifiable not to make reference to the compilations of Mr. J Ferguson, F.R.C.I., &c. the capable and esteemed multi-editor of 38 years' standing. In 1881 he started the *Tropical Agriculturist*, a monthly magazine devoted to the interests of tropical agriculture and inevitably touching botany and horticulture; whilst amongst his other labours are his compilations on the *Coconut Palm* (cocos nucifera) second edition in 1898; *All About Tobacco*, 1890; *All About Spices and Fibres*, 1888; *Arecanut* (areca catechu) 1897; *Tobacco*, 1889; *Coffee Planters' Manual* (latest edition), *All About Rubber*, 1899, &c.

With reference to the economic aspects of Botany in Ceylon, it is worth mentioning the unparalleled rapidity with which both the Cinchona bark and Tea industries developed in the island. The yearly export of the former (now but a few hundred thousand pounds) reached from 50 lb. in 1869 to nearly 16 million pounds in 1887; whilst that of tea rose from 23 lb. in 1873 to almost 130 millions in 1899, the estimate of export for 1900 being 140 millions.

Ceylon Tea

Who could estimate the virtues of that drink,
Which made not one, but many thousands think,
And write such works as made the vulgar stare,
And filled the world with disputations rare.

Before concluding this brief and incomplete bibliography of Ceylon Botany it is imperative to refer to the notable Sinhalese family of Natural History Artists, the de Alwises, who by their hereditary talent for drawing and painting connect the present day with practically the inception of Botanic Gardens in Ceylon. The late Mr. H de Alwis, Mudaliyar, served as writer under Moon in 1818 at Kalutara, being, after the removal of the Gardens to Peradeniya, appointed Botanical Draftsman, a post which he held for 38 years. In 1839 his services were solicited and secured by Dr. Wight for three months at Madras to assist in the botanical drawings for the great work Icones Plantarum Indiæ Orientalis. In 1861 Mr. de Alwis retired on pension which he enjoyed for the record number of 33 years. The orchids *Alwisia tenuis* and *Tæniophyllum Alwisii* have been named after him by Dr. Lindley. Mr. de Alwis was succeeded in 1865 by his son William (made Muhandiram in 1896) who, being still in office and with the gift of his father admirably developed, has added largely to the series of botanical drawings started by his father almost at the beginning of the century. He has painted from nature the Lepidopterous Insects of Ceylon, which with a few additions were published in 1880-87 in three 4*to* volumes by F W Moore, F.Z.S., who supplied the text and in mistake put his own name to the plates. Mr. Alwis's drawings were of such high character that pecuniary assistance from the Ceylon Government was given for this work. The Rev. M J Berkeley, F.L.S. and C E Broome, F.L.S., in their *Fungi of Ceylon* (published in Journal of the Linnæan Society, vols. xi. xiv, and xv) accord their appreciation of Mr. W de Alwis's "exquisite drawings of the fleshy fungi of Ceylon" by naming after him the fungus *Hygrophorus Alwisii*.

The selection in 1896 of Mr. J C Willis, M.A., F.L.S., as head of the Ceylon Botanical Department and so succeeding the line of illustrious Directors preceding him, has been fully justified in the result. Mr. Willis has given the results of his investigation in the remarkable family of Podostomaceæ in a paper before the British Association at Dover in 1899. Since his appointment he has energetically carried on the extension of his department on scientific and practical principles, securing the establishment in the Gardens of a new Research Laboratory, and the appointments on his staff of an expert Entomologist and a professional Mycologist.

X. Y.

EXPERIMENTS IN MANURING TEA IN CEYLON.

DEAR SIR,—I see you take notice of Messrs. Tarrant, Henderson & Co.'s Circular, especially as regards the results of manuring, which the compilers show. The results are poor, and it does not require a manuring expert to advise the proprietor of No. 2 field to abandon that field.

The proprietor of field No. 3 must have had the cockles of his heart warmed when his manuring brought forth 426lb instead of 250; but he must have felt less jubilant when he found a second dose of manure reduced his bearing to 372lb. Perhaps the third manuring will land him at the original amount—250lb.

I have read hurriedly Mr. Kelway Bamber's report on tea soils, and as in scavenging carts in cities you have often a man in front ringing a large bell, I think our well-

known manuring expert should have an Elwood Helmet presented to him by Ceylon proprietors, on which the following words (page 74) might be lettered in gold :—"That the present crop in Ceylon could be increased by one-third or more there is little doubt, and this without the employment of very expensive, though perhaps somewhat, stimulating manures. But what would be the effect if new markets and demand did not keep up with the supply?"

In these days of so many subscription lists, terribly costly though they are, I however don't mind adding my mite for this charitable object, the gold lettering of the Elwood Helmet to be presented to our manuring expert.—Yours truly,

170,000,000LB EXPORT.

"HAS CEYLON THREE ROBINS?"

DEAR SIR,—My question is in the heading. Tennent's "Natural History," page 241, speaks of "the rich and melodious tones of their clear and musical calls. In the elevations of the Kandyan country there are a few, such as the robin of Neura-ellia (Pratincola atrata) and the long-tailed thrush (Kittacinela macrura) whose song rivals that of their European namesakes; but far beyond the attraction of their notes, the traveller rejoices in the flute-like voices of the Dayal-bird (Copsychus saularis) called by Europeans in Ceylon the 'Magpie Robin.' This is not to be confounded with the other popular favourite, the Indian Robin (Thamnolia fulicata) which Edgar Layard said "is never seen in the unfrequented jungle, but always near the habitations of men." Who will describe for me then the distinctive appearance of each bird, in simple clear language so that I may identify the

(1) Indian Robin.

(2) Dayal bird or Magpie Robin.

And (3) the Robin of Nuwara Eliya.

and oblige—Yours truly, NEWCOMER.

[We quote as follows from Legge's big book on Ceylon Birds :—

(1) INDIAN ROBIN.—Thamnolia Fulicata (The Black Robin). Adult male. Length 6·2 to 6·4 inches; wing 3·0; tail 2·5; Iris brown; bill, legs and feet, black. Entire body, except the abdomen, glossy blue black, this, with the under-tail coverts, is fine chesnut; wings and tail coal-black; a large patch on the wing formed by the lesser and median coverts, white. This familiar little bird is a general household favourite in Ceylon, frequenting the vicinity of human dwellings, perching on walls and roofs, resorting even to the verandahs of bungalows. In the Northern and Eastern parts, where it is abundant, and likewise in many portions of the interior, it is by no means restricted as Layard suppesed, to the neighbourhood of houses, but is found in all open rocky places, in newly burnt clearings, and in cultivated chenas, and in the Central Province it affects stony patnas and bare hill-sides. It is most animated in its movements, carrying its tail erect and jerking it up with a corresponding strutting down of its wings when giving out its pretty warble. It passes much of its time on the ground, darting about after flies and insects, and moving hither and thither with a short jerky flight. It consorts in pairs, but the young brood remain a long time with their parents, thus forming after the breeding season a little troop of three or four.

(2) COPSYCHUS SAULARIS. (THE MAGPIE ROBIN.) Adult male. Length 8·0 to 8·5 inches; wing 4·0 to 4·1; tail 3·5. Iris dark brown; eye-lid neutral brown; bill black; legs and feet plumbeous brown or blackish leaden, claws black. Head, neck, chest and upper surface with the scapulars glossy blue-black; quills and tail black; secondary wing-coverts, outer webs of tertials, under surface from the chest, under wing-coverts, three outer tail-feathers entirely and the next pair, except on the inner margin pure white; thighs white, black posteriorly. The white wing-coverts and outer webs of the tertials form a broad longitudinal band on the wing when closed.

The Magpie Robin is universally distributed throughout the whole island up to an altitude of 5,500 feet; there is no spot in the lowcountry, save the solitudes of the damp southern and western forests, where it may not from time to time be observed.

(3) THE NUWARA ELIYA ROBIN.—Pratincola Atrata. (The Hill Bush-chat.) Adult male. Length 5·9 to 6·2 inches; wing 3·0 to 3·25; tail 2·25 to 2·4. Iris hazel-brown; bill, legs and feet black. Above and beneath coal-black, slightly brownish on the lower part of the breast; tips of the rump-feathers, and all but the terminal portions of the tail-coverts, the median and innermost feathers of the greater wing-coverts, together with the centre of the abdomen and under tail-coverts, white. Not unfrequently one or two white feathers about the nape exist, and the amount of this colour on the rump and lower parts varies somewhat.

The Hill-Chat is only an inhabitant of the upper mountains and even there its limit is markedly defined.

ROUND THE WORLD FOR CEYLON TEA: IN THE FROZEN NORTH.

Mount Stephen, Rocky Mountains, Jan. 27.

DEAR SIR,—The last time I wrote you was on the banks of the Atbara River squatting on the sands under the piercing rays of a tropical sun, with my faithful Soudanese servant "Hassan" in attendance, and Teck making a feed on rushes before taking his master back to Berber.

As I now write the surroundings are somewhat different. Here I am seated in the Canadian Pacific Railway Pullman Car "Montana," which forms part of the train, which with two engines is slowly creeping up the steep gorges of the Rocky Mountains which are covered with snow many feet deep, and the thermometer forty degrees below zero. In an hour we hope to be at Mount Stephen Station which is 5,296 feet above the sea; the highest point in Canada as yet reached by the iron horse. At this time of year few passengers cross the Rocky Mountains, today I am the only occupant of the Pullman Car, which has sleeping accommodation for thirty-four passengers fitted up with electric light, steam pipes to regulate the heat, large smoking room, lavatories, &c., These cars are so heavy, and well balanced, that even when running at a high rate of speed, I have no difficulty in writing with my typewriter. Leaving San Francisco on the 21st inst. by the Northern Pacific Railway, a distance of 1,500 miles which is covered in three days and three nights brings you to Vancouver, the Western terminus of the Canadian Pacific Railway. The growth of this city which now numbers 26,000 inhabitants, has been very rapid, and only dates back to 1886. The city has many fine stone buildings, streets are lit by electric light, and paved with wood blocks and asphalt. Electric cable cars run to all parts, and past the doors of the twelve banks which this new city can boast of.

The climate of Vancouver is wet and mild ; snow may be seen on the mountains which surround the city for five months of the year, but it is seldom that it falls in the city.

The distance from Vancouver to Halifax (which is the terminus of the railway on the Eastern coast) is 3,666 miles, the journey occupies a week ; the passenger only changing cars once. Leaving Vancouver the scenery is very beautiful, as the train winds its way along the bank of the Fraser River, which is known throughout the world for the large numbers of salmon that are caught every year, canned and shipped to all parts of the world.

On wakening the following morning the scenery is very different, the train which the day before was covering some sixty miles an hour, is now creeping slowly up the sides of steep gorges through which torrents of icy water are rushing ; on either side stand gigantic cliffs towering hundreds of feet above, covered with ice and snow. At noon we reach Glacier House, and stop for lunch. Last year the fall of snow at this particular point registered fifty feet. Facing the station stands the "Great Glacier" only half a mile distant, an amazing sight, as you will imagine when I tell you that this field of perpetual ice covers some 200 square miles, some hundreds of feet in thickness. To the left of the "Great Glacier" rises Mount Sir Donald, a naked and abrupt pyramid to a height of a mile and a half above the station. This stately monolith was named after Sir Donald Smith, now Lord Strathcona, Agent-General in London for Canada, the man who has offered to equip and transport to South Africa 400 picked Mounted Infantry at his own expense; the cost of which I have heard will exceed two hundred thousand pounds sterling. Leaving Glacier House the train continues its winding route steadily climbing up the sides of the steep gorges, now and again diving through long snowsheds, which have been built where it was found impossible to keep the line clear of snow. During the winter months hundreds of men are employed in removing the snow off the line in these parts.

As I am writing we are steaming out of Mount Stephen Station, above which stands Mount Stephen towering 8,000 feet above the valley, to the left is seen a huge green glacier 800 feet in thickness. The cold here is more than a typewriter can describe; and as darkness has set in I think bed the best place, leaving my letter to be continued tomorrow.

Moose Jaw, Jan. 28.—Rising at 9 a.m. I found the train travelling at a good pace along the great prairie plateau which extends for some thousands of square miles to the north and east of the Rocky Mountains, which are now out of sight. In winter this great prairie is enveloped in snow and ice; in summer it is covered with rich grass, not a tree to be seen. At the stations where we stop, Indians board the train and offer milk and buffalo horns for sale. This race who in the past were renowned for their powers in hunting big game, and for their brave and fierce methods of fighting, are fast becoming extinct. Tomorrow we enter the more civilized regions wherein summer farms covering thousands of acres may be seen under wheat. In the evening we arrive at Winnipeg, where I will stay for two days before continuing my journey to the East Coast, *en route* for Paris. This afternoon the Conductor took compassion on my solitude and began to give a detailed account of what I would and would not see as we went farther East ; I soon brought him up with a round turn, by informing him that "this was my eighth journey across this track in the past seven years."—Yours truly, R. VALENTINE WEBSTER.

LABOUR IN INDIA AND CEYLON.

Coonoor, Nilgiris, Feb. 23.

SIR,—There are upwards of $3\frac{3}{4}$ millions of people now being relieved by the Government of India in connection with the present famine, and as the population in this year is increasing at the rate of six millions, or two per cent per annum, and this rate will continue in larger numbers every year, it is evident that famines in the future will become more and more costly. That financial difficulties must ensue is evident, and just as the previous difficulties were met by forcing up the exchange, so will future financial embarrassments be met by the same expedient with the view of reducing the home charges. There are two reasons why it is certain that the same expedient will be resorted to—the fact that the unpopularity necessarily accompanying fresh taxation will be avoided, and the still more influential fact that the officials, who are really the rulers of India, will gain largely by still further raising the rate of exchange. That they will seize the first pretext for doing so in the future as readily as they have done in the past, no one can doubt, who has the smallest experience of human nature. The planters of India and Ceylon will have to face two serious facts—the fact that they have been placed at a great disadvantage in competing with their rivals in the other silver-using countries, and the fact that there is every prospect, I might almost say certainty, of their being placed at a still further disadvantage. Does any one believe, or can it be for one moment supposed, that the producers of India and Ceylon and the capitalists who work in conjunction with them are blind to these facts? That they are not so is proved by the facts which appeared in the leading article of the *Ceylon Observer* of Feb. 7, which tells us that in 1899 (when it was certain that the Government would adhere to its fatal currency policy) the cooly immigrants fell off by about half, while the departures exceeded the arrivals by 13,000. And that both producers and capitalists are rightly judging the situation, we have ample evidence in India where wages are being reduced, and advances too, all of which indicates what everyone knows, namely, that extensions have been stopped, and that land is being thrown out of cultivation, being either wholly abandoned, or put into an inferior state of working. There is only one thing that can arrest this decline, and that is the granting of such a Bounty on exports as will place producers in the same position which they occupied previous to the closing of the mints. The producers would be thus placed on a secure footing, confidence would at once be restored both to them and to the capitalists, and India and Ceylon would soon exhibit the same signs of progress which they did previous to the closing of the mints, and about up to the time when it was certain that they would not be reopened. The proposed step would probably call for a further raising of the exchange, but this would be all in favour of the proposed measure, ere the officials would gain on their home remittances,

and they, as we know, are masters of the situation both in India and, in the shape of the India Council, at home. The Secretary of State may be reckoned on as being usually in the hands of the Council, and the Governor-General as being in the hands of the Secretary of State when the adoption of any new policy is concerned. Parliament, I need hardly say, is absolutely out of the count.

In conclusion I may remark that nothing could (vide p. 464 of "Gold, Sport, and Planting) be more certain than that the first effect of the currency measure would be a diminution in the demand for labour, and if it did not sooner occur it was partly because it was not generally believed, that the Government would persevere with its currency policy, and partly to a vague hope that the second Currency Committee might reverse the decision of the first, for which indeed there was some ground as the witnesses were nearly all against the policy which has been carried out, and a change from which it is now hopeless to expect.—Obediently yours,

ROBERT H. ELLIOT.

THE LONDON COCOA MARKET.

London, Feb. 23.

Dear, Sir,—As usual when the new crops of Trinidad and Grenada Cocoa first arrive in any quantity, the pressure to sell being out of proportion to the desire to buy, has caused a drop in prices, which is unwarranted by the present state of the market; for with a good demand which is sure to last, the stocks are very small being only 79,203 bags, against 90,435 bags in 1899, 113,918 bags in 1898, and 139,538 bags in 1897, and there are outside influences now at work creating an exceptionable demand which were altogether absent in previous years; and even if the supply this year proves to be as large as that of 1899, which it is generally believed will be the case, the South African War will keep the Government active buyers for another six months at least (Monsieur Jean Bloch, the Polish author of "The Theory of Modern Warfare," estimates it will take a year to see the matter properly through) and the American and continental demand is expected to show as large an increase in the coming year's consumption as they have done in the past one, which makes me convinced that by June those who are now anxious sellers will see the mistake they have made; for, if they do not show a firmer tone than they are now doing, we shall have good middling to good red Trinidads at 73s and Fine Grenadas at 65s before the end of April. As during the last two years there has been a tendency to handle fine Trinidads more judicously, this grade is not likely to show a great drop, if indeed they do not go higher, as is the case just now, for whilst good middling red is now selling at only 78s against 82 and 82s 6d three weeks ago; one of the fine marks sold last week at 84s 6d against only 82s 6d in Jany. Ceylon Cocoa it is true often fluctuates independently of Trinidads, being used more for confectionery, for which purposes its finest marks fetch fancy prices, and also because up to now the bulk of the crop has been sent exclusively to London, which, forcing the best buyers to come together from all parts of the world as Russia, America, Spain, and even Mexico when her crop is short, causes a keen competition resulting in high rates which would never be obtained if she sent her cocoa to every market under the sun that buys it, as Trinidad is so fond of doing, and which is a great mistake, for not only does it, as I have already said, prevent buyers coming together in one common centre, but the cocoa is often shipped entirely to one buyer who having it all to himself squeezes the prices down to the utmost limit he can before he forces the owner to ship it elsewhere, and sell at a betterrate

At the sales this week 6,783 bags of all growths were offered including 419 Trinidads, 1896 Grenadas, and 800 Ceylons. Of these the Government bought 214 bags of Trinidad at 78s and 78s 6d, 167 bags of Grenada at 69s to 70s and 76) bags Machala Guayaquils at 73s 6d. The sales went off with good demand at slightly lower rates for Grenadas, and Dominicas, for out of 2,500 bags offered 1800 bags sold; Grenadas at 65s 6d for common to 71s 6d for fine, and Dominicas at 65s 6d to 67s. The Ceylons nearly all sold, (707 changed hands at the sales) at 68s for native, 62s 6d to 66s 6d for smalls—70s to 77s for middling to fair—and 80s to 86s for good to fine red. Since the sale the demand has been quiet as there is expected to be big sales next week. The West India mail had nearly 4,000 bags of Trinidads alone, which they are trying to get up in time, whilst of Ceylons the cocoa by the "Duke of Buckingham" and if possible by the "Awa Maru" will be offered.

The receipts from Guayaquil are still large, and up to now in excess of last year's, being 36,710 quintals since 1st January against 26,400 quintals last year, and 33,000 quintals in 1898. Cocoa butter is firm: sales have taken place at 1s 5¾d and 1s 6d is now asked.—Yours truly,

HAROLD HAMEL SMITH.

TEA: LONDON CHARGES ON.

Kandy, 27th Feb.

Sir,—I herein enclose copy of letter received from the Secretary, Ceylon Association in London, on the subject of the reduction of Bulking and Taring Charges in London.—I am, sir, yours faithfully,

A. PHILIP.

Ceylon Association in London, 61, and 62, Gracechurch Street, E.C., 9th Feb. 1900.

A. Philip Esq., Secretary, Planters' Association, Kandy.

Dear Sir,—Referring to my letter of 26th ult: I beg to forward copy of a second letter from the Tea-clearing House Committee, dated 5th instant, from which it will be seen that for the present it is not proposed to make any reductions except in respect of the Bulking and Taring rate.—Yours faithfully, (Signed)

Wm. Martin Leake, Secretary.

Tea Clearing House Committtee, 21, Mincing Lane, 5th Feb. 1900.

The Secretary, the Ceylon Association in London, 61, and 62, Gracechurch Street, E.C.

Dear Sir,—Referring to my letter of the 23rd ult. I am directed to inform you that the reduced Bulking and Taring charges therein set out, have now been confirmed and will apply to all teas bulked and separately tared on and after the 1st March next.

This alteration is a considerable reduction and the Committee trust it will enable the Importers to make desired arrangements with the Trade in respect of the taring of the teas. The Committee, however, regret that in view of the heavy expenses pressing upon their trade they are unable at present to make further alterations in the rates.—I am, dear sir, yours faithfully, (Signed) Geo. T. Pocok, Secretary.

MINOR PRODUCTS REPORT.

Annatto Seed.—A bid of 3d per poand for fair bright Madras seed is likely to be accepted for a parcel of 13 bags. There was little on offer today compared ith previous sales.

Cinchona.—Onr Amsterdam correspondent informs us that the Vriessveen cinchona bark department reports the shipments from Java to Europe from January 9th to February 12th, 1900, at 715,000 Amst. lb.

Cinnamon Oil.—Leaf oil sold at 1½d per oz., sbuject.

Coca Leaves.—In auction fair green Ceylon leaves realised 1s per pound for one bag. The shipments from Java from July 1st to November 30th, 1899, have been :—

	1899	1898	1897	1896	1895
Bales	202	445	496	335	509

Dark green Hnanoco leaves are offered at 1s 4d per pound, c.i.f. and light green Truxillo at 1s 1d.

Quinine.—The exports of qninine from Java during November, 1899, were in one consignment of 133 cases to the United Kingdom (opt. New York). The shipments from July 1st to November 30th, 1899, were 655 cases, against 614 cases for the coresponding period of 1898.—*Chemist and Druggist*, Feb. 17.

DEATH OF AN OLD CEYLON PLANTER.

Our obituary includes the name of a well-known former planting resident in Ceylon, but who has latterly been tea planting in Natal, Mr. John Fraser. He was in his day a very strong man; but after enduring all the worries and trials appertaining to the life of a coffee estate proprietor in one of the wettest parts of Lower Dikoya and then fighting away till he got the estate into tea and became Superintendent where he had been proprietor, his health broke down, and a succession of abscesses on the liver undermined his constitution; indeed the late Dr. MacDonald was amazed at his repeated recoveries. A time of great weakness, however, arrived ; and on our advice, "Aberdeen" Fraser went to Carlsbad, and came back in four months looking and feeling as well as ever he did in his life,—a marvellous case of the waters taking effect when a man was very far gone indeed. No one could persuade Mr. Fraser not to go back to "Aberdeen" estate and he worked there for two or three years in good health until he moved to Brae estate, Matale—a still wetter region if possible !—and there also he did good work and kept well. After some years, there came the offer through a brother to go as Manager of a Tea place in Natal, and Mr. Fraser has been in the "Garden Colony" since January, 1897, well-pleased with his work : but here again he had a narrow escape of poisoning at the time his brother James, who was visiting him, fell a victim. It is, perhaps, therefore, no wonder that the end has come to Mr. John Fraser in his 60th year. We do not know if he was touched by the war or had trouble therefrom; but in his day, certainly Mr. John Fraser of Aberdeen, Brae and Natal, had his full share of battling with misfortune and with physical ills, while he always showed an example of putting "a stout heart to a stey brae." Mr. Fraser has left a son in Ceylon, now Manager of Nicholoya, Matale. To him and other relatives, we tender sympathy on this sadevent.

BOTANY AND THE INDIAN FOREST DEPARTMENT.

AN APPEAL.

(To the Editor "Indian Forester.")

Anent the letter of Dr. Schlich in *Nature*, copy of which appears in your issne of December last, regarding the above subject, every Forester, it is thought, of some standing and experience, will agree with almost everything he has said in answer to Sir George King, with this exception: that it is not believed that the lack of knowledge of botany displayed by most Indian Forest officers is due so much to the want of well equipped systematic botanical instructors at Coopers Hill as Dr. Schlich alleges. With the botanical instruction now acquired at the College, Forest officers, it is felt, should have been able to increase their knowledge of the subject in India if a *real* interest had beeu taken in the subject originally; what is needed it seems is that men must be recruited for the Indian Forest service from among those who are botanically inclined, and to attract such men, botany as even now taught, must not only be made compulsory, but placed in the forefront of the subjects for the entrance and after examinations of the College. By forefront is meant that a much larger number of marks should be given for botany than for any other subject.

As far as can be ascertainsd the large majority of men who have joined the Imperial Forest Service during the past 10 or 11 years have relapsed into administrators pure and simple, and little difference is apparent between their present qualifications and those in the Indian Civil or Police. In fact as far as external appearances go their previous training might, to all intents and purposes have been the same, originally as the training of the former.

A modification in the present system of marking at Cooper's Hill therefore is suggested in the manner explained, and more constant practical instruction in botany should be imparted to the stadents while at the College. Examinations, chiefly oral, should also be held in this branch of their studies, as well as in Forest organization, while on tour. The latter subject is doubtless very valuable, and needs much attention but it can be acquired and improved upon in India to a very great extent because of officers being forced *nolens volens*, to study it. Working plans in fact can be drawn up by any educated Forester with the aid of Dr. Schlich's admirable works, and with a little previous practical continental experience such as most Foresters obtain. And if it could be ruled that no Forest officer of less than seven years standing should be a working plans officer so much the better.

Sir George King has done a service in drawing attention to the want of knowledge of even elementary botany among Indian Foresters, and a discussion it is hoped in your columns will now follow, bearing on his remarks as reproduced by Dr. Schlich. The Forest Department is still practically in its infancy and by a discussion among men now out here, who have almost completed their time and who would be capable of giving an opinion as to how best to remedy the unsatisfactory state of things (as unsatisfactory they must be termed), some valuable suggestions might be thrown out which would be of use to the authorities at home in coming to a decision in the matter.

It is trne, that we do not require men to be only botanists; but those who enter the Forest service should display a greater leaning towards the study of trees, shrubs and small plants than the large majority especially from Cooper's Hill now do. D. C. O.

25th January, 1900.—*Indian Forester*, February.

Trees.—The Government of India have sanctioned the expenditure of sums not exceeding R1,000 in each case for tree planting in Wana and in the Tochi Valley.

QUININE.

Mr. Martin mentioned the labours of Richard Spence, Pritchett, John Weir, Robert Cross, Charles Ledger, De Vrij, and others who were pioneers in the establishment of cinchona-culvation in Java, India and Ceylon. He then called attention to the superior quality of the *Ledgerina* variety of *Cinchona Calisaya*, which yields from 9 to 10·5 per cent of quinine,* with 10½ to 11½ per cent of total alkaloids.

The cultivation of cinchona in India, and the preparation and sale of cinchona febrifuge there, were next referred to, the methods of cultivation also being briefly noted. From this the author proceeded to mention the principal facts in respect to the discovery of quinine and other cinchona alkaloids, and described some of the methods for manufacturing quinine which had been published. He then submitted the following short descriptions of salts of quinine:—

ACETATE.—Rather more soluble in water than sulphate.

ARSENIATE AND ARSENITE.—Recommended by some doctors as more powerfully antiperiodic than the other salts; contains twenty-nine per cent arsenious acid, and 69·4 per cent quinine.

BITARTRATE.—Sparingly soluble in water, and has, therefore, little taste. In a number of prescriptions by a West-end physician I observed quinine sulphate and citric acid frequently prescribed; one day I questioned him as to why, when he told me that it was the most useful salt of quinine to administer to patients having a tendency to acidity.

FERROCYANIDE.—Said to be most efficacious.

HYDRIODIDE.—Alterative, tonic and antiperiodic, used in scrofulous affections.

HYDROIDIDE, ACID.—Soluble 1 in 20.

LACTATE.—Soluble 1 in 20; used for hypodermic injections.

HYDROBROMIDE.—Excess of hydrobromic acid given to lessen cinchonism sometimes caused by large doses; contains 76·6 per cent.

HYDROBROMIDE, ACID.—Well adapted for hypodermic injection.

HYDROCHLORIDE.—Richer in alkaloid than sulphate (81·8 per cent); antiseptic; powerful germicide, 1 in 800 stopping growth.

HYDROCHLORIDE, ACID.—Most soluble salt of quinine (1 in 1); contains 72 per cent.

HYDROCHLOROSULPHATE.—74·3 per cent alkaloid.

HYDROCHLOROCARBAMIDE.—Urea quinine; not rich in alkaloid

PHOSPHATE.—For rickets associated with stomach-affections; contains 76·2 per cent.

SALICYLATE.—Contains 70·1 per cent alkaloid: useful in rheumatic gout.

SULPHATE.—This salt is the most used of any; contains 73·5 per cent alkaloid; wherever quinine is ordered by the physician it is universally understood to mean this salt.

SULPHATE, ACID.—Soluble 1 in 11 water, and contains 59·1 per cent alkaloid only.

TANNATE.—Useful for intermittent neuralgia; only 20 per cent alkaloid in it; almost tasteless, and covered with chocolate, is given to children.

TARTRATE.—Used in India for hypodermic injection.

VALERIANATE.—is of no special value for the antispasmodic purposes for which some give it; contains 73 per cent alkaloid.

* This is incorrect; the following are some of the percentages in Ledgeriana bark offered at the last cinchona auctions at Amsterdam, the figures representing quinine sulphate 2·3, 3·1, 4·1, 5·2, 6·2, 7·3, 8·6, and 10·6, with many percentages between these figures. Occasionally a bark yielding as much as 12 per cent of quinine sulphate comes into the market, but the assumption that Ledgeriana bark yields a minimum of 9 per cent is erroneous: the average is about 5 per cent, and the highest known 14·5. It is particularly to be noted that these percentages do not refer to the alkaloid quinine, but to quinine sulphate of the British and other Pharmacopœias. Most materia medica text-books fall into the same error as the writer of this paper.—ED., *C. and D.*

Finally the physiological action of the alkaloid was discussed, and some reference made to the prices that had been paid, the highest since 1874, when quinine sulphate was 9s per oz, being 16s 6d in 1881, and the lowest 8⅝d for the German sulphate.

Mr. Hymans, in opening the discussion, said he thought it curious that artificial quinine had never been synthesised except from cinchonidine, although all kinds of ways had been tried. With reference to the dose of quinine sulphate, he mentioned that the one usually taken in the tropics was much higher than that in Engand, 10-gr. doses being quite usual.—*Chemist and Druggist*, Feb. 17.

PRODUCE AND PLANTING.

TRY KASHGAR.—In his very interesting and instructive book, "Innermost Asia; Travel and Sport in the Pamirs," just published by Mr. Heinemann, Captain Cobbold has something to say about trade with Kashgaria which will interest tea planters. The Government might do much to facilitate British and Anglo-Indian trade with Kashgar, the commercial centre of innermost Asia. Only removable obstacles stand between tea planters of India and an enormous market in innermost Asia. The British acquisition of Chitral gives the Indian Government an opportunity of establishing commercial routes easily and speedily traversible.

TEA IN BOND.—At a recent meeting of the Grocers, Provision Dealers, and Oilmen's Association, a letter was read from a member asking whether, in the event of there being any increase of the tea duty, such increase would be charged on any duty-paid tea lying in bonded warehouses at the time. In the course of the discussion it was stated that Messrs. Densham Brothers had received a letter from Mr. R. T. Prowse, secretary to the Customs, stating that "the Board feel bound to withhold assent to the retention of tea in bond after duty has been paid on it. . . . It is quite intended to exercise all the powers we may find ourselves to be possessed of to prevent the wholesale retention of duty-paid stock in bonded warehouses." It was resolved to call the attention of every member of the Association to the importance of bearing in mind that this decision of the Customs applied, of course, to all dutiable articles. The following is the correspondence referred to:—

Letter to the Mazawattee Tea Company:

"Office Inspector, Customs, London, February 14, 1900.—Gentlemen,—With reference to a recent large payment of duty on tea by you, it has been reported that on the 6th inst. there still remained 11,460 packages of tea in various duty-paid warehouses in London, of which delivery had not been taken, although duty had been paid. I am desired by the Commissioners of Customs to ascertain from you what steps are being taken for the withdrawal of these packages from bonded premises with as little delay as possible.—I am, gentlemen, your obedient servant, (signed) J. FLEMING, Office Inspector."

"Eastcheap, E.C., February 15, 1900.—Dear Sir,—We are in receipt of your letter of yesterday's date, and in reply beg to state that we have spared no effort to keep strictly to the regulations which your Board enforces. Immediately on payment of our big cheque steps were taken by us to clear out of the bonded warehouses without delay the various parcels represented by our payment, and up to the date mentioned by you—viz., February 6—we had removed nearly 45,000 packages, or fourfifths of the bulk. Had it not been for the exceptionally severe weather the whole of the tea would have been cleared. We feel sure that you will realise the magnitude of the task imposed by your regulations of clearing over five million pounds of tea from bond within a few weeks.—We are, dear sir, yours faithfully, THE MAZAWATTEE TEA COMPANY, LIMITED."—*H. and C. Mail*, Feb. 23.

TEA IN CEYLON: EXPORTS IN PROPORTION TO AREA PLANTED.

IS IT WELL TO MANURE TEA ON VIRGIN SOIL?

The question has lately been raised in practical quarters as to whether the export of tea from Ceylon of recent years has kept up with the extension of planted land. We have heard a decided negative given, and the explanation offered that, apart from actual abandonments of unprofitable fields, much tea on poor land had fallen off in yield and that, even if manured, such poor tea failed to respond for more than one or two seasons and then fell back into a worse state than before, more especially if a stimulating fertiliser had been used. In these days of almost universal belief in the virtue of manure—properly selected and adapted of course,—it is somewhat refreshing to meet with practical men who are not only doubtful, but sceptical of the advantages of manuring from the proprietor's point of view, if a series of years be taken into consideration. Given a decent soil with a carefully planted field of hardy hybrid jat in a suitable climate; and "leave well alone" would be their motto. "Content yourself with an average 400 to 500 lb. yield; do all justice in careful pruning, weeding, tillage, burying prunings with a little lime perhaps; and leave the rest to Providence,"—is very much their idea of what is right. "No doubt," they add, "by manuring you can increase your yield by from 25 to 40 per cent. for some years; but your trees suffer in the long run and the yield eventually falls off."

Now as regards a problem of this kind, no doubt a good deal will be learned from the forthcoming Report of Mr. Kelway Bamber, in which, of course, the virtues and effects of manure for tea plantations are most fully discussed. Nor is this done simply from the point of view of the Laboratory and Analytical Chemist. For, Mr. Kelway-Bamber has had a special advantage in visiting every tea district in the island, in getting the fullest information respecting typical estates in each, and in profiting by the experience and observation of many of the shrewdest and most successful of our practical planters, an incalculable gain to the scientist however advanced he may be in his own Department. Nevertheless for the purpose of answering the problem now raised, we should think it preferable if scientific attention had been directed to two typical and therefore old plantations—one of which had never been manured, while the other had had systematic if not continuous applications. Now, for the former, we should be inclined to suggest, above all others, the Loolecondera estate with perhaps the oldest continuously bearing tea in the island. We have been accustomed to get reports at intervals from the manager of this estate for embodiment in our "Handbook and Directory." The latest was courteously furnished by Mr. G. F. Deane on 20th May, 1898, when he wrote as follows:—"Replying to your letter of 17th, the oldest field of tea" (30 to 32 years of age) "on Loolecondera is still looking remarkably well and continues to give yields varying from 400 to 500 lb. made tea per acre per annum. It last year received a heavier pruning and cutting down than it ever had before and looks all the better for it. The ground is a a network of roots and the stems of the bushes are very thick. This tea is now some 30 years old, is very wind-swept in the South-west monsoon and has, I believe, never been manured." There is one exception (and but one only, we believe) to the last clause: in July, 1891, (about a year before his death) Mr. James Taylor, who first planted the tea on Loolecondera, reported to us:—"The field is as good as ever, giving about the same crops: it was manured once only with castor cake in the beginning of 1885." The one exception may surely be said to prove the rule in the case of Loolecondera if the tea of this field still continues up to the mark at 32 to 34 years of age? Now, it ought to be of great interest to have a special report on this unmanured estate, giving, from a scientist's point of view, the reasons why the tea is still in such good heart, with yields if anything increasing, or at any rate, steady year by year. Surely there is encouragement in the case of Loolecondera to proprietors of tea fields formed out of virgin forest, to follow the same course of careful cultivation without manuring? Of course, the lesson might be still more instructive if Mr. Kelway-Bamber were to find a similar estate where an opposite, or "manuring", policy had been adopted from an early age, with a better result in crops and with trees—at 25 to 30 years old—if such there be in Ceylon—even healthier and more vigorous than those of Loolecondera.

We are leaving out of view here the case of tea planted on old coffee estates, or on land otherwise used up or washed out. There, the choice may be: "manuring" or "abandonment." The question we propound is in respect of tea estates formed out of virgin land, doing well and in good heart, or if showing any slackness, only of a few months' duration, due to seasonal influences.

We must now leave this subject, to revert to the more particular and statistical enquiry raised in our opening sentences, namely, Has the Ceylon export (or crop) of tea of late years increased in proportion to the area of young tea coming into bearing? This demands a very careful examination of the figures in our Handbook—more than we are prepared to give today—but before closing for the present, we should like to lay two sets of figures before our readers, making the following contrast:—

In 1888, the total area planted with tea was, as near as we could make out, 183,000 acres, (of course, most not in bearing) the total export of tea that year was 24,381,296 lb.

In 1893—six years after—the area had risen to 273,000 acres: the total export to 84,406,064 lb. = an increase of 90,000 acres under tea and 60 millions lb. more tea exported.

Six years later, in 1899, we have an estimated area under tea of 375,000 acres—an increase of 100,000—while the total export of tea reached to 129,854,156 lb. (above the estimate, but) an increase of less than 45½ millions over 1893. We are aware that this is a very rough mode of instituting a comparison, and that much importance cannot be attached to our figures in support of any theory. Still, their suggestiveness is undeniable; and if they lead some of our 'tea" authorities among proprietors, visiting agents, managers and thoughtful mercantile observers, to ponder the subject-matter, our purpose will be fully served.

AGRICULTURAL DEPARTMENT IN JAMAICA.

The Report of the Committee respecting the Establishment of an Agricultural Department and an Experimental Station, has appeared. We quote:—"For the organization and management of this Department there should be constituted a Board of Agriculture. It should have the same sort of control over the whole Department that an ordinary Head of a Department would have, subject to the usual control of the Government over all Departments, and subject also to the fixing by law or by the Government of any functions of any Branch of the Department. The Board should consist of :—(1) The Director of Public Gardens, *ex officio*. (2) The Agricultural Chemist, *ex-officio*. (3) A person appointed by the Governor on the nomination of the Managing Body of the Agricultural Society, (4) Six members appointed by the Governor and holding office during his pleasure, one of whom should be an elected member of the Legislative Council. Of these six members two should retire annually in the order of their appointment, but be eligible for re-appointment. (5) The Commissioner of the Imperial Agricultural Department of the West Indies should be *ex-officio* a member of the Board to enable him to attend the meetings of the Board on his visits to the island. The Chairman of the Board should be annually appointed by the Governor from among the members of the Board, The Governor should have power to give leave of absence to any member of the Board, and to appoint a person to act in his place during his absence. Provision should be made for paying the travelling expenses of country members of the Board in attending meetings. The Board shall meet at least once monthly, three members to be a quorum. The present Secretary of the Agricultural Society should be the Secretary of the Board. The powers and duties of the Board should be :—(1) To correlate and re-distribute the work of the subordinate Branches as opportunity offers, and to create new agencies and direct new efforts in any line of Agricultural progress. (2) To make arrangements for the carrying out by any Branch of the Department of instructions received from the Government; or for the discharging of any duties imposed upon the Board by Law affecting Agriculture. (3) To consider and report to the Government upon any matter affecting agriculture seeming to the Board to need consideration or action. (4) To be the channel of communication between any Branch of the Department and the Government. (5) To receive the annual estimates of the different Branches, to consider, to alter if necessary, and to confirm them, and to forward them to the Government, together with estimates for its own expenditure. The Chairman of the Board should be the accounting officer for the direct expenditure of the Board; and some member of the present Staff of the Department under the Director of Public Gardens should be the Clerk in charge of the accounts. (6) To make its own annual report to the Government, and to forward to the Government the Reports of the subordinate Branches of the Department, either separately or incorporated with its own report." Dr. Morris concurs in all this and a great deal more, for instance :—"The Departments and Agencies to be brought into immediate organic relation with the Board, and to have their work more or less combined under the Board for Agricultural purposes are :—(1) The Department of Public Gardens. (2) The Government Laboratory. (3) The Agricultural Society. (4) The Experiment and Teaching Station to be created at the Hope University College though not a Department will require to be brought into close relations with the Experiment and Teaching Station. The management of the Teaching Station should be under the general control of the Board, but the detailed carrying out of plans should be under the direction of a body to be called 'The Station Committee.' This Committee should consist of :—(1) The Director of Public Gardens. (2) The Principal of University College. (3) The Agricultural Chemist. (4) The member of the Board nominated by the Agricultural Society. (5) Any other specially qualified person whom the Board, after receiving the advice of the Station Committee, may appoint."

HOW TO REDUCE THE CEYLON TEA CROP:

A PRACTICAL SUGGESTION.

March 10.

Sir,—With reference to "Tea Farmer"'s letter (see page 708) I beg to put before you a scheme for curtailing our crop by 10 per cent. *without* resorting to the need of letting our estates "lie fallow," etc., and, moreover, one which will affect all growers equally.

In short the idea is to raise the present "cess" to one or two cents per lb. and utilize the revenue secured to pay for the tea withdrawn from export or sale locally.

(1) For argument, say, the output is 100 million lb. for 1900.

(2) Prices are supposed to have "touched bottom," *i.e.*, are only equal to cost of production.

(3) Granted that a shortage of 10 per cent. will *more* than raise the average price a like amount, when

(4) No further expense for "booming" Ceylon tea will be necessary.

Now, the present "cess" at one-fifth cent per lb. on 100 million lb. produces R200,000 revenue; and at one cent per lb. do. R1,000,000 do.

This would purchase—

3 million lb. tea	at	33⅓	cents	per lb.	
4	do	do	25	do	do
5	do	do	20	do	do

and, should we submit to two cents per lb. cess, would purchase six, eight or ten million lb. per annum.

Each estate would be obliged to provide for sale, at the price fixed, an *average* break assessed as regards quantity by the "Thirty Committee," C.P.A., and the tea so secured would be destroyed or used as manure at their discretion.

The total intermediate loss to the producer would be about three cents per lb., but the nett ultimate gain—granting that the above conditions (1 to 4) hold good—would be five to ten cents per lb. at the end of the year.

The above may or may not be practicable, but it is, I believe, an original theory and could be put to the test if the condition of the Tea Industry becomes desperate.—I am, yours truly,

PLANTER.

CEYLON TEA EXPORTS: CAN THEY BE REDUCED?

A correspondent puts forward (see above) an original and, possibly, practical —though, we fear, not practicable—scheme for reducing the total export of tea. Theoretically, there is not a great deal to be said against it; it raises the "cess," it is true, but the extra charge will, according to "supply and demand", find its way back in to the pockets of the producer, in the shape of an extra 5 to 6 cents a lb. at the end of the year! This would be a correct enough method of arguing, if only the details of the scheme had to be considered *per se*. But there are inevitable and, we feel certain, insuperable objections:—

(1.) Small as the present tea-cess is, there are murmurings beginning to be heard against its imposition at all. The work accomplished by means of the Cess Fund, it is argued, has gone so far, that it can go on now by itself without further commissions and commissioners. We do not share this opinion, but it exists; and the wholesale raising of the cess would meet with instant opposition.

(2.) It is not likely that the Ceylon planters will produce tea with the off-chance of its being destroyed or used as manure!

(3.) If Ceylon, by a united effort, agreed to any such monster—we will not say "monstrous"—plan, is there any guarantee that India will not step in and increase supplies by an opposite kind of effort; and the whole machinery of raising prices will be instantly upset? We believe there is none, and that the "putting to the test" of "Supply and Demand"'s scheme would be considered far too hazardous an experiment ever to receive a trial.

Passing to the wider question of tea-producing as affected by the rise in the tea-duty, we find it is the belief locally that the producer must suffer considerably, owing to the accumulation of stocks in the hands of big buyers, stocks accumulated in anticipation of the extra 2d. From arrivals from home today, however, we learn that several brokers in London had been giving their opinion that the market would right itself very shortly after the new duty was fixed. The big buyers might play their game for a few weeks; but the balance would soon be regained and prices resume their equilibrium, on the higher plane created by the extra duty. For ourselves we do not foresee any long-standing danger to the tea-growing industry, following on the larger Customs levy. That there will come a period when the lowest of low prices will be reached and awhile maintained, we may well believe; but the tea industry has passed through worse crises before and should weather this as successfully as the rest.

INDIAN TEA ASSOCIATION: SCIENCE AND PLANTING.

Calcutta, 27th Feb. 1900.

Extracts of Proceedings of a Meeting of the General Committee held this day:—

Present:—Mr. H. C. Begg (Vice-Chairman), Mr. G. G. Anderson, Mr. W. Brown, Mr. G. Kingsley, Mr. G. A. Ormiston, Mr. M. R. Quin, Mr. A. Tocher, Mr. R. R. Toynbee, and Mr. T. Traill.

SCIENTIFIC OFFICER.—Enclosed with Mr. Tye's letter, dated 9th February, was a copy of a letter dated 5th February from Dr. J. Augustus Voelcker, Consulting Chemist to the Royal Agricultural Society of England, regarding this appointment. In this letter it was stated that the gentleman selected by Dr. Voelcker for the post was Mr. Harold B. Mann, B.Sc. (Victoria University), F.I.C. Mr. Mann was formerly a student at the Yorkshire College, Leeds, and took his B.Sc. degree at Victoria University, (Owen's College, Manchester), with first class honours in 1892. He became Le Blanc Medallist in the same year. Mr. Mann subsequently gained a Research Scholarship of the Commissioners of the 1851 Exhibition and went to Paris, studying fermentation at the Pasteur Institute under Professor Duclaux. He had subsequently been employed by the Royal Agricultural Society of England. His appointment was strongly recommended by Dr. Voelcker. It was understood that the London Committee had appointed Mr. Mann to the post, and the arrangements to be made on his arrival were now considered.

Considered letter, dated 19th February, from Messrs. Duncan Brothers & Co., regarding the refusal of the Conference Liners to pay claims for loss or damage which occurs in their hands in the case of tea in metal packages. Messrs. Duncan Brothers & Co. considered that the Liners were not entitled to condemn all metal chests in this way, and they suggested that the point should be kept in view when the time arrived for any new Steamer Agreement. The Committee agreed with Messrs. Duncan Brothers & Co. that the Liners were not entitled to condemn metal chests in the manner indicated. They did not, however, see their way to take action beyond drawing the attention of the London Committee to the point in view of any future new agreement with the Conference.

Considered note, dated 10th February, by the Chairman regarding the provision of samples of Indian Tea for exhibition in the Economic Court of the Indian Museum. This subject was last referred to in the proceedings of the meeting of the Committee held on 1st August. The arrangement then suggested, whereby a representative collection of samples from the several Tea producing districts should be exhibited, had been carried out by the Committee. It appeared, however, from more recent correspondence with Dr. Watt, the Reporter on Economic Products to the Government of India, that this did not meet his requirements. He had informed the Chairman that he desired to have for the Court—(1) Samples from all, or as many as possible, of the gardens of the chief Agency Houses. (2) Tea chests of all descriptions—Country-made, Japanese, Swedish, &c. (3) Models of machinery of all available types. Dr. Watt

proposed to group the gardens of each Agency House together ; and to label each sample with the names of its garden, and of the garden Agents.

Before taking any action in the direction of asking members of the Association to supply samples upon this system, the Committee directed the Secretary to ascertain from Dr. Watt an approximate idea of the number he had space for. They rather inclined to the opinion that the space required for samples from all the gardens of the chief Agency Houses might be greater than Dr. Watt anticipated.—*Indian Planters' Gazette*, March 3rd.

THE PROSPECTS OF TEA :

CONSUMPTION IN FOREIGN COUNTRIES. THE CHECK ON OVER-PRODUCTION AND LOW PRICES—? "A TRUST."

The London merchant, largely interested in Indian tea, whom we have already quoted, (see page 669) writes on 23rd February :—"I duly received your letter of 14th December written on board the 'Rome.' We can only await developments of foreign consumptions. There is no doubt whatever a tendency among certain French people, where they are brought into close touch with the English or are influenced by the fashionable tendency to ape English ways, to make use of tea ; but the French are a very conservative people, and it seems to me that the tea habit is foreign to their ways and therefore unlikely ever to become a prominent factor in their national life. I have been in pretty close touch with the various movements made in the last twenty years by the Indian tea people to promote a greater consumption of tea in Paris, and so far I can only characterise the business as practically of no mercantile importance.

"As to the immigrants from the United Kingdom into the United States not having continued the traditions of their fathers, I must say I am not at one with you in tracing the reason for this. The climate to my mind explains a great deal, and the character of the tea consumed follows fairly well-defined geographical lines. In New England and all the older states there has always been a fair consumption of black tea, and the people there have followed the other Anglo-Saxon people in passing more or less gradually from one black tea to another, that is China has been displaced by the Indians and Ceylons. Japan tea has made its way largely from the western seaboard since the opening up of the various routes of trans-continental railroad, and it has made a business for itself quite independent of the old black tea trade. There is no doubt that some people in California and the States nearer the West may have been induced to drink Japan whose parents or who themselves, prior to emigration, had used old-fashioned China teas in the home country ; but you must recollect that the consumption per head of tea in the old country fifty years ago was very low in comparison with the present figure, and more on a level with the present figure in the United States. You must bear in mind that the term English breakfast tea is merely an inclusive title for all black teas, and was in use as descriptive of China congo before any Indian or Ceylon teas were imported, and although the two latter teas have been gaining ground in America, it has been principally because of the displacement of China tea; and I must say I am doubtful whether there has actually been any increase of recent years within the United States itself in the use of black teas.

"As to Russian duty, your argument that a reduction in the rate would lead to the use of better,* tea is not justified by what has happened elsewhere. At present Russia consumes largely of the very finest tea the world produces. Canada, where there is no duty, and the United States, where the duty is recent and probably temporary, take the filthiest rubbish the law will allow to enter. Great Britain, where the duty is a very small one, takes lower and commoner tea all the time, the rage for cheapness and not for quality seeming to pervade the whole life of the people.

"The existing Associations in London of Tea Producers have so far achieved little but trouble. Had we not had a vast over-production of tea in both India and Ceylon many of the grievances that are made so much of, would never have been felt, and I think those Tea Associations would have served a much more useful purpose had they endeavoured to pass 10 years ago a self-denying ordinance as to increased acreage,† instead of checking things at the fountain head in that way, they have made repeated trouble for the distributive section of the trade whom they affect to regard as their natural enemies, while they really are their best friends. It is all very well to try to eliminate the middleman, and in the tea trade a good many such have been effectually abolished, so that producers and retail distributors are very closely brought together indeed now. What is the result? The powerful retailers are combining in a way that the old-fashioned dealers never could have combined, and I see very little hope for the future of tea production unless it is all forced into one gigantic Trust on the model of recent industrial developments in the United States."

COCHIN MARKET REPORT.

Cochin, 10th March.

C. N. Oil.—Some contracts were placed in the bazaar in the early part of the week at R87 to R87/8 per candy but latterly rates dropped and the market closes today rather weak at R87 with ready sellers for prompt delivery.

Coir Yarn.—A moderate demand exists for weaving qualities, for shipment to Europe. There is also some enquiry for shipment to Calcutta. Rates may be quoted at R35/60 per candy.

Coprah.—Rassi—R52/53 per candy.—*Cochin Argus*, March 10th.

* Our idea was better Ceylon tea for the rich classes and a larger quantity of ordinary teas for the middle classes.—Ed. *T.A.*

† Our correspondent should remember that the worst sinner in this respect was a great proprietor or capitalist interested in Indian tea estates, who some years ago showed in print, a vast field for extending tea consumption in Europe and America, as justifying a large extension of planting in Ceylon and Southern India.—Ed. *T.A.*

CEYLON COCONUT PALM INDUSTRY AND EXPORTS:

PAST, PRESENT AND FUTURE.

In reviewing the exports of coconut palm produce for last year, we calculated that they represented a falling-off of the equivalent of about 59 million nuts, as compared with 1898; and that represented in value about 1¾ million rupees. We are not surprised, therefore, that the Horrekelly [Coconut Estates] Company, which declared a dividend of six per cent for 1898, was able to divide only five per cent among its shareholders for 1899. As good coconut property is believed to yield larger returns than are indicated by these dividends, we gather from the summary of proceedings sent to us for publication, that the Directors are to consider whether means cannot be adopted by better manuring, to increase the yield of the plantation. Meanwhile, we observe that there has been an improvement in the exports during the past two months; and we have been making inquiries to ascertain whether this improvement generally, can be expected to continue, with the result noted down as follows for the information of our readers.

In the first place, no safe deduction, can be made from the figures for the first two months of the year. The prices offered for nuts and copra at the end of last year were not such as to favour large transactious; and with the season of short crops on, holders were not in a hurry to part with what they had in hand. Then the South African War had a disturbing effect on trade generally, and on the freight market in particular. Much of the coconut produce sent forward, so far, this year probably represents last year's crop; and it will not be safe to calculate on a continuance of the excess over last year's figures which the export tables shew. The decrease last year, as compared with the previous year, was largely due to the two droughts in February-March and June-July, which told seriously on crops. But the effects of those rainless months are indicated only partially in last year's outturn of crop. This year's crops, too, must show a falling-off, as it takes almost a year for a nut to set and mature; and the effects of the June-July drought will be felt in the crops to be picked till the middle of this year. To add to the trouble, the North-East rains have been scanty, and complaints are rife of the severity of the drought now prevailing towards the Madampe and other coconut growing districts. Under these circumstances we fear, not only that no excess over last year's outturn of coconut palm produce is to be expected; but even that there will be a positive falling-off from the not too satisfactory exports of last year—unless young plantations just coming into bearing add materially to the year's outturn of crop. It is of interest to note the increase over last year which the exports for the past two and half months show. To take the figures up to 12th instant,—of coconut oil there has been sent away as much as 90,572 cwts, which is in excess of the quantity shown in any of the three years past, and nearly treble that for 1897. So with copra: 87,901 cwt is close upon double the figures for the last two years which witnessed a revival of the trade, and nearly nine times the exports for the corresponding period of 1897. High prices ruling for copra explain the rapid pushing forward of supplies. In desiccated coconut, however, there is a decrease of about 78,000 lb. compared with the same date (12th March) of 1899, when 1,781,790 lb. were sent off; but this quantity is 358,849 lb. less than that for 1898. Coconuts in the shell, too, for which high prices prevail, number over 1,872,000 against 1,120,000 exported last year, and nearly 1,733,000 in the year before. If our apprehension that this year's crop of coconuts will fall short of last year's crop prove true, better prices than last year's should prevail, if the demand, as is likely, continues brisk. —Since the foregoing was written we have cheering accounts of a break in the drought; but we fear much damage to crops has already been done, especially in the Northern Districts.

THE USE OF NETTLE FIBRE.

The American Consul at Glauchau (Germany) reports that nettle fibre has of late come greatly into favour in the manufacture of fine yarns and tissues. In Germany, there are factories which use these fibres both in spinning and also for ulterior purposes. In nettle-spinning alone, over 10,000 spindles and some hundred workmen are employed. The raw material is imported almost exclusively from China, whence 661,500 to 802,000 pounds are annually sent to Germany. Nettle fibre produces one of the finest tissues obtainable from any known kind of vegetable fibre, and in view of the importance which this seems likely to attain in connection with the weaving industries, it is intended to introduce the cultivation of nettles, if possible, into the Cameroons. The idea is to prepare the products of this experimental culture at the place where they are obtained, and test them in German factories. Should favourable results follow from these experiments, it is intended to organise nettle-growing enterprises on an extensive scale.—*Indian Review* March.)

Planting and the Indian Currency.—Mr. John Logan, in the *Madras Mail*, backs up Mr. R. H. Elliot as to the evil effects on planting (coffee especially) of the new currency. Here is the comparison:—

Land went up to fabulous prices, as high as R200 per acre being given at public auction for forest land. Prices were good and money flowed freely into the country, and the revenue went up by leaps and bounds. In the labour market, the demand was far in excess of the supply, which was scarce and dear. This happened before our Government began to tinker with the currency. What is the obverse of the picture now after we have had four or five years of a sound and stable currency? Prices of land and produce have gone down lower than they have been for years. I have seen good land sold at less than R5 per acre. Labour has been so plentiful that the best Canarese coolies have been driven from the door, and of course, is cheaper. The coffee industry in the hands of the natives has collapsed, while the voice of the rich sowcar is silent in the land.

ROEBERRY TEA CO. OF CEYLON, LD.

THE ANNUAL REPORT.

ACREAGE.

Tea in bearing	...	542 acres
Planted in 1896	..	127¼ „
Do. 1897	..	40 „
		709¼
Cardamoms	..	4
		713¼ acres in cultivation.

The Directors have now to submit their Fourth Annual Report and accounts, being those for the year ending 31st December, 1899. The yield of Tea during the period has been 179,176 lb. costing 30·32 cent per lb. as against 30·94 cents last year, and realizing 40·46 cents as against 39·94 for the same period.

On a reference to the accounts it will be seen that the sum at credit of Profit and Loss Account, including the sum brought forward from last year, is R9,541·15 after allowing for Depreciation on Factory and Machinery; and out of this sum the Directors recommend that a dividend at the rate of 3 per cent be declared, absorbing R9,000·00 leaving a sum of R541·15 to be carried forward to the current year.

Crop has again been short owing to excessive drought, the rains having been late in setting in after the dry season, but it is hoped, with increased plucking from the young Tea now coming into bearing, 200 000 lb. may be secured during season 1900.

Mr. W Sandys Thomas visited the Estates on 18th, and 19th December last, and found things generally in a satisfactory condition.

The retiring Director is Mr. E Hamilton, who is eligible for re-election.

The appointment of an Auditor for the current year rests with the meeting.

CEYLON PROVINCIAL ESTATES CO., LD.

THE ANNUAL REPORT.

The directors have the pleasure to present their Report for the ear ended 31st December 1899 together with a statement of Acconnts for the same period, which have been duly audited.

The season has been a favourable one for the growth of leaf, and the crop has amounted to 488,904 lb of Tea as compared with 430,951 lb last year. This is considerably in excess of the Estimate, and shows an average yield of 560 lb per acre in bearing.

Prices, too, have been well maintained, and the average is 44·62 cents per lb against 42·73 last year.

The cost of production has at the same time been moderate and works out at 24·35 cents per lb which includes 2·25 cents per lb for expenditure on manuring oprations. Last year the cost was 26·10 cents including 1·50 cents for manure.

The Working Account closes with a surplus over expenditure of R103,221·09 as against R76,371·16 last year.

Out of this an interim dividend amounting to R19,980 at 3 per cent has been paid, and R15,000 has been absorbed in paying off £1,000 from the Glassaugh Mortgage in order to get permission to remove the Factory and Machinery from that division of the property to Aadneven where the new Factory for Glassaugh is now situated. Interest on Mortgages amounts to R9,900 15, and after providing for Bonus to Superintendents and other items, there is a final balance of R51,227·66 standing at credit of Profit and Loss Account.

On the other hand, it will be seen by the Balance Sheet that our liquid Assets, or available funds amount to only R33,887·03. The difference is accounted for by the capital and mortage money having been insufficient, to the extent of R17,340·63, to provide for the extension and improvements to property of late years.

The Directors recommend, therefore, that a final dividend of 5 per cent be declared, making a total of 8 per cent for the year. This will absorb R33,300, leaving R587·03 to be carried forward to next season, besides placing the above mentioned sum of R17,340·63 to Extension account which, with the capital and mortgage money, now equals the amount locked up in property, etc. It is to be observed, however, that, had it not been for the stipulation of the Glassaugh Mortgagee about the old Factory on that Estate, we should have been able to make a dividend of 10 per cent for the year, and something over.

The balance of £5,000 due on the Glassaugh Mortgage has been replaced by a new Mortgage for R75,000 resulting in advantages to the Company.

The Estates are reported to be in excellent order and although Blights have been prevalent at certain periods of the year, the crops show that their attacks have not, so far at all events, affected the yeld or impaired the vitality of the bushes.

The Estimates for the new season point to a yield of 455,000 lb of tea costing 26·70 cents to produce, and this expenditure includes a liberal allowance for manure and cultivation generally.

A fresh survey has been made of Brownlow, with the result as given below. Glassaugh has also been surveyed, but particulars have not yet been received.

		Glassaugh.	Brownlow.
Tea in bearing	..	426½ acres	423 acres
„ partial bearing	..	34½ „	80 „
„ young	..	40 „	— „
Total in Tea	..	501 „	503 „
Fuel Trees	..	— „	2 „
Buildings &c.	..	— „	7 „
Forest	..	14 „	33 „
Grass land	..	2 „	27 „
Scrub and Waste	...	15 „	13 „
Total	...	532 acres	585 acres

Mr. Anderson retires from the Board on this occasion in terms of the Articles of Association and is eligible for re-election.

The appointment of an Auditor for 1900 rests with the Meeting.

THE CEYLON TEA AND COCONUT ESTATES COMPANY, LIMITED.

THE ANNUAL REPORT.

ACREAGE :

TEA.—In bearing	..	265 acres.
In partial bearing		165 „
		430 acres.
Coconuts	..	558 „
Rubber	..	35 „
Grass, Forest and chena	..	213 „
Cinnamon	..	21 „
	Total...	1,257 „

The Directors have now to submit to the shareholders the accounts for the past year.

TEA DIVISION.—The crop secured amounted to 78,933 lb., being about 29,000 lb. under the estimate which is accounted for by the very dry season that has effected most of the estates in the district, and part of the tea having been attacked by Grey Blight (though no permanent damage has been done by it) necessitated the pruning down of about 70 acres, which was not estimated for. The nett average price realised was cents 36·43 against cents 37·34 in 1898.

COCONUT DIVISION.—This crop was over 200,000 nuts short of the estimate, entirely owing to the unusually dry season. The total crop gathered during 1899 was 541,912 nuts, of which 1,460 were sold on the estate at the average of R30 per thousand nuts. The remainder were made into copra—candies 421-0 2-8, and sold at a nett average of R44·20 per candy, as compared with 493 candies in 1898 which, realised an average of R44·76.

During 1899 the Directors considered it advisable to enlarge the withering accommodation of the factory, in consequence of the increased quantity of leaf anticipated this year, and for the same reason they have also purchased a new Rapid Roller and a large Down-Draft Sirocco.

The estimates for this year are. Tea, 184,000 lb. against an expenditure on working account of R42,518·50, which includes the purchase of 80,000 lb., green leaf from other estates. Coconuts,—600,000 nuts on an expenditure of R14,100. These estimates include R7,180 to be expended on manuring.

After making the usual provision for depreciation of buildings and machinery, the result of the year's working shows a loss of R5,993·30.

Messrs. W H Figg & J A Henderson having resigned their seats on the Board, Messrs. G H Alston & H Tarrant were appointed to fill the vacancies.

In terms of the Articles of Association, Mr. G H Alston retires from the Board of Directors, but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting

THE UNION ESTATES COMPANY OF CEYLON, LIMITED.

THE ANNUAL REPORT.

Acreage.

	Tea in full bearing.	Tea not in bearing.	Cocoa.	Cardamoms.	Total Cultivated.	Grass, Jungle and Waste Land.	Total.
Hayes Group	518	3	—	25	546	1,665	2,211
Dea Ella ..	248	—	91	—	339	147	486
	766	3	91	25	885	1,812	2,697

The Directors now submit to the Shareholders the accounts of the Company for the past year.

From the 1st September the Directors arranged for a four years' lease of Longford estate, which is 256 acres in extent, 142 acres of which are under tea. The terms arranged are that this Company undertakes to pay from time to time as they fall due, the assessments due by Longford estate for the construction of the Anningkande-Hayes road, which amount to R2,841·11, or say a little over R700 per annum.

This estate has for many years been managed by the Superintendent of Hayes and its tea manufactured at Hayes Factory at a price which left a fair profit to the Company. Had the estate passed into other hands this profit would have been lost, which at the above rental will still be earned by the Company.

The tea crops secured amounted to 82,330 lb. (including 18,332 lb. purchased leaf) on Dea Ella, 219,778 lb. on Hayes, and 12,963 lb. on Longford during four months, while 9,641 lb. and 32,469 lb. were manufactured for other estates. The average prices realized were 36 cents for Dea Ella and 38·65 cents per lb. for Hayes and Longford teas, which were sold together under the Hayes mark on an all round average of 37·96 cents per lb. as against 34·32 cents in 1898. The cocoa crop on Dea Ella amounted to 95 cwts., which sold at an average of R40·25 per cwt., while the small crop of Cardamoms from Hayes realized Re. 1·12 per lb. nett.

The road to Hayes Factory has now been opened for some time and has been of great service to the estate. The plant for electrical transmission of power to the factory has worked most successfully during the year.

After writing off to coast advance reserve account the sum of R1,500 as a provision for doubtful advances and the sum of R165·07 for bad debts, and transferring to depreciation account on the usual scale, the sum of R10,306·91, (which is equal to 3·22 per cent on the capital of the Company,) the nett profit for the year amounted to R11,456·76, equal to 3·58 per cent on the capital of the Company, To this has to be added the balance of R275·39 brought forward from last year and R86·71 surplus over estimated proceeds of crop unsold at end of 1898.

In view of the amount still owing to the bank the Directors regret that they cannot recommend the payment of a dividend, but would suggest that R10,000 be transferred to an extension fund account and the balance of R1,818·86 carried forward to the current year's accounts.

Capital expenditure during 1899 amounted to R8,268·57, of which R4,054·62 was expended on completion of electrical transmission installation and the balance on the upkeep of acreages not in bearing, and on necessary additions to Machinery and Buildings.

Crops for the current year are estimated at 366,000 lb. tea, 120 cwts. cocoa and 200 lb. cardamoms, on an expenditure of R111,855 29, while expenditure on capital account is estimated at R3,500, principally on upkeep of acreage not in bearing and the erection of new lines on Hayes Estate.

In terms of the articles of Association Mr. W. D. Gibbon now retires from the office of Director, but is eligible for re-election.

The appointment of an auditor for the current year rests with the meeting.

THE ESTATES COMPANY OF UVA, LD.

THE ANNUAL REPORT.

CREAGE :

	Tea in full bearing.	Tea in partial bearing.	Tea not in bearing.	Total Tea.	Other Products.	Timber, Grass, Forest and Waste land.	Total.
Dammeria Group	515	60	29	04	30	556	1190
Battawatte and Forest Hill	413	178	..	591	..	164	755
Gampaha	455	78	57	590	45	231	866
	1383	316	86	1785	75	951	2811

The Directors now submit to the Shareholders the accounts of the Company for the past year.

The crops secured were as follows, 530,695 lb. tea, 495 bushels coffee, about 143 lb. cardamoms and 54 cwt. cocoa. During the year 54,891 lb. tea were manufactured for other estates on Gampaha, while it was necessary, owing to want of withering space, to manufacture elsewhere 8,590 lb. of Battawatte tea. The new withering house on Battawatte is now completed and there is ample space to deal with the crops for some time to come. The cart road through this estate is now finished, and difficulties of transport are in consequence considerably lightened.

After writing off for depreciation of buildings and machinery on the usual scale the sum of R17,638·19 (equal to 2·48 per cent on the capital of the Company), and a small irrecoverable coast advance of R24·33, the profit for the year was R24,519·05, equal to 3·45 per cent on the Capital of the Company. There falls to be added to this the balance brought forward from 1898, R9,842 10, and a surplus of R43·89 over the estimated proceeds of produce unsold at the end of 1898. The Directors recommend the payment of a dividend of 3 per cent for the year, and that the balance of R13,090 04 be carried forward to the current season's account.

During 1899 the expenditure on Capital Account amounted to R29,753·03; the erection of the new withering house on Battawatte cost R15,581·34, the contribution on account of the construction of Forest Hill cart road amounted to R4,053·84, and the balance was expended on the opening of 15 acres on Gampaha, the upkeep of acreage not in bearing and on small additions to the buildings and machinery and erection of new lines.

The crops for the current year are estimated at 581,000 lb. Tea, 50 bushels Coffee, 60 cwts. Cocoa and 150 lb. Cardamoms on an expenditure of R181,417·85.

The expenditure estimated on Capital Account is R12,853 for upkeep of acreage not in bearing and additions to machinery and buildings.

During the past year Mr. W H Figg resigned his seat on the Board and Mr. F G A Lane was elected to the vacancy.

In terms of the Articles of Association Mr. G H Alston now retires from the office of Director, but is eligible for re-election.

The appointment of an Auditor for the current year will rest with the meeting.

UVAKELLIE TEA CO. OF CEYLON, LD.

ANNUAL GENERAL MEETING.

THE REPORT.

The Directors have now to submit their Report and Accounts for the year ending 31st December, 1899

The crop amounted to 152,660 lb. tea, costing 26 82 cts. per lb. against 138,995 lb, costing 30·82 cts. in 1898; the profit on the Working Account being equal to 9·30 per cent on the Capital of the Company.

After estimating the unsold tea at a safe figure, the crop has realized 41·67 cts. per lb. against 45·10 cts. in 1898.

After paying an interim Dividend of 3 per cent and writing off 7½ per cent for Depreciation on Buildings and Machinery, the profit amounts to R12,287·30, and the Directors recommend that this amount be disposed of as follows:—

That a final dividend be paid of 4 per cent (making 7 per cent for the year) absorbing ..	R9,600·00
That a sum be carried to Reserve, of	2,000·00
That a Bonus be paid to the Superintendent, of	500·00
and that the balance of .. ... be carried forward.	187·30
	R12,287·30

The Estimate for the current year is 155,000 lb. tea to cost R47,045·16.

In terms of the Articles of Association Mr. W D Gibbon retires from the Board, but being eligible, offers himself for re-election. It will also be necessary to appoint an Auditor for 1900.

BRAZIL COFFEE NOTES.

The continued rains throughout the coffee districts have greatly benefited the growing crop. The ripening of the fruit from the abnormally early flowering is being delayed, and the general condition of the crop is said to be much improved.

Telegrams from Paris on the 23rd and 24th state that the French government will impose double duties on Brazilian coffee, should this country impose special duties on French products. A tariff as destructive to the interests of both countries, would therefore appear to be imminent.—*Rio News*, Jan. 15.

PLANTING NOTES.

THE "AGRICULTURAL LEDGER."—1899—No. II. Xylia Dolabriformis. (Iron-wood of Pegu). A Revision of the article on that subject as given in the Dictionary of Economic Products, with special reference to the timber, and the employment of the refuse wood as a tanning material. —received.

JAVA TEA.—An Amsterdam circular by this mail gives the total sales of Java tea there during 1899 at 5,293,770 half.kilograms (1 1-10 lb.) at an average of 37¾ cents (of a florin) per half-kilogram. This is equivalent to 5,823,147 lb. and the average to about 34¼ cents, or say a little over 8d, per lb.—The imports in 1899 seem to have been rather less than in 1898. A certain quantity is still taken of "China tea": a merely trifling quantity of "British-Indian" tea.

TEA PLANTED AND EXPORTS.—Our figures in article on page 697, require a little supplementing, in order to make the comparison more instructive. In 1888, of 183,000 acres planted, about 81,000 would not be in bearing or under three years; in 1893, of a total of 273,000, about 53,000 not in bearing; in 1899, of estimated area of 375,000 acres, say 45,000 acres not in bearing.

CACAO PROSPECTS.—In his report on the London market (see page 676) Mr. Hamel Smith speaks of "increasing cultivation in Africa' which will give crop this year sufficient to cover an increasing demand. Now, we should like to know more exactly where cacao cultivation is being systematically and extendingly carried on in Africa? There may be a very little in Nyassaland, Uganda and German Eas Africa; but we take it the West Coast is meant; and yet we cannot suppose Congo land, or any British dependency is seeing much cacao planted?

PARA RUBBER.—Exports of rubber from Para were valued at £7,600,000 for 1897 and £7,7000,000 in 1898. For 1899 they are likely to have reached £8,000,000 or about £14 per head, a rate equalled but by very few other countries and probably excelled by none—not even the Australian colonies or Uruguay. The *Brazilian Review* remarks:—In a country that produces so much with so, comparative, little labour there must be plenty of money to spend and even to waste. So if there are any young and enterprising men in search of a Golconda so long as they don't mind the heat or a little feverishness they can't do better than try Para and if they don't make their pile it must be because they "have not the method of making a fortune."

TEA CROPS AND THE INCREASED TEA DUTY.—Says "*Indian Gardening*":—"Any fear of the future could only arise from an increase in production, which we see no reason to apprehend. In the year just past the exceptionally favourable season in Cachar, Sylhet and the Dooars accounted for the unexpected increase in production, those districts being responsible for nearly the whole of the eleven million pounds of surplus. But the fact that the last season was an exceptionally favourable one relieves us from the anxiety that the districts named will again improve on these figures. They will do well if they equal them. Assam has been practically stationary for the last two seasons at 62 to 64 million pounds. Her estimates have been accurate and we may accept them. The other districts may be disregarded; they cannot do very much towards upsetting the figures. Therefore we think there is every reason to conclude that the Indian tea crop has reached its limit for the present, and the increase of the duty will no doubt make planters chary of extending cultivation or entering upon any operations which will increase the load on the British market. At present figures we may consider ourselves safe. Ceylon, we notice, has estimated for an increase of 8,000,000 lb., which they trust to work off. It is possible that the increased duty may interfere with their anticipation, and we trust that their foreign markets propaganda will be unusually successful to relieve the British market of their surplus."

AN ELEPHANT INQUEST IN LONDON.

Last Sunday afternoon (Feb. 18), while a concert was being held at the Crystal Palace, an elephant belonging to a circus which had been performing there broke from its fastenings and killed its keeper. It then brushed through various partitions of wood and glass, and appeared in the main building, where a great number of persons were listening to the music. It did not attempt to hurt any of the crowd, though it broke off with its trunk the uplifted arm of a statue, probably under the idea that this represented a man about to strike. After some time it allowed itself to be secured by another elephant. It was then decided to kill the animal, and after a dose of poison had failed, a London gunmaker was sent for as executioner and shot the animal dead.

On the following Wednesday an inquest was held on the body of the man. If it had been one of the trials of animals held by jurists in the middle Ages for the exhibition of legal subtlety, the evidence in favour of the elephant could not have been more clearly put. Mr. Sanger, its owner, admitted that the animal had once before killed a former keeper; and he gave the facts which led to the death of the second. The facts speak for themselves. The first man had been discharged by Mr. Sanger fifteen months previously for gross brutality to the animals. He came back and asked to be employed again. This was granted, and he was taken on, not as a keeper, but as a labourer. The very first time he went into the stable the elephant, though it was quite dark at the time, instantly recognised the man's voice and

AT ONCE CRUSHED HIM TO DEATH

against the stall. That the creature had acted only in a panic of horror at the reappearance of a tormentor was so well established at the previous inquest that it was retained in the menagerie. It was exceptionally docile, and was taken through towns and villages all over England. Why then did he kill the second keeper? Because this man, after his Sunday dinner, declared that he would "pay out" the elephant for striking him with its trunk. He actually took a lance, one of those taken from the Arabs in the Soudan. (Those who have seen the trophies taken from the Mahdi's followers, now kept in the United Service Institution, will realise what a horrible weapon this was.) Followed by another keeper also armed with a lance, he proceeded to "prod,' —*i.e.*, pierce the chained elephant. The tortured creature after backing as far as it could, "at length rushed forward to escape the lance, broke its chains, threw down the keeper and trampled on him." If the elephant had been a man and had been put on his trial afterwards, would it be too much to anticipate that the verdict would have been one of justifiable homicide? All these facts, it is worth remembering, were sworn to on oath, They leave a very unpleasant impression as to the management of the "elephant herd" in this country. It is perfectly clear that the animal was in each case influenced by resentment caused by the cruelty of one individual. Male elephants, apart from their occasional attacks of frenzy, are not as unaccountably docile and submissive as the females, and most accidents which do occur in their long lives are due to the gradual forgetfulness of this difference of sex and temper by men who are so accustomed to witnessing the unhesitating obedience of the one that they make too great demands on the forbearance of the other. At the present time the Indian Government, with the exception of a few males kept for parade, only employs female elephants for this reason; even so it is believed that the pay or pensions of mahouts is calculated with reference to the conviction that they pursue

A DANGEROUS TRADE.

The native princes, on the contrary, keep male elephants in large numbers for purposes of State, and it is among the attendants of these animals that "accidents" most commonly happen. Experience, as well as common report, which declares that every elephant kills a mahout in its lifetime, shows that in far the greater number of cases the person attacked is the animal's own attendant. This at first sight seems a contradiction to the general behaviour of animals in captivity, or even in domestication. Generally speaking, they are specially attached to the person who feeds them and gives them exercise, and if disposed to be savage, vent their anger on strangers. There are a few instances on record of horses attacking their grooms, but this, as a rule, is only because the attendant happened to be the only person near when the animal was in a bad temper. The only domestic animals which habitually attack their attendants are the bulls kept for stock-breeding in England, which are responsible for most intentional homicides caused by animals in this country.

The grounds for the ill-will which the elephant often harbours towards its Indian mahout lie partly in the animal's temperament, partly in the character of these men. As most elephants behave with propriety to their drivers, we must believe that either the greater number of the mahouts do their duty by the beasts, or that the latter are exceptionally forgiving. But there must be more than mere hearsay in the general belief that the mahouts commonly steal and appropriate a very large part of the elephant's allowance of food, that they are in consequence often half-starved and hungry, and that the men use their steel-hooked and spiked "ankus" in a very merciless way on animals which are often not in condition to do the work which is set them. As the

COST OF AN ELEPHANT'S KEEP

is from £4 to £8 per month, in proportion to the food given him a proportion and quality which is fixed in reference to the work to be done, the margin for stealing is very great, being reckoned between the minimum necessary to keep the animal alive on low diet, and that required for keeping him in fine condition on the march in a campaign, when he is allowed extra rations, and even a bottle of rum per diem. No other animal is clever enough to know that overwork and underfeeding are probably caused by the direct agency of the man who maintains him. But it is pretty certain that the extraordinary intelligence of the elephant does enable it to put two and two together, and to conclude that the person who gives him little food ought not to punish him for not being up to his work. In any case the elephant bears no gratitude to the man who, if he can, gives him starvation rations, and is his daily slave-driver; and as long as native usage holds that "the driver and three generations of his family shall live on the beast he is paid to nourish" it must be expected that the animal will occasionally try the experiment as to whether the next generation can possibly be worse than its present tormentor. It is sometimes forgotten that an elephant may live for seventy or eighty years, or even longer, in the service of man, and that in the unchanging East he may, through this long life, be farmed as

a kind of property by the same family of mahouts; that the brutality of the father, if he be a brute, is learnt by the children and grandchildren, and that, if the wretched elephant is in bad hands, he has to put up with practically two of our working lives of ill-treatment and semi-starvation. The wonder is, not that its temper occasionally goes amiss, but that it does not "break out" oftener. The inference is that the *natural* temper of the elephant is almost the best and most easy going of that of any beast. All Hindoo traditions and folk-lore agree in this. The elephant is the type of *bonhomie* and easy geniality. It is this belief which encourages its "public" to take liberties with it on which they would venture with no other animal whatever. Perhaps the gentlest of our giant domestic animals are the big shire horses. But no one would expect them to lie down on being pressed with a sharp-pointed goad, or to do work on insufficient food, when ridden and managed by a creature no longer in proportion to their bulk than a monkey, armed with a sharp and painful weapon. Yet the shire horse has no memory for injuries and is at least as docile in his way as the elephant.

There is no doubt that the

POWER OF MEMORY

which the elephant possesses beyond all other beasts, and of reasoning, in which it is supreme, makes its ill-treatment especially dangerous, a danger which is only mitigated, but not removed, by its good nature and extreme patience. Though no one imagines that our English elephant herd is half-starved by the white attendants there is no doubt that these men do not infrequently incur the ill-will of their charges. By long familiarity and constant control the men gradually forget that the creature has a will of its own, and that it has both memory and a power of resentment. They also seem to lose all consciousness of the enormous strength of the beast they manage. Many of the men come to regard them as being as much under control as a traction engine, which only needs the turning on or off of taps to make it advance or recede. As a rule, their only instrument of discipline is a whip; but with this and plenty of shouting and scolding they can "get on the nerves" of an elephant very effectively. In a circus, and it is always in circuses and travelling menageries that these accidents occur, the men who attend the elephants often ride them in performances, and make them perform tricks. A good deal of hurry, some roughness, and occasional punishment are inevitable in these performances, all of which the animal carefully remembers. One day it has a fit of temper, or turns sulky—they will sulk for hours—and then the keeper is attacked. Circus elephants have also a trick of killing people "accidentally." By a movement backwards, or to one side, they will quietly jam a man up against the wall of a stable or a shed. One of the elephants at Olympia did this some years ago, and the first keeper killed by "Charlie" met his fate in this way. It should also be remembered that the elephant is one of the most nervous of all beasts, that one at the Zoo died of sheer fright caused by a thunderstorm, and that a highly nervous temperament of this kind may easily be worked into a frenzy by excitement following ill-treatment. But this is not the fault of elephant temper.—*Spectator*, Feb. 24.

CINNAMON: THE LONDON QUARTERLY SALE.

The news to hand by mail touching the first quarterly sale of cinnamon this year in London must be very cheering to proprietors of estates. While tea is having its weekly ups and downs, cinnamon seems to be holding its own, if not actually forging ahead, notwithstanding unprecedentedly large shipments. During a visit of a couple of days to the Southern Province and a drive of some 20 miles in the country inland between Galle and Dodanduwa, we were greatly surprised to see how freely cinnamon cultivation is being maintained and extended; and the experienced manager of Baddegama assured us that an annual rent of from R25 to R30 an acre can now be got for cinnamon gardens which perhaps had so far not cost more that R50 in outlay per acre. We saw, when reviewing the exports for last year, what immense strides the spice had taken, both in quills and chips, excluding altogether from consideration the wretched fraud separately catalogued as wild cinnamon; and we expressed a natural fear lest heavy shipments coupled with the disturbance which adulteration and spurious spice might create, might lead to a fall in prices. That our apprehensions were rather wide of the mark, we learnt by wire three weeks ago, when a steady market with better prices for fine qualities, and a slight fall for inferior bark, was reported. The information brought by the mail is even more satisfactory than the commercial telegram foreshadowed.

The quantity of plantation spice offered was 1,650 bales, or about the same quantity as in February last year, when the catalogues showed 1,649 bales. We regret to find this comparison omitted in the Report we append; but the usual form has had to be varied in more particulars thon one. The natural objection of shippers to their carefully made up bales being undone in London, and re-baled at two or three times the cost of sorting, baling and stencilling here, has led to a great deal of cinnamon being described in the catalogues as "unworked" in London. A further distinction has had to be introduced between "plantation" and "wild" spice; and to find space for these changes, there have been omissions, which we regret, in particulars referring to previous sales. The Report which we published last December on the November auctions, did not distinguish between plantation and wild spice, but merely informed us that the offerings were 4,450 bales of both sorts—an unprecedentedly large catalogue. Of this immense quantity, the proportion of genuine spice was by no means small; and although as much as 1,200 bales of this were cleared in the room, the tone of the sales was reported dull. It is not a little then that, with a full average quantity, the sale last month should have gone off well, the leading marks fetching late rates, and "A S G P" realising exceptionally high prices. This mark represents Golua Pokuna Estate in the Kadirane District, whose produce, under excellent management, has always topped the market; but from 1s 6d to 1s 9d per lb for the first three qualities is

quite a record, and must recall old times. Last November, when "worked" cinnamon of fine quality was in small supply, 1s 5d to 1s 8d were the highest prices, and they were satisfactory; while in February, 1899, the prices were 1s 2d to 1s 5d. So that the figures obtained last month may well be described as exceptional. Nor had "unworked" spice cause to complain, considering the fullness of the offerings. The prices they realised, and the quantity that found buyers in the room, point to the continuance of the demand for good honest spice, as heavy sales are frequently effected after the auctions. Even more satisfactory than the top prices obtained for fine bark, is the news that there was no demand for what is aptly described as "wild rubbish." The last was the second public auction at which wild cinnamon (if such it is) was neglected; and we trust soon to hear that there has been a cessation of disturbing shipments of what is veritable rubbish. How anything fetching 1½d to 1¾d per lb can pay shippers, we fail to see; but care will have to be taken by local buyers that "wild" spice, failing to command a market as such, is not mixed with plantation spice, and an outlet be found for it in that way; It is to be noted that, though the Chamber of Commerce gives no quotation for wild spice, exports have not altogether ceased yet, and last week saw a shipment of chips to the United Kingdom.

We quote as follows from the Report of Messrs. Forbes, Forbes & Co., Ltd. on the February sale:—

CINNAMON.

London, 27th February, 1900.

The first series of public auctions of the year took place yesterday, when about 1,650 bales Ceylon plantation were offered, together with about 1,500 bales wild Ceylon, and a large quantity of low bark &c. The supply of plantation quill was in excess of demand, about half only finding buyers.

The "worked" spice 150 bales met good competition, and the leading marks averaged late rates, except the fine quill A.S.G.P. in estate mark, some lots of which realised exceptionally high prices. The 1,500 bales "unworked" ordinary to medium sorts met a fair demand, some 700 bales being sold at prices, on the whole rather in favour of buyers. "Worked" firsts 1s 5d to 1s 9d; seconds 1s 3d to 1s 7d; thirds 1s 1d to 1s 6d; fourths 8½d to 11½d per lb. "Unworked" firsts 9d to 1s 2d; seconds 8d to 11½d; thirds 6d to 11d; and fourths 4d to 9½d per lb. For the "wild" rubbish there was no demand, a few bales only being sold at 1½d to 1¾d per lb. Of 4,600 packages wild bark, and chips about 1,700 bags sold, wild at 1d to 1½d; middling to good chips 2¼d to 4d and quillings up to 10½d per lb.

Stocks of Ceylon 4,109 bales against in 1899 5,239; in 1898 4,193 and in 1897 2,700 bales. There are 2,871 bales of "wild" Ceylon in warehouses. Of wild chips bark &c., 10,067 packages, and ordinary chips 2,736 bags.

The next sales will be held on 28th May.

Planting in the Cape Colony.—The Forestry Department is undertaking the planting of Conifers for timber. At present a quarter of a million is annually paid for imported wood, mostly coniferous.—*Gardeners' Chronicle*, Mar. 3.

SALE OF ESTATES.

PITA RATMALIE GROUP OF ESTATES, HAPUTALE, PURCHASED BY CEYLON TEA PLANTATIONS CO., LTD., FOR £40,000.

The name of Colonel Lillie was "familiar as a household word" among the early proprietors of estates in Ceylon. Like so many other military officers on the spot, he in the "thirties" and "forties" picked up some choice land between Kandy and Ramboda: but he also later, through his agents, secured a very valuable block in Haputale which became known as the "Pita Ratmalie and Pitarat Lillie estates," covering 1,603 acres in all. The management was for many years in the hands of "Dick Wyllie" and latterly of Mr. A. L. Kirk. Of course, the worthy proprietor, Colonel Lillie, has long been dead and his property out here has been held by trustees, for whom Messrs. Geo. Steuart & Co. are agents. Besides the Haputale estates just sold, they still hold Nayapane estate in the Pussellawa district.

It is an extensive investment, the purchase money being stated at £40,000 and will afford scope for some of the reserve money of this prosperous Company. The bargain would seem to be a good one for the Company, even if the large area of coffee is not regarded as a stable industry; for the total figures are given as follows:—

Tea	.. ...	466 acres.
Coffee	.. ..	294 „
Grass and Timber	..	35 „
Jungle	.. ..	808 „
Total	..	1,603 acres.

The tea is very good, and the large reserve of jungle is described as of fine soil, high elevation (5,000 feet and upwards) and most of it well sheltered, so that it alone ought to be worth a considerable proportion of the purchase money. If the coffee is in good heart and can be kept up by liberal cultivation and attention to enemies (now chiefly "bug" we suppose) the purchase may at once give some good crops to the Company. In any case this transaction indicates much confidence in the future of our staple, tea, and of high-grown tea in particular. We congratulate Mr. H. K. Rutherford, as Managing Director of the C.T.P. Company, on this latest addition to its properties.

Experiments in the Growth of Sugar Beet.—At a recent meeting of the Sugar Beet Committee of the Central Chamber of Agriculture, Colonel Victor Milward, M P in the chair, it was decided to make arrangements for a series of not less than 20 experiments in the growth of sugar beet in different parts of Great Britain and Ireland during the forthcoming season, each experimental plot to be at least one acre in extent. It is proposed that of the 20 experiments about 12 should be in England, four in Scotland, and four in Ireland. As in certain cases previous experiments have demonstrated the value of sugar beet for the feeding of stock, independently of the value of the root for the manufacture of sugar this point will be specially kept in view in connexion with the proposed experiments of the present year,—London *Times*, Feb. 23.

Correspondence.

To the Editor.

TEA CULTIVATION AND MANURE.

DEAR SIR,—Where do you get tea estates upcountry formed out of "virgin soil" except perhaps "High Forests"? There can only be about *100* acres of such *soil* on Loolecondera. It was, as a whole, long before planted in coffee.* In the lowcountry, of course, there are estates that fulfil these conditions and have been some time now in tea—sixteen years at any rate—such as Kanangama in Dehiowita, in the Kelani Valley. Mr. Taylor of Loolecondera, told his friends, of whom I was one, that manuring only gave increased crops in the ratio of what the land naturally gave when first opened. An estate that never paid from its commencement without manure, would never pay by the application of manure, for such application would be costly and give no remunerative return. *Ex nihilo nihil fit.*

My impression is, and I know it is shared by others, that tea planted in new clearings now, with the best seed available, does not give so quick or so good returns, as young tea planted, say ten or twelve years ago.

It is quite possible that Mr. Fraser's imitators will not get the same returns from their manuring as he did—though no doubt he will give them the best advice possible—because he commenced manuring trees that had been planted with tea seed in its prime, and the atmosphere was not poisoned by the immense area of tea now planted all over Ceylon taking up the same ingredients in their cultivation and throwing out the same excreta and gases.

I met an intelligent planter the other day, who told me that he had been recommended to bury his prunings, because by leaving them on the surface he lost in three prunings what could only be given him by an ordinary manuring. He said: "Well, my estate soil is alive with white ants. They will soon eat all my prunings and migrate elsewhere: don't they take the chemical ingredients of my prunings with them, and may they not in the laboratory of their stomachs evolve poisonous excreta that will produce some beastliness on my tea that may affect its price, or my bushes that may affect the bearing?" "My dear friend," said I, "get Mr. Bamber's opinion on the subject; let him analyse your prunings, your white ants, previous to and after gorging on your prunings, and mention my name, so that the fees you will have to pay the worthy Analyst will be credited against my guarantee."

Is it the case that the wily planter, now that he has from the P.A. in Mr. Kelway Bamber's pamphlet the analyses of the soils on typical estates and Mr. Bamber's prescription for the manure needed for such estates, is quite satisfied to use such manure, and so Mr. Kelway Bamber's "occupation is gone" as a soil analyst? ! OLD HAND.

[Surely "Old Hand" will admit that the whole of the tea in the Nuwara Eliya and Kandapola districts was planted direct on forest-land—so with a great deal in Upper Dimbula, Upper Dikoya and Maskeliya, and what about Balangoda? In fact, there are few districts, even in the Central Province, where some reserves of "forest" have not been planted within the tea era.—ED. *T.A.*]

* The old tea on Loolcondera, to which reference only is made, always means the 100 acres field.—ED. *T.A.*

THE NEW TEA DUTY AND PLANTERS.

DEAR SIR,—So 2d. extra tea duty is to be our war burden. The producer can ill afford it, let it be shared by the consumer and the dealers. Instead of manuring let the growers allow to lie fallow for a year a quarter of the cultivated area, and we shall then bring down on their bended knees, the wily blenders and mammoth dealers. Knock down our export 20,000,000 lb. instead of raising it 30,000,000 by manure and 10d will be the Ceylon average.—Yours truly,

TEA FARMER.

[Most satisfactory of results; but who is to nock down the export—or rather the "manuring"? "Who will bell the cat" by declaring who may, and who may not indulge in Manure? !—ED. *T.A.*]

THE NEED OF ADVERTISING ALL ESTATES FOR SALE.

Upcountry, March 16.

SIR,—How is it that the fact of large estates in Ceylon being for sale is sometimes, kept so quiet, in place of being generally and freely advertised? We all remember Lipton's great bargain in getting poor Downall's estates from Messrs, Antony Gibbs by private negotiation, for £25,000—when, had the places been advertised, there were those in Ceylon at the time who could raise £30,000 or more to secure so fine a group. Now it is another Haputale group sold for £40,000 and I have heard one gentleman at least, who could easily have paid the amount, say "A very good bargain—had I known of the places being for sale, I should certainly have made an offer"—and perhaps a better one!—Your truly,

PUBLICITY.

RAINFALL RETURN FOR COLOMBO.

(*Supplied by the Surveyor-General.*)

	1895.	1896.	1897.	1898.	1899.	Av of 30yrs.	1900.
	Inch.	Inch	Inch	Inch	Inch.	Inch.	Inch.
January ..	5·00	2·92	3·81	2·32	6·98	3·22	3·72
February ..	0·81	0·35	1·68	1·98	2·78	1·93	0·63
March ..	1·84	5·64	3·66	4·21	0·88	4·78	0·76*
April ..	9·34	5·93	10·97	22·81	6·66	11·31	
May ..	10·09	9·31	8·30	5·80	17·73	12·09	
June ..	13·99	8·37	10·14	10·94	9·23	8·37	
July ..	0·52	2·85	5·24	6·15	1·11	4·38	
August ..	0·92	6·35	9·09	0·97	0·62	3·67	
September	4·09	10·99	4·58	6·90	1·48	5·01	
October ..	30·36	16·78	4·71	20·60	12 99	14·52	
November..	5·83	19.81	11·66	17·38	8·58	12·66	
December..	9·44	11·76	8·89	3·05	4·44	6·39	
Total..	92·23	101·06	82·73	103·11	73·48	83·33	5·11

* From 1st to 28th March 0·76 inch, that is up to 9·30 a.m. on 29th March.—ED. *T.A.*

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS OF FEB. 1900.—We append the Monthly Return of rain from which it will be seen that the highest fall in February, was at Haldummulla in the Uva Province, 9·90 inches and the lowest at Madawachchiya in the North Central, and Ambanpitiya in Sabaragamuwa, 0·03 inches.

WESTERN PROVINCE.

Negombo, Mr. Bucknall (6) ... Nil
Kalutara Mr. Gregson (36) ... 2·80
Labugama, Mr. Bond (369) ... 5·19
Henaratgoda, Mr. Silva (33) .. 1·16

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,500) ... 0·71
New Valley, (Dikoya) Mr. Ward (3,700) .. 2·44
Helboda (Pussellawa) Not received (3,300) .. —
Yarrow Estate, Mr. Peto (3,400) ... 0·72
Peradeniya Mr. MacMillan (1,540) ... 2·16
Duckwari, Mr. Edwin (3,300) ... 0·37
Caledonia, Not received (4,273) .. —
Pussellawa, Mr. Powell (3,000) .. 0·50
Hakgala, Mr. Nock (5,581) ... 0·97
S. Wanarajah Estate, Mr. Tatham (3,700) .. 3·70
Padupola, Mr. Ward .. (1,636) ... 0·44
Mylapitiya, Mr. Fletcher (1,707) ... Nil

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) .. 2·00
Jaffna Mr. Kretser (8) Nil
Mankulam, (N. Road) Mr. Walker (167) ... Nil
Elephant Pass, Mr Silva (7) .. Nil
Vangalachettykulam, Mr. Oorloff (179) .. Nil
Point Pedro, Mr. Ropes (24) ... Nil
Jaffna College, Mr. Cooke (9) ... Nil
Kayts, Mr. Kretser .. (8) .. 0·07
Kankesanturai, Mr. .. Pararachasingha (10).. Nil
Pallai, Mr. Silva (24) .. Nil
Murikandy, (North-Central Road) Mr. Silva — Nil
Nedunkeni, Mr. Sanmukam (122) ... Nil
Chavakachcheri, Mr. Silva (16) ... Nil
Udupiddi, Mr. Hastings (35) .. Nil
Marichchukaddi, Mr. Thambitharampillay (14) 0·65
Murungan, Mr. Ramalinkam (52) 0·87
Vavuniya Mr. Walker (318) Nil

SOUTHERN PROVINCE.

Ella Vella Mr. Caldicott (262) 9·07
Kekanadura, do (150) 4·08
Denagama, do (286) 4·90
Uudukiriwila Mr. Lourensz (235) .. 1·69
Kirama, Not received (260) —
Hali-ela Mr. Caldicott (200) 7·40
Tissa Mr. Peries (75) .. 0·78
Matara Mr. Caldicott (15) 2·05
Dandeniya, do (167) .. 1·54

Urubokka, Mr. Caldicott (890) Nil
Tang lla Mr. Fox (94) .. 1·43
Mamadola, Mr. Cade (56) .. 0·56

EASTERN PROVINCE.

Irrakkamam, Mr. Bower (42) ... 7·70
Devilana, Mr. Vanderstraaten (136) 2·00
Sagamata, Mr. Bower (40) ... 2·45
Ambare, do (65) 5·74
Kanthalai, Mr. Carte (150) 0·53
Allai, Mr. Carte (95) 1·21
Rukam, Mr. Vanderstraaten (120) ... 3·21
Periyakulam, Mr. Carte (20) ... Nil
Chadaiyantalawa, Mr. Edge (57) 4·26
Kalmunai, do (12) 1·30
Rotewewa, do (30) 2·72
Lahugala, do (70) 1·20
Naulla, do (30) 2·30
Andankulam, Mr. Carte (41) ... 0·53
Manalpuddy, Mr. Vanderstraaten (21) 3·30
Maha-Oya-Tank, Mr. Vanderstraaten (190) 6·14

N.-W. PROVINCE.

Magalawewa, Mr. Dassanaiyake (176) .. Nil
Maha Uswewa tank, Mr. Crabbe (160) ... Nil
Tenepitiya, Mr. Churchill (8) ... 1·30
Batalagoda, Mr. Madakapola — Nil

N.-C. PROVINCE.

Kalawewa, Mr. Emerson (268) 0·50
Maradankadawala, Mr. Emesron (443) ... 1·69
Mihintale, Mr MacBride (354) .. Nil
Horowapotana, Mr. MacBride (217) . 0·70
Madawachchiya, Mr. MacBride (285) .. 0·03
Topare, Mr. Jayewardane (200) .. 0·73
Minneriya Mr. Eves — 0·87

UVA PROVINCE.

Bandarawela, Mr. Tocke (4,000) .. 1·43
Haldummulla, Mr. Viramuttu (3,160) .. 9·90
Kumbukan, Mr. Devasagain (446) ... 0·17
Koslanda, Mr. Rowland (2,258) ... 3·84
Tanamalwila, Not received (550) .. —
Bibile, Mr. Silva (680) 6·12
Taldena, Mr. Fernando (1,100) .. Nil
Allutnuwara—Mr. Leembriggen (300) 2·59

SABARAGAMUWA.

Ambanpitiya, Mr. Dassanayaka (729) 0·03
Pelmadulla, Mr. Clarke (408) 7·95
Kolonna Korale (Hulanda-oya) Mr. Dabre (203) 1·53
Avisawella, Mr. Jeffery (105) — 2·80

S. G. O. METEOROLOGICAL OBSERVATIONS FOR NOVEMBER, 1899.

The following is the return of the total fall of rain for November, from which it will be seen that the highest fall was at Kobnella Estate, Rangalla, 24·00 inches, and the lowest at Sandringham, Agrapatana 3·80 inches.

Colombo (40) 8·58
Ratnapura (84) 14·23
Puttalam (27) 11·09
Anuradhapura (295) 11·33
Mannar (12) 16·11
Jaffna 9 9·23
Trincomalee (12) 14·99
Batticaloa (26) 16·92
Hambantota (50) 5·70
Galle (48) 6·80
Kandy (1,654) 4·88
Nuwara Eliya (6,188) 5·96
Hakgala, Nuwara Eliya (5,581) 9·08
Badulla (2,225) 9·97
Kurunegala (381) 4·66
Maligakanda, Colombo Mr. Johnson (70) 6·91
Agricultural School Colombo, Mr. Rodrigo ... —
Passara Hospital, Passara (Mr. Thomasz) 2,200 8·33
Welhelmina, Puttalam, Mr. Ratnayake (131) ..
Horakele Estate, Chilaw, Mr. Beven (50) 4·70
Chilaw Kachcheri Chilaw, Mr Koch (10) ...
Franklands Estate —
Veyangoda, Mr. Beven 8·13
Orange Hill, Ragama Mr. Bury (50) 15·81
Henaratgoda Gardens, Henaratgoda, Mr. de Silva (33) 15·52
Kotua Godella, Rambukana Mr. Windus (580) ..
Eadella or Liberia Estate Polgahawela Mr. Craighead (425) 4·93
Geekianakanda, Neboda Mr. Towgood (200) ..
Polgahakanda, Neboda Mr. Wight (300) 11·37
Labugama, Hanwella, Mr. Bond (369) 15·69
Rayigam, Horana, Mr. Dawson, (300) 7·97
Kanangma, Avissawella Mr. Cooke (200) 8·88
Dunedin Estate, Avissawella, Mr. Bayley, (400) 10·05
Digalla Avisawella, Mr. Tottenham, (400) 6·50
Pamhagama, Avisawella, Mr. Bridgman (600) 9·63
Avisawella Estate Avisawella Mr. Byrde (250) 13·33
Yatideriya, Kegalla, Mr. Fairweather — 9·01
Mahawalatenna, Balangoda Mahawalatenna R. M. -- 5·55
Agarsland Estate Balangoda Mr. Boyd (2,215) ..
Maduwanwala, Rakwana, Maduwanwela R.M. (750) 7·24
Anninkanda, Morawaka, Mr. Anderson, (1,400) 12·66
Panilkanda, Morawaka, Mr. Davidson, (1,900) 9·88
St. John Del Rey, Bogawantalawa Mr. Glanville (4,300) 9·09
Friedland, Bogawantalawa Mr. Rammell (5,200) 7·41
Campion, Bogawantalawa, Mr. Gidden, (4,810) 6·62
Blair Athol, Dikoya, Mr. Lane (3,641) 5·44
Annfield, Dikoya, Mr. Knight (4,300) 6·13
Maskeliya Hospital, Maskeliya Dr. Brohier (4,200) 6·59
Hope Estate, Hewaheta, Mr. Bagot (5,000) 10·14
Coldstream Estate, Watawala Mr. Spedding (3,300) 9·19

Holmwood Est., Agrapatana, Mr. Gray (5,240) 6·01
Sandringham, Agrapatana Mr. Orchard (5,200) 3·80
Gingran-oya, Kotmale, Mr. Cox (3,800) 6·54
Labookelle, Ramboda, Mr. Stone (5,000) 12·56
Dunsinane, Pundalu-oya, Mr. Metcalfe 4,300 7·97
Sogama, Pussellawa, Mr. Eustace (3,500) 7·70
Kurundu-oya, Maturata, Mr. Corbetta (5,150) 16·64
Kabaragalla, Maturata, Mr. Maclean (4,400) 12·90
Maragalla Estate, Moopana, Mr. Betts, (2,200) 9·53
Mupana, Hospital, Mupana (Mr. Sela) (500) 7·53
Madulsima Hospital Lunugala Dr. Vethecan (2,600) 12·94
Meeriabedda, Haputale, Mr. Dupuis (3,600) 11·97
Udahena Estate, Haputale, Mr. Bisset, (4,400) 11·60
Haputale Hospital Haputale Mr. VanRooyen (4800) 10·0
Post Office, Bandarawela, Mr. Mendis (4,033) 5·18
Callander, Ohiya Mr. Green (5,125) ...
Mariawatte, Gampola Mr. Salmond (1,600) 8·36
Orwell Estate, Gampola Mr. Taylor (1,800) 9·10
New Forest, Deltota, Mr. Wardrop (3,500) 11·66
Rajawella, Estate, Teldeniya Mr. Miller, (1,500) ..
Lower Spring Valley, Badulla Mr. Rettie (3,650) 10·18
Gonrakele Estate, Badulla Mr. Hope (4,200) 7·90
Mousagala Estate, Badulla, Mr. Deaker (4,500) 7·54
Ledgerwatte, Badulla Mr. Rettie (4,000) 21·72
Hambegamuwa Tank, Badulla (RanbandaKorala) ... 6·13
Dea Ella Estate, M'walatenna Mr. Vandersloot (800) 5·69
Sembawatte Estate, N'pitiya Mr. Roe (1,600) 10·09
Gammaduwa, Estate, Rattota Mr. Westland (2,400) 17·56
Kobonella Estate, Rangala, Mr. Pole (3,800) 24·00
St. Martins, Rangala, Mr. Wyllie (3,600) ...
Crystal Hill, Matale, Mr. Van Starrex (1,400) 10·94
Vicarton Estate, Matale Mr. Carrie (3,250) 9·73
Matale Mr. Tisseverasinghe (1,208) 8·36
Wariapolla, Matale, Mr. Dickenson (1,200) ...
Dambulla, Mr. Sinnetamby (400) 6·39
Kotta Estate, Pallai, Mr. Todd (13) 12·54
Mantota Hospital, Mannar, Mr. Adams (17) 17·92
Buttala Hospital, Buttala, Mr. Som sundaram — 5·42
Police Station, Hatton Police Constable, Miskin (1,141) 7·14
Medway Estate Nilaveli, Mr. Abraham, .. 13·99
Delwita, Kurunegala Mr. Neame (490) ...
Woodside, Uragalla Mr. MacMahon (3,000) 13·81
Gillardstown, Wattegama Mr. Hardy (2,500) 7·82
Ja-ela Hospital, Ja-ela Mr. Fernando (4) 12·62

SHARE LIST.

— —

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions.
Agra Ouvah Estates Co., Ltd.	500	900	—	900
Ceylon Tea and Coconut Estates	500	—	950 n'l	..
Castlereagh Tea Co., Ltd.	100	—	90	90
Ceylon Hills Estates Co., Ltd.	100	—	—	..
Ceylon Provincial Estates Co.	500	480	..	480
Claremont Estates Co., Ltd.	100	..	..	—
Clunes Tea Co., Ltd.	100	—	—	..
Clyde Estates Co., Ltd.	100	—	—	..
Doomoo Tea Co., Ltd.	100	60	—	—
Drayton Estate Co., Ltd.	100	..	150	..
Ella Tea Co., of Ceylon, Ltd.	100	—	65	65
Estates Co., of Uva, Ltd.	500	220	250	..
Gangawatta	500	...	..	—
Glasgow Estate Co., Ltd.	500	905	910	905
Great Western Tea Co.,	500	...	640	..
Hapugahalande Tea Estate Co.	200	—	..	..
High Forests Estates Co., Ltd	500	—	—	525
Do -part paid	350	...	400	—
Horekelly Estates Co., Ltd.	100	...	—	..
Kalutara Co., Ltd.	500	..		—
Kandyan Hills Co., Ltd.	100	65	67·50	.
Kanapediwatte Ltd.	100	...	..	90
Kelani Tea Garden Co., Ltd.	100	40	..	..
Kirklees Estates Co., Ltd.	100	—	..	—
Knavesmire Estates Co., Ltd.	100	60	70	—
Maha Uva Estates Co., Ltd	500	..	425	400 xd
Mocha Tea Co., of Ceylon, Ltd.	500	600	—	600
Nahavilla Estate Co., Ltd.	500	—	450	...
Neboda Tea., Co. Ltd	500	..	500	—
Nyassaland Coffee Co. Ltd.	100	—	—	..
Ottery Estate Co., Ltd.	100	—	—	—
Palmerston Tea Co., Ltd.	500	—	400	...
Penrhos Estates Co., Ltd.	100	—	97·50	..
Pine Hill Estate Co., Ltd.	60	40	—	..
itakanda Tea Company	500	..	—	..
Putupaula Tea Co., Ltd.	100	—	120	—
Ratwatte Cocoa Co., Ltd.	500	—	—	..
Rayigam Tea Co., Ltd.	100	—	60	—
Roeberry Tea Co., Ltd.	100	..	45	—
Ruanwella Tea Co., Ltd.	100	—	40	..
St. Heliers Tea Co., Ltd.	500	500	—	..
Talgaswela Tea Co., Ltd.	100	27·50	30	30
Do 7 per cent. Prefs.	100	...	..	..
Tonacombe Estate Co., Ltd.	500	—	450	—
Udabage Estate Co., Ltd.	100	..	—	—
Udugama Tea & Timber Co., Ltd.	50	5	10	..
Union Estate Co., Ltd.	500	—	275	—
Upper Maskeliya Estate Co., Ltd.	500	..	475	475
Uvakellie Tea Co., of Ceylon, Ltd.	100	—	70	...
Vogan Tea Co., Ltd.	100	..	83	..
Wanarajah Tea Co., Ltd.	500	1086	..	..
Yataderiya Tea Co., Ltd.	100	—	395	..

CEYLON COMMERCIAL COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions.
Adam's Peak Hotel Co., Ltd.	100	—	—	..
Bristol Hotel Co., Ltd.	100	76	—	...
Do 7 per cent Debts	100	105	—	—
Ceylon Gen. Steam Navgtn. Co., Ltd.	100	210	212,50	—
Colombo Apothecaries Co., Ltd	100	142·50	145	..
Colombo Assembly Rooms Co., Ltd.	20	12·50	..	..
Do prefs.	20	—	..	..
Colombo Fort Land and Building Co., Ltd.	100	85	..	...
Colombo Hotels Company	100	297·50	—	295
Galle Face Hotel Co., Ltd.	100	150	..	..
Kandy Hotels Co., Ltd.	100	..	117·50	117·50
Kandy Stations Hotels Co.	100	..	30	—
Mount Lavinia Hotels Co., Ltd.	150	150	200	..
New Colombo Ice Co., Ltd.	100	175	—	177.50
Nuwara Eliya Hotels Co., Ltd.	100	27½	30	..
Public Hall Co., Ltd.	20	15	—	—
Petroleum Storage Co.	100	—	—	—
Do 10 % prefs.	100	—	...	—

LONDON COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Alliance Tea Co., of Ceylon,	10	8½	—	..
Anglo Ceylon General Estates Co.	100	—	35—40	..
Associated Estates Co., of Ceylon	10	—	3—5	...
Do. 6 per cent prefs.	10	..	7½	..
Ceylon Proprietary Co.	1	...	12·6—17 6	..
Ceylon Tea Plantation Co.,	10	..	24½—25½	—
Dimbula Valley Co.,	5	..	5½—6	—
Do prefs.	5	..	..	—
Eastern Produce and Estates Co.	5	...	5½—6	...
Ederapolla Tea Co.,	10	...	7—8	..
Imperial Tea Estates	10	...	5—6	..
Kelani Valley Tea Asscn.	5	..	5—6	..
Kintyre Estates Co.,	10	7½	7—9	..
Lanka Plantation Co.,	10	4½	4—5	..
Nahalma Estates Co.,	1	—	¼—¾	..
New Dimbula Co.,	1	—	2½—3	..
Nuwara Eliya Tea Estate Co.	10	...	—	
Ouvah Coffee Co.,	10	7	—	..
Ragalla Tea Estates Co.,	10	—	10	..
Scottish Ceylon Tea Co.,	10	—	14—15	.
Spring Valley Tea Co.,	10	3	4—5	..
Standard Tea Co.,	6	—	11—12	..
The Shell Transport and Trading Company,	100	—	—	—
Yatiyantota Ceylon Tea Co.,	10	—	8—9	..
Yatiyantota pref. 6 o/o	10	10	—	..

BY ORDER OF THE COMMITTEE.

Colombo, March 30th, 1900

Latest London Prices.

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, March 27th, 1900.

COFFEE :—	
Estate Parchment per bushel	None offering
Chetty do do	None offering
Native Coffee per cwt.	None offering
do F. O. B per cwt.	None offering
Liberian coffee:—per bushel	R4 00 to 4·50
do cleaned coffee:—per cwt	R22·00 to 24·00
Cocoa unpicked:—per cwt	None offering
do cleaned do	None offering
Cardamoms Malabar per lb	R00·90 to 1·00
do Mysore do	R1·60 to 1·75
RICE :—	
Soolai per bag of 164 lb. nett	R9·10 to 9·30
Slate or 1st quality:—per bushel	R3·40 to 3·44
Soolai 2 & 3rd. do do	R3·32 to 3·38
Coast Calunda	R3·90 to 4·00 Scarce
Coast Kara	R3·80 to 3·87 do
Kazala	R3·30 to 3·33
Muttusamba Ordinary	R3·87 to 4·25
Cinnamon per lb No 1 to 4	R00·54
do do 1 to 2	R00·64 to 00·66
do Chips per candy	R90·00 to 95·00
Coconuts Ordinary per thousand	R35·00 to 38·00
do Selected do	R36·00 to 39·00
Coconut Oil per cwt	R14·37½ to 14·75
do do F. O. B. per ton	R287·50 to 295·00
POONAC :—	
Gingelly per ton	R120·00 to 125·00
Coconut Chekku do	R85·00 to 87·50
do Mill (retail) do	R80·00 to 82·50
Cotton Seed per ton	R82·50 to 85·00
Copra per candy	
Kalpitiya do	R44 00 to 45·50
Marawilla do	R44·00 to 45·25
Cart Copra do	R38·00 to 43·00
Satinwood per cubic feet.	R2 00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R28·00 to 30·00
Palmyra do do	R5·00 to 15·50
Jaffna Black Cleaned per cwt	R15·50
do mixed do	R12·50 to 13·00
Indian do	R8·00 to 13·50
do Cleaned do	R10·00 to 15·50
Sapanwood per ton	R55·00 to 58·00
Kerosene oil American per cases	R8·00 to 8·25
do bulk Russian per tin	R3·35 to 3·40
do Russian per cases	R6·90 to 7·12
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R23·00 to 28·00
Kapok cleaned f o b per cwt	R24·00
do uncleaned do	R5·50
Plumbago per ton, according to grade: Large lumps	R500·00 to 1000·00
do	R400·00 to 900·00
Chips	R225·00 to 650·00
Dust	R100·00 to 500·00

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo, 26th March, 1900.

Cardamoms:—
All round parcel, well bleached per lb. R1·40
Do. dull medium do. 1·10
Special assortment, 0 and 1 only do. No transactions
Seeds do. 1·40

Cinchona Bark:—
Per unit of Sulphate of Quinine 10c—For 1 to 4 o/o

Cinnamon:—
Ordinary assortment per lb. 60c.
Nos. 1 and 2 only per lb. 66c
Nos. 3 and 4 only per lb. 55c.

Cinnamon Chips:—
Per candy of 560 lb R92·50

Cocoa:—
Finest estate red; unpicked per cwt } None offering.
Medium do do ,,
Bright native, unpicked and undried ,,
Ordinary do do do ,,

Coconuts—(husked).
Selected per thousand R48·00 } Scarce.
Ordinary ,, R40·00
Smalls ,, R28·00

Coconut Cake—
Poonac in robins f. o. b. per ton R80·00
Do. in bags R65·00

Coconut (Desiccated).
Assorted all grades per lb. 13¾c

Coconut Oil—
Dealers' Oil per cwt. R14·50.
Coconut Oil in ordinary packages, f. o. b. per ton R330·00.—Sellers.

Coffee—
Plantation Estate Parchment on the spot per bus. —None offering.
Plantation Estate Coffee f.o.b. (ready) per cwt.—None offering.
Native Coffee, f.o.b per cwt.—None offering.

Citronella Oil—
Ready do per lb. 65c—In drums of 800 lbs exclusive of packages.
do do per lb. 64c do of 90 lbs

Copra—
Boat Copra per candy of 560 lb. R45·50 } Fair supply.
Calpentyn Copra do do R45·50
Cart do do do R42·00
Estate do do do R45·50

Croton Seed per cwt R25·00

Ebony—
Sound per ton at Govt. depot R175.—As per last Government Sales, Nov. 15th.
Inferior per ton at Govt. depot R120.—As per last Government sales of 15th November.

Fibres—

Coconut Bristle	No. 1	per cwt		R11·00
Do	,, 2	,,		8·00
Do mattress	,, 1	,,		2·75
Do	,, 2	,,		2·00
Coir Yarn Kogalla	,, 1 to 8			18·00
Do Colombo	,, 1 to 8			16·00
Kitool all sizes				38·00
Palmyrah				16·00

Pepper—Black per lb 28c.

Plumbago—

Large lumps	,,	per ton	R950	Sellers.
Ordinary lumps	,,	,,	900	
Chips	,,	,,	650	
Dust	,,	,,	500	
Do (Flying)			200	

Sapanwood— per ton R52
Satinwood (ordinary) per cubic ft. R2·40

Tea—	High Grown Average.	Medium Average.	Low Grown Average.
Broken Pekoe and Broken	cts	cts	cts
Orange Pekoe per lb	59	49	33
Orange Pekoe do	59	42	33
Pekoe do	43	40	31
Pekoe Souchong do	39	35	27
Pekoe Fannings do	34	29	28
Broken mixed—dust, &c. per lb	27	27	27

CEYLON EXPORTS AND DISTRIBUTION, 1899-1900.

COUNTRIES	Tea. 1900 lbs.	Tea. 1899 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.	Coconut Oil. 1900 cwts	Coconut Oil. 1899 cwts	Copra cwts.	Desiccated Coconut lb.	Poonac cwts.	Coconuts. No.	Plumbago. 1900 cwts.	Plumbago. 1899 cwts.	Ebony cwts.	Sapanwood cwts.
To U K. ..	23156737	19407336	1249	..	1249	9691	81541	151038	76100	53349	23853	7109	1105337	..	1511826	23346	27727	...	2876
,, Austria ..	2069	741	..	..	..	..	..	...	19600	2220	851	5906	525	...	.	..	14	..	480
,, Belgium ...	1880	3683	30	..	30	63	...	16200	13400	..	..	27079	...	21297	...	7519	4713	...	..
,, France ..	44276	36036	..	...	..	33	2623	58988	604	...	...	11974	2078	...	..	..	306	220	...
,, Germany ..	88349	59401	..	..	..	109	32328	139300	107976	2545	..	23114	173743	11450	155005	14347	16516	1119	856
,, Holland ..	2060	..	..	..	..	..	...	..	22400	..	..	..	35600	.	...	912	2926	...	...
,, Italy ..	1433	4440	..	..	..	...	...	24700	5600	..	205	1500	..	..	1050	...	..	45	...
,, Russia ..	1850236	449509	15	..	15	...	..	..	...	..	..	24003	..	...	159[illegible]	...	..	..	..
,, Spain ..	7470	5000	..	...	..	..	..	55000	16800	..	..	..	...	...	..	..	...	..	..
,, Sweden ..	21725	7228	..	..	..	...	560	2000	..	...	..	4403	...	..	..	105	101	...	...
,, Turkey ..	7061	5994	..	..	..	..	1000	...	..	..	..	..	...	..	..	...	..	...	...
,, India ..	151269	142017	44	..	44	..	19023	..	..	12515	8785	..	.	..	9500	69	68	..	23
,, Australia ..	3279815	3379287	523	..	523	..	..	2700	8736	21	251	..	129177	..	..	210	719	...	.
,, America ..	1328340	611056	9	..	9	278	...	101800	44800	24246	22548	..	485990	...	..	59322	50393	..	..
,, Africa ..	54598	150[illegible]8	..	..	..	..	1120	100	2408	...	..	..	9275	...	3[illegible]5245	..	..	..	...
,, China ..	179855	227948	6	...	6	62	1800	...	...	..	2194	..	13220	...	..	..	..	..	...
,, Singapore ..	17591	16585	..	..	..	405	..	..	..	...	17812	..	...	..	—	...	..	...	..
,, Mauritius ..	...	6890	..	..	..	..	...	...	..	..	..	...	...	..	...	..	...	..	...
,, Malta ..	95178	47552	..	...		..	..		.	...	...	...	..	..	..	..	..	..	...
Total export from 1st Jan. to 26th Mar. 1900	30290182	24425711	1876	..	1876	10641	140005	561826	318424	94896	76499	105088	1954945	32747	2064216	10[illegible]830	103483	1384	4235

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From Lewis & Peat's Fortnightly Prices Current, London, February 21st, 1900.

	QUALITY.	QUOTATIONS.
ALOES, Socotrine cwt.	Fair to fine dry ...	44s a 100s
Zanzibar & Hepatic ,,	Common to good ..	20s a 60s
BEES' WAX, ,,		
Zanzibar & Bombay White ,,	Good to fine	£6 a £7 10s
Zanzibar & Bombay Yellow ,,	Fair ,,	£5 15s a £7
Madagascar ,,	Dark to good palish	£6 5s a £6 12s 6d
CAMPHOR, China ,,	Fair average quality	162s 6d
Japan ,,	,, ,, ,,	170s
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 7d a 2s
Ceylon.—Mysore ,,	Fair to fine plump ..	3s 5d a 4s 1d
	Seeds	1s 6d a 2s 6d
,, Tellicherry ,,	Good to fine ..	2s 11d a 3s
	Brownish	2s 6d
,, Long ,,	Shelly to good ..	2s 11d a 4s
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4¼d
Madras ,,	..	
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	40s a 47s 6d
CINCHONA BARK.—		
Ceylon lb.	Crown, Renewed	5d a 7d
	Org. Stem	3¾d a 5½d
	Red Org. Stem	4⅜d a 5⅝d
	Renewed	5¾d a 7½d
	Root	3¾d a 4d
CINNAMON, Ceylon 1sts	Ordinary to fine quill	10d a 1s 8d
per lb. 2nds	,, ,,	9½d a 1s 5d
3rds	,, ,,	8½d a 1s 4d
4ths	,, ,,	8d a 11½d
Chips	,, ,,	2½d a 8d
CLOVES, Penang lb.	Dull to fine bright bold	5½d a 9d
Amboyna ..	Dull to fine	4½d a 5½d
Zanzibar and Pemba	Good and fine bright	4⅜d
	Common dull to fair	4d a 4¼d
Stems ..	Fair	1¾d
COCCULUS INDICUS cwt.	Fair	9s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	100s a 115s
	Middling to fine mid ..	85s a 95s
	Low mid. and low grown	75s a 82s 6d
	Smalls	55s a 75s
Native	Good ordinary	30s a 70s
Liberian ,,	Small to bold	33s a 40s
COCOA, Ceylon ,,	Bold to fine bold	85s a 95s
	Medium and fair	73s a 82s 6d
	Triage to ordinary	60s a 70s
COLOMBO ROOT ,,	Fair to good	22s 6d a 30s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair .	£17 a £20 10s
FIBRE, Brush ,,	Ord. to fine long straight	£16 a £19
Cochin ,,	Ordinary to good clean	£18 a £24
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	,, ,, very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	38s a 45s
CUTCH ,, ,,	Fair to fine dry	28s a 42s
GINGER, Bengal, rough ,,	Fair	26s
Calicut, Cut A ,,	Good to fine bold	87s 6d a 92s 6d
B & C ,,	Small and medium	35s a 72s 6d
Cochin Rough ,,	Common to fine bold	25s a 34s
	Small and D's	25s a 28s
Japan ,,	Unsplit	21s
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £20
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 2/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ...	£4 8s a £8
	,, ,, red ...	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 60s
Turkey sorts ,,		67s 6d a 85s
Ghatti ,,	Pickings to fine pale ...	12s 6d a 35s
Kurrachee ,,	Good and fine pale ...	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras ,,	Dark to fine pale ..	23s a 35s
ASSAFŒTIDA ,,	Clean fr to gd. almonds	40s a 80s
	Ord. stony and blocky	8s a 25s
KINO ,,	Fine bright	1s 6d
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	17s a 20s
siftings ,,	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 4d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 3½d
	Common to fine	1s a 2s 4d

	QUALITY.	QUOTATIONS
INDIARUBBER, (Contd).		
Java, Sing. & Penang lb.	Foul to good clean ..	8d a 3s 3½d
Mozambique ,,	Good to fine Ball ...	2s 8d a 3s 7d
	Ordinary to fair Ball..	2s a 2s 10¾d
	Low sandy Ball ..	1s 3d a 1s 7d
	Sausage, fair to good...	3s 2d a 3s 6d
	Liver and livery Ball	2s 4d a 3s 2½d
Madagascar ,,	Fr. to fine pinky & white	3s a 3s 6¼d
	Fair to good black .	2s a 2s 10¾d
	Niggers, low to fine ..	1s 4d a 2s 10d
INDIGO, E.I. ,,	Bengal—	
	Shipping mid to gd violet	3s 9d a 4s 6d
	Consuming mid. to gd.	3s 6d a 3s 8d
	Ordinary to mid.	3s 2d a 3s 5d
	Mid. to good Kurpah	2s 2d a 2s 8d
	Low to ordinary	1s 11d a 2s 1d
	Mid. to good Madras	1s 5d a 2s 6d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 4d a 1s 11d
	Pickings	1s 4d a 1s 4½d
MYRABOLANES, Madras cwt	Dark to fine pale UG	6s a 7s
	Fair Coast	5s 6d a 6s
Bombay ,,	Jubblepore	4s 3d a 7s
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	11½d a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 21s
NUX VOMICA, Bombay per cwt.	Ordinary to middling	4s a 5s 6d
Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	6s
CASSIA ,,	According to analysis	3s 6d a 4s
LEMONGRASS ,,	Good flavour & colour	2¾d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3¼d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1s 1/0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody...	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf ...	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER - (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	6½d a 6 3-16d
Singapore ...	Fair	6½d a 6 3-16d
Achcen & W. C. Penang	Dull to fine	5¼d a 5¾d
PLUMBAGO, lump cwt.	Fair to fine bright bold	55s a 60s
	Middling to good small	41s a 53s
chips ,,	Dull to fine bright ..	21s a 45s
dust ,,	Ordinary to fine bright	7s a 20s
SAFFLOWER ,,	Good to fine pinky ..	65s a 75s
	Inferior and pickings ..	40s a 60s
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £50
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay ,,	Lean to good ..	£4 a £5
Madras ,,	Good average ..	£4 a £5 nom.
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth...	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	53s a 59s
SENNA, Tinnevelly lb	Good to fine bold green	5d a 8d
	Fair middling medium	4d a 5¼d
	Common dark and small	1¼d a 3½d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's / D's and B's / Small ...	£4 a £5 5s
Mergui ,,	Small to bold ..	£6 a £8
Mussel ,,	Small to bold ...	£1 a £2 15s
TAMARINDS, Calcutta...	Mid. to fine bl'k not stony	15s a 16s
per cwt. Madras	Stony and inferior ..	7s 6d a 11s
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	15s a 23s 6d
TURMERIC, Bengal cwt.	Fair ...	30s
Madras ,,	Finger fair to fine bold bright	30s a 32s 6d
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger ..	21s
	Bulbs ...	9s a 10s 6d
VANILLOES— lb.		
Mauritius and Bourbon 1sts	Gd. crysallized 3½ a 9 in	17s 6d a 27s
2nds	Foxy & reddish 4½ a 8 ,,	17s a 24s
Scychelles 3rds	Lean and inferior ...	10s a 16s
VERMILION lb.	Fine, pure, bright ...	3s 8d
WAX, Japan, squares cwt	Good white hard ...	30s 6d a 31s

THE

AGRICULTURAL MAGAZINE,

COLOMBO

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for April:—

Vol. XI.] APRIL, 1900. [No. 10.

THE AGRICULTURAL SCHOOL.

ANNUAL PRIZE-GIVING.

On Saturday, March 31, the annual prize-giving of this institution was held in the presence of a large gathering presided over by Mr. S M Burrows, Director of Public Instruction. Much pains had been bestowed to decorate the main hall and the long corridor leading to it, and the effect presented was most pleasing. A well constructed pandal was put up at the entrance, bearing the inscription "Welcome to Mr. S M Burrows, Director of Public Instruction." Among those present were:—Lady and Miss Grenier, Mrs. Ferguson and Misses Williams and Macdougall (of Madras), Mrs C Drieberg, the Very Rev Father Collin, Rev Brothers William, Edmond and Cassian, Messrs J Harward, E Elliott, Jas Pieris, Jacob de Mel, W Arthur De Silva, Mrs North, Mr Scott Given, Mr Francis Beven, the Misses Beven and Drieberg, Dr and Mrs J B Drieberg, Mrs Bawa, Arthur Bawa, Dr Chinniah, Morgan de Saram and the Misses Bawa, Messrs B W Bawa, Allan Drieberg, the Misses Barber, Mrs H O Beven, the Misses Vanderstraaten, Mr. R H Ferguson, and many others.

Mr. Burrows called upon Mr Drieberg, the Superintendent of the School, to read

THE PRINCIPAL'S REPORT.

I have much pleasure in offering a hearty welcome to our new Director, who is present for the first time at a public function connected with this Institution.

Let it be admitted that such enthusiasm as Mr. Green (the founder of this School) showed in matters Agricultural was rare, and that the School suffered for lack of interest on the part of his successor, when it is seriously proposed to dissociate this Institution from the Educational Department. I venture to think that so sweeping a change is ill-conceived at the present time, when we have as our head one who is so eminently fitted to be Director, both of Education and Agriculture, who may be expected to avoid the mistakes which the founder of the School (like all pioneers) was bound to make, and to pursue an enlightened policy based on his experience of the country and a knowledge of the requirements of the people.

During the last few weeks, in addition to the usual annual report, I have, at the request of the Director, prepared a special memorandum dealing fully with the school, its past, present and future. But you will, I feel sure, prefer to read these documents when they appear in print, or to call for them whenever it may suit your convenience, rather than that I should take advantage of your kind presence here today to intrude them upon your attention. I shall therefore occupy very little of your time. I will not repeat the recommendations which I have from time to time offered in previous reports, for making this institution serve its object more worthily. I must say, however, that I have begun to be a little hopeful of some of these recommendations being carried into effect, if the sympathy of the head of a department counts for anything. And this is naturally a source of satisfaction after years of unsatisfied expectancy. There are, moreover, rumours of a special Committee having been appointed to deal with the school—a circumstance which is calculated to strengthen our hope that some definite measures for the good of the school will soon be decided on.

As regards numbers, our largest number on the roll last year was 22, and the average for the year 16.

These are rather below the normal: the full complement being 25 and the usual average 20. The decrease is to be attributed to the uncertainty attaching to the future of the school. Indeed, the wonder is that, under present conditions, our numbers are what they are. In India, with greater inducements for the study of agriculture, and with prospects of employment to trained students, there are instances of the attendance at agricultural classes being far more disappointing. Were we only half as fortunate as our sister institutions in India as regards financial aid, provision for a thorough course of training and inducements offered to students, the School of Agriculture will be rather a different institution to what it is.

On the results of the final examination held last November, three students became entitled to the first class certificate of merit granted by the Department.

Veterinary training continues to form part of the School course and already three old boys of the school have fully qualified as veterinary surgeons, while two others have lately been appointed stock-inspectors. The present Government Veterinary Scholar is J E Fernando—also a late student of the school—who left for Bombay at the end of last year to prosecute his studies at the Veterinary College there. He succeeded Veterinary-Surgeon Chinniah, who, with commendable enterprize, started practice in Colombo on his own account—a departure which, I believe, he has no reason to regret.

The other institutions (the existence of which few persons are aware of) located in this building are the Government Training and Practising Schools and the School of Forestry. But of these I have no excuse to say anything today. The Government Dairy, however, is more intimately connected with the School of Agriculture, and I am able to report that it has been working satisfactorily during the past year. We have now in the Dairy 82 cows, 72 calves and seven bulls, or, a total of 161 animals.

The net profit from the Dairy on last year's working was nearly R2,500, while that from the Model Farm exceeded R3,000. In addition to this a sum of R4,337 was realized by the sale of stock, principally young stock bred on the farm. The Dairy has now paid back to Government the sum of R11,500 advanced for working of the concern; over and above which it has refunded a sum of nearly R13,000. against an initial expenditure of R19,539 on buildings and equipment. But then our stock-in-trade was at the end of last year reasonably estimated to be worth R13,500, a sum which, I think, the most cautious speculator would be willing to give for it. But, while all this is very satisfactory, the School of Agriculture of which the Dairy is an offshoot, derives no advantage by the prosperity of the latter.

It is a pleasure to me to be able to count Mr. Harward among the speakers this evening. The short time he acted as Director was more than sufficient to impress us with his worth, and for his continued interest in this institution we are most grateful.

I must not omit to acknowledge our indebtedness to Mr. J W C De Soysa, who with traditional liberality, continues to present the handsome prize which the late Mr. Charles De Soysa first offered for competition among our students.

Finally, I have the pleasant duty of thanking you, ladies and gentlemen, for your encouraging presence here today, for, I say it regretfully, our friends are all too few.

The prizes weredistributed by the Chairman :—

THE PRIZE LIST.

Senior Form:—1, English, E W Jayatilleke; 2, Mathematics, G S Jayasinghe; 3, Agriculture, G S Jayasinghe; 4, Science, P C Fernando; 5, Practical Chemistry, G S Jayasinghe; 6, Veterinary, E W Jayatilleke.

Junior Form:—1, English, M D S A Wijenaike; 2, Mathematics, C S Fernando; 3, Agriculture, M D S A Wijenaike; 4, Science, M D S A Wijenaike: 5, Veterinary, C S Fernando; 6 Dairying, M D S A Wijenaike.

The following are the winners of the certificates:— E W Jayatilleke, G S Jayasinghe, P C J Fernando.

THE CHAIRMAN'S SPEECH.

The Chairman said, after some introductory remarks, that in Ceylon the very best reason for making a speech was that one practically knew nothing of the subject on which he was speaking. (Laughter.) He had been appointed on a great and awful Committee sitting to discuss the future of the Agricultural School. The Committee was composed of men whose very titles would fill them with awe, and if he divulged any of their secrets he would probably be condemned to death by sealing wax or choked to death by red tape. Therefore, his hands were tied in that direction entirely. It was impossible to say what the future of the Agricultural School would be. But he would like to say something of its past. It was the hobby of a very old friend of his—Mr. H. W. Green. Mr. Green was a man on whom the vials of criticism were freely poured. People were very ready to criticise and to show how much better they could have done a thing themselves. But there was this to say of Mr. Green—unlike certain other people, he attempted to do something. But few people realised what he had in mind, and when he started the Agricultural School people said he was trying to do an impossible thing—to improve agriculture in Ceylon! Personally, he (Mr. Burrows) did not believe it was impossible. There were various methods of doing it, and people might differ very widely as to the best methods to adopt, but the best way to set about it was to make some effort in some direction. Mr. Green did make an effort, and he deserved intense gratitude for the effort he made. And that brought him (the speaker) to the obvious conclusion that the gentleman to whom was entrusted the carrying out of Mr. Green's ideas deserved the fullest measure of praise. It was not easy to carry on an institution to which help had not always been given. The School of Agriculture, however, had not wanted the energy and perseverance of Mr. Drieberg. Those advantages had been most fully and ably offered. Mr. Drieberg could look back on the fact that he had trained 25 or 30 men who had taken to the career that was predestined for them and they were thoroughly creditable to the training they had received. Those present should all join in congratulating Mr. Drieberg most heartily upon the admirable work he had done in the school.

MR. HARWARD'S COMMENTS.

Mr. Harward said that during a short tenure of the office of Acting Director of Public Instruction, it was a great pleasure to him to be very constantly, for different reasons, within those premises. In fact he became nearly as familiar with them as with those of the Royal College. It was true he did not go there with any knowledge of the subject of Agriculture proper, nor with any ideas to suggest to the Superintendent of the School. Mr. Drieberg was, however, kind enough to go very fully into the question of what his school course was, and how the time of the students was occupied, and he had formed the idea,—and still had the idea—that so far as his opportunities went, and so far as means allowed and the existing constitution of the school admitted, he was doing his very best for it. He also received intimation from the public press and elsewhere that considerable changes were contemplated with regard to the school, and that, in fact, even a Commission was sitting, which was deliberating as to its future destiny. Of the verdict of that Commission he knew nothing, but he hoped they might regard the present state of the School of Agriculture, so far as Agriculture itself was concerned, as being in a chrysalis state, and that something further would be done for it which would enable it to put forth wings and assume the splendours of the butterfly, and let them hope, when it was in that condition also it would be associated with the able management of Mr. Drieberg. (Applause.) One thing was certain,

and that was that the School had not had a fair chance in the past. He did not mean to say there would have been anything necessarily defective in the ideas with which it was started, but funds had not been forthcoming for the full carrying out of those ideas, and changes had been introduced from time to time which had prevented the carrying out of any one consistent idea. In estimating in any way the work of that school, they must not lose sight of the fact that it had formed a centre round which a very large amount of useful work had been done in other subjects than those of Agriculture, strictly speaking, and by Mr. Rodrigo, the Manager of the Dairy, and he had no hesitation in saying, that its existence had been of very great service to the School had served as a centre, to which was to be attached a Forestry Class, which had also done excellent work. It had been of great use also to the Department of Public Instruction by providing a local habitation to what was of very great use to the Department, namely a small Government Training School, and he might add that those who had been trained in that school had derived very useful knowlege of Agricultural principles, by being associated with that building. Ceylon was essentially an agricultural country. Living in Colombo they were apt to lose sight of that fact. They saw very little of agriculture in Colombo. The eyes of the people were rather fixed on trade and commerce and things in the way of manufacture, and were apt to lose sight of the fact that Ceylon was essentially an agricultural country, and was dependent for its prosperity mainly on agriculture of various kinds. It ought to be an axiom, that an Agricultural School or College ought to be one of the educational institutions of the island. (Applause).

PRACTICAL AGRICULTURE.

Mr. E. ELLIOTT said he had simply come there, being naturally interested in the occasion, and to hear what had been doing in the School for the last few years. Some years ago he addressed them on a similar occasion. He was then a Government Agent. He was now a *Goiya.* (Laughter). He had practical experience for the last three years of growing a considerable extent of paddy, and he had had, like a great many pioneers, to buy his experience. He had no reason to regret what he had done, and he hoped that before long he would be able to satisfy men of business of the soundness of the venture he had embarked on, and he was sure there would be a good many people, erelong, who would regret that they did not go in for coconuts and other low-country products. Of course, there was a great difference between the practical growing of a large area—he had 500 acres of paddy—and the theoretical growing of two acres, under an instructor. One could not repeat on a large scale the immediate results of what was practically horticulture. What he had seen of the students educated in that school convinced him that they were very satisfactory men. Several in the Eastern Province worked with him, and he was at present assisted very ably by a gentleman—a relative of the superintendent and bearing the same name. That gentleman had been most useful to him as an assistant, and the practical education which he had received in that school had been of most valuable assistance to him, and would be, he trusted, of still greater value in time to come. He (Mr. Elliott) could quite support the view which Mr. Harward had enunciated, that the Agricultural School had been a decided success, though working under considerable difficulties for a number of years past. He had also had several communications with Mr. Drieberg who had given him various hints and assisted him in getting various kinds of paddy, etc., and he was glad to be able to publicly acknowledge all that had been said of him on that occasion. He trusted that the new scheme, that was under consideration for improving the school would include some arrangement for giving the school a good large piece of decent land. They could not do much on the adjacent cinnamon land. What they wanted was a plot of 50 or 100 acres of land, which they could practically cultivate on a respectable scale and make experiments on. Experiments, of course, cost money, and people who were working for profits could not afford to make experiments as fully and exhaustively as a Government institution could. All over America there were Government farms, kept up at Government expense, where all sorts of things were grown and all sorts of manures were tried, and the results published. That was what was wanted in Ceylon, not only as regards paddy, but even with other products. The native cultivator, after all, was not such a bad cultivator as some people thought. He was no modern agriculturist it was true, but he had generations of experience and tradition, which stood him in very good stead. If he had had more time he might have put together some more ideas. Living as he did, in the jungle, did not train him to public speaking. (Laughter.) As Mr. Drieberg had said, he hoped, if there was any change, that it would not be of such a nature as to take the school out of the fostering care of Mr. Burrows. (Applause.)

THE MAYOR'S FORECAST: CATTLE DISEASE MAY BE STAMPED OUT.

Mr. PRICE (Mayor of Colombo) proposed a vote of thanks to the Director of Public Instruction for so ably presiding at that meeting. They had all listened with much pleasure and gratification to his eloquent address; and equally to the speech which Mr. Harward had given with his accustomed ability, and similarly to the practical remarks which fell from Mr. Elliott. None of them who lived here and there settled in this country could affect to ignore the importance of agriculture, and he had listened with attention to the report which Mr. Drieberg read at the outset of the proceedings. One point specially attracted his attention, and that was what he said—and others touched on afterwards—with reference to the education of Veterinary Surgeons. That was most important as they all knew. He specially recognized the importance, because a short time ago—a few months ago—he was considering and elaborating with the aid of Mr. W A de Silva, a scheme for quarantining all cattle imported into Ceylon from India, the object in view being to stamp out all cattle disease. At first they thought that if they obtained money and elaborated a scheme and obtained the necessary legislation to enable them to inspect and quarantine every head of cattle imported from India, they might be confident they would then succeed in eventually stamping out cattle disease in Ceylon. However he went to work slowly, on purpose, and after discussing it with officers of greater experience, they came to the conclusion that the measure proposed was a good one; but, he thought

that it would not be sufficient, because there were centres of affection in Ceylon where the disease had to be stamped out. To stamp it out they wanted a trained staff of Veterinary Surgeons. If the School of Agriculture trained Veterinary Surgeons, and if the authorities in Colombo, where the school was in progress, provided a scheme of quarantine that could be elaborated, he saw every prospect of a most material benefit accruing to Ceylon, namely the total stamping out of cattle disease. He commended the idea to the head of the School and to the head of the Department, and he felt they would all endorse his proposal that they should pass a vote of thanks to the Director of Public Instruction for presiding on the occasion. (Applause.)

Cheers were given for the chairman, Mrs. Burrows, Mr. Harward and Mr. and Mrs. C Drieberg, and a musical entertainment, in which several amateurs took part, concluded the interesting and instructive proceedings.

(*From the "Ceylon Observer."*)

The periodical function at the Agricultural School which took place in the school hall on Saturday was a pronounced success Mr Drieberg's report, which we published in our issue of that evening, was eminently encouraging; and its contents, taken as a whole, appeared to us scarcely to justify the note of, we might almost say, despondency with which it closed. Yet it is perhaps too true that expert agricultural training in new and improved methods of cultivation has not yet acquired that popularity which the sterling work accomplished by both present and past students of the School already, fully merits. It is, indeed, to be hoped that the "Committee now sitting on the future of the school," as Mr. Burrows put it, has in mind some such scheme of extending the experimental scope of the Institution as that which the third speaker, Mr. Edward Elliott, suggested—namely, to grant for the school property (probably near Kandy) something like 50 to 100 acres on which sufficiently extensive and instructive scientific work could be done. Mr. Elliott spoke as an experienced paddy cultivator,-one, too, who had had personal contact with students from the school and who bore testimony to their practical worth.

Mr. Burrows on Saturday gave another specimen of his remarkable powers as a skilful as well as lively speaker. "Skilful" is scarcely sufficient—"brilliant" would be more suitably applied to portions of his rapid speech which were filled with robust humour. Mr. Burrows knows how to be immeasurably entertaining while telling you nothing at all; and this is anything but a fault in an official who is barred from unfolding state secrets. But his audience can sometimes barely keep up with him. Speaking on his pledged secrecy with regard to the verdict of the Committee on the Agricultural School he brought out the following:—"If I were to reveal to you one morsel of their verdict, I suppose I would be condemned to death by sealing-wax, choked up with red-tape, or swept out of existence by whatever other form of electrocution the Government are accustomed to use." But his listeners had not properly assimilated this rich mouthful before the speaker had got on to more serious stuff, and neither laughter nor applause were forthcoming in time!

Of the other speakers we have already referred to Mr. Elliott. Mr. Harward once more gave a clear, concise and instructive speech which was specially welcomed as from one who knew more about the Agricultural School, perhaps, than any one present—the Principal, of course, excepted. And that Mr. Harward should publicly state his conviction that all he had seen went to show that Mr. Drieberg had "done his very best" must have been the most gratifying testimony to the zealous, enthusiastic and indefatigable head of the only Government Agricultural Institution in our isand. The Mayor closed the prize-giving proper with a short speech, referring especially to the progress of Veterinary science and practice in the island through the medium of the school. The rest of the proceedings partook of a social nature.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF FEBRUARY, 1900.

1	Thursday ..	Nil	16	Friday ..	·51
2	Friday ..	Nil	17	Saturday ..	·32
3	Saturday ..	Nil	18	Sunday ..	Nil
4	Sunday ..	Nil	19	Monday ..	Nil
5	Monday ..	Nil	20	Tuesday ..	Nil
6	Tuesday ..	Nil	21	Wednesday	Nil
7	Wednesday	Nil	22	Thursday ..	Nil
8	Thursday ..	Nil	23	Friday ..	Nil
9	Friday ..	Nil	24	Saturday ..	Nil
10	Saturday ..	Nil	25	Sunday ..	2·51
11	Sunday ..	·4	26	Monday ..	·16
12	Monday ..	Nil	27	Tuesday ..	Nil
13	Tuesday ..	Nil	28	Wednesday	Nil
14	Wednesday	Nil	1	Thursday ..	Nil
15	Thursday ..	Nil			
				Total..	3·50
				Mean..	·13

Greatest amount of rainfall in any 24 hours on the 25th inst. was 2·51 inches.

Recorded by Mr. J. A. G. RODRIGO.

PRACTICAL HINTS TO HORSE OWNERS.

BY A. CHINNIAH, G.B.V.C.

(*Continued.*)

Partition.—There are many materials that are used for partitioning stables. The best of them is a brick wall partition. The next in order comes thick wooden planks. I have noticed in some stables cadjan partitions and thin board partitions, but these are frequently the causes of accidents. But any material may be used which answers the purposes, which is durable and is a bad conductor of heat or cold. Whitewashing the walls should be periodically done and glaring colours should be avoided as far as feasible. A light blue or green tint is to be preferred. Tarring the walls is resorted to by some stable owners, and this is undoubtedly a good thing, especially in stables where there are more than one animal. In cases of contagious diseases such

walls are less liable to contamination. In big stables it is usual for the sake of convenience to have temporary partitions slung upon on chains or iron bars; in such establishments these partitions are less costly and are of great practical use when carefully managed.

Space.—The space allowed for a single horse should not be below 12 feet by 12 by 16 feet. The passage into the stable ought to be broad and high, and if doors are used they must be very simple in construction and should always open outside. If bars be used they must be strong and so fitted as to be easily removed.

Roof.—A tiled roof is probably the best. If galvanized iron is preferred it is very essential to have a wooden ceiling so constructed as to allow the free circulation of air between the roofing and the ceiling.

Ventilation.—The ingress and egress of atmospheric air must be well regulated. It is an undoubted fact in the animal economy that the proper ventilation forms one of the main features that go to contribute to the health and comfort of the creature. This is in many cases ignored, and hence the animal suffers from mange and other skin diseases, inflammation of the eye membrane, &c. The door or the entrance to the stable is of course the chief means of ventilation.

In addition to the door there must be a window opposite to the door and at a height just above the head of the animal. And just below the window there should be a floor ventilator. Square pieces 2 x 2 feet of earthenware ventilators are generally used. In some instances galvanized iron is used. Let any material be used, but care must be taken that the free passage of air does not become interrupted, while at the same time there should be no possibility of reptiles creeping in. Floor ventilation is invariably neglected in Ceylon, but it is of the greatest importance as being the means of carrying off the heavy foul air which otherwise requires a high temperature to make it rise to the level of the window or upper ventilators. Further, it dries up the floor and keeps the stable sweet.

The Window.—It is necessary as already stated to have the window just above the head of the horse. It should also be so constructed as not to admit of bottles and other articles being placed on the ledge. I have heard instances where the horses were burnt to death by such lamps placed on the window ledge falling on the bedding. The wings of the windows should be made to move horizontally on two sockets, so that it may open and close according to the direction of wind.

THE CLASSIFICATION OF FIBRES.

(Continued.)

In this arrangement I have separated the fibrous substances derived from plants into five groups, according to their use in the plant economy, as well as in relation to part of the plant employed. The first and third groups follow the natural division of the two great vegetable kingdoms into exogenous and endogenous plants; the second group confined wholly to the first division, but only fibrous in a sense; the fourth group pertaining to both, but more largely confined to the first division, while the fifth group is comprised of low orders of plants that are not fibrous at all, but which are chiefly used as cheap substitutes of better packing materials. The classification is as follows:—

A. Fibro-vascular Structure.

1. *Bast Fibres.*

Derived from the inner fibrous bark of decotyledonous plants or exogens or outside growers. They are composed of bast cells, the ends of which overlap each other so as to form in mass a filament. They occupy the phloëm portion of the fibro-vascular bundles, and their utility in nature is to give strength and flexibility to the tissue.

2. *Woody Fibres.*

(*a*) The stems and twigs of exogenous plants, simply stripped of their bark and used entire, or separated into widths, for weaving or plaiting into basketry.

(*b*) The entire or subdivided roots of exogenous plants, to be employed for the same purpose or as tie material, or as very coarse thread for stitching or binding.

(*c*) The wood of exogenous trees easily divisible into layers or splints for the same purposes, or more finely subdivided into thread-like shadings for packing material.

(*d*) The wood of certain soft species of exogenous trees after grinding and converting by chemical means into wood pulp, which is simple cellulose, and similar woods more carefully prepared for the manufacture of artificial silk.

3. *Structural Fibres.*

(*a*) Derived from the structural system of the stalks, leaf stems, and leaves or other parts of monocotyledonous plants or inside growers occuring as isolated fibro-vascular bundles and surrounded by a pithy spongy, corky, or often a soft succulent cellular mass covered with a thick epidermis. They give to the plant rigidity and toughness, thus enabling it to resist injury from the elements, and they also serve as water vessels.

(*b*) The whole stems, or roots or leaves or split and shredded leaves of monocotyledonous plants.

(*c*) The fibrous portion of the leaves or fruits of certain exogenous plants when deprived of their epidermis and soft celluar tissue.

B. Simple Celluar Structure.

4. *Surface Fibres.*

(*a*) The down or hairs surrounding the seeds, or seed envelopes of exogenous plants, which are usually contained in a husk, pod, or capsule.

(*b*) Hairlike growths or tomentum, found on the surfaces of the stems and leaves or on the leaf buds of both divisions of plants.

(*c*) Fibrous material produced in the form of epidermal strips from the leaves of certain endogenous species, as the palms.

5. *Pseudo-fibres, or false fibrous material.*

(*a*) Certain of the mosses, as the species of Sphaguum for packing material.

(*b*) Certain leaves and marine weeds, the dried substance of which forms a more delicate packing material.

(*c*) Seaweeds wrought into lines or cordage.

(*d*) Fungous growths, or the mycelium of certain fungi that may be applied to economic uses, for which some of the true fibres are employed.

The bast fibres, derived from the bark of exogenous plants, such as trees, shrubs, the climbing vines, herbaceous vegetation generally, are clearly defined, and the fibres of all species of such plants, when simply stripped, are similar in form as to outward appearance, differing chiefly in colour, fineness and strength. An example of a fine bast fibre is the ribbons or filaments of hemp, and of a coarser form, the bast from the linden or cedar. A variation in form should be noted in the lacebarks and the paper barks, where the bundles of fibres which interlace may be peeled off in the form of thin, flat strips. The woody fibres are only fibrous in a broad sense, as their cellulose is broken down and all extraneous matter removed by chemical means, as for the manufacture of paper pulp or of artificial silk. The greater number are merely wood in the form of flexible slender twigs or osiers that are useful for making baskets; or the larger branches may be split or subdivided into strips, withes, or flat ribbons of wood for making coarser baskets. The softer woods still further subdivided give the product known as excelsior, which can only claim a place in a list of fibre plants, because it is a substitute for upholstery or packing material. Structural fibres are found in many forms, some of which may be enumerated as follows:—The stiff, white or yellowish fibres forming the structure of all fleshy-leaved or aloe-like plants, as the century plant, the Yuccas, Agave, and pineapple or the leaf trunk of the banana, as an example, rival hemp of commerce; the coarser bundles of stiff, fibrous substance which gives strength to the trunks, leaf, stems (mid-ribs and veins), and even the leaves of palms, a good example being Piassaba, derived from the dilated margins of the petioles of a palm, where they clasp the stem, these are made into thin strips which afterwards split into smooth, cylindrical fibres. Another example is the stiff fibres extracted by maceration from the "boots" or basses of the leaf stems of the cabbage palmetto, or the shredded leaves of the American fan-palm, known as Crinvégétal. Other familiar examples may be noted in strips rattan, the fibrous material derived from bamboo, from the cornstalk, the flower stems of broom corn, and from reeds sedges, and the true grasses. Still another form is the fibrous mass surrounding the fruit of the coconut, known as coir, and as a curious example may be noted the fibre from pine needles, a notable exception of a structural fibre derived from an exogenous plant, the fibrous mass filling the sponge cucumber being another.

MODERN AGRICULTURAL SCIENCE.

(*Concluded.*)

But, every thing comes to him who waits, and at last the time came when the doctrines of the New Soil Science could be tested under the most favourable conditions. The post of land agent on Lord Rosebery's Scottish estates became vacant, and Mr. Drysdale, the gentleman who was appointed to that highly-responsible post, was an old pupil of Mr. Hunter's. Mr. Drysdale was wholly unfettered by any feeling of blind loyalty to orthodox doctrines in agricultural science, and, after carefully examining for himself the later developments in the New Soil Science, he came to the conclusion that it was desirable to have these new ideas put to the test in actual farm practice. He accordingly commenced experimenting on a small scale in various fields, and with such satisfactory results that, with the cordial approval of Lord Rosebery, it was decided to extend the work. In the Spring of 1895, therefore, a thoroughly well-equipped experimental station was established on his Lordship's farm, at Dalmeny Park, with Mr. Hunter as scientific adviser, the practical work being under the personal supervision of Mr. Drysdale himself. Part of the station was devoted to testing the relative productiveness of different varieties of grain, potatoes, &c., another part was devoted to bacteriological research work, and the remainder of the station was worked as a miniature farm on the four-course rotation, each section being subdivided into sixteen plots, which were all differently manured on a regular system. A good-sized volume would be required to detail the results, which have been most consistent throughout, obtained at this station in the last four years, during which time the station has been annually visited by hundreds of deeply-interested agriculturists. A few of the more notable results, may, however, be briefly summarised. In the first season the beneficial results of a small dressing of ground lime were so marked that the system of applying to every field on the farm an annual dressing of 4 cwts. of lime was commenced, and has been continued ever since. In order that the small dressing should be equally distributed over the soil, Mr. Hunter procured ground lime, *i.e.*, ordinary burned lime shells mechanically ground to a fine state of division. At first this ground lime was applied in the compost form, but the second year's experience showed that it was equally effective and less costly when applied direct in the hot state when the land was being worked, the small quantity of hot lime applied being insufficient to injure the nitrifying and other soil organisms, besides being rapidly converted into the carbonate form when worked into the soil. It was also found that when the lime required by the nitrifying and other soil organisms was thus supplied, the plots which had received their nitrogen in the form of sulphate of ammonia showed much better crops, alike as to quantity and quality than were obtained from plots which got their nitrogen in the form of nitrate of soda. Mineral superphosphate, supplemented in the case of the potato and root crops with fermented bones, proved the most satisfactory form of phosphate. The Dalmeny experiment also emphasised the importance of potash for every crop, particularly the leguminous, potatos, and root crops. With a moderate dressing of farmyard manure, supplemented with 4 cwts. ground lime applied at the working of the land, and followed by 4 cwts. superphosphate, 1 cwt. fermented bones, 2 cwts. of kainits and 1 cwt. of sulphate of ammonia, the Dalmeny Home farm produces crops which are the admiration of all who see them. Another most important branch of investigation was in regard to the destructive pest of finger-and-toe in turnips,

a pest which had previously baffled the skill of experimenters. The Dalmeny experimenters knew that a heavy dressing of caustic lime would kill the germ of finger-and-toe, but it would also kill the nitrifying and other advantageous soil organisms, while, on the other hand, a small dressing of 4 cwts. per acre would be insufficient to kill the disease germ. They therefore steered a middle course so as to avoid the Scylla on the one hand and the Charybdis on the other, by applying one ton of ground lime per acre when the land was being ploughed in the autumn, and another ton per acre when the land was being worked in the spring. In this case they rigidly avoided the use of dissolved phosphates and used undissolved phosphates supplemented with 8 cwts. kainit and 1 cwt. sulphate of ammonia. This treatment proved a complete success, and the root crops grown by this system on infested soil were found to be sound and good, while those grown on the same soil under different treatment were so rotten as hardly to be worth removing. It was noted, however, that though this treatment was successful in eradicating the disease, the crop was decidedly smaller than that grown on uninfested land to which only a tenth of the same amount of lime had been applied. A word in conclusion may be added as to the far-reaching effect of the Dalmeny experiments. When these experiments were commenced, ground lime for agricultural purposes had never been heard of, whereas now there are at least six lime works where extensive grinding 'plant' is kept hard at work to supply the ever-increasing demand for that substance. Since the principles of the New Soil Science have been put in successful practice at Dalmeny, the scientific authorities, who at first had branded these principles as absurd heresies, have changed their tune, and in the recently-published volume of the Highland Society's Transactions, the chemical adviser of that society has unreservedly declared his acceptance of these new doctrines. Great credit is due to Lord Rosebery for not only providing the means of carrying on this important research work, but also for throwing his home farm and experimental grounds open for the inspection and information of agriculturists.

[*Note by the Editor Agricultural Magrzine,*—"Years before Hellriegel announced his discovery in 1886, Messrs. Hunter and McAlpine were teaching the same fact to their students, as the lecture notes of any of their students at that time can testify." As a student both of Mr. John Hunter, one of the extra-mural teachers of Agricultural Chemistry, and Professor McAlpine, the popular lecturer on Botany at Minto House, we can fully endorse the above from our personal experience as well as from our 'lecture notes,' and it gives us very great pleasure to press the claims of our old teachers in Edinburgh to the discovery, as indeed we did in the pages of the *Agricultural Magazine* as soon as we read of "Hellriegel's discovery" shortly after our arrival in the Island. To us the "new theory" was familiar enough from acquaintance gained in the class-rooms at Edinburgh."]

THE SOLUBLE MINERAL MATTER OF SOILS.

By Thomas H. Means.

Assistant in the Division of Soils V.S. Dept. of Agriculture.

(*Concluded.*)

If in the piece of granite referred to in the beginning of this paper the rain water had not been allowed to wash out the soluble matter as it was formed, there would have been found a quantity of white salt in the rock powder and in the resultant soil. If the quantity of this white salt had been great, as much as 2 or 3 per cent of the weight of the rock, it would have been difficult or impossible to get a plant to grow in the soil. This has been the experience the world over, that plants will not grow in a soil that contains too much soluble matter.

In arid countries there is not sufficient rainfall to remove all of the soluble matter as it is formed in the decay of rocks and soils, and the result is an accumulation of salts within the soil. In still other parts of the country, where more rain falls, the salts may be washed out, but the solution runs down into inclosed basins having no connection with the ocean, and there evaporates, depositing the salts. In either of these cases plants suffer when the amount of salts reaches a certain per cent. It can safely be said that few crops can flourish when soluble matter amounting to one-half of 1 per cent of the weight of the soil is in solution around the soil grains when the soil is saturated with moisture. As the water of saturation weighs from 25 to 75 per cent of the dry weight of the soil, it will be seen that crops will not thrive when the solution contains more than 1 per cent of the soluble matter. When the concentration of the soil solution reaches this per cent, the leaves of alfalfa turn yellow, wither, and die, just as the plant would do if drought prevailed.

In arid regions where the amount of rainfall is small, the amount of water which leaches through the soil is not sufficient to wash out all of the soluble matter. For this reason the amount of soluble matter in the western soils exceeds the amount of soluble matter in the eastern soils of the United States. The following table shows the relation between the amounts of soluble matter in the soils of different parts of the country :—

Relative amounts of salts in soils.

Kind of soil.	Locality.	Per cent soluble matter.	Pounds soluble matter per acre-foot.
Prairie ...	Kansas, Nebraska ...	0·033	1,155
Limestone ...	Virginia, Maryland, Pennsylvania, Kentucky ...	·017	595
Gneiss ...	Virginia, North Carolina	·077	245
Truck ...	Maryland, Virginia, North Carolina ...	·006	210
Subtropical.	Florida ...	·0012	42

The prairie soils throughout the West show large amounts of soluble matter, and they are exceedingly productive when enough rain falls to keep the soil in a moist condition. Of the soils of the humid regions, those formed from limestone show the greatest percentage of soluble matter. In general,

it will be found that in the humid regions of the United States the percentage of soluble matter depends upon the size of the soil grains. The soils of the humid regions vary much in size of grain and extent of surface exposed on these grains upon which the water may act. The following table shows the relation in a general way between the texture of the soil and the percentage of soluble matter present.—

Relation between texture of soils and percentage of salt.

Kind of soil.	Locality.	Relative extent of surface of gr. ins.	Percentage of salt.
Florida soils ...	— ...	1	1
Truck ,, ...	— ...	5	10
Limestone soils...	Maryland ...	18	6
Do ...	Pennsylvania...	33	27
Do ...	Kentucky ...	55	17
Do ...	Virginia ...	56	78

It will be seen from the table that the soil which had the greatest extent of surface for the water to act on (or, in other words, the soil which was made up of the finest grains) had also the greatest percentage of salt which was soluble. It is a well-known fact, also, that the general agricultural value of a soil varies in nearly this same ratio, that is to say, a heavy soil is better for general farming purposes than a light, sandy soil.

There is another point of difference between the humid and arid soils which is of general interest as well as of general importance. The soils of the humid regions contain much more soluble matter than the subsoils, that is to say, the greater part of the soluble matter is concentrated within the surface foot of the soil. About 50 per cent of the rainfall of the humid regions either washes over the surface of the ground or else washes through the soils and skins down below the subsoil to appear at a lower level and be carried off by streams into the ocean. This has been going on for ages, and the amount of soluble matter left is very small, only sufficient to supply the plant roots.

The absorbing action of the soil grains retains the greater part of the salt as it becomes soluble within the surface foot of the soil, and it is here used by the plants. Below this, in the subsoil, in the region where the action of weathering is reduced to a minimum, the amount of soluble matter found is very small.

In the arid regions, where the rainfall is not sufficient to keep the soil continuously moistened to any great depth, and where the air is drier and evaporation much more rapid, the proportion of the rainfall drained from the land by the rivers is much less, in some cases less than 10 per cent, and in nearly all cases of Western rivers less than 25 per cent. Thus, with a small rainfall, very little water leaches through the soil, and therefore very little soluble matter is washed out.

In fact, in most of our arid prairies the soil is never wet from the surface to a depth of more than 5 or 6 feet. When the rainfall soaks down to the subsoil it carries with it some of the soluble matter which is in the soil. This soluble matter is absorbed by and condensed upon the grains of the subsoil, and when the water is again brought to the surface of the ground by the evaporation of the soil water, part of the soluble matter remains in the lower layers of the soil. Then, if an examination is made of the prairie soils as they normally occur, more soluble matter will be found in the subsoil than in the soil, while in the humid regions the conditions are just the reverse.

BORACIC ACID AS A FOOD PRESERVATIVE.

Boracic or boric acid and its sodium salt Borax are now extensively used for the preservation of liquid and solid foods such as milk, butter, cream, fish and meat that a short account of them should prove of general interest. We are indebted for our facts to an instructive paper on this subject by Prof. Brünnich, F.C.S.

In all preservatives sold, boric acid and borax are the chief ingredients. Analyses of some of these preparations are given below:—

Preservitas contained:

Water	...	34·50	per cent.
Soda	...	5·58	,,
Boric acid	...	47·39	,,
Salt	...	9·33	,,
Saltpetre	...	3·00	,,
		99·80	

Sal praeservare contained:

Water	...	34·30	per cent.
Soda	...	4·96	,,
Boric acid	...	51·80	,,
Salt	...	8·52	,,
		99·58	

Preservative contained:

Water	...	37·70	per cent.
Boric acid	...	40·60	,,
Salt	...	20·16	,,
Saltpetre	...	3·03	,,
		101·49	

Preservative contained:

Water	...	39·30	per cent.
Boric acid	...	57·26	,,
Soda	...	4·35	,,
		100·91	

The effect of boric acid and borates on man and animals has been studied by a great number of scientists, but the results of their investigators are by no means conclusive. Some of the investigators—for instance, the French Commission appointed to study the influence of boracic acid on the human system—found that it could be taken for a considerable time without injurious effects. More recent experiments proved that small doses of boric acid, or borax, have no injurious effects, whereas larger doses produce distinct physiological disturbances—a danger will consequently arise if boric acid is used indiscriminately as a preservative. The Medical Officer for Health for East Kent, Dr. M. K. Robinson, has

shown that a serious outbreak of illness, by which five out of the seven inmates of a house were suddenly attacked, was due to a repeated addition of a preservative containing boric acid. Milk was at once suspected, being not only taken by itself, but also with tea and in a blanc-mange. It was found that the cook added preservative to the milk, which already contained boric acid when delivered by the dairyman. The result was that, by using the preservative twice, over-doses of boric acid had been administered. The remainder of the blanc-mange was given to nine fowls, of which five died; the rest suffered badly, but recovered. Dr. Robinson states that the addition of the drug should be regarded as an injurious adulteration. If such results, he says, can be produced in the case of adults, it is not unreasonable to presume that infants cannot take with impunity long-continued doses in their staple food. The opinion is general among physiologists that all reservatives, when effectual, either from their nature or quantity, in so injuring the micro-organisms which bring about fermentation or putrefaction of food as to inhibit their action, also injure those persons who consume such food. If a preservative substance can so influence the proto-plasmic intergrity of bacteria and other low forms of life as well as of the higher forms like ordinary plants, it is difficult to conceive that the same basis of life-tissues in animals, especially that of the mucous membrane of the alimentary canal, should not also be be injuriously affected, to say nothing of those beneficial bacteria concerned in the digestive processes. In 1897, a "Lancet Special Sanitary Commission on the use of Antiseptics in Food" was appointed, and consulted eminent members of the medical profession, as, for instance, Sir Benjamin W. Richardson, Sir Henry Thompson, Dr. Lauder Brunton, Dr. Pavy, Dr. F. J. Allen, and others on the subject. In spite of a great difference of views expressed by the various authorities, they all agree in stating that the antiseptics taken contiuuously in food, in sufficient qantity, are injurious to health, and they all insist that the name and the quantity of the antiseptic used should be stated on a label attached to the article when sold. Some of the medical men demand a restriction on the amounts of preservatives used; others again wish for a complete prohibition of the use of antiseptics. By the laws of Germany, France, Belgium Switzerland, Italy, and most other countries, the addition of preservatives to goods is absolutely forbidden. In England, although an Adulteration Act has been in existence for a long time, no direct action to prevent the use of antiseptics has been taken; and only recently, since 1898, numerous convictions have been obtained for the addition of boric acid to milk and butter at a great many places.

The *National Provisioner*, Chicago, 4th, 11th, and 18th February, reopens the question under the heading, "Is Boracic Acid Deadly?" and numerous evidence is given to show that the drug is not deadly, which no one hitherto had tried to prove. But nothing new is brought forth, and some of the statements, as, for instance, that 10,000,000 lb. of cured meat treated with borax are eaten annually in Germany, and over 100,000,000 lb. in England, have to be taken with more than the proverbial grain of salt, considering that the adulteration law is carried out so very strictly in Germany.

The conclusions to be drawn from the foregoing remarks are very simple. Sooner or later the use of boracic acid (although it is not a deadly poison) as a preservative will be everywhere greatly restricted, if not entirely prohibited. There is not the slighest doubt that milk, butter, meat, fish, &c., can be preserved without the use of drugs. Cold storage is the simplest modern method of preservation of foods, and is applicable with equal advantage on a small or on a large scale. If, with cold storage as preservative, a previous scrupulous care as to cleanliness, inspection of meat and dairies, modern processes, such as pasteurization, &c., go hand in hand, our products such as meat, butter, and other foods can compete successfully with the products of other nations in the world's market.

GENERAL ITEMS.

Too much care cannot be exercised in taking up a young tree for the purpose of transplantation. If it be taken up roughly many of the young feeding roots will be destroyed, and without these the necessary amount of sap cannot be supplied to the branches and buds, yet the tree will continue to evaporate a large amount of water. The consequence of this evaporation and failure of supply is that the tree will often fail, or will remain for a long time a sickly, struggling object, unless assistance is given by removing sufficient branches and buds to compenstate for the loss of roots. In any case, the damaged roots should be cut off clean with a sharp knife. In taking up the young tree, first remove all the surface soil down to the root system. Then dig a trench round it at some distance from the extremities of the roots. If the weather be dry, it is a good plan to water the roots copiously, to cause the soil to adhere. Then, with a sharp spade, cut under the roots and loosen the boll of earth from that below. The tree may then be safely removed, the tender roots having received very little damage: and if it be carefully replanted, success will be almost assured. In the latter process, the roots should be spread out evenly on a loose bed, and the soil pressed firmly upon all the fibres, thus excluding air as much as possible. The depth at which the young tree is planted will depend upon the nature of the soil in the new location. If the latter is of the same quality as that from which the tree was taken, then the depth should be the same; but if the soil is heavier than the former, then the plant should be set shallower in the ground; and on the other hand, if lighter, then it should be planted deeper. On finally filling in the hole, the surface soil shold be fine and light, because moisture can then not escape by capillarity.

Tomato diseases have become very common of late years, and it therefore behoves every grower of this popular fruit to be able to recognise the early symptoms of various troubles, so that

remedies may be applied before the diseases have obtained a strong foothold. Root knot is generally caused by ellworms, which form galls, or irregularly swollen diseased growths on the roots, resulting in the wilting and death of affected plants, which should be burned, the soil in which they have been grown being either carefully burned or sterilised with quicklime. The sleeping disease of tomatoes, caused by an internal fungus parasite, is surely indicated by the drooping of the leaves successively from the base of the plant upward, increasing day by day, and sometimes accompanied by discoloration. At this stage the woody parts of a split root show a dingy yellowhis-brown hue, more pronounced five or six hours after being cut open. Infested plants should be burned, and the soil in which they have been growing cleared out and sterilised by being mixed with quicklime. In cases of tomato-blight, the fungus-infested foliage shows rusty, yellowish spots, and the edges of the leaves often curl downwards before the foliage shrivels and dies, leaving the stems bare. Spraying with Bordeaux mixture directly the first indications of disease are observed, and the removal of the badly affected plants, are effective remedial measures. The tomato-rot-fungus generally attacks only over half-grown fruits, the first symptoms being the appearance at the blossom end of a small black spot, rapidly increasing in size until half the affected fruit is sunken, black, and destroyed, the injury usually extending uniformly from side to side across the tomato. The crop also suffers from a physiological trouble, a kind of tomato dropsy, visible in swellings on both leaves and stems, and in the curling of the former. This disease results from an excess of water in the tissues of the plant, and is encouraged by insufficient light, and by injudicious watering, especially in dull weather.

A method of fertilising fruit trees in vogue in Holstein is suggestive, and not unworthy of a trial. The trees, it is said, receive no cultivation, and the fruit is large, sound, and produced in abundance. Every two years a few holes are dug in the ground about 4 or 5 feet from the trunk of the tree, and about 1 foot deep, closer and shallower in the case of young trees. These holes are filled with liquid manure about four times during the winter months, and for young trees this is diluted with water. If there is more liquid manure than is wanted, it is distributed over the surface of the orchard, using an old street sprinkling-waggon for the purpose. There is no reason why manure water should not be used once or twice after it is seen what the crop is likely to be; of course, not affording any at that season to trees not bearing a crop, or which are carrying only a few fruits, as to dose them would be to encourage, probably, an unnecessary growth of shoots. But in this matter, the cultivator must be guided by the condition of the trees and of the soil.

A noteworthy milking record has been established by the Red Poll cow Crocus, which belonged to the famous Norfolk dairy herd at Whitlingham. She gave birth to her third calf on May 11, 1890, since which date she continued uninterruptedly in milk till September 28, 1899, a period of over nine years, her milk yield in the last week of her life being at the rate of 43¾ lb. or nearly 4½ gallons. During the nine years four months that she was continuously in milk she yielded altogether 50,428 lb., or nearly 23 tons of milk. Over the last five years the average quantity of butter fat in her milk was as high as 4·3 per cent. Her live weight when sent to market, after being on grass feed for the last six months of her life, was 10 cwt. 1 qr. 11 lb. In the nine years since her last calving she gave something like 45 times her own weight in milk, and her average production during that period was 5,403 lb. of milk, or considerably over 500 gallons per annum. For a moderate sized cow this is a remarkable performance which has aroused much interest amongst the breeders of Red Polls.

Arthur Sinclair, F.L.S.

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"PIONEERS OF THE PLANTING ENTERPRISE IN CEYLON."

(Third Series.)

ARTHUR SINCLAIR, F.L.S., F.R.C.I.,

PLANTER AND VISITING AGENT IN CEYLON.

[THE STORY OF HIS LIFE AND TIMES AS TOLD BY HIMSELF.]

IN a snug, little farm-house at King Édward, Aberdeenshire, I was born one dreigh day in December, 1832. My earliest recollection is a ploughing match, or "love darg," by the neighbours on the occasion of my father retiring to Turriff, an adjacent township :

" A wee bit placie nestlin' doon
Wi' burns and hills and wide aroon ;
It's hardly what you'd ca' a toon,
Oor native Turra.

But little placie tho' it be,
It's dear to many mair than me,
And prood are we to say that we
Were born and bred near Turra."

SCHOOLS.

Here I was sent to school at the age of five. Albeit letters were not of the first importance at Mrs. Cruickshank's establishment, knitting was her forte, and she insisted upon all her pupils of both sexes being proficient in this art, a technical education which has not as yet proved eminently useful to me, but who knows? The day may come, as it did to Robt. Knox, to whom the knitting and hawking of caps led to the opportunity of his escaping from Ceylon.

I graduated in my seventh year and entered the Parish-school, then ably conducted by the Rev. John Clark; and here I soon took a fairly good position. At the end of my third year I got to the front, or "McCulloch class" next to the village lad of pairts—'gas Johnie' who by the way still survives as the Rev. Dr. Duncan, the esteemed minster o' Trinity Congregational Church, Aberdeen. In my tenth year my school education virtually ended, untoward circumstances followed, which henceforth deprived me of the dominie's aid, my father removing again to a bleak country district, where the school and schoolmaster belonged to a type so poor and primitive as to be quite a revelation to the village-bred boy who found nothing in common with the "heather peepers of Blacklaw." Two things went very much against my grain, the one was the carrying of a peat daily to school, and the other was the committing to memory of that profound document said to have been compiled "for those of weaker capacity," though to this day, I am bound to confess it is beyond mine. My parents were descended from an old Jacobite stock, at this time still rather at a discount, and although they would have offered no objections to my learning the Shorter Catechism, they would not enforce it. So left to the freedom of my own will, I decided to have none of it. In Turriff school I had been

allowed to repeat the Church of England Catechism with a few other "whistle kirk" bairns; but this enlightened dominie was horrified at the bare suggestion, and taking me aside, lectured me on the iniquity of belonging to such a sect, and said no creed containing such words as "Holy Catholic Church" should ever be repeated in his school! I ought to mention that this was in 1843, when there was a great upheaval amongst the Presbyterians, and any one whose "effectual calling" was not in the orthodox form, was looked upon with grave suspicion.

And here I may say ended my schooling and began my education such as it was and is. Scotland had doubtless a very admirable system of education and theology, and it was perhaps more my misfortune than my fault that I did not profit by it.

READING INDISCRIMINATELY.

Thrown upon my own resources, I read indiscriminately every book in my father's house, at least such as seemed to me at all interesting or intelligible. Blair's Sermons and Boston's "Fourfold State" hardly came with'n that category; bnt I found a perfect treasure in the gentle and scholarly James Hervey, whose "Reflections on a Flower Garden" I read and re-read with intense delight; planted a little flower-garden for myself, and on summer eves sat therein poring over my Hervey. Never had the tranquil and talented Rector of Weston-Favel a more devout disciple. Never had I seen a book better fitted

"To form the taste and raise the nobler part,
"To mend the morals, and to warm the heart."

There was no mere affectation in my love for this author; for on my first visit to Aberdeen the only "fairin" I purchased for myself, was six more volmes of Hervey, containing his delightful *Theron and Aspasia* and his defence thereof against the objections of John Wesley. Looking back from to day, it seems strange pabulum for a boy of 13; but it was the first book to really influence me, and so deeply interested was I in my treasure, that as I walked home from Aberdeen I could not help sitting down occasionally by the wayside to dip into it. The classical footnotes, however, sadly puzzled me, and awakened in me an ambition to dip into, Latin, which I did with more diligence than success; for my knowledge of Latin—never studied methodically,—amounted to little more than a string of roots, tenses and long words which, however, proved of use in after years. With French I was more successful, reading and writing the language with tolerable ease, though never able to speak it very fluently or intelligibly. The same may be said of my English; probably one of the many drawbacks of so-called self-education. I also tackled Trigonometry and Land Measuring with very fair success.

A GRAND DISCOVERY.

About this time I made a grand discovery. Speaking to a young ploughman, he remarked: "I say, min, I could gie ye a richt book for naething if you'd tak oot the lave o't." He had begun taking it out in parts, but found the bookman's calls came at inopportune times, when he felt more in need of tobacco than literature. I closed with this offer, and the boy boasted how cleverly he had sold me, and freed himself of the tax of 1*s.* per month. The book turned out to be Oliver Goldsmith's works, a perfect treasure and godsend to me; not so much for the matter as the manner in which it was said. I at once became charmed with a style of English I had never before seen or heard, and soon I became so thoroughly saturated with it, that to this day I can scarcely scribble a line without first thinking "how would Goldie have said it." No other writer—with the exception, perhaps, of Thomas de Quincey,—ever fascinated me so much. Both may have been eccentric, but certainly gifted and inspired to a marvellous degree. The beauty of the prose-poems and neatness of the humour was such as I had never before met with, while the descriptive notes of the latter, such as the scene of Catalina's travels, is—as I discovered in after life—drawn with wonderful fidelity.

BOTANICAL STUDIES.

Goldsmith was followed by "Rhind's Vegetable Kingdom," then looked upon as a sort of companion to "Animated Nature," and this book fixed my fate. Though not written like a "fairy tale," the Vegetable Kingdom was presented in a sufficiently attractive form to make plants, both wild and cultivated, from henceforth my chief hobby. The speedwell's peeping eye shed a new light from the hedgerow, the buttercups by the burnie brink became something more than buttercups to me, while exotics in the garden and window, even the familiar lupins, calceolarias and fuchsias had a life-history which it was a delight to trace, and I dreamed even then of visiting them someday in their own native habitat.

Rhind in due course was followed by Humboldt, whose "Geography of Plants" greatly interested me, and whose footprints on the slopes of the Andes I then dreamt of perhaps coming across. Meanwhile, though looked upon as rather an erratic and somewhat "dowie lad," I was not lazy; indeed, my little garden was already looked upon as an oasis in a wilderness of moorland farms, and a neigbouring farmer seeing my industry, gave me off a corner of a field measuring perhaps quarter of an acre,

which I tackled with as much diligence as any Chinaman, getting up by 4 a.m. and working till late at night.

"BOTRYTIS INFESTANS" OR POTATO BLIGHT.

The year was 1846, the summer one of the loveliest of the century. A little burn rippled past the ground in which by way of relaxation I bathed, caught trout and culled the *Nymphæa* from its margin; but my special pride was a plot of potatoes: the grand old blue kidney, nowhere now to be seen. No coffee planter ever saw with greater interest his first 100-acre clearing burst into blossom. Early one July morning I got up to watch the flowers expanding, when I observed what seemed drops of soot upon the tender green leaves. It looked like the work of some malicious miscreant, but no footprints were there, and I felt fairly puzzled. Next morning there were still more "soot drops," and every day during the week added to the mystery, till at length the haulins began to blacken, and a sickening smell greeted me as I approached my precious plot. I was only 14 years of age, but I shall never forget my first great discouragement as a planter; and when a quarter of a century afterwards I saw coffee attacked with a similar blight, I could not help remembering my early sorrow and fearing how little science could do for us.

Like the Ceylon planter of the "seventies," however, my horizon gradually expanded to other plants and products. I now sought and found congenial employment in a Nursery-garden to see how the various plants were propagated and learn the mysteries of grafting, budding and hybridising. He was a rough, unkindly fellow, the foreman, but a perfect workman; and I have seen few gardeners who could handle the knife, the rake or spade like old T——, but he had no taste or respect for science.

"See that you take that horse gowan out by the root," he said toa fellow-creeper who hadn just come from a bota nical class. "You mea, the *Leontedon taraxacum*, sir"? said the youth wishing perhaps to air his learning. "Ah! I see," said the foreman sarcastically, "you're a bit of botanist." "Ay!" was the reply, "and I can *draw* a little too." "D——n you, *draw* that barrow out of my way?" was the rough rejoinder.

TRAINING FOR TROPICAL AGRICULTURE.

For eighteen months I laboured here; the work was hard but interesting enough. Yet, the plants were only native trees or hardy flowers from temperate latitudes, and I, longing to make the acquaintance of exotics from warmer regions, now apprenticed myself to a garden where there were good hot-houses, preparing, like many a better man, for what was to follow. I well remember my first little tropical acquaintance, viz., the *sensitive plant*. How I marvelled at the curiosity and never rested till I knew of its native home, and had read everything that was known about it, little thinking that in after years, it, as a troublesome weed, would cost me thousands of rupees to keep it down. Through the *Balsam* (*Impatiens*), *Nepenthes plumeria* and the *Gloriosa superba*, I was first introduced to Ceylon. I was in my element, and my special hobby and delight was in tracing every exotic I came across, to its original home, a labour which gave me much pleasurable reading.

FIRST EFFORTS AT WRITING.

In four years I had reached the top of my ambition as a gardener, and with the wide world before me began to look towards the Tropics for a more congenial field. I had already begun writing for the local press. My first accepted article being on "Evergreens," a contribution which led to the life-long friendship of Mr. Wm. Alexander, Editor of the Aberdeen *Free Press*, and one of the kindliest, purest-souled men I ever intimately knew.

About this time I was introduced by Mr. Geo. Dalrymple to Sir John Cheape, who, during a visit to Lady Elphinstone, came to consult me with reference to sending out certain varieties of Rhododendrons to Ceylon. "Will they grow in Ceylon"? enquired Sir John. "Unquestionably," was the reply. "How do I know"? "Well, I have just been reading Dr. Hoffmeister's delightful book in which he says that Rhododendrons not only grow wild at Nuwara Eliya and other upland districts, but on the very top of Adam's Peak he found a gorgeous display of blooms." Sir John was good enough to seem interested in me, and told me all about his estates near Kandy, managed by Mr. Mortimer, "a most capable man," he said, "though he had not the educational advantages you seem to have had" (save the mark!)

FIRST THOUGHTS OF CEYLON.

The excellent work by Dr. Hoffmeister was one of the first and certainly one of the *best* books on Ceylon I ever read.

A splendid young fellow was Dr. Hoffmeister, travelling Physician to H.R.H. Prince Waldemar of Prussia, the first German Prince to visit Ceylon. No keener, more observant botanist ever landed at Galle, and the fidelity of his description of the vegetation and natives, seen *en route* for Colombo, has rarely been excelled. The reception by Sir Colin Campbell, the journey to Kandy, thence *via* Pusellawa, where the brothers Worms were found planting their first clearings, and onwards to Nuwara Eliya and Badulla, where they were royally entertained by Major Rogers, is all graphically described. Dr. Hoffmeister was no sportsman, but while the Prince accompanied the Major on sundry shooting excursions, he contrived to extract great delight from his botanical rambles. The poor young physician and scientist (he was only 25) accompanied the Prince to India, where he collected much interesting and valuable information. Unfortunately, Britain was at the time embroiled in one of her inglorious border wars, and the Prince wishing to see fighting, went to the front, his faithful physician by his side. The latter was killed on the spot, and the sorrowing

relatives had only the melancholy satisfaction of publishing the admirable letters which, with the appendices addres ed to Baron Von Humboldt, form this most interesting volume.

GEO. E. DALRYMPLE.

The George Dalrymple mentioned above was uncle to "our Logie;" he also had been in Ceylon for seven years, during which time he had worked himself up into a leading position in a Kandy Firm. A tall and very handsome, beardless youth, he was popular with all classes and an especial favourite with the young military officers stationed at the Central Capital. One afternoon a bit of a lark was proposed, and no sooner said than done. Young Dalrymple was dressed as a lady, as near as possible *a la mode*, the next step was on to a high dog-cart, and one of the officers to drive "her" round the Lake; the chief object being to attract the attention of and arouse the jealousy of a certain Mrs. S———, who had recently begun to trot out two daughters.

Few in the present day of globe-trotters can imagine the consternation such a simple event caused in the early "fifties."

Round and round rode the handsome pair, and none was more critically interested in the new arrival than Mrs. S———. Most unfortunately, in turning a corner for the third time, right opposite her bungalow, the horse shied. Up went a wheel on the parapet and over went the occupants! With a shriek ran Mrs. S——— to the help of 'the lady," the screeching daughters behind her, but were shocked and thunderstruck to get hold of a top boot!

The next upshot was that Master George got a badly broken thigh which rendered him a cripple for life, and as such was ordered home. We all thought he had been injured while out hunting elephant; but Dr. Charsley, who attended him, gave me the true version of George's mishap. On returning home he started a Flax Works, but falling into the hands of Aberdeen Jews the project failed, and he went out to Australia where he did some good exploring work. I had thought of accompanying him, but at the last moment he said "*No*, you would be throwing yourself away, Ceylon is the place for you," and he offered to recommend me to his friend Simon Keir. Meanwhile, the following advertisement appeared in the *Aberdeen Journal*:—"Wanted for Ceylon, a young man of liberal education, with a knowledge of Agriculture. Applicants in own handwriting must state age, where educated, and how employed hitherto, good references required." I answered this and was the successful applicant.

START FOR CEYLON.

So, early in February, 1858, I sailed in the good mahogany ship "Albemarle," 400 tons burthen, my fellow-passengers being Ellis, Tindall, Wernham, Bruce, Hay, and the brothers Rossiter:—all gone now excepting one of the last-mentioned and myself.

The events of the four and half months, such as they were, were they not too fully chronicled in the *Aberdeen Free Press*.

We reached Colombo on the 10th June, a memorable day, of which Padre Ellis, as long as he lived, kept up the anniversary, by writing to me, often in pawky verse, of which the following is a sample:—

"Here's health, milk and meal
To an honest hearty chiel,
Deil cadge them in a creel
Wha doesna wish us baith weel."

ARRIVAL AND PECULIAR RECEPTION AT "OBSERVER" OFFICE.

Our reception in Baillie Street was peculiar. I had been asked by my fellow-passengers to write and publish a letter of thanks to Captain Collett for his considerate and unremitting kindness to us during the long voyage. Consequently, our first call in Colombo was at the *Observer* Office. Dr. Elliott sat in the Editorial chair, and after glancing over the MSS, said in his loud cheery voice, "We shall be *deloighted* to insert this;" but, and again he looked at us up and down, with a twinkle in his eye; then leaning back in his chair simply *roared*:—"Come here, Ferguson, and look at this," and the handsome head of a man in middle-life looked over the screen. "*Sample of passengers per Albemarle*," he said pointing to us, and they both laughed in ready chorus; while we, reddening with chagrin and surprise, drew back at the strange and unexpected reception. An explanation soon followed. Our names had been sent in by the Wharf clerk with the prefix "*Misses*," instead of "*Messrs.*" and all Colombo was on the *qui vive* to see the batch of young ladies, newly arrived!

Fred. Wernham and I were hospitably received by good genial Sylvester Richmond, whose hearty laugh was a grand entertainment in itself. Next evening found us in Kandy introduced to those keen coffee dealers, Sandy Brown and old Gerrard, the latter by this time in shady circumstances, but full of anecdote; the point or moral of his reminiscences, however, was not very edifying or encouraging to newcomers. Poor old rake! he evidently imagined he was having a ruse out of the raw arrivals, little thinking how minutely they weighed and appraised him.

ON THE HILLS.

My destination was Rangalla, a district that stood A1 in coffee planters' estimation, and Battegalla, which was acknowledged at that time to be the finest hill estate in the island. Mr. Duckworth, the fortunate proprietor, resided there and received me with great kindness. His father—one of the merchant princes of Liverpool—I had visited before leaving England, meeting the young student brother, now Canon Duckworth. Battegalla was indeed an ideal estate, combining good soil and shelter with a glorious view of the rich lowcountry beyond, 350 acres bearing at the rate of fully 15 cwt. per acre, an ample labour supply, rising prices, and altogether the prospects were as bright as ever they were before or since in Ceylon. Sir Henry Ward had just been up dining and complimenting the "spirited gentlemen of the district" for having made "a beautiful bandy-road of 9 miles from Teldeniya to their splendid estates."

The second day's tappal brought me a kindly letter from A. M. F. telling me he had just seen Capt. Collett with an armful of papers from Aberdeen containing my contributions on the voyage, and concluded by hoping I wouldn't send all the fruits of my pen to Aberdeen-awa, and here began another long-cherished friendship. Few outdoor occupations could be more attractive than Coffee planting in the "fifties." Coolies were more docile than they now are, the surrounding Sinhalese less corrupted and more respectful. The busy crop season was soon over and then came ample leisure, the interesting process of pruning, the beautiful blossoming time when bumper crops were estimated, after which those so minded could readily be spared for a sporting trip to Bintenne. Monotonous as the work seemed to many, to me it was a daily delight, albeit the climate had its drawbacks.

DYSENTERY.

We had just entered upon a wet cycle, and the surroundings during the S.-W. monsoon were decidedly damp. There were no bungalow fireplaces in those early days, no flannel shirts, the rains blew through the weather-boarding, and the bed-sheets had frequently to be wrung out before retiring. As a believer in hydropathy, I did not dream of the danger of this; but the result was, in the words of Dr. Charsley, "a rattling case of dysentery." Few Europeans escaped in those days: my colleague Mr. Greig had to seek a drier climate, while I was carried into Kandy—30 miles—by coolies, and was for some time despaired of. The kindness and skill of Dr. Charsley* and attentions of Dr. Symons and Mr. Sprott can never be forgotten, particularly during convalesence, when they took me for drives to Peradeniya Gardens, where Dr. Thwaites did so much to encourage and gratify my taste for plants. It was during one of those visits that I saw the first cuttings of cinchona ever introduced into Ceylon being planted in a propagating frame. Meanwhile, poor Mr. Duckworth had been left alone in the midst of crop, attempting work for which he was thoroughly unfitted: the wet coffee lay 5 feet deep on the barbecue, the smoke from which could be seen for miles around.

The weather, however, hardened up by the end of December, and with the aid of a clever adaptation of Clerihew—erected by our friend A. Greig—we struggled through the wet coffee, and by 1st March had the satisfaction of seeing Miner Cader cart away the last load to Colombo, over 20,000 bushels from about 300 acres in full bearing.

W. N. D.

Mr. Duckworth, though not a planter, was a gentleman of refined tastes, and managed to employ his time in a very interesting, if not very profitable, manner: a musican of no mean order, he could paint passably and even dabbled in verse, would often send a messenger to call me from a distant corner of the estate to hear or see his latest effort, and if I could but suggest a word or a half note by which a line would go more smoothly, he was more pleased than if I had added another cwt. per acre to the crop. "Don't go away," he would say, "tiffin is coming, and what do we pay kanganis for but to look after coolies," as if he had yet to learn, that kanganis were merely stuck on stones to warn the coolies of durai's approach.

PLANTING AND PLANTERS 40 YEARS AGO.

Forty years ago the planters were a comparatively small body, about 400 all told. The S.D. was treated with more consideration than he probably is now; relations with the Proprietor were most cordial, and seldom indeed did the S.D.† abuse the confidence or dishonour the position he was encouraged to occupy. In after years, I occasionally did come across something different. Once when making enquiries regarding the capabilities of an applicant for a situation, his employer wrote:—"My only reason for parting with him is that he is apt to get too d—d familiar; the sort of fellow who slaps you on the back when you go to visit him." This man did not get the appointment.

Then there was "R.B.T."'s man to whom he gave a certificate merely stating: "I hereby certify that the bearer requires to be taken down a considerable peg." And there is the other side, when the too exacting P.D. ordered his Superintendent to remove at once to the lowcountry and open some lands he had recently bought, to which the planter demurred as the place was known to be *hot and sickly*. "Hot," said the irate proprietor, "Superintendents ought to be ready to plant coffee in h——l if we so desire them". "*May be*," retorted the cautious Scot, "but I'm thinking it won't be necessary." "*Why?*" "Because you will doubtless all be resident proprietors there."

At the time I speak of, Mr. Duckworth had a visit from the redoubtable Andrew Nicol. "A.N." and "W.N.D." were old friends or rather the descendants of old friends, for individually, truth to tell, there was little love lost between them. "A.N." though in some respects less accomplished, had much more energy than the somewhat phlegmatic "W. N.D." over whom, moreover, he possessed a considerable influence, and at this time managed to arrange for the transfer of my services to his own employ, with a view, it was thought, of my succeeding Jas. S. Martin who was looking forward to a trip home.

MY FIRST MOVE.

Meanwhile, I was sent to reclaim a half-abandoned estate in Matale East, the wholly abandoned Superintendent of which had been carried into Kandy suffering sadly from "D.T."

Kabroosa had a history, dating from the famous rebellion of 1848, when every bungalow in the district was sacked with the solitary exception of this one. The Matale Volunteer Corps had not yet been formed, and the "doraimar" of the day finding it necessary to be in Kandy on urgent business, the estate buildings were the more easily looted. The conductor on Kabroosa, however, was a bit of a strategist: he mustered a score of stalwart coolies, took them to the bungalow, dressed them in dorai's clothes as far as they went, and seating them on chairs in the front verandah, armed each with an open *Observer*, and fearlessly awaited the approach of the enemy. By and by Appuhamy keeked out from the jungle on the opposite side of the stream, but seeing such an array of Mahatmayas beat a hasty retreat to Warriapola where the decisive battle was fought, resulting, sad to say, in one English Sergeant being wounded. The Government of Ceylon very properly pensioned this conductor.

MY NEIGHBOURS.

My near neighbours here were Wingate, a genial gentlemanly man, as were also the brothers Hope, always happy except when visiting the wind-blown wattie over the hill, where even the grindstone had to be staked and tethered to the ground!

Robt. Mitchell, on the adjoining estate, was a rather unpolished piece of granite, but the soul of hospitality, whose Sinhalese employer on his periodic visits invariably got drunk on champagne. "You must find those visits rather costly," I ventured to remark one day. "Oh! no," said Bob, "I just charge it to manuring."

Poor Paul Macrae, on the opposite side of the stream, was then a fine active specimen of a hielan'-man, more at home in Gaelic than in English—a

* Our friend has forgotten to mention, how the first evening Dr. Charsley saw him in Kandy, he thought so seriously of his case that he said:—"If you have any little matters to put right, any important letters to write, I would advise you to see to them now.—ED. *T.A.*

† Sinna Durai—*anglice* "little master" or Assistant. —ED. *T.A.*

good planter, but his great delight was to dine the district, and his one after-dinner song, "*Robie Tamson's Smiddy*" was always ready and well-rendered. Poor Paul and Poor Bob! both came rather to grief in the end; good useful men, but had not the moral stamina to stand an attack of *Hemileia*.

Over the ridge on Dangkande swaggered, though more economically, our friend Christie, while John Gray on Cattaratenne remained a Buchan loon, pure and simple to the end of his days.

Kabroosa had just given its record crop, and its condition, in the words of Billy Rudd, was one of "*Veeds, Vips and Valking Sticks.*" I did my best to renovate the totum. True, I let light into the matted bushes, and when expostulated with, remarked with a certain air of native conceit, that I did not to go to Matale or even come to Ceylon to learn pruning.

"Never cut a primary," said the orthodox coffee planter. "Till it requires it," I added. Nevertheless, though dead branches no longer bear, they do give a certain amount of shelter to young shoots, and had I known the full force of the monsoon on these hills, I might have used the knife more sparingly.

Here I remained about 18 months, meanwhile opening and planting *Owelle*, one of the first of the Lower Matale estates and still flourishing in the list of that most prosperous of Companies, The Ceylon Land and Produce, Limited.

It was while planting here, that drowned out of my talipot hut, I rode for shelter to *Sudugunga*, and thereby first made the acquaintance of Hugh Blacklaw, which led to a friendship of now 40 years, which stood the test too of seven years of official visiting! When Mr. Martin went home, I returned to Rangalla to manage Galleboda and Lovegrove estates; and it was while here I awoke one morning to find myself famous, or infamous, as the suspected writer of the notorious "*Young Scotsman letters:*" otherwise this period passed away without any striking incident.

WM. FERGUSON, F.L.S.

By the time Mr. Martin was ready to return, I had accepted a situation in Sabaragamuwa. In passing through Colombo I first met that genial soul, *Wm. Ferguson.* Who in the "fifties," "sixties," or "seventies," could visit Colombo without meeting and making the acquaintance of "W.F.?" And who that once enjoyed with him a ride round the gravets in his well-known and well-worn trap, could ever forget it? Kept more for use than ornament, his equipage was ever at the service of visitors, and to hear him talk of the trees and flowers by the wayside was a lesson in botany, while few professors could impart information with such success or delight to his listeners. Less of a litterateur than his gifted brother, he was in his own department unique in Ceylon. Let one but ask the name of the meanest little creeper in the hedgerow, and at once the trap was stopped, the horsekeeper sent for a handful, and "now let me tell you a story about this plant" he would begin; and for 10 minutes or more the story would flow in such idiomatic English with just a slight dash of highland accent. After such an object lesson, that IPOMEA would be for ever familiar to you. Or let any luckless native be found hacking a branch from a favourite tree and then listen to the castigation of the Vandal. "W. F." would not swear, he would not strike, but in fluency of cutting hard words, O'Connell would have been nowhere! The poor Yahoo trembling from top to toe would slink away. Meanwhile, we also would be moving on, and the intercepted story would begin again where it was left off. Altogether a more interesting and lovable man than Wm. Ferguson never lived in Ceylon. All who loved plants loved "W. F.," and the love of plants and flowers is the secret of success in Ceylon. "I never met but one man who hated flowers," said the late Editor of the *Spectator*, and this poor prejudiced creature was a Plymouth Brother, who believed that flowers were cursed with the ground, owing to the disobedience of Adam and Eve!

EN ROUTE FOR RAKWANA.

The journey through the ancient Province of Sabaragamuwa was not so easily accomplished forty years ago as it now is. No Rakwana Defiance with spanking horses went up and down the Madampe hill at eight miles an hour. Only the weary hired and unwilling hack, upon which it was a feat to ride in three days, over the 90 miles of rough roads, portions of which were frequently flooded; indeed Chas. Shand was reported to have said he "once walked 10 miles under water." The Resthouses were poor. Awissawella might be looked upon as the *ultima thule* of civilisation, and even it did not strike me as very cheerful, the first thing pointed out being a spot at the end of the verandah where lay the bones of a predecessor.

At Ratnapura I found old "T. P."* busy with a gang of jail-birds digging for cat's-eyes, without much apparent success, judging from his looks. The natural beauty of the Gem City greatly charmed me, though verily, beyond the planting of a few Crotons, Poinsettia, Hibiscus, Datura, and a couple of Nutmeg trees, man had done but little to beautify the scene with exotics.

At Pelmadulla the sorry screw and I arrived wet and weary enough. "Do you know anything about an estate called Everton"? I asked of the old appu who stood in the door of his inhospitable-looking shed. "No, sir, only that all gentlemen who go there get sick and die" was the grim reply, the fact being that my three immediate predecessors got ill, of whom two died on the way to Colombo. No doctor nearer than 90 miles, and yet the poor Durais died!

IMPRESSIONS, AND NEW FRIENDS.

Hoping for better things I hastened onward and upward, finding Everton—the "Kabragalla" of the Sinhalese—for a wonder, bathed in sunshine. Here I pitched my camp and remained for five years, enjoying the ample elbow-room. I visited within a few months every hill top in the district, and carefully taking my bearings, got to know the locality better than most natives.

Rakwana had long been somewhat stagnant: "the first planted coffee," as Sir Henry Ward said, "was thin and bare;" but there were sheltered pockets of good soil which, judiciously opened, paid the planter well. I selected about 1,000 acres, and opened three estates, all of which ultimately did well. It was a lonely scattered district. At that time we were only five Europeans all told, David Mitchell, Joe Bennison, M. Moss, Reid and myself.

David, the father of the district, was one of the gentlest of men, albeit clothed in a somewhat rough exterior, hospitable to a fault, scrupulously

* Tom Power, c.c.s.

honorable in all his dealings, and tender-hearted as the most motherly woman, never in a hurry and inclined to be somewhat prosy; yet, one rarely wearied in waiting for the completion of David's story. Joe, too, was as good a fellow as ever dropped an H or entertained a neighbour, and no better planter ever mustered coolies in Rakwana. M. Moss, though he kept his guns cleaner than his estate, was all round a gentleman and a sportsman to be depended upon in any emergency. Poor Reid was a waif frae Buchan, whose splendid penmanship was his only redeeming qualification. Such were the lords of a district 60 miles in circumference, sparsely inhabited and very partially cultivated. Yet in this "Wilderness of the Peak" I contrived to spend some of the pleasantest years of my planting life. Just as on boardship we get to know men more familiarly than it would be possible in a crowded city, I became intimately associated here with two men who had a considerable influence on my after-life—men whom I elsewhere might never have had the same chance of knowing.

W. HAY WODEHOUSE AND. J. W. BIRCH.

The first and best was Mr. Haye Wodehouse (C.C.S.) whom I met at the Ratnapura resthouse on the way up, and was so struck with his courteous, kindly bearing to all around him, so different from the average John Bull who bullies appus and kicks kudirakarens that I reported him on my arrival at Rakwana as the most amiable man I had ever met.

"Ah!" said David with a kindly twinkle, "let us invite him up," which we did, and for two years I saw much of the Temple Lands Commisioner, who frequently stayed with me for a week, and whom I as frequently accompanied on many of his pilgrimages through village lands; in the intervals many scores of letters passing between us. Son of Canon Wodehouse, a family of stupendous pedigree, Wodehouse was a highly polished, scholarly aristocrat with all the advantages I had most lacked, yet he was pleased to discover many affinities in our reading tastes. We agreed to take out on joint account some of the best magazines of the day, and much of our correspondence related to the different writers and their styles. This of itself was an education for me which I greatly appreciated.

My other friend, J. W. Birch (C.C.S.) was in many respects the very antipodes of W. H. W.—Wodey always dignified and leisurely, whether dressed for dinner or enjoying his matutinal pipe, was ever the pink of propriety. B. was ready, rough and careless of his toggery, but an energetic, clever man of outstanding ability. W. inclined to be lazy, but always suave and kind to the meanest cooly! B. simply indefatigable, could work day and night and lick a dozen Sinhalese into shape before breakfast. "Does not know the word difficulty," said Sir H. Robinson,—W. scrupulous in statements and refined in his language; B. would swear till all was blue, and illustrate his after-dinner yarns with the most monstrous of Rougemont-like fables; and "if you don't believe me ask ——" he would say, —— being a relative and another well-known economist of truth. Both W. and B. were men whom it was interesting and profitable to know, far above the average in administrative ability, while as letter-writers the best I ever came across, never too busy to reply to a note, yet never like the fussy man asking to be excused while he did so.

Dear Wodey has slept soundly in Borella for the past 30 years; but the last visit I paid in Colombo two years ago was to his grave. "Poor Colonial Birch," as H. S. O. Russell was wont to call him, was assassinated in Perak.

Mr. Russell, by the way, who acted for sometime as Agent at Ratnapura, was altogether a different type from Birch! He ruled the district with a dignified hauteur—slow, sarcastic, but very choice in his language. In the most polite way he could make his belted peon tremble with fear, as he deliberately exclaimed when very angry, "You son of a —— misguided woman!" An admirable administrator, however, the district was never more conscientiously ruled than in his day: no shady gem-pit digging, no broken heads by H. S. O. R., and the day soon came when he was promoted to the Central Province.

CALLED TO THE C.P. AS V.A.

About the same time I also had "a call"—as the ministers say—and selecting Kandy as my centre, entered upon the busiest portion of my life; travelling as V.A. over the length and breadth of the island for the next ten years, almost continuously in the saddle. It may be thought that the wilds of Sabaragamuwa was not a very good training gronnd for an Estate Inspector in the C.P., but as a matter of fact, my planting experience was acquired in Aberdeenshire. What I had chiefly to learn in Ceylon was the nature of the different localities on an island where every few miles give a change of soil and climate. Coffee-planting in rugged but richly-cropping Rangala was quite a different matter from the culture of the same plant in the leafy dales of Dimbula; and estates in poor patchy Sabaragamwua required more careful treatment than those in the more happy-go-lucky Haputale. This experience I had now ample opportnnity of acquiring. Beginning with a modest dozen estates, they gradually increased upon my hands, till at the end of my second year I had three times that number, and in a few years more the nnmbers rose to 100 or about one-twelfth of the island's extent of Coffee, and my duties were not merely to report on the condition of the estates, but to direct the cultivation and estimate the crops. Those were the days before *Hemileia vastatrtx.*

My remuneration was now over £2,000 stg. per annum, equal to that of the Lord Bishop!

RETIREMENT.

And yet I retired at the age of 40! Some remain the year too many; peradventure others retire prematurely; but who knows? There was much to induce me to stay; but the superior attractions of Aberdeenshire prevailed.

As showing the cordial relations between a V.A. and his Colombo Agents in the seventies, the following letter from a leading firm may suffice:—

"Colombo, 14th October, 1873.

"Dear Sir,

"In now relinquishing your valuable services, "we beg to reciprocate sincerely the good feelings "expressed in your letter, and to assure you that "the intercourse carried on between us, has "afforded us the utmost satisfaction in every way.

"The able and conscientious nature of your "Reports has been much appreciated by our Consti-"tuents both here and in England, and we feel satis-"fied that their several properties have benefitted "much by the good directions you have been able "to give to the Superintendents in charge.

"We remain, &c.,

"GEORGE STEUART & CO,"

James Sangster Martin, for whom I acted fourteen years before, now undertook a portion of the work I left. James was the elder brother of the equally well-known John, perhaps the more intellectual of the two; but both were first-rate planters, indeed none better ever came to Ceylon.

I had scarcely reached Aberdeen when I got a wire that J. S. M. had died of dysentery. It was in the end of May (1874), the trees were bursting into leaf. I had not seen a summer for sixteen years, and not feeling disposed to resume my duties at once, I gave up all idea of returning to my post!

Now for the next ten years I extracted as much enjoyment out of life as perhaps ever falls to the lot of ordinary unambitious mortals; but at the end of this time I fell amongst thieves, and as misfortunes rarely come single, the *Hemileia* must needs play havoc with securities in Ceylon at the same time, so that I began to look abroad again for investments and occupation, resulting in a trip to *Tasmania*, an adventure often talked of with friends now gone, R. B. T., J. S. M. and others.

PROSPECTING IN TASMANIA.

Of my experiences there have I not written fully to the *Observer* under the heading "In search of a Home." My prospecting during these three years cost me over £2,000, money not by any means wasted, as I gained in return a more thorough knowledge of this beautiful, if in many respects over-rated and sadly misguided island than many of the natives possess, and learned to appreciate better our own bountiful native land on which there is yet ample room.

Calling in passing and repassing upon my first love, Ceylon, I found her more interesting and beautiful than ever.

"HOW I FOUND MY WATTIE."

The old *Wattie* on which I lived and reared a family, though now uncultivated, was not abandoned, hundreds of tree and flowers—escapes from the Botanical Gardens—grew there where they never grew before; the fruit trees I planted thirty years ago, jak, mango, coconut and lime, now waxing old and bearing heavily. The sensitive plant, with its clover-like blossoms, covered the walk like a carpet, a walk made just eighty years ago to enable Lady Barnes to enjoy the view. The sweet little yellow *Thunbergia* peeped with its dark eye from amongst the weeds by the wayside, while its rich mauve-flowering relative, the noble *Laurafolia*, hung in festoons from the arms of the gaunt cotton tree. The flowers on the huge Sapu trees scent the air, while the indigenous Guava—from which the district derives its name—*Pera*(deniya)—was in many places an impenetrable thicket, Lantana only—once so luxuriant—now decaying, and being supplanted by a sunflower, also from S. America. The *Bougainvillea* with its rose-coloured bracts, hides the crumbling ruins of the godowns, while the *Inga Saman* trees which, on the recommendation of Dr. Thwaites in 1870, I transplanted from the garden now throw a grateful shade over the old bungalow, looking so inviting and with its sunny memories doubly interesting. The view from the verandah greener and richer than of yore; the old sugar estate—an abandoned common in the sixties—now a splendid sheet of luxuriant and valuable tea. Why should Primrose Hill not be again utilized? Why should the lost wattie not be regained? The desire was natural and in process of time was gratified. Yet one cannot live upon a wealth of wild flowers or on the distant view however lovely:—

"Such wealth is but a name
That leaves our useful products still the same."

The next step was to replant the totum, which I did very successfully; and while the tea, &c., was growing, I made sundry excursions into other parts of the world, the most notable being Peru* and Australia as elsewhere described; but my home in Ceylon—preserved as a winter resort—is still my favourite stand-by.

* See "In Tropical Lands: Recent Travels to the Sources of the Amazon, the West Indian Islands, and Ceylon"—by A. Sinclair, F.R.C.I., etc.—"Ceylon Observer" Book Store, Colombo.

View of Mahavillaganga from Primrose Hill Bungalow.

A SKETCH OF THE HISTORY OF INDIAN BOTANY.*

BY SIR GEORGE KING, K.C.I.E., LL.D., M.B., F.R.S.

(Continued from page 649.)

Somewhat similar to Griffith in temperament and versatility was the brilliant Victor Jacquemont, a French Botanist who, at the instance of the Paris Natural History Museum, travelled in India for three years from 1829 to 1832. During this period Jacquemont collected largely in the Gangetic plain. He then entered the North-West Himalaya at Mussourie, explored Gharwal and Sirmur, ascended the Sutlej to Kanawer and Piti (at that time unexplored), visited Cashmir, and returning to the plains, crossed Northern Rajputana to Malwa and the Deccan. He finally reached Bombay with the intention of returning to France. But at Bombay he succumbed to disease of the liver, brought on by hard work and exposure. His remains, after having lain in the cemetery there for fifty years, were, with that tender regard for the personality of her famous sons which France has always shown, exhumed in 1881, and conveyed in a France frigate to find a permanent resting-place in the place of Jacquemont's birth. Jacquemont's collections were transmitted to Paris, and his plants were described by Cambessedes and Decaisne, while his non-botanical collections were elaborated by workers in the branches of science to which they respectively appertained, the whole being published in four volumes quarto, at the expense of the French Government.

The roll of eminent Botanists who worked in India during the first half of the century closes with the name of Thomas Thomson, who collected plants extensively between 1842 and 1847 in Rohilkund and the Punjab, and again still more extensively during a Government mission to the North-West Himalaya and Tibet which was continued from 1847 to 1849. During this period Dr. Thomson explored Simla, Kanawar, Piti, Cashmir, Ladak, and part of the Karakoram. His collections, which were large and important, were transmitted to the Botanic Garden at Calcutta, and thence in part to Kew. They formed no insignificant part of the materials on which the 'Flora Indica' and 'Flora of British India' were founded. Dr. Thomson also published an account of his travels—an admirable book, though now jostled out of memory by the quantities of subsequently issued books of Himalayan travel and adventure.

About the year 1820 a second centre of Botanical enterprise was established at Seharunpore, in the North-West Provinces. A large old garden near that important town, which had been originally founded by some Mohammedan nobles of the Delhi Court, was taken over by the Honourable Company, and was gradually put upon a scientific basis by Dr. George Govan, who was appointed its first superintendent. Dr. Govan was in 1823 succeeded by Dr. J. Forbes Royle, and he in 1832 by Dr. Hugh Falconer. Dr. Royle made collections in the Jumno-Gangetic plain, in the Lower Gharwal Himalaya, and in Cashmir. He was distinguished in the field of Economic rather than in that of Systematic Botany, his chief contribution to the latter having been a folio volume entitled 'Illustrations of the Botany of the Himalaya Mountains.' His valuable labours as an Economic Botanist will be noticed later on. Hugh Falconer was an accomplished palæontologist who devoted but little of his splendid talents to Botany. His great contribution to palæontology, the value of which it is almost impossible to over-estimate, consisted of his exploration and classification of the tertiary fossils of the Sewalik range. Falconer was transferred to the Calcutta Garden in 1842. He was succeeded at Seharunpore by Dr. W. Jameson, who explored the Botany of Gharwal, Kamaon, and Cashmir, but who published nothing Botanical, his chief energies having been devoted to the useful work of introducing the cultivation of the China tea plant into British India, and this he did (as will afterwards be mentioned) with triumphant success.

During the first half of the century, a considerable amount of excellent Botanic work was done in Western India by Graham, Law, Nimmo, Gibson, Stocks, and Dalzell, the results of whose labours culminated in the preparation by Graham of a List of the Plants of Bombay, which was not, however, published until 1839 (after his death); in the publication by Stocks of various papers on the Botany of Scinde; and in the publication by Dalzell and Gibson in 1861 of his 'Flora of Bombay.' It is impossible in a brief review like the present to mention the names of all the workers who, in various parts of the gradually extending Indian Empire, added to our knowledge of its Botanical wealth. It must suffice to mention the names of a few of the chief, such as Hardwicke, Madden, Munro, Edgeworth, Lance, and Vicary, who collected and observed in Northern India, and who all, except the two last mentioned, also published Botanical papers and pamphlets of more or less importance; Jenkins, Masters, Mack, Simons, and Oldham, who all collected extensively in Assam; Hofmeister, who accompanied Prince Waldemar of Prussia, and whose collections form the basis of the fine work by Klotzsch and Garcke (*Reis. Pr. Wald.*); Norris, Prince, Lobb, and Cuming, whose labours were in Penang and Malacca; and last, but not least, Strachey and Winterbottom, whose large and valuable collections, amounting to about 2,000 species, were made during 1848 to 1850 in the higher ranges of the Kamaon and Gharwal Himalaya, and in the adjacent parts of Tibet. In referring to the latter classic Herbarium, Sir Joseph Hooker remarks that it is 'the most valuable for its size that has ever been distributed from India.' General Strachey is the only one who survives of the splendid band of collectors whom I have mentioned. I cannot conclude this brief account of the Botanical labours of tour first period without mentioning one more book, and that is the 'Hortus Calcuttensis' of Voigt. Under the form of a list, this excellent work, published in 1845, contains a great deal of information about the plants growing near Calcutta, either wild or in fields and gardens. It is strong in vernacular names and vegetable economics.

The second period of our history begins with the arrival in India in 1848 of Sir (then Dr.) Joseph Hooker. This distinguished Botanist came out in the suite of Lord Dalhousie, who had been appointed Governor-General of India. The province to the exploration of which Sir Joseph directed his chief attention was that of Sikkim in the Eastern Himalaya, the higher and inner ranges of which had never previously been visited by a Botanist, for Griffith's explorations had been confined to the lower and outer spurs. The results of Sir Joseph's labour in Sikkim were enormous. Towards the end of his exploration of Sikkim he was joined by Dr. Thomas Thomson, and the two friends subsequently explored the Khasia Hills (one of the richest collecting grounds in the world), and also to some extent the districts of Sylhet, Cachar, and Chittagong. Dr. Thomson subsequently amalgamated the collections made by himself in the Western Himalaya with those made in Sikkim by Sir Joseph individually, and by them both conjointly in Eastern India; and a distribution of the duplicates after the fashion of the Wallichian issue, and second only to it in importance, was subsequently made from Kew. The number of species thus issued amounted to from 6,000 to 7,000, and the individuals were much more numerous than those of the Wallichian collection. The immediate literary results of Sir Joseph Hooker's visit to Sikkim were, (1) his superbly illustrated monograph of the new and magnificent species of *Rhododendron* which he had discovered; (2) a similar splendid volume illustrated by plates founded on drawings of certain other prominent plants of the Eastern Himalaya which had been made

* From the Report of the Sixty-ninth Meeting of the British Association for the Advancement of Science held at Dover in September, 1899.

for Mr. Cathcart, a number of the Civil Service of India, and (3) his classio 'Himalayan Journals'—a bock which remains until this day the richest repertory of information concerning the botany, geography, and anthropology of the eastern Himalaya. A remoter result was the appearance in 1855 of the first volume of a 'Flora Indica,' projected by himself and his friend Dr. Thomson. The first half of this volnme is occupied by a masterly introductory essay on Indian Botany, of which it is hardly possible to overrate the importance. This remarkable essay contains by far the most important contribution to the Physico-Geographical Botany of India that has ever been made, and it abounds in sagacious observations on the limitation of species and on hybridisation, besides containing much information on the history of Indian Botanical collections and collectors. The taxonomic part of the book was cast in a large mould, and the descriptions were written in Latin. Unfortnnately the condition of Dr. Thomson's health and the pressure of Sir Joseph's official duties at Kew made it impossible that the book should be continued on the magnificent scale on which it had been conceived. After a period of about twelve years Sir Joseph, however, returned to the task of preparing, with the aid of other Botanists, a Flora of the Indian Empire, conceived on a smaller scale and written in the English language. His proposals for this work were accepted and officially sanctioned by the Duke of Argyll while he was Secretary of State for India. The first part of this great work was published in 1872 and the last in 1897. In the execution of this great nndertaking Sir Joseph had the assistance of Mr. C. B. Clarke, who elaborated varions natnral orders; of Mr. J. G. Baker, who worked out *Leguminosæ* and *Scitamineæ*, and of Sir W. Thiselton Dyer, Messrs. A. W. Bennett, Anderson, Edgeworth. Hiern, Lawson, Maxwell Masters, Stapf, and Gamble, The greater proportion, however, of the book is Sir Joseph's own work, and noble monument it forms of his devotion and genins.

Since the date of Sir Joseph Hooker's visit to India, by far the most important Botanical work done in India has been that of Mr. C. B. Clarke. Rather than attempt to give any appreciation of my own of Mr. Clarke's labonrs (which would be more or less of an impertinence), I may be allowed to quote from the preface to the conclnding volnme of the 'Flora of British India,' Sir Joseph Hooker's estimate of them. Referring to all the collections received at Kew since the preparation of the 'Flora' was begun, Sir Joseph writes: 'The first in importance amongst them are Mr. C. B. Clarke's, whether for their extent, the knowledge and judgement with which the specimens were selected, ticketed, and preserved, and for the valuable observations which accompany them.' Mr. Clarke has published numerour papers on Indian Botanical subjects in the Jonrnals of the Linnæan and other societies. He has issued as independent books monographs of Indian *Compositeæ* and *Cyrtandraceæ*, the former in octavo, the latter in folio, and illustrated by many plates; and he is now engaged on his *opus maximum;* viz. a monography of the *Cyperaceæ*, not only of India, but of the whole world; and to the completion and publication of this every systematic Botanist is looking forward with eager anxiety.

During the second half of the century Dr. Thomas Anderson, who was for ten years superintendent of the Calcutta Garden, collected much; and he had just entered on what promised to be a brilliant career of Botanical authorship when his life was cnt short by disease of the liver, contracted during his labours to establish the cultivation in British India of the quinine-yielding species of cinchona. Dr. Anderson was also the earliest Conservator of Forests in Bengal. Sulpiz Kurz, for many years Curator of the Calcutta Herbarium, also collected largely in Burma, and besides many excellent papers which he contributed to the 'Jonrnal of the Asatic Society of Bengal,' he prepared for Government an excellent manual entitled 'The Forest Flora of Burma.' This was published in two volnmes in 1877. Other collectors in Burma were Colone Eyre (in Pegu), Mr. Bnrness (at Ava), and the Rev. Mr. Parish, to whom horticulturists are indebted for the introduction to Europe of the beautiful orchids of this province. And in this connection must be mentioned Mr. E. H. Man, C.I.E., who, although not himself a Botanist, has given for many years past the greatest possible help in the Botanical exploration of the Andaman and Nicobar groups of islands, our first knowledge of which was, by the way, derived from the collections made by the naturalists of the Australian and Danish exploring expeditions. A large book on Bnrma, which contains a good deal of Botany, was published by an American missionary named Mason, who resided for the greater part of his working life in that country. General Sir Henry Collett, who commanded a brigade during the last Burmese war, also made most interesting collections in that country, the novelties of which were described by himself in collaboration with Mr. W. Botting Hemsley, of the Kew Herbarium, in the Linnæan Society's, 'Jonrnal' some years ago. Sir Henry Collett also collected much in the Khasia and Naga hills, and in the portion of the North-Western Himalaya of which Simla is the capital, and on these latter collections, together with the materials in Kew Herbarium, Sir Henry is now elaborating a local Flora of Simla. The preparation of a local Flora for an Indian district is an entirely new departure, and the publication of Sir Henry's book, which is to be well illnstrated, is looked forward to with much interest. At rather an earlier period, Dr. Aitchieson, C.I.E., was a diligent collector of the plants of the Pnnjab and of the North-Western Frontier. Some results of his work are to be found in his 'List of Punjab Plants,' which was published in 1867, and in various papers which he contributed (some of them in conjunction with Mr. Hemsley) to the Linnæan Society and to the Botanical Society of Edinburgh. In Dr. G. Henderson's book on Yarkand there are also descriptions of some plants of the extreme North-Western Himalaya and of Western Tibet. Mr. (now Sir George) Birdwood also made some contributions to the Botany of the Bombay Presidency.

Five officers of the Indian Forest Department, viz. Dr. Lindsay Stewart, Colonel Beddome, Sir D. Brandis, and Messrs. Talbot and Gamble, C.I.E., have within the past thirty years made important contributions to the systematic Botany of India. Dr. Stewart collected largely, and published in 1869 his 'Punjab Plants,' a book which gives a very imperfect impression of his acqnirements as a Botanist. Sir Dietrich Brandis issued in 1874 his admirably accnrate 'Forest Flora of the Noth-West Provinces of India,' illustrated by seventy excellent plates. Between the years 1869 and 1873, Colonel Beddome issued his 'Flora Sylvatica of the Madras Presidency,' illustrated by numerons plates. He also published, between 1869 and 1874, a volume of descriptions and figures of new Indian plants, under the title 'Icones Plantarum Indiæ Orientalis.' Colonel Beddome is the only Indian Botanist of note, except Griffith, Mr. C. B. Clarke, and Mr. C. W. Hope, who has written mnch on Indian Ferns. His two works, the 'Ferns of Sonthern India' and the 'Ferns of British India,' pnblished, the former in in 1863 and the latter between 1865 and 1870, practically give a systematic acconnt, together with excellent figures, of the whole Fern Flora of India. Of these excellent books a condensation in a popular and abridged form has also been issned. The fourth Forest officer who has published contributions to Systematic Botany is Mr. W. A. Talbot, whose 'List of the Trees, Shrubs, and Woody Climbers of the Bombay Presidency,' gives evidence of much careful research. And the fifth is Mr. J. S. Gamble, who besides amassing at his own expense probably the largest private collection of plants ever owned in India, has published a systematic account of the Indian *Bambuseæ*, a tribe of grasses which, from the

peculiarity of many of the species in the matter of flowering, had so long been the bane of the Indian agrostologist. Mr. Gamble, in his monograph, gives a description and a life-sized figure of every oue of the Indian species. Of this monograph (which forms a volume of the 'Annals of the Botanic Garden, Calcutta') Sir Joseph Hooker writes (at p. 375, vol. vii. of his 'Flora of British India'): 'It is indispensable to the student of the tribe by reason of its descriptions and admirahle plates aud analyses.' Mr. Gamble has also published a Manual of Indian Timbers. A Forest officer who has ever ready to help in Botanical work, but who never himself published, was Mr. Gustav Mann, for many years Conservator of Forest in Assam, but now lost to India by his premature retirement. Other Forests officers, who have done, and are still doing, good botanical work in their various spheres, are Messrs. Lace, Heinig, Haines, McDonell, Ellis, Oliver, and Upeudra Nath Kanjilal. Mr. Bourdillon, Conservator of Forests in the Travancore State, is also an enthusiastic Botanist and collector.

In the Madras Presidency Botanical work has been carried on during this second half of the century by Noton, Perrottet, Metz, Hohenacher, Schmidt (on the Nilgiris), Bidie, and Lawson. By the efforts of the latter two a second public Herbarium was established in Madras (the first having heen broken np many years ago), and in this second Madras Herbarium are to he found many of the collections of Wight, besides those of the other Madras Botanists just named.

In the Bombay Presidency the only public Herbarium is at Poona. This is of recent origin, and owes its existence to the devotion of four men, viz. Dr. Theodore Cooke (late Principal of the College of Science at Poona), Mr. Marshall Woodrow (until recently Superintendent of the Garden at Guneshkind and Lecturer in Botany in the Poona College), the late Mr. Ranade (a native gentleman), and Dr. Lisboa (a medical practitioner in the Deccan)—all fonr enthusiastic Botanists. The amount of Government support given to ths Herbarium at Poona has hitherto been very inadeqnate. It is to be hoped that greater liberality may be extended to it now that a stranger to the Bombay Presidency has just been appointed to its chagge in the person of Mr. George Gammie, hitherto employed in the Cinchona Department of Bengal.

Reference has already been made to the Botanic Gardens at Seharunpore and Calcutta. But to complete this sketch, and especially in order to give a clear idea of the apparatus at prosent existing in India for carrying on the study and practice of Systemetic Botany, it is necessary again to refer to them. On the retirement of Dr. Jameson in 1872, Mr. J. F. Duthie was selected hy the Secretary of State for India as Superintendent of the Seharunpore Garden. Mr. Duthie is still at Seharunpore. During his tenure of office he has added to the Herbarium previously existing there (which consisted chiefly of the collections of Royle, Falconer, and Jameson) a magnificent collection of his own. Mr. Duthie has pnblished a valuable book on the 'Field and Garden Crops of the North-Western Provinces,' and another on the Grasses of the same area. He is now engaged on the preparation of local Floras of the North-Western Provinces and of the Pnnjab.

The Calcutta Garden at the Date of Sir J. D. Hooker's arrival in India in 1848 was under the temporary charge of Dr. McClelland, who soon made way for Dr. Falconer, who, in 1855, was sncoeeded by D. J. Thomson, and he in turn by Dr. T. Anderson in 1861. Mr. C. B. Clarke acted as Superintendent dnring the interregnum between Dr. Anderson's lamented death in 1870 and my own appointment in 1871. The Garden aud Herbarium at Calcutta have been most liberally supported by the Government of Bengal. By funds thus snpplied the Garden has been remodelled and improved; the Herharium has been housed in an excellent fire-proof building (erected in 1883), and the collections of which it consists have been greatly increased. The chief items of these after acquistions have been the large contributions of Mr. C. B. Clarke; of Dr. D. Prain, for many years Curator of the Hebarium, and now Superintendent of the Garden and of the cinchona plantation and factory; of Mr. G. A. Gammie, formerly one of the staff of the cinchona plantation and now Lectnrer on Botany in the College of Science at Poona; of Mr. R. Pantling, Deputy-Superintendent of the Ciuchona plantation, who, in addition to dried specimens of the orchids of Sikkim, contributed nearly five hundred drawings, most of which have been lithographed as the illstrations to a book puhlished in the 'Annals' of the Garden as the 'Orchid Flora of Sikkim;' of Mr. Kunsler, a collector in the Malay Peninsula; and last, but by no means least, of a trained band of aborigines of Sikkim named Lepchas who possesses keener powers of observation of natural objects, more patience, sweeter tempers, and, I am bound in fairness to add, dirtier clothes than any race I have ever met —black, yellow, or white! In addition to their liberal grants to the Garden and Herbarinm, the Bengal Government, twelve years ago, sanctioned the publication, at their expense, as occasion might offer, of monographs of important families or genera of Indian plants. These monographs are printed in quarto, and they are, with one exception, profusely illustrated hy plates drawn and lithographed by Bengali draughtsmen. The series is known as 'The Annuals of the Royal Botanic Garden Calcutta,' and it has now reached its eighth volume, the ninth being in active preparation. These 'Annals' have been contributed to by Dr. Prain (my successor at the Calcutta Garden) by Dr. D. Douglas Cunningham, Mr. J. S. Gamble, Mr. R. Pantling, and myself.

Abont ten years ago, it occured to the Supreme Government of India that it might be to the interest of Science if the four Botanioal establishments at Calcutta, Seharunpore, Madras, and Poona were to be formed into a kind of hierarchy nnder the designation of the Botanical Survey of India, without removing either the officers of the four institntions to which they were attached from the financial or general control of the local administrations within which they are respectively situated, the Supreme Government making a small contribution of money for the purpose of exploring little-known districts and making itself responsible for the cost of a publication called 'The Records of the Botanical Survey.' The four institutions just mentioned continue, therefore, to be piad for and controlled hy the Governments of Bengal, the North-Western Provinces, Mrdras, and Bombay, but their Superintendents are placed on the cadre of the Botanical Survey. The published Records of this Survey now extended to twelve numbers, each of which is devoted to an acconnt of the Botany of some parts of the enormous and continually expanding are to be explored.

Suoh, then, is the machinery by which Systematic and Geographical, as distinguished from Economic and Physiological, Botany is oarried on within the Indian Empire. But the work done in India itself by no means represents all that is being carried on in connection with the elucidation of the Flora of the Empire of India. On the contrary the bulk of the work of elaborating the meterials sent from India in the shape of dried specimens has always heen, and must always be, done in a large Herbarium; and until lately no Herbarium in Asia has been sufficiently extensive. The last word on every difficult taxonomic question must still lie in Europe. A very large number of the Herbarium specimens collected in India have found their way to the various centres of Botanical activity in Europe, and have heen described by Botanists of many nationalities. The lion's share of these specimens has naturally come to the two great national Herbaria in the British Mnseum and at Kew, but especially to the latter. It was in the Kew Herbarium that Sir Joseph Hooker and his collahorateurs prepared

the Flora of British India. And it is in the Kew Herbarium that are to be found the types of an overwhelming proportion of the new species described for the first time in that monumental work. The Kew Herbarium is therefore to the Indian Botanist the most important that exists. I must apologise for diverging for a moment to remind you what a type specimen is. It is the very one on which an author has founded any species to which he has given a name. And in order to determine absolutely what is the specific form to which the author meant his name to apply, it is often necessary to examine his type. The necessity increases in urgency with the extension of our knowledge of the Flora of the world.

(*To be concluded.*)

THE CAUSE OF DECAY IN PLANTS, AND THE REMEDY TO GIVE TO THEM NEW LIFE.

BY R. R. HARDING, CURATOR, BOTANIC GARDENS, TOOWOOMBA, QUEENSLAND.

The primary object of this paper is to direct attention to the results of unskilful planting of trees. I will endeavour to show that this is very expensive, and unsatisfactory in the end. When we consider that it takes only a little time longer to plant trees properly, the only exuse that can be given for not doing so is that the persons who plant trees or shrubs are afraid to separate the roots for fear of killing the plant. It would be, as a matter of fact much better to kill it then than to be disappointed in after years. Such cases are numerous in this town and I am often asked by residents here and by others in different parts of the colony, what is the reason for their trees looking so miserable?

Before I give a practical illustration of this, I will go back to the heading of this paper: "The Cause of Decay in Plants." Decay or disease is the antithesis of health, and, as the health of the plant means the correct performance of its functions, disease may be defined to be an incorrect performance of those functions. I believe that of all the various kinds and forms of disease to which plants are liable, none are so general or so fatal as those affecting the roots. In many, perhaps in most cases, it is extremely difficult to say precisely where disease orginates and how it is produced. It is only when we see it in some of its intense forms of developement that we are aware of its existence.

On the authority of the wisest of men there is nothing new under the sun, yet there are constantly presented to us things that appear, and are to us essentially new. Take the position of a tree. Its position may be said to be unchangeable; the soil, subsoils, atmosphere, and climate may be so far unvarying as to be also unchangeable. On the other hand, the roots of the tree are constantly year by year altering their position, traversing as it were the whole surrounding area in quest of food. Moisture also performs a very important part in the nourishment of the tree and all strata of soil penetrated by the roots are not equally full of moisture, so that when the roots pass through one stratum the tree is well nourished, and on passing through another it is less liberally supplied. Atmospheric influences also materially affect the tree, and as these vary so the growth varies. Insects, too, do occasional injury to trees by eating or poisoning their foliage, hence, as the foliage is good or healthy, or the reverse, so is the growth of the tree good or bad for that or for succeeding years. The mellow, withered, or fallen leaf in early or midsummer is not always a sure indication of a diseased tree, indeed it is always more satisfactory to find an evergreen tree of any kind shed its leaves freely on agitating the tree than that they should tenaciously hold by the tree after they have become withered. The decay or the dying of leaves in some instances, evidently depends on a want of vigour or on partial rot in the roots, but in a great majority of cases it is produced by injudicious planting and after cultivation. As an instance of this, I may state that last September I was requested to inspect the avenue of camphors growing in the Royal Agricultural Show Grounds. For the past two or three years they had looked very sick, each year getting worse, and they would eventually die if something extraordinary were not soon done to them. Various causes have been assigned for the appearance of these trees by those who have expressed their views upon the subject, but there was no difference of opinion as to their highly unsatisfactory state. Like most other places of similar extent in this part of the Downs, it is evident that the land in the area is not all alike in its suitability for the growth of trees; yet allowing for the difference, those conversant with tree culture will not have long to seek for the cause of this decay, which has been slowly but surely going on. The decline is not the result of old age, nor of the capabitity of the soil to grow and maintain the trees in a healthy condition, for a closer inspection of similar trees growing only a few yards away, confirmed my first opinion, which was that want of timely thinning and the want of nourishment at the roots, caused by bad planting, were at the bottom of it all. The questions put to me were—"Could anything be done to the trees to give them new life? Was it advisable to plant young trees between them, and when these had made a start to then take the sick ones out? The answer I gave was —"Leave them to me, with power to act, and they will be given new life." I remarked at the time these were planted that they would never make anything else but shrubs, and that only for a time. I examined the roots and foliage thoroughly, and found that three parts of the branches were dead or decaying and the foliage scant and yellow-tinted; but on examining the roots I saw at once the cause of all the evil. The trees in the first instance, had been planted too high; the roots when young had not been spread out; they were simply growing as if they remained in a pot, and those who know the size of these camphors will be surprised at my saying that the roots had not extended more than 6 feet from the stem of the tree, when they should have spread 12 feet at the least. The roots showed up out of the ground 2 feet from the trunk. They had embraced and interlocked each other and on account of the scant foliage, were exposed to the full rays of the sun, and the remark I made at the time of planting was now justified. My first work was to cut out the dead yellow branches, the centre of which was found to be decayed. Then all the inside branches were taken out, the surface of the soil under each tree was forked over very shallow, and outside the spread of the foliage a trench was dug all around the tree. Now this, of course, is the proper place to apply the nourishment, at the mouth of any tree, as here are situated the extremities of the roots, and as these feeding roots spread out beneath the soil pretty nearly to the same extent as the branches above ground, the tree should be fed at the distance of the extremity of the branches above ground from the stem. Here Nature teaches us a lesson: The head of the tree is in the form of a dome like an umbrella; all around the soil is exposed to the rain, and the water penetrates the earth just where the extremities of the roots are situated to receive it. In addition to this, the greater part of the rain which has washed and refreshed the leaves trickles down from the ends of the branches, and reaches the ground in the appropriate spot. In trenching around the trees immediately where the branches extended, the men were surprised to find no roots. This was nothing more than my practical experience expected, because, if there had been roots there would have been no necessity to do anything to the trees; but here was the mischief. The trees were then thoroughly mulched with half-rotten straw and manure, well covering up the large crinkled roots near the stem with a good coating of it. At the extremities, where the feeding roots should have been in the trench, the richest manure was

placed, but none was forked in. On the 17th March, the caretaker being present, we found that at the extremity of the trenching, and right up to within 3 feet of the stem, the young fibrous roots had formed a mat, and it was impossible to lift the mulching without damaging these roots. Now, what I wish to draw particular attention to is this: When the men started to fork over the surface they wanted to start near the stem. This I objected to at once, and made them keep their backs to it, showing them where the mistake is often made by digging underneath any tree or shrub. Each time you turn over the soil, so many rootlets suffer, because as you proceed you keep on doubling the roots over towards the stem, and this is carried on until the work is finished, when the soil is generally raked back again. Now this is against nature; it is similar to someone doubling your fingers back upon the wrist and leaving them there. The roots are left in that state until the next season, and then the same cruel operation is carried out again, until the roots are diseased by being constantly bruised and broken, when, of course, the tree suffers and begins to decay. The proper way to clean underneath a tree is to start just at the extremity of the branches, keeping your face to the opening until finished. You need not disturb the soil near the stem of a large tree, for do what you will there you cannot improve the growth of the tree; because all roots at that place cannot feed, being too large, but you can throw some of the soil from the first remove round the stem. If you want to prevent decay, feed them just as I have explained that is at the extremity of the feeding roots, and that is just where the rain trickles down from the leaves. A practical man can see immediately what is the matter with any tree that is sickly-looking; if the top of the tree is decaying, it is the fault of the tap-root entering the cold wet ground, and the remedy for this is to excavate and cut the tap-root clean off I say clean, for the least bruise will affect the tree's future growth. If the branches wither and the leaves fall off from the lower branches, it is because the surface roots have been disturbed and doubled back in the way I have already described. There may be some other cause, but that is the chief one. As all plants in this colony are surface rooted, it is advisable not to disturb them by that process. If the rootlets require separating the best way is to get a pointed pick and work from the stem by continuous drawing: this does no harm, and the few roots that are torn up are of advantage to the tree's growth; it separates the mats of roots and draws all towards the feeding point. There is no necessity to throw any soil back, get some mulching and cover all underneath the tree with a good coating. If you have any manure especially good, I have told you where to put it.

I know of one instance where the owner, wishing to prevent the roots of a camphor tree from coming into a bed made around the stem, placed bricks and sheet iron close round the bottom with the object of preventing its roots coming through; but very soon they got beyond this confinement; they turned upwards and now the 2 feet of soil is a mass of fibrous roots, and the tree has splendid foliage.

There is no pursuit wherein so much depends upon the right thing being done at the right time as in this; and in all other pursuits the man of close observation and systematic habits—who is not too proud to learn from any sources, however humble—is the one who will succeed, for there is no better guide than to seek the advice and experience of others and by following the advice tendered it will be the means of preventing decay, and will also give to the plants new life.—*Queensland Agricultural Journal.*

HYBRIDISM IN CITRUS.—The seeds of Citrus often contain more than one embryo plant. Lately Mr. Webber has shown that in hybrid plants of Citrus only one of the embryos shows any trace of the pollen-parent, the true hybrid being derived from the egg-cell, and all the others by adventitious embryos produced from the nucellar tissue of the ovule. —*Gardeners' Chronicle.*

THE STRAITS: DEVELOPMENT OF THE FEDERATED MALAY STATES.

COFFEE, COCONUTS, AND RUBBER IN PERAK.

A representative of a Colombo Paper has had an interesting interview with a resident of the Federated Malay States, who is on a vist to Ceylon, showing the opening up of the country, the introduction of new products and the starting of new industries, all affording splendid opportunities for the investment of capital. The development of the country is gradually taking place, Europeans are settling down, and plantations of new products are being opened, while the mineral resources of the country is also attracting a share of attention. The climate is fine and agreeable, and there is plenty of rain, and the soil is described as very rich. Land can be secured on favourable terms from Government on a long lease at a nominal rent.

The Rev. W. E. Horley, of the Methodist Episcopal Church, an American institution, who afforded the representative the interview, has spent many years in the Malay Peninsula carrying on Mission work at Ipoh, in Perak, while he has also travelled all over the country.

COFFEE.

Regarding the introduction of coffee we were told that the soil is remarkably adapted for its cultivation, and during recent years large plantations were being opened up round about Ipoh by Chinese *towkyahs*, that is men who have made their fortunes in tin mining. At Taluk-anson, about forty miles from the coast up the Perak River, a fine, large plantation, about four to five years old, has been opened by a European Company, and this is now bearing heavily. An older plantation is Waterloo estate in Kinta district, which covers an extensive area, and was planted over ten years ago. With the exception of the first-named estate which is on low land, the others are all on the hills, about 100 miles from the coast. Most of them are now bearing, and the produce is transported by river and rail, being taken to Penang or Singopore by small steamers. The berries are fine and large, and there is no leaf disease, and the trees have a vigorous growth. The price of coffee, however, is at present very low, but notwithstanding this, the native growers keep up their plantations.

COCONUTS.

Coconut cultivation can be said to be quite a new introduction. Up till recently whatever nuts were required had to be imported from neighbouring countries, but now the first clearings are producing crops, while further extensions are in progress. A large clearing at the mouth of the Perak River which was laid down in nuts some four years ago is now in bearing which demonstrates the richness of the soil. The Straits Plantations Co., a European concern, is opening out several thousand acres; while they are also intending to erect oil mills on their premises. The natives are also going in largely for coconut cultivation, and on some of their patches there are trees already in bearing. Several new Companies are being formed for coconut cultivation on a large scale at the mouth of the Perak River; and the industry promises to be an important one in the near future. There are vast tracts of land suitable for coconuts, and only waiting to be opened.

PARA RUBBER

The cultivation of Para Rubber is just attracting some attention, and the product is being planted by both Europeans and natives in differnt localities. A wealthy Chinaman, with much enterprise, is going in for Rubber cultvation on a large scale at Kotabharu, in the Kinta Valley, which is about 30 miles from Taluk-anson. He is opening out about 5,000 acres, and has engaged a European Manager to supervise the work. Other plantations for this product are also being opened in the Kinta Valley; and large patches among the coffee, on the coffee estates, are to be seen planted with the new product. It is expected that satisfactory results will be obtained in Rubber cultivation.

SUGAR PLANTATIONS.

The sugar industry in the Malay States, like that of the adjacent countries, is an old one. The cane thrives, very well, and in the Malay Peninsula is principally grown in the Krin District, adjoining Lower Perak, on the coast most of the plantations being owned by European Companies, but the cane is now being introduced inland and a large tract of land is being opened up tho Perak River, close to Taluk-anson, by Mr. Turner from Province Wellesley. Tamil coolies are felling the jungle, and it is expected to start planting the canes shortly. Almost all the existing plantations have their sugar mills; while it might be mentioned that all the labour employed on the plantations is secured from South India.

CLIMATE AND RAINFALL.

While on the subject of planting it will not be ont of place to say a few words about the climate and rainfall. The climate is described as pleasant and healthy, and there is plenty of rain. In fact it might be said to be raining during the whole year with the exception of two months which are hot and dry. The rainfall is pretty evenly distributed through the whole year, and the country well watered. There is said to be very little malaria in the country.

AGRICULTURAL EDUCATION IN GREATER BRITAIN.

PAPER READ BEFORE THE FOREIGN AND COLONIAL SECTION OF THE SOCIETY OF ARTS, ON TUESDAY, FEBRUARY 27, 1900.

By R. HEDGER WALLACE.

There can be little doubt that the interest taken in agricultural education generally is extremely widespread. The subject I find is not discussed by a few authorities alone, but seems to appeal to and attract the attention of the general public also. The title of my paper, I trust, indicates clearly the section or branch of the subject I intend to deal with, and I would ask that it be clearly understood that I do not approach it as an authority, agricultural or educational. My paper can be best described I think, as a compilation, in which an attempt is made to condense, in a form suitable for the general public, a large amount of data obtained from various sources. It is an attempt to answer such a common inquiry as, What are they doing in regard to agricultural education in this or that colony? I have no intention, therefore, of criticising either the work done or methods employed in the Colonies; and may only venture into the domain of criticism when discussing the point whether a suitable training for colonial life can be obtained in this country, or whether it is desirable to take advantage of the educational facilities in agriculture offered in the Colonies. Here of course all citizens looking forward to the settlement in life, either of themselves or of menbers of their families, meet on common gronnd.

The subject of "Agricultural Education" generally has within recent years been twice (as far as I am aware) brought before the Society of Arts. First by Mr. J. C. Morton in 1887, and next by Professor Wrightson in 1888. In Mr. Morton's paper no reference is made to the Colonies at all, while Professor Wrightson only makes a passing allusion to Canada in his. Again at the International Congress on Technical Education held in London in 1897, at the invitation of the Society of Arts, there is no detailed reference, as far as I can find to the work done in the Colonies either in the papers read on "Agricultural Education" or in the resulting discussion. Some information however, can be gathered from the papers on technical education. In the period under discussion, I may add, there have been quite a number of papers read and published on "Foreign Agricultural Education" but their survey has been limited to the work done on the Continent of Europe or in the United States, and the Colonies have been left untouched. Yet there is one paper to which I must direct particular attention, namely, the paper by Mr. Henry F. Moore on "Agricultural and Technical Education in the Colonies" read before the Royal Colonial Institute in January, 1891. This exceedingly interesting and valuable paper, in its references to work accomplished in the matter of agricultural education in Greater Britain, covers the same ground that I do in this paper. In fact I shall attempt a similar survey, but I do it after an interval of ten years, and if a comparison be made, my paper will indicate, I hope, the progress accomplished in the Colonies and dependencies surveyed.

I have already stated that the general public are interested in learning what is being done in the Colonies in regard to agricultural education, and they are also keenly interested in discussions as to whether a suitable training for colonial life can be obtained at home or not. That such questions are really of general interest, and one not limited or restricted to the area in which dry-as-dust authorities and faddists profound and demolish the dogmatic assertions of each other, can be readily illustrated by references to our general literature as represented by our ordinary monthly magazines and reviews. I would in this connection refer to such articles as that entitled "Colonial Training for Gentlemen's Sons" in *Chambers' Journal* for 1885, to Mr. Montefiore's "Education for the Colonies" in *Macmillans' Magazine* for 1892, to the article by Frances Macnab on "The Production of Learned Pigs amongst the Poor" in *Temple Bar* for 1896, and to Mr. George J. Holyoske's article on "Emigrant Education" in the *Nineteeth Century* for 1898. The articles I have just named, and many similar ones that could be quoted, support I think, the view that my paper should be addressed to, and primarily intended for, the ordinary man, rather than for the expert. At any rate such is the position I have adopted, and I hope these prefatory remarks will sufficiently explain.

When one surveys the agriculture of Greater Britain it is at once apparent that it can be grouped under two heads, *i. e.*, farming, farms, and farmers: and planting, plantations, and planters. That there is a difference between these two groups will be at once recognised; but to define when or how the distinction is made or can be drawn is by no means an easy matter. Generally speaking, however, it may be assumed that a plantation is a large estate devoted to the rearing of tropical or semitropical crops—such as sugar-cane, tea, coffee, cotton, and tobacco—by the labour of an inferior or subject race. On the other hand a farm can be of any size and is cultivated by the labour of the owner, assisted when desired by the labour of men of his own race, and the crops grown are those of a temperate clime. The distinction between a farmer and planter is so marked that it has been stated (in *The Times* I think) that the tendency or tone of a body of planters is to be exclusive and aristocratic, while on the other hand that of a community of farmers is generally democratic.

The technical education or training in agriculture of a prospective farmer and a planter (we suppose will be readily admitted), ought to differ a good deal, seeing that the work, for instance, of a tea planter in Assam differs wholly from every point of view from that of a farmer in Tasmania. As far as I am aware, however, no such dstinction is made in the agricultural training obtainable in this country: Some such specialised training is, I am aware, obtainable at Kew, by gardeners, and a man going out from there to some tropical botanic station has already had some experience in the propagation of tropical plants specially those of economic value. Turning next to Greater Britain there also, unfortunately, we find no facilities are provided for the agricultural education or technical training of the planter, such facilities as do exist in the tropical regions being intended entirely if not exclusively for the benefit of the native race. I believe, however, that under Dr. Morris's scheme of agricultural education for the West Indies opportunities are to be given to the younger generation of planters and sons of planters to study "the scientific problems which underlie the pratical work in which they are daily engaged."

There are many in this country, I think, who at some period in their life have had to ask themselves

the question—can a training for a life career in Greater Britain, as a farmer or a planter, be obtained in England? That for a planter is, I should say, practically unobtainable, as the soil, climate, vegetation, and conditions of life and work with us are not the same as in tropical and subtropical countries. Perhaps it is from this very cause that, as Sir William Des Voeux has pointed out, we are said to be most subject of all colonisers to entertaining delusions about tropical cultivation. "The luxuriance," he states, 'of the tropical virgin forests appeal to the colonising enthusiast chiefly as indicating possibilities of its succession by equal luxuriance of plantations controlled by planters." In imagination he sees the 'jungle,' 'bush,' or 'scrub' replaced by fields of sugar, cotton, or tea, judging in doing so, of the cultivation and vegetation of the tropics by the conditions common to the temperate zone. As regards planting then it would appear that the only education or technical training available is by the system under which young men are placed out with planters to be taught the management of an economic plant in all its stages, from the seedling in the nursery to the shipping home of the ultimate commercial product.

There still remains a part of the original question to be examined, namely can a training for farming in the Colonies be obtained in England? Those who intend to settle and farm in the Colonies can usually, I think, be divided into two classes—those who have been brought up in rural districts and from an early age have been accustomed to farm and manual labour, and on the other hand those brought up in urban districts unaccustomed to farm labour and often even to labour in any form. In a way, as far as I can gather, this distinction is to some extent recognised in this country. Those who are acquainted and accustomed with the practical work of agriculture can find institutions in England at which they can study simply the science of agriculture. At the same time those who have known acquaintance with the details of agricultural practice will be able to find institutions, where besides studying the theory of agriculture, they will also be instructed as regards its practical details, taking part in all the operations and processes which go to form the yearly cycle in farming. Turning now to the Colonies, what appears to be a general feature there is, that in the agricultural colleges of Great Britain it is assumed that the student who seeks instruction is unacquainted with practical farm work and, therefore, practical work or manual labour must be undertaken or performed by all and is a part of the instruction offered.

The agricultural settler in the Colonies as already indicated may have had a rural or an urban training. It is but natural, therefore, that these two differently trained men should approach the subject of "Agricultural Education" from two different standpoints. in the one case, considering that both the theory and practice of agriculture has to be learnt, it would seem that the most advantageous way to undergo such instruction would be in the college of the colony where settlement was intended. On the other hand one cannot but admit the justice of the other view held, namely, that the practical man who desires to study chiefly the higher scientific problems which underlie the practice of agriculture before he entered upon colonial life, would find it to his advantage to do so in England, where he can command the best teaching talent, material and equipment. Still there is one factor which must not be overlooked by the most practical man who has further benefited by an expensive agricultural education in England, and that is the time and money that must necessarily be spent by him, in obtaining colonial experience in the colony he has chosen. Colonial experience being a term which indicates the knowledge that is absolutely necessary for bringing undertakings entered upon with entirely new surroundings to a successful issue, and it includes experience in "the clearing of bush hands, the preparation of virgin soil for cultivation, the dealing with the heavy timbers of the colony, whether for use or destruction, the varied modes of cultivation and manuring consequent on the peculiarities of soil and climate and methods of clearing and reaping, the different systems of fencing, the handling of large herds of cattle and flocks of sheep. the local buying and selling of the stock and produce and the treatment of wool, timber meat, fruit, bark, butter and other produce for export." It will be readily seen therefore that this "colonial experience" is the difficulty that has to be surmounted and, of course, it will be just as readily observed that a training at a colonial agricultural college, theoretically. should give the knowledge and experience usually so much in demand and sought after.

This leads me to what is the main object in this paper—a survey of what our colonies and dependencies have attempted and accomplished in respect to agricultural education. I cannot pretend to be able to give a complete record of what is being done in the British Empire, but I have attempted by correspondence with the chief officials of our various colonies and dependencies, and by a careful study of numerous reports to be found in the libraries of the British Museum, Colonial Office, and India Office, assisted also by the good offices of the various Agent-Generals in London for our colonies, to gather together some authentic information on the subject.

Leaving England, then, and going to the great American continent, the first country there of importance for us is the Dominion of Canada. I have been favoured with a memorandum relating to agricultural education in Canada, which has been drawn up by Dr. Saunders, Director of the Dominion Experimental Farms as follows:—

"Information relating to agriculture in Canada is given to the farming community by both the Provincial and Dominion Governments.

"PROVINCIAL AIDS.

"1. *Agricultural Schools.*—Some of the provinces maintain agricultural schools for the practical education of young men in farming. The Ontario College of Agriculture at Guelph, Ont., is the best of these, institutions in Canada. It is well-equipped well managed, and has been in operation for about 25 years. There a large number of the sons of Canadian farmers receive practical training in their calling. An experimental farm is also carried on in connection with this institution. The full course of study covers a period of three years.

(To be continued.)

LESSONS IN TREE-PLANTING.

A class of blue-books that may be held to fully justify its existence, even in the face of recent criticism, is that relating to road-side arboriculture. As a rule departmental reports on this subject are at once concise, practical and instructive. It seems unfortunate, therefore, that advantages like these should not infrequently be neutralised by dilatoriness in publication. We have just received, writes the *Civil and Military Gazette*, two annual reports on road-side arboriculture in the Central Provinces, one for the year 1898-99, itself a sufficiently belated production, and the other for the year 1897-98. As it happens, the latter is intrinsically even more valuable than the former, and had it seen the light a couple of years ago, as it ought to have done, would doubtless have served important uses. Even at this late hour, however the book is still something better than waste-paper, and it may be that a province like Punjab which itself dabbles largely in tree-planting, can pick up some grains of counsel from the many failures and the few successes of the Arboriculture Department in the Central Provinces during the periods under notice.

The period 1897-98 embraced the worst half of the famine year, and although the closing portion was a time of recuperation, owing to the bounteous crops reaped in the autumn of 1897, still it was not to be expected that lost ground would be regained.

As remarked by the Commissioner of the Jubbulpore Division, "When the crops fail, road-side trees escape attention." The results of the year's operations

were, therefore, unsatisfactory. Planting operations, especially those conducted by private agency, were curtailed, and the maintenance of trees planted in previous years was a matter of special difficulty, owing to the drought that prevailed and the low level of the sub-soil water. But there were probably additional reasons for the comparative want of success. The Director of Land Records and Agriculture, who has watched the working of the present system for a number of years, seems disposed to question whether the allotments are always spent to the best advantage. Making due allowance for the unfavourable nature of the season, he thinks "we want more concentration of our resources, and at present money is frittered away in driblets to little effect." The annual expenditure of District Councils on tree-planting amounts to about R9,000 per annum, and as this money is distributed with impartiality rather than with discretion, each Local Board gets roughly the useless sum of R100 to spend on twelve months aboricultural operations. As a particularly bad instance of this excessive subdivision of allotments, mention is made of Hoshaugabad district, in which an annual sum of R350 is split up to maintain six different nurseries. One, or at most two, nurseries should presumably suffice for all requirements, and by receiving undivided attention and financial support, would probably show much better results. On the other hand, as an instance of wise concentration of resources, Chanda district is cited, in which the entire annual allotment of R300 is to be devoted for the next few years to planting trees on a single trunk road: when the avenues on this road are duly established, and not till then, the District Council will consider other claims. Complaint is also made that the management of nurseries is often conducted in what is described as spasmodic fashion. The Nagpur nurseries, for example, contain 1,257 saplings, all of which have attained a growth of over three feet. When this defect was brought to light, and an explanation called for, the naive explanation was offered that no new plants were put down because the existing number of saplings was deemed sufficient. It had apparently not occurred to the apologist that many of the existing saplings might grow too old for transplantation before funds are available to plant them out on roads, and that what is required is a succession of plants in different stages of growth, the number ready for transplantation each year according, as nearly as possible, with the number actually required for planting out. It is clear that in the absence of some such arrangement arboricultural operations would shortly come to a standstill for want of saplings of the prescribed height, or, what is more probable, money would be wasted on putting down immature seedlings.

As already stated that the number of trees planted by private agency declined greatly during the few years of agricultural depression culminating in the famine of 1897. The only districts in which it was possible to enlist the co operation of private individuals are Bhandara, Balaghat, and Sambalpur. The assistance rendered in the two former districts was on a small scale, but appears to have been fairly effective. On this subject of tree-planting by private agency, the report for 1898-99 shows that there is much ground for dissatisfaction with the attitude of District Councils. In Nagpur the Chairman of the District Council states that "private persons show no desire to undertake the trouble of planting and rearing trees on the side of public roads." He, however, admits that the slackness of Local Board members in the matter has a good deal to do with the apathy. The Chairman, District Council of Wardha, remarks: "Private agency has again been found wanting. The history of the year under report is one more illustration of the futility of reliance on this source." The inference to be drawn from these remarks would seem to be that the people of Nagpur and Wardha are less fond of tree planting than those of more enlightened districts like Bilaspur or Bhandara. But as a matter of fact, this is not at all the case. The Officiating Commissioner of Settlements and Agriculture says: "I know from personal experience that trees have been planted in the past by private individuals on the sides of public roads, and there are no districts in which rights of ownership in trees are more keenly contested. If the Chairman of the District Council, or the Local Board member of the district, have ever stirred a finger to encourage private enterprise of this kind, there is no evidence to show it in their reports. In other words, where there is apathy at the top, there will be apathy at the bottom.

Now that most districts have come up for increased arboricultural allotments, it is more than ever necessary that the operations should be carried out in a methodical manner. To this end nearly all districts have been induced to frame schemes; but this alone will be of little utility unless more interest is taken in the subject by those responsible. The reports which accompany the statements are annually full of promises of what will be done "next year," but each year come confessions of neglet of rules. Money may be wasted on planting out immature saplings contrary to rule, but nobody is ever brought to book. Responsibility for failures must be fixed before much improvement can be manifested, and the conduct of arboricultural operations of any road should be as much the duty of the overseer or other official in charge of it, as the maintenance of the road itself. In the report for 1898-99 the Officiating Commissioner of Land Settlements says: "The orders of the Administration are contained in a Revenue Book Circular, but have the instructions which it lays down been communicated to the officials whose duty it is to carry them out? Plain instructions should be issued in writing to each official, and neglect to carry them out should entail his punishment. For instance, the gharra system of watering is laid down in paragraph 11 of that Circular; where it has been tried it has been found successful and economical; yet it was necessery to ask for information regarding it in nearly every district, and in many cases it is found that the system has never been tried, although enjoined in the plainest terms." Again, in the matter of enlisting private agency, the Circular prescribes the issue of a preliminary certificate when a tree is planted and of a sanad when it is established. But this procedure is hardly anywhere followed: it is flagrantly ignored. Every body acquainted with the lethargic character of petty landowners realises that it is almost useless to issue a sort of impersonal encyclical urging malguzars to plant trees in their own and the public interests. Individual officers must go to individual malguzars whose fields adjoin public roads, and use persuasive eloquence to stimulate them to plant trees. As long as people are assured that they will receive the fruit of trees which they may plant, and their titles are confirmed by the issue to them of the prescribed certificates and sanads, many will be glad to come forward. The Officiating Commissioner of Land Settlement and Agriculture writes: "I remember cases a few years ago when such persons were denied the ownership of the trees they had planted. This is, I hope, a thing of the past, but unless cerificates are issued in such cases, it is not unlikely that some ignorant road overseer may commit the same mistake, thereby effectually discouraging all private planting." This same critic says: "Some of the writers of the reports merely contend themselves year after year with lamenting the absence of private energy in the matter of tree-planting, but they never state what measures were adopted to enlist such efforts, or whether they themselves ever thought about it until the day that a draft report is put up for their signature." No doubt the present time is unfavourable for pressing the subject of road-side arboriculture. With famine imminent in many districts and a failing water-supply, arboricultural operations must necessarily be restricted. But there is no reason why, in such operations as are conducted, rules should be neglected, and neglect go unpunished, and the first essential is that every official in charge should know the rules and appreciate the consequences of neglecting them.—*Indian Agriculturist.*

COCONUTS AND NATIVE DEALERS.

JUDGMENT OF THE CEYLON SUPREME COURT.

Messrs. Justices Lawrie and Browne delivered judgment on March 16th, in the case in which Messrs. William Birch Junior & Co., Ltd., of Manchester, sued I. L. M. H. Mohamadu Mohideen of the Pettah. The plaintiff's alleged that the defendant consigned to them 625 bags of coconuts and drew on them a bill of exchange for £150. The coconuts had to be sold at a loss, and the plaintiffs sued the defendant for the recovery of £225—15—10 or its equivalent R3,427·03 due to them on this consignment. In defence the defendant pleaded that he suffered the loss owing to the neglect of the plaintifts, and admitted his liability to a sum of only £36—17—9. Mr. Dias, A.DJ., held that the loss was due to the plaintiffs' neglect, and condemned them in costs, giving them judgment only for the amount admitted. Their lordships gave judgment for the plaintiffs as follows :—

Mr. JUSTICE LAWRIE :—The defendant consigned a quantity of coconuts to the plaintiffs, a firm of merchants in England. Roughly speaking the agreement was that the plaintiffs should honour a draft for ⅔ of the invoice price, that they should do their best to sell the nuts at a profit, that they should be paid brokerage and storage &c. and that they should be remunerated for their trouble ; but as I read the agreement the consignors should bear the loss if the market fell or the articles did not find a purchaser. The speculation ended in a loss. The plaintiffs are out of pocket and they brought this action for payment. The defence is that the loss was caused by the neglect or want of skill or misconduct of the plaintiffs; that the plaintiffs ought to have sold the coconuts immediately or at least shortly after their arrival for 4s. per 100. They kept the consignment. The market did not rise for months and then so slightly as not to make up for the deterioration of the nuts. That is, fresh nuts were saleable at 4s. per 100 in December and though the price of fresh nuts rose in June or July to 5s. per 100, the price of stale nuts (as these had then become) was hardly 4s. and that the price obtained after so many months keeping was much the same as could have been got when they first arrived. The warehouse and other charges had accumulated, so there was a greater loss than if they had been sold for 4s. in December. Men are wise after the event and wish they sold when the market was higher, or bought when the market was lower. The defendant valued the coconuts at 8s. per 100. That estimate may have been justified by the prices quoted in September before the coconuts were shipped from Ceylon ; but it is clear that the high price (8s.) induced many from the East and from the West to import nuts to England, that the market was glutted, the prices fell and 8s. per 100 could not be got after the nuts arrived. The defendant wrote to the plaintiffs to sell, but they did not say what sacrifice they were willing to endure ; they did not say sell for less than 8s. If the letters implied that they would take a less price, they did not suggest that they would take half the value stated in the invoice. In my opinion the plaintiffs did not neglect the defendant's interest. At first, perhaps they were too sanguine as to a rise in the price. In January they showed they were not sanguine and they wished to bring the transaction to a close and they sent an account and drew on the defendant. They showed that at the prices obtainable there would be a loss. They asked to be relieved of the business and they were willing to transfer the account. An attempt was made to hand it over to Mr. Scrutton who did not agree to take the consignment over. Finally the plaintiff said that if the defendant did not make other arrangements they would sell for any price they could get. The defendant did not wire to prevent this. This speculation in coconuts valued at double their worth was bound to end in loss which the defendants have to meet. I would set aside and give judgment for the plaintiffs with costs.

Mr. JUSTICE BROWNE :—It appears to me that the learned Additional District Judge in declining to discuss in detail the evidence with regard to the state of the London Market for coconuts from Nov. 1896, when this shipment arrived, until May-June 1897, when they were sold, and in paying no attention whatever (so far as I can see) to the fact that from about the 22nd February until the 4th or 5th March, the defendant had placed the disposal of the shipment with another firm, has omitted matters of serious import in the consideration of whether or not the plaintiffs had failed in any duty or obligation by them to the defendant. The defendant certainly did not put any limit upon the price for which they should be sold in merely invoicing the nuts as at 8s per 100. It is to be noted, however, as to this consignment that the advice thereof preceded their arrival by only a few days, and that the shipment was in the less attractive forms of mixed unspecified sizes, instead of so many bags each of the sizes known in the trade as one, two and three, the first of which may have its subdivisions of large, extra large, and extra selected. Even had he therefore directed or had plaintiffs' broker desired to effect sales "to arrive" or "afloat," I find no reason to believe that such a sale would have been found easily practicable. The evidence as to the market rates shews me that after prices of 7s in Ocober and 8s in November there were such heavy stocks in London in December in readiness for the first of the four festivals, or festive seasons specified as those, when trade is most brisk, viz : Christmas, Easter, Whitsuntide, and August. That the highest price here proved to have been possibly obtainable in December sale would have been 4s 6d—5s 3d ; but that practically there were no offers when these and other parcels were offered on 9, 11, 16, and 18 December, the nuts having been landed on 5th December, and that it must be taken that 4s—4s 9d was the best price obtainable before their arrival. The result to defendant of any sale that would have been effected then at 4s is shewn by plaintiffs' *pro forma* account of 14th January ; it would have placed in plaintiffs' hands £17 16s 7s as against a draft for £150 which defendant had drawn against the shipment and plaintiffs had duly honoured. In spite of their having been offered at those 4 sales by a leading broker in the trade in December within a fortnight after arrival, the District Judge has held that "plaintiffs do not appear to have taken any steps whatever to dispose of them," and suggests that if on their arrival the price was only 4s the plaintiffs should not have honoured the defendant's draft. The consequence of that would probably have been that the Bank which bought the draft would either have simply redrawn upon defendant for the amount and let the nuts be sold to pay freight, or else have sold them with possibly a worse result than the *pro forma* account estimated, and in either case the defendant-consignor would have had no opportunity of seeing whether a less disastrous result could be arrived at ere he "ont his loss." When their broker reported to plaintiffs on the 4th January that there were no offers, were plaintiffs wrong in writing defendant and giving him a chance to make other arrangements ? Or should they have sold at that loss ? His letters to them of and after 23rd December, to effect speedy sales, had not then arrived, and they stood to lose about £130 upon this first venture of their new client, and had to keep a prudent watch over their own interests. Plaintiffs' manager says "it was unquestionably my duty not to sell in that state of the market," and in Frazer *v.* Vanderspaar Withers J., remarked, in the absence of authorities on the point, looking at the question from a common sense point of view :—"If a factor has the invoice prices before him and he finds that he can only put the consignment on the market for a price very considerably below the invoice price, it might be argued that he should communicate the fact to his principal who would either instruct him to sell for whatever price he

could obtain, or would demand the return of the goods subject to any lien for honoured drafts drawn against the goods and other legitimate charges." How defendant would have judged of plaintiffs had they so sold, may be considered from the fact that on receipt of their letter he did not wire "sell best possible price," and honor their drafts, thus making his loss then, but elected to try the market further per another agent, who on the 3rd March reported the nuts were then worth only 35s per 1,000, and declined to pay the draft and freight as a condition-precedent to their realising the invoice. No member of their firm however gave evidence for what "much better price" they could have sold them for the Christmas market. There is but little evidence (apart from Mr. Isaac's evidence as to sales "to arrive") of what the market rates were in and after March. They seem to have been 3/6—4/3. Even on the 25th March defendant wrote to plaintiffs "If you cannot obtain a better offer, deliver to Messrs, Scrutton. Owing to your non-experience in this line of business I had to suffer the loss." He evidently still believed that a better market could have been and might even then be found, and, in the same faith as he there wrote, has defended this action. But the evidence does not shew that this defence was well founded. One witness examined spoke chiefly, if not entirely of sales to arrive, which are more speculations than "Open Sales" and the other had no transactions in Dec.—May, except one in Feb. which was of assorted nuts and "to arrive." I have pointed out that defendant's general instructions to effect speedy sales were received after the plaintiffs had, as they thought it their duty to do, referred to him for instructions ere sacrificing the consignment at half the price he had anticipated, and I regard his action in desiring to see, could Messrs. Scrutton do better for him, and in not telegraphing or even writing "sell at once" is in itself approbating their having referred to him. I find no ground therefore for the strictures which the District Judge has passed in his Judgment on the plaintiffs. They appear to me to have taken all ordinary measures to bring the consignment to prompt sale, and defendant's loss is attributable only to the market being overstocked. I would set aside the dismissal, and enter judgment for plaintiffs as prayed for with costs.

THE RUBBER INDUSTRY.

At the sitting on Friday, February 23rd., in the House of Commons, Mr. Weir asked the Secretary of State for the Colonies, whether he was aware that the value of rubber imported from the British Central Africa Protectorate through Chiromo amounted during the year 1898-99 to £10,233 18s, as compared with £1,044 17s 6d in 1897-98, showing an increase of over £9,000 in one year; and would he state whether any efforts were being made to regulate the mode of collecting rubber juice, so as to prevent destruction of the rubber vines.

Mr. Brodrick, who replied, said,—Yes, it is so stated in the last report on the Protectorate. Regulations regulating the manufacture and sale of rubber were issued on September 1st last.

MORIB COCONUT ESTATES SYNDICATE, LIMITED.

Registered on February 23rd by Heath and Hamilton, 50, Lincoln's-inn-fields, W C, with a capital of £2,500 in £10 shares. Object, to acquire an estate in the district of Kuala Langat, Selangor, Malay Peninsula, and to carry on the business of coconut and rubber growers and merchants. The first directors (to number not less than three nor more than seven) are to be appointed by the subscribers. Qualification, one share.—*Financial News*, March 2.

CEYLON COMPANY DIVIDENDS FOR 1899.

(AS COMPARED WITH PREVIOUS DIVIDENDS).

The following table has to do with 24 Plantation (Tea) Companies, one for Coconuts and three Hotel Companies—28 Limited Rupee Companies in all. And it will be seen that, with very few exceptions, the dividends declared for these Companies for 1899 are better than for 1898. In only two instances do we find a less dividend paid; in six other cases the dividends for 1898 and 1899 are the same; while twenty Companies declare an improved dividend for last year over 1898. Here are the figures:—

	DIVIDENDS:					
NAME OF CO.	1899. p. c.	1898. p. c.	1897. p. c.	1896. p. c.	1895. p. c.	1894 p. c
Agra Ouvah	20	18	17	22	20	16
Bristol Hotel	8	8	5	10	10	10
Castlereagh	12	7	6	14	15	8
Clyde	2½	4	6½	8	—	—
Colombo Hotels	18	18	18	18	17	15
Galle Face Hotel	8	5	—	—	4	—
Gangawatte	6	8	10	—	—	—
Glasgow	18	15	15	17	18	18½
High Forests	5	4	2	2½	—	—
Horrekelly	5	6	5	10	7	5
Kalutara	7	2	—	4	—	—
Kanapediwatte	10½	9	9	—	—	—
Kelani Tea Gardens	5	2	5	5	—	—
Kirklees	6	4	15	13	12½	—
Knavesmire	5	2½	5	7	—	—
Maha Ouvah	8	6	8	9	16	8
Nahavilla	6	—	—	13*	—	20
Neboda	5	—	2	—	—	—
Ottery	8	7	7	10	—	—
Palmerston	5½	5	4	8	—	—
Pine Hill	5	4½	6	7	7	9
Putupaula	9	7	—	10	10	—
Rayigam	5	2	2	3	—	—
Roeberry	3	3	3	—	—	—
Ruanwella	3	3	—	5	—	—
Upper Maskeliya	8	5	9	15	18	20
Vogan	7	5	6	8	—	—
Yataderia	25 plus 20†	25	20	25 plus 7½†	25 plus 20†	25 plus 5†

* This is for 1895 and 1896. † Bonus.

THE RECEIPTS FROM THE TEA-DUTY have recently been at the rate of £160,000 per week, or just double that usually charged at the beginning of a year, says the *Grocer* of Feb. 17th. This represents a clearance of about 720 tons per day, or a quantity sufficient to last the public two and a half days. The cold weather has caused a considerable demand for rum. In mild winters 90,000 gallons of that liquor is consumed, for the past few weeks 140,000 have apparently been required to help to counteract the action of frost. Possibly the existence of the suspicion that the duties on spirits will be raised may have something to do with these increased clearances from bond; but as the Budget is two months off, merchants are not likely to lose the interest on the duty for six or seven weeks if they can help it. Cocoa is advancing in popularity at a great rate; for the month of January, 1897, the consumption was 1,082 tons, in 1898 the month's demand was 1,400 tons, in 1899 the quantity was 1,670 tons, last month it had risen to 1,830 tons.

BIG CEYLON TEA CO.

COOPER COOPER & JOHNSON.

DIRECTORS' REPORT—NO DIVIDEND ON THE ORDINARY SHARES.

The report of the directors of Cooper Cooper and Johnson, Ltd., for the year ended 30th June, 1899, to be submitted to the ordinary annual general meeting to be held in London on 6th prox. states that the difficulties of effecting the transfer of so many estates and businesses, and their organisation as a whole, have been very great, but the directors consider that the company has now been brought into good and economical working order, with steadily improving results. During the first part of the year under review the management of the estates acquired by the company was not in their hands, but after the transference had been effected and other matters in London settled, Mr. E H Hancock proceeded to Ceylon, on behalf of the company, to make the necessary arrangements for combining and working the estates. The Board, being subsequently dissatisfied with the way in which the Colombo agency was being managed by Messrs. J J Vanderspar and Co., instructed Mr. Hancock to pay special attention to that matter, and eventually particulars of such a nature came to the knowledge of the Board as to render, in their judgment, a change of agency necessary in the interests of the company. This change was made, but unfortunately disputes have arisen on accounts and otherwise, the details of which the directors are unable to go into, the matter being still sub-judice. The non-receipt of the accounts from Ceylon has caused the delay in preparing the accounts of the company. Mr. Hancock spent six months in visiting Ceylon, and making arrangements on the estates, which have already resulted in a more efficient working, by which the cost of the tea has been reduced and a considerable saving effected in every way, and he reports most favourably on the future prospects of both tea and cocoa estates. The amount of tea produced up to 30th June was 2,100,302 lb. and it is estimated that the production for the current year will be 2,322,000 lb. at a reduced cost per lb. The cocoa estates, from various causes, including unfavourable weather, showed disappointing results, but advices received to date show that a larger crop may be expected this year. The wholesale business shows satisfactory results. The business acquired from Messrs Cooper Cooper & Co., Ltd., has been a serious disappointment under the late management, but it is now showing better results under new direction, and there is reason to hope that it will prove a satisfactory source of revenue to the company in the future. The late managing director ceased to control the business in May, 1899, and subsequently resigned his seat on the board. The directors regret that owing to the results shown by Cooper Cooper & Co.'s business, and to the poor cocoa crop, they are unable to recommend a dividend on the ordinary shares for the year ended 30th June, 1899. It will be seen from the accounts that the net profit in working the properties is £23,068. After deducting general expenses and interest £9,001 remains, out of which preference dividends amounting to £6,996 have been paid, leaving a balance of £2,005 to be carried forward. The directors are pleased to say that Messrs. Antony Gibbs and Sons have undertaken the London agency of the estates. It has been decided that 1st April and 1st October are more convenient dates for the payment of preference dividends payable in respect of profits made up to 31st December and 30th June, and a resolution will be proposed to that effect. Messrs. A A Clark, M P Evans and Clive Meares have retired, and Messrs. G L Davies and Hector F Monro have joined the Board, and the shareholders are asked to confirm their appointment. Messrs. John Young and H A Hancock retire. The former does not offer himself for re-election owing to ill health.

WORKING ACCOUNT.

To loss on Cooper Cooper and Co.	£2,829
,, Balance carried to profit and loss account	23,068
	£25,897
By profit on estates	£20,750
,, Profit on Johnson, Dodds and Co. ..	5,141
	£25,891

PROFIT AND LOSS ACCOUNT, for year ended 30th June, 1899.

To rent salaries, accountants, general expenses and income-tax	£2,195
,, directors' fees	1,150
,, legal expenses	923
,, interest	1,720
,, debenture interest to 30th June, 1899 ..	8,155
" preference dividend to 30th June, 1899 ..	6,996
,, balance, being profit carried to balance-sheet	2,005
	£23,144
By balance brought from working account...	£23,068
,, transfer fees	76
	£23,144

BALANCE-SHEET, as at 30th June, 1899.

LIABILITIES.

To Capital authorised—		
170,000 preference shares of £1 each	£170,000	
170,000 ordinary shares of £1 each...	170,000	
	£340,000	
To Capital issued—		
156,122 preference shares of £1 each...		£156,122
167,468 ordinary shares of £1 each..	£167,468	
Less calls in arear	30	
		167,438
,, Forfeited shares—amonnt paid on ..		469
,, Calls overpaid		—
		£324,029
,, 5 per cent. first mortgage debenture stock..		206,800
,, Sndry creditors—secnred ...	£33,254	
,, ,, unsecured ...	44,344	
		77,599
,, Estate account creditors		6,491
,, Trade creditors		32,573
,, Profit and loss account		2,005
		£649,497

ASSETS.

To Goodwill and assets acquired by the company, inclnding freehold and leasehold properties, plant, machinery, fixtures, carts, horses, &c., less depreciation of leases, plant, &c., &c. ..		£544,556
,, Capital improvements		1,981
,, Office furnitnre		81
,, Estates' debtors		17,979
,, Sundry debtors		1,426
,, Trade debtors		39,648
,, Stock		32,511
,, Coast advances		4,624
,, Debenture issue account		2,335
,, Cash in hand ..	£378	
,, Cash at bankers ..	3,978	
		4,356
		£649,497

BEES AT KANDY.

It is a strange fact that regularly once a year a swarm of bees form a hive on the huge beam supporting the verandah of the upper story of Messrs. Walker, Sons and Company's premises in Ward Street. The attraction of bees to this particular beam is strange and on Friday last a multitude of them settled themselves once again on this their favourite spot and yesterday morning the unruly hand of some mischievous lad in all probability disturbed the insects which caused great commotion in Ward Street. The bees commenced stinging every passer-by. Several native men, women and boys were attacked and it was amusing to see them running along the streets, many of them with the bees sticking on to their heads or faces. Mr. Elton, Private Secretary of Sir Winfield Bonser, Chief Justice, was one of the victims. He was riding up the street on his bicycle when he was stung by one or two on his face and throwing his cycle aside he ran up to the pavement and fortunately found himself in the Central Dispensary. There the Dispenser applied some soothing remedies and in a few minutes he left the place. He was seen in Court, in the afternoon, however, with marks on his face. It would be to the safety of the passers-by if the bees were smoked out of the place.—*Cor.*

PRODUCE AND PLANTING.

Advance Duty Payment on Tea.—The general order of the Custom House Board requiring the immediate withdrawal from the bonded warehouse of goods on which duty has been paid is as follows: "General Order 14, 1900.—Custom House, London, February 19, 1900.—Duty-paid Goods: Prompt Removal from bonnded Warehonses.—The Board, in concurrence with the Board of Inland Revenue, direct that the following paragraph be inserted in the Warehousing Code, after paragraph 489: '489A. The sole purpose for which a bonded warehouse is approved and appointed by the Commissioners of Customs or Inland Revenue is to secure keeping of dutiable goods before and until the payment of duty or exportation, and subject to any permissible operations therein; and the bond taken from the sureties of a warehouse-keeper is to secure the payment of duty upon such goods. It follows that the retention in a bonded warehouse of dutiable goods after duty has been paid thereon is to turn the warehouse to an illicit use. 'Warehouse-keepers and owners of bonded goods must therefore be made to understand that the payment of duty entails an obligation to remove forthwith from bonded premises the goods in respect of which such duty is paid Collectors at outports, and the inspectors in London are directed to make this Order known to the several warehouse-keepers within the respective ports and, in order to facilitate this notification the new paragraph will be printed separately for distribution and copies can be had on application in the usual manner to Division II. of tho secretary's office.—By order of the Board, R T Prowse." One effect of this general order will be that it will be difficult to cover the risk of any large inorease of tea duty by paying the duty and leaving the goods in the warehouse.

The Outlook for Coffee.—Coffee planters would be glad to hear that there was foundation for the statements made in some quarters that the consumption of the berry was increasing at a rate that threatened to overtake the production. Statistics do not bear this out, however. Messrs. W. H. Crossman and Bros., of New York, in their circular of the 9th ult., estimate that the Brazil crops of Rio and Santos coffee together will swell to an aggregate of 37,663,000 bags for the four seasons from July 1, 1896, to June 30, 1900, as contrasted with 22,682,000 bags for the same number of seasons between July, 1892, and June, 1896, a growth in the production of about 15.000,000 bags in four years. According to Messrs. Crossman's statistics, the total deliveries of the Brazil description of coffee in the United States during the four seasons ended June next will approximate to 22,807,000 bags in comparison with a previous four years' delivery (1892-96) of 17,432,000 bags, which is tantamonnt to an enlargement of 5,375,000 bags in one country alone. Turning to Europe for the same period we find that the deliveries of coffee of all kinds (including Brazil) will probably amount to 32.178,000 bags, in lieu of the 26,439,000 bags delivered in the interval prior to 1895-96. The difference in this case is clearly shown to be 5,739,000 bags, but still on the favourable side, and makes the total gain in the quantities of coffee cleared from the stocks on hand in Europe and the United States equal to 11,114,000 bags in the short space of four years. It will thus be seen that, although the increase in consumption is considerable, it falls short by nearly one-third of the extra 15,000,000 bags produced in the corresponding period of time. There is not much chance therefore at present of a failure in the world's supplies.—*H. & C. Mail*, March 2.

THE LONDON COCOA MARKET.

BY HAROLD HAMEL SMITH.

London, March 5.

In comparison with the total business done in cocoa since last mail, this has been quite a "Ceylon week," for of the 4819 bags of all growths offered this week for public sales, 2,163 bags were Ceylons, and of the 2,200 bags sold at and after the sale Ceylons accounted for at least 1,400 of them, so the island has had a good share of attention

On the whole it has been a quiet week, the sales were made up of 2,163 bags Ceylons, 1,682 bags Trinidad, 363 Dominicas, 300 Guayaquil, and about 300 varions. The continued pressure caused a further drop in Trinidads, in the lots sold, whilst some of the bids were very low, and out of proportion to others. The market generally was evidently not wanting this growth as there was an absence of competition when it was offered: middling to good red sold at 75s to 78s, and some marks since the sale realised 80s. The Ceylons received much more attention and sold at 64s 6d for native, 56s to 68s 6d for smalls, 69s to 75s for middling to fair, 76s to 83s 6d good to fine up to 90s for very fine, At times the prices were a little irregular—but on the whole steady, except for the cheaper growths.

The shipments from Trinidad up to the 14th Feb. were only 3,146,000 bags against 6,217,000 bags last years. It is hoped the difference will be much less by July, and what the crop will be after that it is too early to say. Although the Venezuelan cocoa is coming in fairly well just now, it is said that owing to the Revolution, cultivation is neglected, many of the labourers are away, and the bush is growing very high, all of which is bad for the crop.

Thanks to the courtesy of the selling brokers I was able to ascertain that the L R C (Trinidad) cocoa of which I sent you a sample, and which had been here since March 1898 had lost 18 ounces (eighteen ounces) a bag of 1½ cwt. during that period and the charges amounted to 13s 9d per bag. There are 5,210 bags Cocoa (all growths) advertised at present for sale next week.

TEA TWADDLE.

Apparently the increasing popularity of Indian and Ceylon teas in the United States is causing uneasiness among certain sections of the grocery trade which have been vending the Chinese product with profit in the past. There have been many tirades written against the cup that cheers without muddling one's brains; but one does not look for twaddle from persons who are credited with intelligence. Doctor Kellogg, who "runs" a sanitarium at Battle Creek, in Michigan, U.S.A., with branches at Calcutta and Darjeeling, seems to have outdistanced all previous detractors of tea. According to Doctor Kellogg, tea "is a most dangerous drug." He tells of servant girls arrested in the streets of Boston for being drunk and disorderly who had tasted no alcohol, but who had "chewed tea constantly;" also, of an old lady in Minneapolis who drank thirty or forty cups a day and ended her life in a lunatic asylum. But even worse than these cases are those in which tea plays a more silent and insidious part. Among women it produces a kind of mania—"the mania for acting the persecuted saint." Among men, unlike the much-condemned alcohol, it produces fear. "One patient who was suffering from tea poisoning in this way never passed a high building without looking up to see if something was going to fall upon him. Tea is responsible for sleeplessness, and, in fact, most of the ills which flesh is heir to." This is the kind of language one expects from the illiterate. However, tea will go on making its way in public favor so long as men like Lord Kitchener sing its praises as the best sustainer for fighting men.—*Indian Gardening (Calcutta.)*

[Similar tactics are employed to win favor for imitation coffee and other articles. It is a wonder that retail grocers will put into stock articles made by parties who persistently and systematically discredit staple and universally used articles in order to create a demand for some cheap and enormously overvalued substitute or rival brand. There is need of reform in this direction. Some makers of gelatine seek to win favor for their brand by discrediting all other makes. Some manufacturers of soap hint that rival makers use stock of an obnoxious character. This sort of publicity leads people to ignore all goods of the class attacked, and thus injures the demand in all directions. The retailers have a remedy within control by throwing out of stock goods made by manufacturers who persistently attack quality.—ED. *American Grocer.*] Feb 14.

BRAZIL COFFEE NOTES.

Should the French Government impose double its present import duties on coffee, who will suffer most? In our opinion the French people will hardly care to pay the cost, nor will they wish to do without coffee. Brazil will suffer, of course, but less perhaps than France.

The minister of industry has advised the director of the Central railway that he has assented to the petition of the coffee commissarios to be relieved of the obligation of having their coffee sent to a central deposit. They can hereafter take their coffee to their own deposits.

The ship "Somali," which cleared for New York on Thursday, takes a cargo of 82,169 bags of coffee, shipped by Messrs. J W Doane & Co. of this city. This is not only the largest cargo which has ever left this port in a sailing vessel, but is the largest that has ever cleared in any vessel with but one exception. And in the case of the exception, the cargo came partly from Santos, while the "Somali's" cargo was entirely made up here and was shipped by one firm—probably the largest single shipment on record.—*Rio News*, Feb. 6.

THE "TROPICAL AGRICULTURIST": A COMPLIMENT.

(From Mr. Montague Kirkwood, Japan.)

I have always read that excellent periodical with the greatest interest and consider it invaluable to all those who desire information of a thoroughly practical nature with regard to agriculture and kindred industries in tropical or semi-tropical countries. If you have not already done so, you would do well, I think, to bring it prominently to the notice of the American officials and merchants and planters, who are now engaged in the development of the Philippines. Should you forward copies to the "President of the United States Commission to the Philippine Islands," you are at liberty to say that you do so "on the recommendation of Mr. Montague Kirkwood of Tokyo, who has furnished Reports to the Commission in regard to the Government of Britain's Dependencies in Asia."

PORTMORE TEA COMPANY OF CEYLON.

Report of the Directors submitted at the Third Annual Ordinary General Meeting of Shareholders, held at 24, Rood Lane, London, E C., on Thursday, 8th March 1900.

The Directors have the pleasure to submit the General Balance Sheet and Profit and Loss Account for the year ending 31st December, 1899, duly audited.

	£ s. d.	£ s. d.
The net amount at credit of Profit and Loss after providing for general expenses, Income Tax, &c., and writing off New Clearings and Withering Shed £166 11s. 6d is		4,393 11 4
To which should be added Balances forward from former years, viz:—1897 ...	116 16 7	
1898	367 5 8	
		484 2 3
		4,877 13 7
An Interim Dividend of 5 per cent was paid September 18th, 1899, amounting to ...	2,000 0 0	
It is proposed to pay a final Dividend of 6 per cent (making 11 per cent in all, free of Income Tax) which will absorb	2,400 0 0	
And to carry forward to next year	477 13 7	
		£4,877 13 7

In presenting their Third Annual Report, the Directors have pleasure in recommending a dividend of eleven per cent.

The yield of tea has been 242,740 lb., being at the rate of 510 lb. per acre, the cost of production has been £4,249 15s 9d being at the rate of 4d 201 per pound, and the crop has netted £9,024 10s 1d, being 8d 92 per pound, equal to a profit on the capital of the Company of 11·93 per cent.

The lower price realized for the tea has not been due to any falling off in quality, but to the unprecedented demand for common tea which has existed during the past year and which has withdrawn the attention of the market from higher class teas.

The average rate of exchange for year has been 1s 4 13-64d against 1s 4 5-64d during 1898.

Mr. W. Herbert Anderson retires from the Board by rotation, but being eligible offers himself for re-election.

The latest reports from the Manager in Ceylon describe the estates, buildings, and machinery as all being in good order, and the estimates of crop and expenditure for the current year give promise of continued satisfactory results.

The Directors desire to express their unqualified satisfaction with the manner in which the Manager and the Superintendent of the estates in Ceylon have discharged their duties during the year.—By order of the Board,

SHAND, HALDANE & CO., Secretaries

THE GANGAWATTA ESTATES COMPANY OF CEYLON, LIMITED.

THE ANNUAL REPORT.

ACREAGE:

Tea in full bearing	..	335 acres.
„ partial bearing	..	2 „
„ not in bearing	...	8 „
Grass and Ravines	..	10 „
Total	..	355 acres.

The Directors beg to submit their third annual report and statement of accounts for the year ended 31st December, 1899.

A visitation of blight on some of the best yielding fields has caused a shortfall to the extent of 10,000 lb. on the crop, and the result has been a yield of only 140,025 lb. against 150,000 lb. estimated.

Prices have been slightly better than last year, and the average is 40·16 cents per lb. while the cost of production works out at 27·06 cents per lb. including 2·70 under the head of manure.

The working account shows a surplus over expenditure of R18,343·92 which, after allowing for interest on mortage, amounts to a little over 9 per cent on the capital. Out of this, however, we have had to spend R3,316·95 for permanent improvements for which there was no capital provided, and that, with an uncovered balance under the head of coast advances, has somewhat crippled our funds. The expenditure on manuring was absolutely necessary, and it is proposed to treat a third of the acreage annually with artificial manure.

An interim divideud of 3 per cent has already been paid, and the Directors now propose a final dividend of the same amount, making 6 per cent for the year.

After payment of this, the balance remaining at credit of profit and loss account will be R3,996·33 subject to deduction for directors' fees, and it is proposed that this should be carried to an extension account against the capital expenditure this season above alluded to.

Mr Hayes reports that the properties are in good order.

The estimate of crop for 1900 is 160,000 lb. and of expenditure R43,060 which includes an outlay of R5,175 for manuring.

In terms of the articles of Association Mr. Anderson retires from the office of director, and offers himself for re-election.

The appointment of an auditor for the current year rests with the meeting.

NAHAVILLA ESTATES COMPANY, LD.

ANNUAL MEETING.

The Directors beg to present their Report for the year ended 31st of December, 1899, together with a Statement of Accounts for the same period, which have been duly audited.

The Tea Crop amounted to 377,376 lb, against an estimate of 345,000 lb, and the Coffee Crop also exceeded expectations, 1,786 bushels having been secured in place of 1,360 bushels estimated.

Prices obtained for the Nahavilla Teas have been very satisfactory, but the Ury Factory shews a falling off from last year, which may have been partly caused by insufficient withering space. Further accommodation has now been provided, but more is still needed to meet the requirements of an improving yield. The general average price for all the Estates combined amounts to over 40 cents per pound.

The cost of producing the teas and placing them on the market is 30·32 cents per lb. and is less than in previous years. The rates, moreover, should continue to decrease as the young fields of tea come into bearing. A distinct improvement has taken place in connection with the working of Galella, but the estate has still to meet the cost of manufacturing its teas at a neighbouring Factory, and the ordinary expenditure this season also includes a payment of R1,698·36 on account of the new Cart Road.

The total working profit from the four Estates for the year under review, amounts to R50,076·72. which is equal to about 10 per cent on the capital of the Company after allowing for interest on the mortgages.

The Profit and Loss Account, after paying interest on Mortgages and other charges, shows a balance of R50,828·62 at credit. Out of this a sum of R15,239·47 was brought forward from last year to meet previous extensions, and we have spent R24,645·02 under that head this season.

Your Directors recommend that a Dividend of 6 per cent be declared, absorbing R23,790·00; and that the balance, after providing for Directors' fees, and a Bonus to the Superintendents of Nahavilla and Galella which has been omitted should be carried to Extension Account.

The latter account will then be well in funds as regards past outlay, but further extensions are still imperative to the Factories and Machinery on Ury and Nahavilla, even if it be decided not to have a Factory on Galella. The upkeep of a considerable extent of tea not in bearing must be provided for, and there is also much available land which ought to be planted in order more fully to develop the estates. There is, moreover, a large lock up in Coast advances which has to be met, and your Directors will have to consider how capital can best be raised for these purposes. The requirements are judged to be too large to admit of their being wholly met out of revenue without unduly depressing dividends.

The new Season's estimates point to a yield of 420,000 lb. of tea and 750 bushels of coffee against an outlay of R129,564·00, and under normal conditions of weather it may be hoped that these crops will be fully secured.

ACREAGE.

	Nahavilla.	Ury.	M. P. G.	Galella.	Total.
Tea in full bearing	...251	209	195	294	949
Tea in partial bearing	72	155	22	—	249
Tea not in bearing	... 50	163	35	3	251
Coffee	...112	41	—	—	153
Forest	... 45	66	5	72	188
Grass, Fuel trees and Patna	... 71	132	84	244	531
Total	...601	766	341	613	2,321

Mr. Anderson retires from the Board of Directors by rotation, and is eligible for re-election.

The appointment of an Auditor rests with the Meeting.

THE CAMPHOR TREE.—In reply to the question, "Is the camphor tree grown in California?" the editor of the *Rural Press* replies thus:—The camphor tree has been grown for many years as a shade and ornamental tree, but no effort has thus far been made to produce camphor upon a commercial scale. At the State University, some years ago, a small sample of camphor was made from the twigs and foliage, and was exhibited at the fairs as a matter of common interest. The trees are very widely distributed over the State of California, both along the coast and in the interior, and everywhere are much admired for their thrifty growth and natural beauty. There are trees, probably nearly forty years of age, sixty feet in height, and three feet in diameter at the base. No large plantations have been made, but only scattering trees here and there.

PLANTING NOTES.

STABLE-MANURE FOR POTATOES.—According to some experiments carried out for the Wilts County Council, a more profitable crop was obtained with the use of stable-manure, at 5s a load, than with artificials. The stable-manure undoubtedly enabled the plants to resist the effects of the drought of the last two seasons.—*Gardeners' Chronicle*, Mar. 3.

BORDEAUX MIXTURE AND THE POTATO DISEASE.—According to the experiments made on behalf of the Wilts County Council, the average gain from the use of Bordeaux Mixture as a preventative of the Potato disease amounted to over £2 10s per acre. The application is specially valuable to late varieties. Two applications are generally necessary, the first being most advantageous, whilst no benefit accrued from a third spraying.—*Gardeners' Chronicle*, Mar. 3.

THE "COCONUT" DISPUTE, with the judgments of their Honors Justices Lawrie and Browne on page 731, ought to carry a lesson to local consignors of produce to London who (if Ceylonese especially) are sometimes inclined to think that if they ship and draw on the bills of lading at their own estimation of value, there is an end of the transaction. In the present case, the consignor not only gets nothing for his 625 bags of coconuts; but he will be out of pocket £75 15s 10d, besides the costs of both sides in the case in the District Court and in appeal. Pity such coconuts were ever shipped; but then it is too late to cry over what is irretrievable.

A CURE AGAINST DYSENTERY.—The Colonial Garden in Indo-China, through the good offices of Senator Pauliat, has received some seeds called "Ko-San" by the Chinese and employed by them as a preventive against dysentery. Dr. Mongeot, of Saigon, had the happy idea of utilising these seeds according to the Chinese methods, and the results have been very satisfactory. Out of 879 cases experimented upon, he met with only eight unsuccessful results. Experiments made at the Colonial Garden have shown that the seeds had a powerful physiological action. New experiments will, no doubt, enable the cause to be traced, and the effects of the action determined. If, as everything seems to point to it the utility of this Ko-San seed is confirmed, the plant will be spread all throughout the French Colonies.—*Singapore Free Press*, March, 8.

COFFEE HULLING: DUTCH EAST INDIES.—The coffee planter has always been very desirous of finding a huller which, whilst not deteriorating the bean, would at the same time be able to deal with different kinds of coffee. The problem has now been solved by M Schaap, one of the planters, who has invented a machine which can hull all the kinds of coffee grown in the colony. At the last coffee planters' congress held at Malany in October, 1898, a prize of 2000 florins was voted for the improvement of Schaap's system which could be made lighter, more economical in motive power, and able to treat at least three piculs per hour. Coffee hullers come generally from England and Germany, but on many plantations this work is still done in a very rudimentary way. The U.S.A. are now introducing machines made by the "Engelberg Huller Co." of Syracuse, New York; they are giving great satisfaction and will soon become very widely spread.—*French Official Report from Java.*

COCONUT CULTIVATION IN SELANGOR.—Says the *Perak Pioneer* (March 7th) in an article on the Annual Report of the Selangor Planters, Association :—Under the heading of *coconuts*' the report records the testimony of Ceylon experts, that the F M S product is finer than anything obtainable in that island. This betokens an unmistakeable influx of Ceylon coconut planters in the near future. The coconut oil, fibre, and rope industry, are already under development in the Straits and F M States. Hitherto, Rangoon and Calcutta have received a very large percentage of our coconut produce, for the purposes specified. The order of things now existing, promises therefore and very rightly so, to be revolutionized. The sooner the better say we, for, when its products are reproduced in a country, its welfare is undoubtedly on the incline. A mighty industry in the coconut and its products may therefore be safely predicted, for the regions bordering on and contiguous to the Straits of Malacca.

COOPER, COOPER AND JOHNSON.—On page 733 we give the annual report of this well-known Ceylon Company in which it is stated that the concern has now been brought into good and economical working order. *Commerce* however considers it very disheartening reading for the shareholders and adds :—

An addition is made to the melancholy list of industrial companies which have failed to come up to the promises of their prospectuses. They ought to have done well. For not only have they the advantage of growing their own teas, but they sell direct to the consumer, and thus save those intermediary charges which add such a serious burden to the tea trade. The document states that the difficulties of effecting the transfer of so many estates and businesses, and their organisation as a whole have been very great, but the directors consider that the company has now been brought into good and economical working order, with steadily improving results. During the first part of the year under review the management of the estates acquired by the company was not in their hands, but after the transference had been effected and other matters in London settled, Mr. E H Hancock proceeded to Ceylon, on behalf of the company, to make the necessary arrangements for combining and working the estates. The board being subsequently dissatisfied with the way in which the Colombo agency was being managed by Messrs. J J Vanderspar & Co., instructed Mr. Hancock to pay special attention to that matter, and eventually particulars of such a nature came to the knowledge of the board as to render, in their judgment, a change of agency necessary in the interests of the company. This change was made, but unfortunately disputes have arisen on accounts and otherwise, the details of which the directors are unable to go into, the matter being still sub judice. The non-receipt of the accounts from Ceylon has caused the delay in preparing the accounts of the company. Mr. Hancock spent six months in visiting Ceylon, and making arrangements on the estates, which have already resulted in a more efficient working, by which the cost of the tea has been reduced and a considerable saving effected in every way, and he reports most favourably on the future prospects of both tea and cocoa estates. The amount of tea produced up to 30th June was 2,100,302 lb and it is estimated that the production for the current year will be 2,322,000 lb at a reduced cost per lb. The cocoa estates, from various causes, including unfavourable weather, showed disappointing results, but advices received to date show that a larger crop may be expected this year. The wholesale business shows satisfactory results.

We also reproduce a letter to *The Financial Times* in which the opinion is expressed that it is a case of too much Hancock.

RICE-GROWING IN LOUISIANA, U. S. A.—Japanese Kiushu rice is now grown in the warm prairies of south-western Louisiana. Steam harvesters and thrashers are employed in the culture, and the kiushu is expected to bear the milling better than ordinary rice.—*Globe*, March 2.

TEA BULKING.—We understand that a consignment of some 5,000 chests of tea was recently bulked and tared at the Port Commissioners' godown by the aid of the Apjohn tea-bulker. This is a step in the right direction, and we hope to see the movement grow rapidly.—*Indian Gardening*, March 8.

TROUT CULTURE UP THE THAMES.—The trout eggs in the private hatchery erected by Mr. A. Burrow, at Staines, have now hatched out, and the young trout (Loch Levens) look very healthy. Out of 25,000 eggs put down under one hundred have been lost. The trout when old enough are to be placed in the Thames.—*Daily Chronicle*, Feb. 24.

A NEW FUNGICIDE.—In some French tests a fungicide composed of 3 lb. copper sulphate, 5 lb. copper carbonate ½ oz. of permanganate of potash dissolved in a pint of water and 100 qts, water, is said to have given as good results as the same quantity of Bordeaux mixture, and has the advantage of adhering to the foliage better.—*Planting Opinion*, March 17.

PLANTING IN THE STRAITS SETTLEMENTS.—In Malacca a good tea plantation has been thoroughly established, which finds a local market for its produce. An enterprising syndicate of Chinese has begun to plant rubber largely in that Settlement. In all the Settlements the cultivation of coconuts is progressing. In Malacca a very successful agricultural show was held. It is intended in future that there should be a show every year in some Settlement of the Colony. The Botanical Garden at Singapore continued to aid planters by seeds and advice. This station is a centre for British North Borneo, Sarawak, Labuan, Johore, the Federated Malay States, and even Siam, and there was very keen competition for all the rubber seeds which could be spared. Orders were booked for quite twenty times as much seed as was available.—*Colonial Office Report from Singapore.*

DOES TEA IMPROVE OR DETERIORATE BY KEEPING?—Some say that it improves, whilst others assert that it begins at once to deteriorate unless hermetically sealed. As a matter or fact, provided the tea has been thoroughly dried before packing and then carefully soldered in lead or tin, it will most certainly improve by age. This has been proved by planters time and again. We would remark, however, that even in the most (as we think) thoroughly dried tea there is always a certain amount of moisture retained, which, although imperceptible to us, is perceptible to the chemist or analyst. If the keeping qualities of the tea are to be preserved for any very extended period, the tea should not be packed whilst greatly heated, but allowed to gently cool in some *dry* place (so that it may not absorb moisture), and then be enclosed in its lead or tin-casing, which must be most carefully soldered, so that there may be no possibility of air entering it in any manner whatsoever. Such hermetically-sealed tea will not only keep as long as its casing survives uninjured, but will greatly improve with age. Once, however, its case is opened, its keeping qualities are impaired, and although it may be repacked at once, its contact with the air has deprived it of its properties of resisting deterioration for an indefinite period of time.—*Indian Planters' Gazette*, March 3.

FRUIT CROPS IN QUEENSLAND, 1900.—Acting upon instruction from the Queensland Under-Secretary for Agriculture, the Instructor in Fruit Culture attached to that department, has forwarded to us (under date January 15), the following interesting particulars connected with the fruit crops for the current season:—The last figures available show the following acreage and returns for the following fruits:—

Bananas	.. 5264 acres	... Produce	46,547,090 doz.
Pineapples	1.130 „	... „	462,752 „
Oranges	2,272 „	... „	1,527,469 „

The prospects of the present crop are as follows:—Bananas: The dry spring has somewhat retarded this crop, but recent rains have greatly improved it. Pineapples will be ready for marketing within a month; there is a good show of fruit on both rough-leaved and smooth Pines, and the recent rains will tend to improve the size, which promised to be small. Oranges are very patchy; some districts promising record crops, whilst others will be less than average. The same remarks apply Mandarins. Passion-fruit has been a good crop, as have also been strawberries and Cape Gooseberries. Mangoes are only a small crop in the southern part of the colony.—*Gardeners' Chronicle*, Mar. 3.

NEW DARVEL BAY (BORNEO) TOBACCO PLANTATIONS (LIMITED).—The seventh ordinary general meeting was held yesterday at Winchester-house. Mr. Sigmund Sinauer presided, and, in moving the adoption of the report, expressed a hope that the shareholders would consider it satisfactory. The company's tobacco, though of good quality, had the fault of being "spotted," and, moreover, the market had not been so favourable as in the previous year. They had received only 1s 10d per lb., against 2s 2¾d in 1898, and this difference had affected the profits to the extent of upwards of £12,000. The large quantity reaped showed, however, the capabilities of the plantations for tobacco cultivation. From the balance standing to the credit of profit and lost account, £13,938, including the amount brought forward, it was proposed to pay a dividend of 1s 6d per share, free of income-tax, and to transfer £4,000 to the reserve fund, leaving more than £1,000 to be carried forward. In addition about £6,000 had been written off for depreciation. The 1899 crop had been housed in the fermenting sheds and would soon be ready for shipment. Although in quantity it might not be quite so satisfactory as the 1898 crop, the quality was better. With regard to the prospects of finding gold on the company's property, he said that owing to the illness of the mining engineer development work had had to be suspended. Arrangements had been made with the British North Borneo Company for an extension of the concession for two years more, so that they had plenty of time in which to conduct operations. Since the engineer had resumed work he had reported that there were indications of something better than he had originally expected to find. A large quantity of conglomerate had been discovered in the sides of the bed of the river, and about 13cwt. of it had been sent home. Experiments on it had been made by three firms. Two of these reported that they could not find gold in payable quantities, but the other had given a more favourable report. The intention of the directors was to have a large quantity of the "stuff" sent home in order that a more thorough test of its value might be made. The shareholders might rest assured that the sum spent on making experiments would not be in excess of that already authorised. Mr. H. Hayman seconded the motion, which was adopted.—London *Times*, Feb. 22.

TEA IN THE ANDAMAN ISLANDS.

CONVICT-WORKED TEA GARDENS;

DEAD LOSS IN EACH CASE.

An experimental tea garden was first commenced in the Andaman Islands in the year 1876, tea seed being planted in nursery beds in February of that year. Lieutenant-Colonel Berkeley took charge of the plantation on the 12th April, 1880, and found, on taking over charge, that the trees had growing very tall, some being as much as eight feet high. The experiment proved a success, and a source of profit to Government at the time. The "Report on the Administration of the Andaman and Nicobar Islands for 1898-99," just published, furnishes us with some interesting information relative to the present condition of tea cultivation in the Andamans. There are three tea gardens: one at Navy Bay, one at Goplakabang, and one at Kalating.

THE GARDEN AT NAVY BAY

was in charge of Mr. A J King during the year 1898-99. He reports that the season was very unfavourable, due entirely to unseasonable weather. The year opened favourably and continued so until the 8th of May. Unfavourable weather was then experienced for the rest of the year, with small breaks. The total area under plant is 301½ acres. No new land was cleared. The whole garden was as well cultivated as circumstances permitted, and portions were manured with cow-dung and castor cake respectively.

The outturn was 48,300 lb. only against 55,021 lb. during the previous year. The shortage was due to the very unfavourable weather experienced during the greater portion of the year, as also to inadequate supply of labour, whereby the necessary cultivation had to be restricted. The cost of manufacture averaged nine annas 2½ pies per lb., against five annas 10 pies per lb. during the previous year and five annas 8½ pies during 1896-97. There was a loss, as was to be expected. The report states that:—"The sale proceeds of 47,286 lb. was a little under six annas one pie per lb. against six annas one pie during 1897-98, so that the net loss per lb. equalled three annas 1¼ pie after charging for convict labour and local material in addition to cash expenditure. The profit per lb. during 1897-98 was three pies." The garden being Government property, situated in a penal settlement and worked by convict labour, it matters little whether it yields a profit or not as it is simply a case of taking money out of one packet and placing in the other. With regard to prospects, Mr. King states that if anything like favourable weather is experienced during the remaining months of 1899-1900, he anticipates manufacturing 64,000 lb. of tea. It is to be hoped, however, that this will again not be at a net loss of three annas per lb. The contract rate at which tea is supplied to the Burma and Madras Commissariat Departments is five annas 11·04 pies per lb. Mr. Minto held charge of the

GOPLAKABANG GARDEN

to the 2nd of February, 1899, when he proceeded on leave, handing over charge to Mr. A J King, who reports that the first eight months of the year under review were fairly favourable. This was followed by heavy rain, which did considerable damage. From December 1898 to the end of March, 1899, the season was most unfavourable, no rain falling. This was the longest and most severe drought experienced for very many years, and to this, and other causes, is due a deficit of 23,745 lb. in the outturn during the year. The chief cause, however, was insufficiency of labour. Thread Blight has also been steadily increasing yearly and causing great damage. The total area of this garden is 187 acres. The garden was cultivated as much as an inadequate labour force permitted. The yield of leaf taken off the nurseries was not good. The crop of tea manufactured was 25,460 lb. against an outturn of 49,205 lb. during 1897-98, showing thus a deficit of 23,745 lb. The cost of manufacturing the year's crop averaged 12 annas 7½ pies per lb. against 5 annas and 6¾ pies per lb. during the previous year. The sale proceeds of 13,192 lb. of tea, says the report, was 3 annas and 9½ pies *per lb.* against 5 annas per lb. during 1897-98, so that the loss per pound was 8 annas and 10 pies, against 6 annas and ¾ pies during 1897-98, after charging for convict labour cost of machinery and local material. Comment is superfluous further than to remark that we do not understand why this garden is not abandoned. The total loss on the year's transactions, according to the accounts submitted, was R16,976. Mr. A. J. King held charge

OF THE KALATANG GARDEN

also from the 2nd of February, 1899. This is an indigenous planted garden. The season, on the whole, was unfavourable. The area of the garden is 30 acres only. It was attacked by Thread Blight, which, however, disappeared after a time. The outturn of tea from this garden exceeded its estimate by 4,600 lb. The bushes were regularly clipped throughout the year, and the yield was 21,600 lb., as against an outturn of 16,830 lb. during the previous year. This yield gives for the 30 acres, 9 maunds per acre, a very satisfactory crop. The cost of manufacture was 3 annas and 5 pies per lb. against 3 annas and 4 pies per lb. last year. The sale proceeds of 13,480 lb. was 4 annas and 2½ pies per lb. against 4 annas 9½ pies per lb. during the previous year and 4 annas 9½ pies per lb. during 1896-97, so that the net profit per lb. equalled 9½ pies, after all charges, against a profit of 1 anna 5¼ pies per lb. during 1897-98. The report, however, states that—"After deducting these book charges, the account exhibits a loss of R1,052 as compared with a net profit of R625 during 1897-98. This is said to be due entirely to the failure of the Burma Commissariat Department to fulfil its part of the tea contract. Mr. King expects an outturn of 22,000 lb. of tea during 1899-1900 if the conditions are at all favourable. Taken all in all the conditions of the tea industry as at present existing in the Andaman Islands are by no means inviting.—*Planter.*

PLANTING IN BRITISH NEW GUINEA.

Some months ago two young men asked me to give them some information on British New Guinea and what likely success would attend them on taking up a block of land. Within the last few days I obtained particulars from the Surveyor-General, Queensland, of land now open for settlement, and, as the price and conditions are so favourable, I have extracted from the document the following particulars:—The blocks of land on the south coast of the Central district range from 1,280 acres to 4,500 acres, and I classified as agricultural and pasturage. They are situated on Cloudy Bay, Cape Rodney, Velerupu River, Waipara River, and Kemp Welch River. In the Central district the area of the blocks range from 5,000 acres to 326,000 acres, and are situated on Brown and Laloke rivers, south of Laloke River, Vanapa River, Galley Reach, and Cape Suckling, and are similarly classified as the above. In the Western district only one block of 21,200 acres, on the Oriomo River, of agricultural and pasturage lands is gazetted. The price is subject to arrangement with the Government, but not to be less than 2s 6d per acre for agricultural land, free hold; 6d per acre for pasturage land, freehold; 6d per acre for agricultural land, leasehold; 1d per acre for pasturage land, leasehold. The improvement conditions, also under the same conditions as price, are 2s 6d per acre agricultural land, to be effected within five years; 2s per acre pasturage land, to be effected within five years, exclusive of residential buildings. The latter, in respect of large pastoral blocks, is far too excessive. For instance, on the 326,000-block advertised, which is classified agricultural and pasturage, the outlay would mean something like £40,000, or £8,000 per year. In the present state of progress no individual or company could see its way

to lay out such a sum and expect a profitable return from it. Most of the blocks are on open and undulating country, partially wooded. The climate is not worse than Northern Queensland: in fact, in the upland country the climate is healthy and bracing. I believe there is a good future for British New Guinea, and I hope that the land taken up will be in the hands of Australians only.—*Sydney Mail*, March 3.

PARA RUBBER IN THE STRAITS. A PROMISING OUTLOOK.

TO THE EDITOR "S. F. PRESS,"

DEAR SIR,—I have been asked by the Committee of the United Planters' Association F. M. S. to let it be widely known that a strong feeling exists amongst planters that the time is fast approaching when we should send a representative to Para and from thence to the different seats of the rubber industry in order that when this country is ready to put its own rubber upon the Market, we may be in full possession of all the most up-to-date methods of tapping, of obtaining the maximum output with the minimum of damage to the tree and of curing our produce in such a manner that it will fetch as high a price as any in the markets of the world. It has already been demonstrated that we can grow Para Rubber, that we can get a heavy yield, and that the quality of our produce is equal in value to the best Brazilian. These are now proved facts and there is no doubt that if we avoid all initial mistakes when cultivating and producing on a large scale, are thoroughly coached in our business when we first make our bow to the public and so gain straight off a reputation for quality, a very prosperous agricultural future lies before the Malay Peninsula.

I believe I am right in stating that the Rubber zone is approximately confined to 15° north and 5° south of the equator, and a glance at a map of the world will very soon show how exceptionally well situated we are in every respect by comparison with other rubber producing countries. Easy transport, a labour supply that can be developed until it is sufficient for our fullest requirements, a healthy climate where the white man and the coolie alike can thrive, all these advantages are ours; and I maintain that it rests with us whether we make a success of the great industry which we have inaugurated here or whether by carelessness and ignorance in our initial methods we find ourselves saddled with a reputation which it may take us years to live down

The Resident-General with characteristic sympathy, has promised the planters the assistance of an expert from Kew, and a substantial sum has been provided for that purpose on the Federal Estimates: no one doubts that the results of this officer's researches will be of enormous benefit to Malayan agriculture generally, but, with respect to Rubber, we believe that much additional good may be done by sending over to Para one of our own men, a thoroughly practical and energetic planter, and, making his experience the basis of our own methods, by steadily endeavouring to improve from that point. In Selangor during the year 1898, no less than 389,500 Para Rubber trees were planted and in 1899 the S P A Annual Report shows a return of 1,600,000. Previous to 1898 a fair number were planted too. Taking 1,000,000 then as likely to arrive at maturity and with a yield of 1½ lb. per tree which we may put at 2s, or say $1 to allow for a possible fall of 50 per cent in value, we have in this State alone sufficient ara planted to give us an annual return of $1,500,000, double this for the rest of the Malay Peninsula, and it is abundantly clear that we have already laid the foundations of what may with luck and care become an enormous trade

It will no doubt be objected that what answers in Brazil may not by any means apply here, but surely it is folly to assume this? We know next to nothing about our subject at present, and very soon most planters will be wanting to begin tapping on a small scale, let us find out then as soon as possible all that there is to be learnt and apply that knowledge to suit local conditions.

It has been estimated that to send a good man to Brazil with 'carte blanche' to travel as he thinks best and to extend his inquiries, if he get the opportunity, to other rubbers besides Para, will cost in all probability not less than $10,000. In these hard times this is a large sum to raise, and my object in writing is to invite public opinion upon the question. If those interested will communicate their views to the press much good may result and when the time comes for us to take definite action, the skeleton of the scheme will already have been framed.—I am, dear sir, yours faithfully, E. V. CAREY,
Chairman, United Planters' Association,
Klang, 13th March, 1900.
Singapore Free Press, March 17.

CATTLE NOTES.

BY W. A. DE SILVA, V.S.

This little volume (published by the "Ceylon Standard" Press of over 100 leaves), meets a need experienced by many residents in the island, and being compiled for this country; it touches on the questions that constantly arise with owners of cattle. The headings of the chapters will give an idea of the scope of the work:—

Cattle and Buffaloes; Description and Aging. Cattle Food; Cattle Sheds: Handling of Cattle; Signs of Ill Health; Nursing and Attendance; Medicinal Materials; Prevention of Disease and Treatment; Milk Cows.

There is also an Index with the names of medicinal materials in Sinhalese, Tamil and Hindi.

Thirty pages are devoted to the Diseases to which Cattle are liable. The book will be found very valuable in giving simple directions as to treatment in sickness and the proper feeding and care of animals at all times, and should be in the hands of all those who own cattle. Three rupees would be well spent on the volume. As a sample of the style of the book we will quote what is said on the subject of cow-pox:—

An infective fever attended with eruptions in the teats and udder of cows. This is a very mild desease, the fever is not high, and the vesicles that appear on the udder and teats, do not give much trouble; the disease runs its course in from ten to fourteen, days. Laxatives, such as a pint of gingelly oil or linseed oil; salines as an ounce of nitre in the water, are useful in the early stages. Milk from cows suffering from this disease should not be used.

PLANTING IN BRITISH GUIANA.—According to the Government Botanist there is an excellent opening in British Guiana for small cultivators. Cacao was formerly largely produced by the Dutch, and, with due selection of situation and soil, few countries are better adapted to cacao cultivation. Rubber cultivation could also be successfully carried on, as already one or more valuable species are found in a wild state.—*Imperial Institute Journal*, March.

Correspondence.

To the Editor.

TEA PRODUCTION AND MANURE: PATANA SOIL GIVING UP TO 800 lb PER ACRE AFTER 15 YEARS WITHOUT MANURE!

DEAR SIR,—The figures given in the *Observer* (see page 697) certainly leave the impression that the production of tea has not been keeping pace with the increased area under cultivation and yet speaking from my own observation I cannot say I have noticed much falling-off in the returns of the older fields. No doubt in some instances the yield might have suffered, if the land had not been manured, but speaking *generally* of tea growing in soil which had been to some extent impoverished by crops of coffee and cinchona in older days, I find the yield, notwithstanding the age of the bushes, is being on the whole well maintained. To institute correct comparisons and arrive at accurate conclusions one must of course take the returns, not of a particular season only, but over a period of two years, from pruning to pruning and if a shortfall is experienced after *one* pruning, it may be made up for after the next. Much depends on the style of pruning, whether it is light or heavy, and still more on the plucking afterwards. The latter naturally varies according to the class of tea it is intended to produce, and labour considerations are also an important factor. Even should a particular field shew a diminished return, therefore, the chances are that it may have been the result of one of the many causes which go to influence the yield and not to the diminished vitality of the bush itself. As to any *serious* falling-off in the yield of our old tea, I cannot see it, nor do our estate returns which are accurately kept, afford ground for such a conclusion.

People speak of patna tea as giving a record yield after a few years, but I have to do with a large acreage of tea-growing in land of this description and my experience does not agree with those who take that view. As an illustration of what a comparatively poor field of patana (the soil is quartz) will do, it may interest your readers to know that in Badulla district there is a field of tea *15 years* old which has given, without the aid of manure, crops ranging from 420 lb. to 670 lb. per acre ever since it came into bearing, and *this* year the manager is expecting to beat previous records with a yield of *800 lb.* to *850 lb.* per acre all round!!

If common grass land can produce a result such as this, after fifteen years' cropping, unassisted by manure, it cuts away the ground from the feet of those who contend that cultivation is necessary to maintain the productiveness of patna soils. Still your figures go to prove that there is a falling-off *somewhere* and if it is not in the old tea, where is it? I regret to say my personal experience and observation do not provide the material for any satisfactory reply to this question. Turning to estates with which I am connected, it is only in a very few cases that a systematic falling-off in the yield can be detected and in such fields the returns were *never* good. This is important. In parts of the lowcountry I am told there is a very distinct deterioration in the condition of some of the older fields and I may observe that it is here where I have myself noticed that returns have diminished in individual fields; but there has been nothing so far as I am aware to approach a *general* falling-off in the yield, such as your figures seem to indicate and you may, I am sure, search in vain for any convincing evidence upcountry.

My fear is and always has been, not that there will be any difficulty in *growing* leaf in Ceylon, but that we may not be able to dispose of what we produce, and I think myself that all this heavy manuring which we now hear so much about is a mistake. Individuals who are first in the field may score; but the industry as a whole must suffer, and yet if we do not go ahead in keeping with the times, we shall be left behind,—so what is to be done?

If a certain gentleman who has been very successful with manuring had kept the information to himself, the prospects of the island generally would have been brighter and be none the poorer. But the ball has been set rolling now and where will it stop?

VIATOR.

[Oh, no earthly good trying to keep back information—and such a policy would be worse than useless in the end; for rumour would, as usual, magnify results greatly.—ED. *T.A.*]

BEET-ROOT SUGAR.

DEAR SIR,—Do you not think the sugar-beet would grow in Ceylon and have you any idea where seeds could be had for an experimental patch? Given sugar in the island, our guava jelly, loquat and other jams might be a profitable industry.—Yours truly,

HOUSEKEEPER.

[Has "Housekeeper" thought of asking for the wholesale price of his No. 1 and No. 2 quality sugar from the Manager of Baddegama estate, Galle?—ED. *T.A.*]

GUM OFF A TREE.

Anuradhapura, 1st March.

DEAR SIR,—I enclose a specimen of gum picked off a tree, of which I am told many are to be found in the jungles up here.

Please let me know if it indicates in your opinion that Indiarubber may prove an export from these regions when transport is available.

When this tree grows, may not better qualities be cultivated?—Yours faithfully, G.

—[The gum is the ordinary 'cashew,' not fit for rubber purposes, but if melted very useful for 'gumming,' &c.—ED. *T.A.*]

TEA ON LOOLECONDERA—ABOUT THE OLDEST IN CEYLON : INTERESTING PARTICULARS.

Loolecondera Estate, Deltota, March 23.

DEAR SIR,—The *Observer* of 13th and 16th instant containing an article (page 697) and a letter (page 708) referring incidentally to Loolecondera, which you sent me I found most interesting.

With regard to the second heading of your article "Is it well to manure Tea on Virgin Soil ?" I would say "Certainly not ;" but the yield and quality of the leaf will depend in a great measure on careful and systematic pruning, and of course weeding ; and as to burying prunings as far as my experience goes nothing is gained by burying them. I would prefer to leave such on the surface to shade the ground immediately after pruning and thus lessen the shock to the trees in being pruned and denuded of shade at the same time. The prunings being left on the surface also prevent and arrest wash and help to form new surface soil.

The old 100 acres last year gave a yield of 450 lb. made tea per acre, though 20 acres of it were pruned down. The yield would, I believe, be much larger were it not for the extraordinarily high winds which prevail here throughout the S.-W. monsoon.

As to the remark of "Old Hand," about there being no virgin soil here, besides the 100 acres referred to, which was planted with tea,—some 120 acres of forest and 75 acres scrub and patana have been planted with tea here since 1894, beside the old coffee and cinchona land.—Yours faithfully,

G. F. DEANE.

COFFEE AND TEA—AND A HIGHER CURRENCY :

EVIL TIMES APPROACHING IN INDIA ?

Coonoor, Nilgiris, March 16.

SIR,—On the 28th of last month you did me the honour to publish a letter on "Labour in India and Ceylon" in which I pointed out that, from the increasing population and the corresponding increase in the cost arising from famines, the Indian Government must sooner or later be involved in financial difficulties, and that it was certain that in that case the Government would seek relief, as it did before, by forcing up the exchange in order to lessen its payments for home charges. When remarking upon my forecast you say that you "can scarcely believe this," but that it is not only possible but probable, is evident from the statement of the Indian Finance Minister when introducing the Currency Bill—June 1893, and I may remind your readers that he then said "it is not intended to do more *at present* (the italics are mine) than aim at a rate of 1s 4d," so that it is clear that the Government contemplated a higher rate than 1s 4d in the future, and that too without the pressure of any severe financial emergencies. That such emergencies must arise sooner or later is evident, when we come to consider that we have a rapidly increasing population and diminishing means of employment which must, before many years go by still further diminish, as the remaining railways and large irrigation works are completed. It is then not only possible, but in the highest degree probable, and many will be inclined to say certain, that the producers of India and Ceylon may at no distant time have to face a 1s 6d exchange, or even more, and it is to provide against such a crushing calamity that I suggest that such an amount of bounty should be granted as will us in the same position in competing with our rivals in the other silver-using countries that we enjoyed before the closing of the mints. But you think that there would not be the least hope of obtaining bounties in "the planters' interest." As to this remark I should entirely agree, were the planters interests' solely concerned, because the Government of India has hitherto not only shown an utter disregard of planters' interests ; but, as I could amply prove were I not afraid of unduly encroaching on your space, taken pains to refuse them a hearing as regards those points which most conclusively show the evils arising from the currency policy. But where the interests of the cooly are concerned, when his wages are being reduced, and when even at reduced wages there are diminished numbers employed, and therefore the certainty of increased cost to the Government in time of famine, it is a different affair altogether. Unless the planters are placed on a footing of security there can be no security for the labourer. That is an argument which the Government will and must listen to. Formerly the planters stood firmly on an automatic currency which placed him on even terms with his competitors in the other silver using countries, Whereas now he is at the mercy of Government officials who have already placed a burden of 25 to 30 per cent on the back of the producers, and who, as we have seen, will in all probability increase the burden by still further forcing up the rate of exchange. What the effect of this must sooner or later be in the case of tea we can see by the effects produced in the case of coffee. We cannot, of course, prove the fact scientifically. In such matters we can only be guided by reasonable probabilities in making our deduction from the facts. We know it to be a fact that our coffee difficulties have mainly arisen from an immense over-production in South America and other silver-using countries. We also know it to be a fact that this over-production has arisen from the large breadths of coffee planted in the year of, and the year following, the passing of the Currency Act. It is therefore perfectly reasonable to conclude that just as coffee extensions would have been stimulated here, had the Governments of our rival manipulated their currencies, so as to confer on us superior exchange advantage, so has the action of the Indian Government stimulated extensions in the other silver-using countries. Now let us suppose these competing countries had been growing tea as well as coffee, is it not evident that the tea industry of Ceylon and India will be involved in all the difficulties that have overtaken coffee ? But wherever coffee can be grown tea can be raised, and it is more than probable, or I may say certain, that tea will be raised in Mexico and the other countries which now compete with us as regards coffee, seeing that our Government has given them, by its currency policy,

every incentive to embark in the cultivation.

The sum of the matter in this. We must either return to our former automatic silver Currency, or India and Ceylon industries must be protected by a Bounty, or they must steadily decline in consequence of the unfair competition to which they are now subjected.

In conclusion I would warn planters that nothing can be got out of the Indian Government by a representation of planting interests. The Indian Government has declared war against those interests by its Currency policy. For the blow it has struck at us, we have only one-third of a blow to deliver in return, and that is by stopping extensions, and throwing out of cultivation, or placing in an inferior state of cultivation, all but the best lands. This will reduce not only the wages, but very largely the numbers of people employed. Such reduction in wages will gradually extend themselves to other Indian industries, so that the whole policy I advocate will hamper the Government permanently by increasing the cost of finances. Mr. Granville Acworth told the Currency Committee that the Government policy would have created a rebellion in any other country. Well we cannot rebel, but we must recognize the fact that the Government has declared war against us and that we must do our best to retaliate in whatever way will at once best serve our own interests and inflict most injury on the Government. One thing at least is certain and that is that if we do not adopt some form of strike the Government will conclude that we are so well off that we could easily afford a one-shilling-and six penny, or even a one and eight-penny rate of exchange.—Obediently yours,

ROBERT H. ELLIOT.

TEA PRUNINGS—BURIED OR UNBURIED.

March 17.

DEAR SIR,—I see in a letter from Mr. E. Ernest Green, the Government Entomologist, in the March *Tropical Agriculturist*, that he thinks it possible that root disease in the tea trees at a high district may be induced by large accumulation of *buried prunings*. What with "Old Hand"'s white ants and the chemical processes that occur in their stomachs after gorging on buried prunings and the attacks of mycelium fostered by said buried prunings, I think I will allow my prunings to lie unburied in future.—Yours truly,

DUFFER.

[A little quicklime added to the buried prunings would save trouble, as per the example of the experienced manager of "St. George," etc., Agras.—ED. *T.A.*]

TEA CROPS AND MANURING.

No. I.

SIR,—In looking through your editorial (see page 697) which discussed the subject of manuring, —it struck me that the opinions you quote as to the after effect of manuring hardly seem logical. One manures; the vigour of bushes increases and the soil improves; but we are told the after-effects will be a falling-off in yield. It would be just as logical to say that children should not be fed on Mellins' and other artificial foods because the child would suffer afterwards. Again a deterioration of quality is spoken of, as the result of manures. Possibly were very stimulating manures used such might be the case, but this lies entirely with the Manager; his commonsense —coupled with the scientific knowledge we now have at our disposal should prevent such occurring. When tea is to be manured for the first time, in many cases, increased yields are undesirable and in fact excepting whenever stimulating mixtures are used, nature sees to this and devotes her time to fostering and creating the rootlets and frames so conspicuously absent, ere allowing her patients to start the work of creating excessive foliage. I have often thought that in many cases, money and time could be saved were manuring operations to be preceded by careful attention to bush and soil, treating the former to careful pruning; bearing in mind the necessity of a healthy sound frame, free from gnarly knots, etc., and sometimes a great change for the better would occur were the roots pruned as well. As for soil, an attempt should be made to improve its mechanical condition and increase organic matter, which can be done by prunings—burying, forking and so forth, and in very steep places a small dose of some organic manure might be applied. Having done all one can in this way; when the time came for manuring everything necessary for economical work would be at hand, instead of the manure lying idle (for want of the necessary chemical balance in soil-life in bush required to render it soluble) and being slowly washed out of the bushes' reach, a healthy growth would start at once.

My personal experience of the effects of using a mixture containing some soluble matter—sulphate of ammonia, etc.—in fields that have been in a fairly healthy condition at the time of application, is that increase of yield has commenced almost at once, accompanied by marked improvement in vigour of bushes. In one field particularly, I made repeated tests—extending from time of application—even about six months, finding the teas made from this leaf, fully equal in every particular to teas made from contemporary fields which was—though I am not quite certain on this point—hardly the case formerly. *As far* as comparing manured with unmanured property goes, figures may prove anything; but taking into consideration *past, present and possible future* results, one argues against nature in giving a preference to unmanured estates.

As for the last item, *Over-production*, this subject is no doubt a serious one; but more fitted for discussion by the Pessimistical Theorist than the Practical Planter; the latter, as an individual, is hardly likely to reduce, or keep down, yield for the benefit of his neighbours.

SUPERINTENDENT.

No. II.

Peacock Hill, Pussellawa, 16th March.

With regard to your leader "Tea in Ceylon," in *Observer* of 13th instant,—

(1) Has the export (or crop) of tea from Ceylon of recent years kept up with the extension of

planted land? I think that your Directory apparently shows that it has, and that not only has it kept up but that the yield has increased per acre, as I endeavour to show. Beginning in 1883, the first year that the export, exceeded 1,000,000 lb. I find that the exports amounted to 1,665,768 lb. The acreage of tea in cultivation in same year is 32,000, from this I would deduct the acreage planted during the three previous years, as certainly not in bearing, this amounts according to Directory to 25,500 acres leaving 6,500 acres yielding 256 lb. per acre. In 1888, or five years after, the acreage planted is 183,000, deducting as before the tea planted during the previous three years which amount to 116,000 acres there remains 77,000 acres, export for the year is 3,820,723 lb. or at the rate of 309 lb. per acre. In 1893 or after another period of five years, the acreage under tea is 273,000, including 68,000 acres planted during the previous three years, deducting this the result is 205,000 acres, export 82,269,353 lb. or at the rate of 401 lb. per acre. In 1898 there are 364,000 acres of tea, deduct 75,000 acres planted during the previous three years leaving 289,000 acres, exports are 119,769,071 lb. of tea or 414 lb. per acre. Taking 1899 with (an estimated) planted acreage of 375,000, 70,000 acres was planted during the previous three years, subtracting this there remains 305,000 acres with an export according to the Chamber of Commerce returns of 129,894,156, or at the rate of 425 lb per acre, or, put simply, the above comes to the following :—

Year.	Acres of Tea in bearing.	Yield per acre.
1883	6,500	256 lb.
1888	77,000	309 „
1893	205,000	401 „
1898	289,000	414 „
1899	305,000	425 „

Of course an important factor to be taken into consideration with the increase of yield, is when the bulk of the tea in the lowcountry came into bearing, this would give the yield per acre for the whole island a perceptible rise. There is no doubt as yet that the lowcountry tea has not gone back, in spite of sporadic attacks of grey blight.

(2) Is it well to manure Tea on virgin soil?—If the "virgin soil" was suitable for opening in tea, (I exclude patna and chena lands), and was properly drained when opened it should not require manure for at least fifteen years and I question if there is much tea planted in such land in Ceylon of that age. With regard to those estates you mention "formed out of virgin land doing well, and in good heart, or if shewing any slackness only of a few months duration, due to seasonal influences. Should they be manured?" One would imagine that the obvious answer to this would be no, but that there is something wrong with the tillage which could be remedied without applying manure, though it is now extensively believed, and we have good authority for it, that the systematic burying of prunings—with possibly the addition of basic slag—will do a great deal towards keeping up the yield of tea. Of course, however, if Mr. Bamber is successful in his attempt to impregnate the soil with the lower oxide of iron, in an active condition or so that it can be assimilated by the bushes, and which he shows raises the price of made tea pence per lb. according to the quantity present in the soil naturally, the answer would be "Manure by all means."

GEO. THORNTON PETT.

No. III.

Uva, March 20.

DEAR SIR,—I fully agree with you when you say you think it is a mistake to manure tea planted in virgin soil; it is I think a great error. Manuring, unless we can open new markets for our product, tends I think, to become the curse of Ceylon. The way it is being shovelled in to such fine estates as there are in the Agras, Dimbula, Bogawantalawa and on the Nuwara Eliya side appears to me to be folly. No doubt the people who are doing it do not think so. Manure old coffee estates where the tea is finely grown and is simply at a stand-still, because the soil has become exhausted. Of course another point of view must be taken besides the yield one gets in manuring. It is whether tea regularly manured is less apt to be affected by the blights it is said to be subject to. Personally from what little I have seen I am inclined to think that a well-cultivated estate is not affected so much as an unmanured one. In Haputale, however, it may be said in argument against this opinion and very rightly too, that little or no manuring has been done so far (except on Lipton's group) in this district. I think I am right in saying that so far not a single estate here has had a bad attack of blight, such as has been experienced in some parts of Dimbula and the lowcountry. I think burying prunings with lime or, better still, basic slag, where land is not too steep, an excellent practice. Then six months after, where soil requires, add a mixture to keep the tea up to an average yield of 500 to 600 lb. an acre. Further than this I would not go.—Yours,

LOOK AHEAD.

No. IV.

1883.

183,000 acres ... Yield 133 lb. per acre.
102,000 acres in bearing—crop 24,381,296 lb.
Average yield, including home consumption, say *240* lb. per acre in bearing.

1893.

273,000 acres ... Yield 309 lb. per acre.
220,000 acres in bearing—crop 84,406,064 lb.
Average yield, including home consumption, say *390* lb. per acre in bearing.

1899.

375,000 acres ... Yield 346 lb. per acre.
330,000 acres in bearing—crop 129,854,156 lb.
Average yield, including home consumption, say *395* lb. per acre in bearing.

"Given" a decent soil, etc., etc.—Quite true; but *fortunately* the island does not consist of that, or we should have a crop of 150 to 160 millions. You don't want to increase your crop if you get 500 lb., but what about the 250 lb. per acre places. To live they must manure.

Re Looleconderа,— Remember the old field quoted may give 400 or 500 lb. per acre; but look at the acreage of the whole place and crop. See Wilson, Smithett's yearly circular. I forget the acreage of this field, but I believe under 30 acres. Mr. Bamber, as you doubtless know, visited Looleconderа.

"We are leaving out of view" para.—How big a proportion of whole? You seem to be raising bogies only to knock them down

Table I. shows on your own figures crops gradually increasing on whatever figures you base it.

ERRATA.—On page 753, under heading "The Manuring of Tea," para 4, line 1, "The similarity of the increase in the field of plot five" should be "*in the yield*," &c. In the next column, "oxide of magnesia" should be "oxide of *manganese*."

Each Manager of an estate is the best judge or should be, as to whether the virgin soil estate should be manured. I take it a big proportion of estates have old coffee land and virgin soil; in my own case I am manuring the old coffee land but not the virgin soil at present.

PROPRIETOR.

No. V.

Holmwood, Agrapatna, March 22.

DEAR SIR,—In reply to your query *re* Manuring Tea on virgin soil, I can see no harm in supplying to the soil any mineral ingredient in which it might be shown by analysis to be deficient, and by adopting such a course I think the trees would be built up of stronger constitution; but manuring with the object of forcing an unnaturally large yield, I should consider a very risky proceeding, and therefore better left alone.—Yours faithfully, W. D. B.

THE MANURING OF TEA.

Colombo, Ceylon, March 23.

DEAR SIR,—Mr. Joseph Fraser sends us today the statistical results which he obtained during the second year of his experiments in manuring, and we take pleasure in annexing a copy of the same.

These statistics are drawn upon the same lines as those published in the *Ceylon Observer* on the 6th April, 1899* and will no doubt prove of great interest to the public generally. Mr. Fraser adds the following remarks:—

"The tea was four years old, and well grown when the experiments began. The field was in Guinea and Mana grass before being cleared for tea. There was no pruning in the first year, but all the plots were pruned in the second.

"The similarity of the increase in the field of plots five, six, seven, and eight in the second year is rather remarkable, though it varied to a certain extent from month to month. You will observe that the manure applied shows a maximum and minimum application of the three fertilising ingredients in the four plots. No. 6 is the most puzzling, as in all my experiments carried out previous to this, in old coffee land tea, a low percentage of nitrogen meant a low yield, and this is borne out by plot No. 3, where the nitrogen was suppressed. The only explanation that suggests itself to me is that in the plots from five to ten inclusive, there were a considerable number of 'Albizzia Stipulata' trees growing naturally in the land. A considerable number of these were cut out when the land was cleared for tea, and a fair number allowed to grow along with the tea. The decay of the roots rich in nitrogen and the fall of the leaflets yearly (the Albizzias being atmospheric nitrogen collectors) may have afforded a sufficient supply of nitrogen naturally. The decay of grass roots, would no doubt also have aided in this respect, but then all the plots had these equally. Plots one, two, and three had no Albizzias and four only one or two. The general appearance of the bushes in the various plots, as regards health, vigour and succulent growth stand in the order of six, five, seven, ten and four—eight and nine suffered most again from grey blight and the mite family of insect pests, of all the plots, and indicates that the mixture, as regards potash was not properly balanced, and this might be all the more marked as the Albizzias are strong potash feeders.

"Results from the increased profit per acre point of view, are in the order of eight, six, ten, five, seven, nine and four—No. 8 and 6 take the lead as in the previous year, but ten jumps from 7th to 3rd place. The experiments have been again repeated, and will be recorded for another two years.

"I had the soil of plot No. 6 analysed, but as is usual with soil analyses, it helps little to an interpretation of results."

We further annex copy of the analysis made by Mr. Cochran of the Pitakande soil, and his report on the same and remain.—Dear sir, yours faithfully, FREUDENBERG & CO.

(Copy)

M. Cochran,

City Analyst's Office, 56, Kollupitiya Road, Colombo, 25th November, 1899.

Analysis of a Sample of Soil from the Pitakande Group, received on the 3rd November from Mr. Joseph Fraser, per Mr. J. Morris.

MECHANICAL ANALYSIS.

The soil which passed through a sieve having 10 meshes to the lineal inch consisted of

	per cent.
Coarse Earth	46·5
Fine Earth	53·5
	100·0

CHEMICAL ANALYSIS OF THE FINE EARTH.

	per cent.
Moisture	3·650
*Organic and volatile matters ..	13·050
Soluble in standard Hydrochloric Acid.	
Oxide of Iron	12·143
Alumina and small quantity of oxide of magnesia	21·029
Lime	·168
Magnesia	·400
Potash	·233
Phosphoric Acid	·128
Silica, Insoluble Silicates and undetermined matters	49·199
	100·00
* Containing nitrogen	·156

This sample of soil is rather richer in nitrogen than the sample analyzed in January, while the latter had somewhat more potash and phosphoric acid, and was also richer in lime of magnesia.

The sample just analyzed has more alumina, and also rather more organic matter, but, nevertheless, the dried sample has less moisture than the sample analyzed in January. A drier condition of the atmosphere, when the present sample was prepared, is probably the explanation of this.

With regard to the general characteristics of the soil, it has the composition of a soil that should be fertile for tea; nitrogen, however, being relatively less than the other important constituents.

(Signed) M. COCHRAN, F.C.S.

City Analyst.

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* See *Tropical Agriculturist* for May.—ED. *T.A.*

PITAKANDE GROUP.

Manure Experiments from 13th February, 1899, to 31st January, 1900.

No. of Field.		2	3	4	5	6	7	8	9	10
Particulars of Manure Applied.	No Manure.	400 lbs. Blood Meal. 200 „ Basic Slag.	200 „ Basic Slag. 150 „ Sulph. of Potash.	400 „ Blood Meal. 150 „ Sulph. of Potash.	250 „ Basic Slag. 400 „ Blood Meal. 150 „ Sulph. of Potash.	200 „ Blood Meal. 250 „ Basic Slag. 200 „ Sulph. of Potash.	400 „ W. Castor Cake. 400 „ Fish. 100 „ Sulph. of Ammonia. 100 „ Nitrate of Potash.	800 „ W. Castor Cake. 200 „ Basic Slag.	800 „ W. Castor Cake. 200 „ Bone Meal.	1120 Extra Dissolved Guano.
Tea secured lbs. per acre.	781·264	931·709	894·007	960·068	1056·116	1064·499	1064·222	1067·795	1005·631	1161·220
Increased yield over unmanured plot 1899		147	110	176	272	280	280	283	221	377
„ „ „ „ 1898		182	148	248	348	373	316	384	255	499
„ „ „ „ for two years.		329	258	424	620	653	596	667	476	876
Cost of Plucking and Manufacture to f.o.b 12¾ cents.			14·02	22·44	34·68	35·70	35·70	36·08	28·17	48·07
Amount realized for increased yield 36 cents.		52·92	39·60	63·36	97·92	100·80	100·80	101·88	79·56	135·72
Profit per acre over the unmanured plot 1899.		34·18	25·58	40·92	63·24	65·10	65·10	65·80	51·39	87·65
Profit per acre over the unmanured plot 1898.		·94 Loss.	3·86	6·57	19·23	32·58	12·66	38·26	10·67	6·37
Total increased profit over unmanured area for two years.		33·24	29·44	47·49	82·47	97·68	77·76	104·06	62·06	94·02
lbs. per acre of essential ingredients in the manure applied. Nitrogen		44·80	Nil	44·80	44·80	22·40	76·60	50·	56·	124·40
Potash		Nil	75·	75·	75·	100·	48·	10·	10·	22·10
Phos. Acid		34·	34·	Nil	42·50	42·50	27 16	52·	66·	56·00

THE GOVERNMENT DAIRY AND CATTLE SALES.

March 23.

SIR,—I see an advertisement in the papers that a sale of bulls and cows will take place at the Government Dairy on the 31st instant. This will only give an opportunity to the wealthier men to buy these fine animals, as there will be high competition. I think the Government Dairy is not in want, but in a flourishing condition, and has a balance in its favour. Taking the circumstance to be so, would it not be advisable to sell these animals in the different Koralcs and out of the way places—the sale to be open to *bonafide* villagers only—and stop the sale for the 31st instant. By this means the breed of bulls and cows in the villages will be greatly improved, and this ought to be the aim of the Government. Or why not distribute stud bulls among the villages by giving them in charge of the Headmen and Mudaliyars.

I hope Government will not lose sight of this suggestion—and a word from your pen will go a great way to help in this cause.—Yours

A CULTIVATOR.

[Well worthy of consideration.—ED. *T.A.*]

PLANTING NOTES.

THE COFFEE MARKET.—Messrs. C. J. Leech & Co. in their weekly report on the coffee market, state that there has been another week of large receipts in Rio, where the rise in exchange would seem to be having the effect of attracting the balance of the crop from the interior faster than would otherwise be the case. In the speculative centres the tone has been weak, the large Rio receipts having unfavourably affected the New York market.—*Home and Colonial Mail*, March 9.

MANURING FRUIT TREES IN HOLSTEIN.—A method of fertilising fruit trees in vogue in Holstein is suggestive, and not unworthy of a trial. The trees, it is said, receive no cultivation, and the fruit is large, sound, and produced in abundance. Every two years a few wholes are dug in the ground about four or five feet from the trunk of the tree, and about one foot deep, closer and shallower in the case of young trees. These holes are filled with liquid manure about four times during the winter months, and for young trees this is diluted with water. If there is more liquid manure than is wanted, it is distributed over the surface of the orchard, using an old street sprinkling-waggon for the purpose. There is no reason why manure water should not be used once or twice after it is seen what the crop is likely to be; of course, not affording any at that season to trees not bearing a crop, or which are carrying only a few fruits, as to dose them would be to encourage, probably, an unnecessary growth of shoots. But in this matter, the cultivator must be guided by the condition of the trees and of the soil.—*Gardeners' Chronicle.*

THE WORLD'S PRODUCTION OF PRECIOUS METALS.—The year 1899 would have been a record-breaker in the production of gold, had it not been for the conditions in South Africa, but it is estimated the production will amount to 968,000 pounds. The Witwatersrand will probably, after peace has been restored, produce 5,000,000 and the other districts in Africa 250,000 ounces, or approximately double the production of 1897. The United States, Australia and Canada also contribute an increase, so that the twentieth century will commence with a yearly production of about 1,014,000 pounds, of a value of $305,360,000, which means that the output of gold alone will exceed by $119,000,000 the average production of gold and silver combined in the years between 1866 and 1870. From the discovery of America up to the year 1899, there were produced 32,514,329 pounds of gold.—*Scientific American.*

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees. R. N. Lyne, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised *Maragogipe* Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price according to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

***Manihot* Glaziovii** (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona *Seeds*.—Different varieties.

***Sterculia* Acuminata.**—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, Eucalyptus various Varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"South Africa."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—Messrs. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

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William, Veyangoda, Ceylon.
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J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
Henaratgoda, Ceylon.

PLANTING IN THE WEST INDIES.

DR. MORRIS'S PLANS.

An agricultural Conference was held in Barbados in January, under the presidency of Dr. Morris, Commissioner of the Imperial Department of Agriculture for the West Indies, who described in his address the experimental work which was being done in the agricultural interests of the West Indies. In the sugar industry, for example, beside the raising of new canes and the cheapening of the manufacture, there was the reduction of the cost of cultivation to be considered, and it was expected that the present costly system of manuring might be modified without affecting the yield. The value of green manuring for fertilising cane lands was to be re-examined, and the cost of cultivation might also be reduced by increased attention to rotation and catch crops, thus growing to a larger extent than at present the food stuffs and supplies imported from other countries. Next to sugar, cacao is the most important production of the West Indies, Trinidad's export of that product showing a steady increase in value year by year. This is an industry that offers good profit to the planter; it requires little labour, compared with sugar, and is adapted for large and small cultivators. At Grenada, St. Lucia and Dominica, where many small growers have already started planting cacao, the Imperial Department will afford advice and assistance by means of travelling instructors, and establish model plots in each district as object lessons in the right methods of cultivation. A new coffee estate of about 200 acres, at an elevation of 2,500 feet, has been opened in Dominica by a Ceylon coffee planter. If this undertaking should be successful, Dominica may regain its former position as the producer of some of the finest coffee in the New World. The first-class coffee grown in the Blue mountains of Jamaica has been little affected by the recent fall in prices. Fruit cultivation continues to expand in Jamaica, and producers throughout the island must at once make arrangements to meet opportunities, which will arise, of shipping large quantities of fruit, when the new direct steamship service shall commence in January next, for it is understood that the owners of the steamers are to be purchasers of produce and not merely carriers. While bananas and oranges will be the principal products taken, there will be an increasing demand for many of the minor products which are at present luxuries in the English markets, and cultivators will do well to extend their plantations, paying the greatest attention to the quality of their produce.—*Imperial Institute Journal.*

THE DELGOLLA ESTATE CO., LD., (IN LIQUIDATION.)

The liquidation of this estate by Mr. Munton is now closed, and the result is a loss on realisation of about R135,000 out of the capital of R220,000. The shareholders have, in other words, had about R155½ paid back for each paid-up share of R400. At one time, Delgolla seemed a most promising property, having not only flourishing cacao, but also coconut palms; but the cacao proved a great disappointment after a few years, and a purchaser having been found for the estate, it seemed very wise to liquidate. Mr. John Guthrie has audited the liquidator's accounts and all is now closed.

TEA CROPS AND MANURING.

ONCE again we are indebted to Messrs. Freudenberg & Co. and Mr. Joseph Fraser for the results of the very careful and elaborate series of manuring experiments made by the latter on Pitakande estate. (See page 751.) This is the second year of the experiments. Planters who file our monthly ought to refer to the May number of last year for the analyses of the average of the several plots, to compare with that of No 6 plot by Mr. Cochran, given on page 753. Mr. Fraser's own remarks on the results will be specially considered; but it is evident that the observations must be continued for one or two years more, before any very definite conclusions are arrived at.

In this connection we also call attention to a couple of letters arising out of our recent article on "Manuring" and "Overproduction" —see page 751. Some of these are suggestive and useful. Two writers seem to shew that, leaving out "tea not in bearing," the average production per acre has, on the whole, increased. It seems not to be realized that we had a practical purpose in view; we insist that the acreage of tea planted on forest-land, even in high districts, is appreciable; that there are absent proprietors and shareholders who are liable to be carried away by the general cry for "manuring" and that it is worth while to shew such proprietors—getting probably not less than 500 lb. tea per acre—that they ought to leave well alone and take encouragement from the old field on Loolecondura. Very different is the case of the estates on which Mr. Fraser has been experimenting; but, on the other hand, we are bound to put his opinion on record, as now sent to us, to the effect that "generally all tea at medium and low elevations will have to be manured if yield and quality are to be kept up, even if planted in virgin soil. The forcing and exhaustive nature of the climate is so great at these elevations, both in regard to organic matter and soluble or available plant food, that the yield sooner or later invariably falls off."

LARGE CEDARS OF LEBANON.—On p. 106 of the *Gardeners' Chronicle* reference was made to these noble trees, from Transactions of English Arboricultural Society, vol., part ii. "Dimensions were given of different trees, the one growing at West Wycombe being stated to have a quarter girth of 71 inches, or nearly 24 feet at 5 feet in circumference from the ground, the largest Cedar ever seen by any arboriculturist present when the trees were inspected last August." It may interest those gentlemen, or other readers of these pages, to learn that at Goodwood may be seen, without doubt, the finest specimen in the country. It has one clean stem, the girth at 5 feet from the ground being no less than 29 feet 6 inches. At this point, however, it is where the massive limb commence to divert from the stem. The smallest measurement of the latter taken at 3 feet from the ground, exceeds 25 feet 11 inches. The height is rather more than 100 feet; spread of branches 130 feet. This specimen, together with many others, was planted in 1760. Richard Parker, Goodwood.—*Gardeners' Chronicle.*

CACAO IN SAMOA.

The following (says the Samoa *Weekly Herald*) is taken from advance sheets of a Consular report :—

Cacao is generally planted in rows about 14 feet apart and on hillsides at closer distances. Some planters favour a wider spacing ; thus it will be seen that from 180 to 225 trees are usually planted to each acre of ground occupied. During the third year a small crop is produced, but not until the fourth year is the crop of any appreciable value. Each year thereafter, as far as my short experience goes, the crops increase, and at the present time I can not even conjecture how much may ultimately be produced.

On my Papa'oloa plantation, after clearing my land of the forest growth, I set out rows of bananas in lines 15 feet apart, and when these were well under way and offering good shade, I planted my cacao with spaces of 15 feet on parts of the land and 18 feet on other portions. Along all the different roads I planted pine apples, and I also devoted several fields to them. I have reserved for pasturage about 8 acres all told, and it may seem astonishing to people outside of Samoa when I say that land has furnished abundant pasturage for six horses, fifteen sheep, and twenty one head of cattle. I can not from memory say just how much fruit I shipped last year from this place to Auckland, nor how many head of cattle I sold out of the natural increase of the place. But I am well assured that my net profits, after paying every expense, were upward of $1,200. This from 60 acres all told is very satisfactory, considering that all was obtained from catch crops (bananas and pines) planted mostly to shade my cacao, from which, during the next two years, I expect very profitable returns.

During the early months of this year, Papaloloa was raided in turn by both factions then at war, and I have up to now been unable to procure a sufficient supply of laborers to put it in its former fine condition. Though the whole of the crops was carried off or consumed on the spot during three months when hostilities existed, it is safe to say that from the sale of the fine fruit crop now coming on, I will still this year be able to score at least as good a net profit as last; though this will not cover the great loss I met with in the destruction of my herd of cattle, and the loss of 750 cacao trees wantonly pulled up by the adherents of Tanu and Tamasese.

Part of my cacao has just commenced to bear, and I am forwarding its seed pods to my different trading stations as fast as they come on. At these points they are freely given to the natives, who are now commencing the cultivation of cacao in good earnest in several districts. At Pagopago, I have at present about 3,000 trees in all stages of growth, and on my property there I have still room for about 2,000 more plants, which will be set out this year.

After Papaloloa is cleared up I expect that eight men will be sufficient for the place while we are still raising fruit for export. Next year, I will have to abandon this on account of the rapid growth of my cacao. When this is done, I will increase the number of my cattle to fifty or sixty at least, and their natural increase will probably bring me nearly as much as I should have received from the fruit and this too with less labour and trouble.—*Fiji Times*, Feb. 17.

BRITISH TROUT IN KASHMIR.

The experiments in introducing British trout into Kashmir have come to an untimely end owing to the shipping agents at home having sent the ova in a slow steamer unprovided with a cool room. Captain Allan, who went to Karachi to meet the box, found that the Duke of Bedford's gift to the Kashmir Association had developed from ova into trout long before the steamer had passed Aden. The Association has however sufficient funds at its disposal to make a further trial, and another attempt will we hear be made in the coming autumn.—*Pioneer*, March 21.

THE TEA DUTY.

SOME FIGURES.—The announcement that the Budget speech would be made on Monday was only known at the close of last week, and occasioned considerable surprise owing to the early date. A rush was made to get dutiable articles out of bond, and some of the large tea distributors have been working early and late. It is a philosophical way of looking at the matter to say that the extra duty will not affect the general consumption. Anyway, it will fall heavily on the poor, to whom tea is at once a necessary and a luxury. Although the Chancellor of the Exchequer does not appear to think so, tea contributes quite enough to the national exchequer. The additional burden of 2d per lb. is expected to produce in the course of twelve months a sum of £1,800,000. The duty from tea has produced, in the ten months ending January 31, £3,640,633 which is an increase on the corresponding ten months of last year of £344,833. The consumption per head for the period has therefore increased from 4.9 to 5.3 pounds. The receipts from coffee duty were £162,963, against £155,932; from cocoa £154,208, against £155,000. The decrease in the latter was caused by the increased import of raw cocoa (which is taxed at 1d per lb.) not quite compensating for the decreased import of foreign made chocolate and cocoa, which pays 2d. per lb. Brewers are not at all displeased with the Budget, for it is said they fully expected that the duty on beer would have been raised 2s. a barrel. Surprise is expressed that millionaires have been left untouched, and that coffee escapes. Certainly the Chancellor of the Exchequer believes in tea—as a source of revenue.

THE TAX ON BROKERS' CONTRACT NOTES.—Some uneasiness has been caused in commercial circles generally by the Chancellor of the Exchequer's proposal to tax contracts for goods sold by brokers. The precise wording of the resolution carried in the House of Commons on Tuesday was "that there shall be charged upon a note signed by any person carrying on the business of a broker to his principal advising him of the sale or purchase of any goods, wares, or merchandise the stamp duty following—namely : If the goods, wares, or merchandise are of the value of £5 and under the value of £100, 1d ; of the value of £100 or upwards, 1s." This proposal is of a very wide character, and, whether intentionally or not, will be pretty sure to cause considerable friction in business circles. Meetings of merchants and brokers have been held hurriedly at the London Chamber of Commerce, and a deputation was appointed to present to the Chancellor of the Exchequer a very numerously signed memorial asking for information as to the scope of the next tax, and that the memorialists might be heard before any final decision was given. The Chancellor of the Exchequer has, we believe, agreed to receive a deputation next week, and ten representative brokers and merchants have been selected for this purpose. In the House of Commons last night Mr. C. McArthur asked whether the new stamp duty on produce contracts would apply to all descriptions of produce, including sugar, cotton, corn, provisions, and iron, and whether it would be levied on both spot and future transactions, and the Chancellor of the Exchequer replied in the affirmative. He also answered a question with regard to the payments at the Custom houses on Saturday and Monday in anticipation of the extra duties to be imposed by the Budget, stating that the amount paid was £2,500,000, and that he hoped shortly to make some proposal with a view to the prevention of such large anticipatory payments.—*Home and Colonial Mail*, March 9.

APPLYING MANURE TO FRUIT-TREES.—A mistake that is very often made in the application of manure to fruit trees is in heaping it right round the trunk and forking in within a radius of a foot or two. It is not difficult to discover how far a tree's roots extend, and to distribute the fertiliser accordingly.—*Queensland Journal.*

THE RUBBER-YIELDING FICUSES IN NORTH AFRICA.

[FROM THE REVUE DES CULTURES COLONIALES NOV. 5TH, 1899.]

(*Specially translated for the "Tropical Agriculturist."*)

It would be a mistake to suppose that Algeria and Tunis had climates which would permit of a profitable cultivation of rubber-bearing plants. It would be wrong to imagine that if the northern slopes of the Atlas Mts. were unsuited, the southern and Sahara slopes would be less so. The greater part of the Algerian territory is an elevated plateau with a severe winter, and desert region, generally elevated, which refuses all cultivation save that of the date palm. More than 25 years ago attempts at growing rubber-bearing plants of all kinds in the open air were made. Repeated experiments have shown that these plants cannot stand exposure to the winter chills and that even in sheltered positions they do not yield rubber in any satisfactory quantity. . . . . The following kinds cannot stand the winter. *Bassia latifolia* and *longifolia* of India ; *Mimusops Balata* (Guiana); *Chrysophyllum diversum* ; *Hevea guyanensis* and *brasiliensis* and *Landolphia diversa* ; Nor can the various artocarpi. The *Castilloa elastica* of Mexico the *Hancornia speciosa*, of South America and the *Manihot Glaziovii* though less delicate, can only rarely stand two or three winters out of doors. On the other hand the *Sapotilla, Achras sapota* of the Antilles, succeeds well on the Algerian coast as to fructifying. but its vegetation is sluggish. The Alstonia Scholaris of the East Indies alone developes finely in the Hamma. This arborescent *Apocynea* there attains to more than 45 feet in height, but it does not yield any quantity of latex.

Various *Plumeria*, in rich soils in which water does not remain through the winter, have a fine growth, but they suffer from frost. Among the *Artocarpæ*, the genus Ficus alone offers some fine specimens among the latex-bearers, but these are strictly limited to the neighbourhood of the sea.

At the Experimental Gardens of Algiers scientists have again and again experimented on the Ficus trees growing there, many 40 years of age. Those richest in *latex* are the *macrophylla, elastica, glumacea* the latter having a great resemblance to the *macrophylla* and then the *rubiginosa*. Then among the kinds with small leaves, *Ficus lævigata, nitida*, etc.

(Then follow lists and descriptions of three groups of Ficus).

The value of the latex of the Algerian Ficus has long been questioned. Repeated experiments under various conditions showed that incision of the branch or aërial root let flow abundant milk, especially in the summer season ; that this latex, of a pure white colour, was glutinous, coagulating rapidly, and sticking to the fingers in long filaments when they were fresh ; but, as it got older, it lost all traces of elasticity and became a dry and powdery resin.

The question had reached this point in 1890. The Ficus had grown much, and their development was attributed largely to the frequent incisions that had been made. The late Aimé Girard of the Institute, whom I still remember with affection, determined to intervene and define the flow in the quality of the rubbers obtained. Later in 1896 Aimé Girard resumed the same work more methodically ; he examined all the various rubber-like latex, I could collect —which according to his directions underwent various preparations before they were sent to Paris. Death surprised this learned man in the midst of his labours, but M. Lindet has recently published a useful *resumé* of them.

I possess, however, the conclusions arrived at in private letters from M. Aimé Girard who kept me informed of his experiments.

He found the rubbers procured interesting from the anomalies they presented.

According to the different experiments of this learned man, it is at between 0·980 and 0·990, that we must place the density of ordinary rubber milk.

CEYLON TEA IN AMERICA.

That the importance of the Colombo market is likely to be steadily developed in the near future goes without saying. As an illustration of this truth we may instance the opinion of Mr. V. L. Tissera who accompanied "Mr." John Grinlinton to the Chicago Exhibition, remained in the States, started and has run the tea-importing firm of V. L. Tissera & Co. for the last eight years, and returned recently to Ceylon by the German steamer "Prinz Heinrich." He is of opinion that Americans prefer to have their tea brought to America direct from Ceylon and not *via* the home market. And Mr. Tissera's present visit to the East is mainly with the object of establishing branch firms in Colombo and perhaps, in Calcutta, by means of which he could import direct, though not yet severing his connection with the London market. Mr. Tissera's chief associates in the tea business at Chicago are the firm of Walsh, Lang & Co., who act as distributors through no less than 32 agents in the States. He finds that the American public are slowly, and by careful manipulation of the blends supplied, being brought to favour Ceylon teas, though the taste for China's is difficult to convert. Our visitor also does a certain amount of business with Ceylon coffee which is much liked by our American cousins.

Passing through Paris on his way East Mr. Tissera had the good fortune to meet our Commissioner, Mr. W E Davidson, who showed him round some of the buildings of the coming "exposition." He is reported also to have met a number of gentlemen in Paris, with whom he has arranged to run an "Oriental Booth," outside the Exhibition limits, for which unique depot he is shortly to send supplies of tea.

Mr. Tissera received some help last October from the Planters' Association representative, Mr. W. Mackenzie, in the shape of 11 half-chests of tea (black and green) in recognition of his furtherance of the interests of Ceylon tea since 1893. Our visitor is at present residing with his brother at "Tis Ville," Gregory's Road, Colombo.

GERMAN CHEMICAL INDUSTRY.—The approximate number of chemical factories in Germany is 5,950, employing 120,000 working men and 4,000 chemists. Heavy chemicals. such as soda, acids, &c, find employment for 16,000 workmen ; fine chemicals, 17,500 ; aniline colours, 14,000 ; and fatty products, 9,000. Of the chemical staffs, 220 are employed in heavy chemical work, 250 for fine inorganic chemicals, 90 for fatty products, 400 in the metallurgical industry, 300 in sugar refineries, and 1,300 in aniline dye and organic chemical works. There are about 75 to 80 works in Germany devoted to the extraction of tar products and the manufacture of aniline colours.—*Revue des Prod. Chim.*

PROPOSED NEW DOCK CHARGES IN LONDON.

A statement issued by the London Chamber of Commerce reads:—"When powers were originally given to the dock companies of London it was provided, in order to maintain the freedom of the port, that lighters and craft should have free entry into the docks to deliver or discharge ballast or goods to or from on board of vessels lying therein. At the beginning of last year, however, certain rates were imposed by the dock companies on coastwise craft engaged in this work. Under the auspices of the London Chamber of Commerce (Cement Trade Section) the action of Burham Brick, Lime and Cement Company, Limited, v. the London and India Docks Joint Committee was thereupon brought before Mr. Justice Mathew in the Queen's Bench Division, when it was decided that the new charges on sailing barges employed 'in carrying cement and other goods from the Upper Medway to be discharged into ships lying in the defendants' docks, and in receiving goods from ships lying in such docks' were 'wrongfully demanded,' and 'must be repaid.' Parliamentary powers are now being sought by the Dock Companies to impose dues of this nature, and, if obtained, it is estimated that the trade of London may be burdened with an additional contribution to the companies of over £700,000 per annum. As the dock dues, rates, and charges already levied in London are alleged to be heavier than at any other port in the kingdom or on the Continent, any further addition to the present high charges would be disastrous to the trade of London. Already notices have been issued by foreign commission houses warning their clients of the intended increase of London charges, and recommending transhipping services at Antwerp, Hamburg, or Rotterdam. A similar course was adopted during the great dock strike of 1889-90, which, as is well-known led up to the holding of stocks abroad, and the merchant when selling goods to the London market ordered lots by wire, to the detriment of London warehousekeepers. Should the dock bills become law this course would most probably again be adopted. Amongst other public and mercantile bodies opposed to these bills as now drawn are the following:—The Corporation of the City of London, the London County Council, Association of Master Lightermen and Barge Owners, General Produce Brokers' Association, Wharfingers' Warehouse Keepers' and Granary Keepers' Association, London Flour Trade Association, Home and Foreign Produce Exchange, Limited, Wholesale Spice and Rice Dealers' Association, Indian Tea Association, Tea Buyers' Association, Ceylon Association, London Corn Trade Association, Barge Owners' Protection Society, Colonial Wool Merchants' Association, Short Sea Traders' Association, Wine and Spirit Association. Every effort is consequently being made to oppose the bills now before Parliament, or to have them referred to a Parliamentary Committee, with power to consider the whole subject of port administration."—*Home & Colonial Mail*, Mar. 9.

GUANO IN SEYCHELLES.

Writing from London on March 9th, Mr. John Hughes says:—"Probably Ceylon planters are not aware that in certain of the out-lying islands of the Seychelles there are deposits of Phosphatic Guano which from its composition is specially suitable as an ingredient of a good Tea manure. Already a few cargoes have been delivered in this country and samples have been submitted to me for analysis, so that I can testify to the quality from personal knowledge. I understand that this guano has been used for sugar-cane in Mauritius in conjunction with sulphate of ammonia, the two materials making an excellent mixture; for the guano itself contains only about 1½ per cent of ammonia and requires more nitrogen in the form of sulphate of ammonia to be added in order to render the mixture suitable for sugar-cane. It is intended to develop the working of this deposit, and no doubt the guano will be brought to the notice of Ceylon planters, as the material is in my opinion admirably adapted for tea manures for, it is not too stimulating like Peruvian and other highly nitrogenous guanos, which are quite unsuitable for tea and coffee. It would be interesting to hear whether there is any local knowledge of this Seychelles Guano, and the object of these few lines is to direct attention to the matter for further inquiry."

THE IMPERIAL BUDGET AND TEA.

WE give in our daily the full report of that portion of the budget speech and debate referring to our staple. From the point of view of the Imperial Government, it is impossible to find fault with the increase of the duty by 2da lb. at this time, and no serious opposition, or criticism even, was offered on the proposal. The large clearances of tea in anticipation of the rise, are referred to in Messrs. Gow, Wilson & Stanton's Circular (given as a daily *Supplement*) and are also the occasion of the following pithy paragraph by Messrs. Geo. White & Co.:—

As indicating the anxiety of the Trade to forestall any advance in the tax, 5,542,241 lb. were released from Bond on the 3rd, and 17,183,638 lb. on the 5th inst., making the unprecedented total for two days of 22,725,879 lb., representing nearly £379,000 sterling.

The disorganisation of the trade following on the new arrangement, caused the postponement of the usual weekly sales.—The Rood Lane firm furnish us with some suggestive figures this time in respect of the home consumption of tea in Great Britain, showing how it has risen from 3·42 lb. per head of population in 1866 to 5·98 lb. in 1899. Ceylon tea only appears from 1885 when 3,217,000 lb. were taken off, while last year the quantity was no less than 85,137,945 lb.! China tea has fallen from 97½ millions lb. in 1866 to 23¼ millions lb. in 1899; while Indian tea has risen from 4½ millions lb. to 134 millions lb. in the same period.

THE GRAPE FARM.—The following letter is from Mr. T. J. Harris, of the Jamaica Public Gardens, to the Jamaica Agricultural Society:—

"SIR,—I am desired by the Director of Public Gardens to inform you that he considers it necessary for me to again visit the grape farm at Newport, to note the progress of the vines, and to carry out any work that I might find to be necessary. He also suggests that if you thought of visiting the farm shortly, we may go together to save expense, if not I am to proceed alone."

"A Grape Farm" is what should be started at an early date in the Northern Province of Ceylon to test the country for viticulture,

RUBBER TRADE OF THE UNITED KINGDOM.

The following interesting table respecting the rubber trade of the United Kingdom for the past three years will be interesting to our readers, and although it may be misleading in some respects it is important to notice that in spite of the supposed great increase in the use of rubber, the consumption in this country was less in 1899 by nearly 5,000,000 lb. weight than in the provious year, and the value about £500,000 less. Comparing the imports there was a marked increase on the total amount imported in 1898 over 1897 of over 10,000,000 lb. of nearly £2,000,000 value, but there was a considerable falling off in 1899, the weight decreasing 4,500,000 lb., but the value was only about £300,000 less. Curiously enough the re-exports of raw rubber have steadily increased both in weight and value, but taking the average value per lb. in 1897, the imports and exports were the same, namely, 2s 0½d per lb. while that used in this country only averaged 1s 11½d per lb. In 1898, the imports averaged 2s 3¼d per lb., while the re-exports averaged 2s 4d per lb., that for home consumption amounting to 2s 4¼d per lb. During 1899, although the prices all-round were considerably higher than in 1898, the imports averaged 2s 2¼ per lb., the re-exports 2s 5¾d, while that consumed in the United Kingdom averaged 2s 0¾d per lb. Of course there are a number of points connected with a general statement such as this which detract from the value to be placed upon the result. For instance, in the imports we get a large quantity of the best quality rubber from the South American market. The average value of the Brazilian rubber imported in 1897 was 2s 10 1/8d., while for 1898 it amounted to 3s 0¾d. The figures for 1899 we have not yet complete. Of our re-exports, a large proportion is of the better quality rubber, the cheaper African kinds being largely shipped to Continental ports direct, so that our re-exports average a high rate, while our home consumption is consequently somewhat lower in comparison. We are preparing a full statement of the rubber trade for the past three years, which will doubtless prove very interesting to all engaged in the rubber trade, and we shall be glad to receive particulars from any of our readers which in any way bears upon this question :—

	Total weight	Total value	Avr. value per lb.
	1897		
Raw Rubber.	lb.	£	s d
Imports	44,456,048	4,553,416	2 0½
Re-Exports	26,619,152	2,795,878	2 0½
Consumption	17,836,896	1,757,538	1 11½
	1898		
	lb.	£	per lb
Imports	54 833,072	6,214,933	2 3¼
Re-Exports	33,023,536	4,020,850	2 4
Consumption	21,809,536	2 194,083	2 4¼
	1899		
	lb.	£	per lb
Imports	50,360,464	5,925,643	2 2¼
Re-Exports	34,284,880	4,271,711	2 5¾
Consumption	16,075,584	1,653,932	2 0¾

--*India Rubber and Guttapercha Journal*, March 1.

SOUTHERN INDIA PRIZE TEA.

We learn that the Agri-Horticultural Society's Gold Medal for tea has been again awarded to the Glendale Tea Estates, now under the management of the Nilgiri Plantations Company, Limited. The prize tea, which is being sold at As. 8 per pound, was valued by the brokers at twelve pence. The sample case has been most kindly presented to one of the Friend-in-Need Society's Women's Workshops.—*Madras Mail*, March 28.

PLUMBAGO IN CEYLON:

THE MINING INDUSTRY AND THE COMMERCIAL "BOOM";

IS THE LATTER A BLESSING, OR CURSE, TO THE SINHALESE?

PADDY CULTIVATION DISTINCTLY FALLING OFF.

DURING a recent visit to the Southern Province, we were much struck with the evidences brought under our notice of social disorganisation, and indeed demoralisation, among the Sinhalese, in connection with the great "boom" in plumbago. The recent sudden rise in value, by fifty to a hundred per cent., had quite turned the heads of the people in districts where there is any probability of the mineral being found. Not only was agriculture neglected,—work in the paddy fields delayed or postponed until too late, attention to gardens and planting a thing of the past,—but the "craze" had affected the villagers accustomed to work for the tea planters; it had moreover greatly disturbed domestic service—so that Sinhalese house servants were at a premium,—and it has even in some quarters emptied the schools! In their haste to be rich, Sinhalese parents insist on their children working all day in cleaning and sorting the precious mineral and they call home house-boys and appus to take a part in plumbago digging or exploiting. Not only so; but we were assured that the industry with the new and greatly increased wealth which it has brought and is bringing in, is provoking an unprecedented spirit of gambling. A European resident, who knows the people and their language well in the Galle district, declared that instead of 10 and 50 cents—the accustomed stake from each in a gambling bout,—the villagers or idlers now gamble for five rupees each; and in one case, away out in the country, he had found each person staking fifty rupees! Then, again, just as gambling on horse-races in England has been brought within the reach of domestic servants, so in South Ceylon—and perhaps in other plumbago-yielding divisions—persons now wander about asking appus and ayahs, cooks and table-boys, to take a rupee, or five-rupee ticket, in a new plumbago mining company or village syndicate; and so, in all these ways, plumbago mining and preparation has provoked an extraordinary amount of gambling, with its inevitable concomitant of crime, among the people.

We were especially struck with the many paddy fields out of cultivation, no doubt a direct result of the plumbago-mining mania. But we were assured by some old residents that ever since the abolition of the paddy rent—that is eight years ago—the tendency has been to circumscribe, rather than to extend, the area under culture. This is in accordance with experience in the Central Province under the old system which permitted the purchase of the rent at a value covering a certain number of years. Where such purchase was made, it was found that the object was almost invariably to have so much less to cultivate—to secure so many more holidays—rather than to get more crops or money! Who will say that there was not

philosophy in this, although it is enough to scare a Western political economist. It is certainly time that there was a careful investigation by the several Government Agents and their Assistants as to the effect of the policy adopted from 1st January 1892, on the staple of our native agricultural enterprise in the country. It may be supposed that the plumbago diversion complicates the matter; but it should be easy to distinguish between ancestral fields neglected for the first time this year and those previously allowed to fall out of cultivation; while, of course, the reason given by the owner for non-cultivation in each case, should be specially recorded and can then be taken *quantum valeat* by the Government and the public. The practical value of such an Enquiry and Report in connection with the Administration of the rural districts and the welfare of the people, cannot be over-estimated. We actually find a London journalist of some weight, heading an extract from a local paper,—"Ceylon and a Possible Famine," basing this on the declension of paddy culture; and any day there may be questions on the subject in the House of Commons. Governor Sir West Ridgeway must see, therefore, the wisdom of being in a position, as soon as possible, to afford reliable information if called on to do so by Mr. Chamberlain. Should it appear that the wild rush into plumbago is causing the ruin of "paddy," then it may be necessary for the Government to devise some check on promiscuous "mining" (and gambling) by the Sinhalese people,—a check that may serve to choke them off from a comparatively new and precarious industry, while urging, or compelling, their attention to the one occupation to which they have been accustomed from time immemorial, and which has always been held in the highest esteem amongst them.

THE COCONUT PALM AND SCIENTIFIC CULTURE.

How delighted the late accomplished Mr. Davidson, coconut planter in the Jaffna Peninsula, would have been to have had to guide him, such a paper as Mr. Cochran furnishes today—see page 764—for the benefit of all intelligent cultivators of the palm. There is a happy combination of practical experience and scientific investigation in the results arrived at and the recommendations made; and we should like to hear what such veterans as Messrs W. B. Lamont and W. Jardine and the present experienced Managers of Franklands and Goluapokuna, have to say on the paper. before us and its several series of analyses. The great advantage obtained for the palms where the husks are allowed to be returned to the soil, is made very manifest. Manufacturers of coir fibre, etc., must necessarily compensate their gardens for the additional drain upon them. Mr. Cochran incidentally shows that the application of salt to coconut palms growing along the seaside is not required; but does that of itself not prove how much good salt should do to palms grown in the interior, away up the Mahaoya valley for instance?

PLANTING NOTES.

"AGRICULTURAL EDUCATION IN GREATER BRITAIN."—Under this heading, Professor Hedger Wallace read a paper before the Society of Arts, on February 27th. We are reproducing it in our monthly periodical, but meantime we give the paragraph referring to Ceylon:—

In Ceylon the elements of agriculture are taught as a specific subject in the Government schools, and a primer of agriculture has been published by the Director of Public Instruction. There is also a school of agriculture at Colombo which was opened in 1884, and has ten branch institutions. From this school, to which a dairy is attached, agricultural instructors are sent into remote rural districts to illustrate improved methods. The school for a number of years has also issued a monthly magazine and this, along with the *Tropical Agriculturist*, furnishes the agricultural literature of the colony, a colony, I may add, which has the reputation of being itself the best training ground for the tropical planter.

THE 1900 TEA SEASON has now fairly commenced. A number of gardens in several districts commenced taking leaf in the middle of this month and prospects are reported fair all round. Red spider is stated to have made its appearance in some Sylhet gardens after a dry spell, but a heavy fall of rain washed it away. It is too early to prophesy, but the general aspect of tea affairs is propitious for the coming season. We note from Government returns that in 1898 the area settled by time expired coolies in the Province of Assam amounted to 72,697 acres. It is explained that this does not show the whole amount of land settled with coolies, as it excludes the considerable area rented from private owners, but the figures are sufficiently suggestive, especially when contrasted with preceding years. In 1880 the acreage settled in this manner was 4,584, in 1885—8,196, in 1890—32,360, in 1897—67,923.—*Indian Gardening.*

PARA RUBBER AT THE STRAITS.—We call attention to a letter (see page 748) by our old (or rather young) friend, Mr. E V Carey, Chairman of the United Straits P.A. and at one time a Ceylon planter, like his father, Mr. Arthur Carey, before him. So important is the Para Rubber Industry in the Straits becoming, that the Chairman proposes (with apparently the countenance of Sir F Swettenham) that a special agent or expert should be sent to Brazil to report on the different modes of harvesting, preparation, &c. Now, we have no hesitation in saying that until full use is made of the information already available, such an expedition would simply mean a waste of money. In fact we question if any knowledge worth having could be added to what is already available from experts, tourists, travellers, journalists, who have ere now visited the South American rubber-yielding divisions and reported fully upon them. Has, Mr. E V Carey, for instance, digested the information in our compilation, "All About Rubber"? If he has, we should like to know what he requires from an expert visiting Para beyond what is in that volume? We are not writing egotistically; because the information referred to is not from our pen—it is taken from a hundred sources and deals with all rubber-growing countries, more especially Brazil. It would be well, therefore, for Mr. Carey's Committee to study this volume and then to draw up a series of questions as to the points on which they wanted further enlightenment at the hands of an expert visiting Brazil,

A NEW "RUBBER PLANT."—The *Semaine Horticole* of January 13th publishes an illustration and a figure of a new species of *Ficus* called *F. Eetveldiana.* It is a moderate-sized tree, growing in the Belgian Congo. The leaves are on long slender stalks, the blades cordate oblong. It will form a fine shade tree in the tropics, and grows rapidly under cultivation.—*Gardeners' Chronicle.*

"MAZAWATTE."—A Ceylon friend at home sends us a specimen of this Company's advertising, from which we quote as follows:—

£85,862 8s 8d Represents 19½ miles of 100 lb. tea chests, 5,151,746 lb. of delicious Mazawattee, equals over 2,300 tons. 1,300,000,000 cups of Mazawattee would fill a huge tea-duct 1,670 miles long by 1 ft. square. Reaching from London to Siberia, right across Europe. A river of liquid Mazawattee as long as the river Thames, 215 miles long, 8 ft. wide by 1 ft. deep.

The Sugar to sweeten this Mazawattee tea (one lump of a cubic inch to each cup) would make a road of sugar 14½ miles long, 10 ft. wide by 1 ft. thick; and the milk for the delicious tea would fill a milk duct of 1 ft. square, which would extend from London to Dublin, a distance of 289 miles in a straight line.

THE TEA DUTY.—A London wholesale firm have through a trade journal made to their customers the following offers:—

If you remit us (PLAN A,) as a deposit, a sum equal to the present Duty of 4d. per lb. on any quantity of tea, we will hold on your account that quantity. Thus for every £25 you send, we undertake to enter for you 1,500 lb. of tea at our present list prices, and at the 4d. Duty rate, and you gain should an advance in Duty take place. If however, the Duty be not advanced, all we ask from you is to send us orders (before 31st December next) equal in amount to the sum you have actually deposited with us, and the transaction ends.

If you remit us (PLAN B,) a deposit at the rate of 1d. per lb,. *i.e.*, one-fourth the present Duty, on any quantity of tea, we will hold on your account that quantity. Thus, for every single sovereign (£1) you deposit with us, we will enter for you 240 lb. of tea at our present list prices, and at the 4d. Duty rate, and you gain if the duty be raised. You advance 1d., whilst we advance 3d., per lb. for the present Duty. If, however, the Duty be not raised, you on your part undertake to complete the purchase (before 31st December next) of all the Tea thus entered for you.

AN OLD SUBJECT REVIVED.—Few are aware probably that the question raised by "Wanderer" (see elsewhere) has been before discussed in our columns and the matter went so far at one time as that estimates of the cost of erecting a Paper Mill on the side of the Kelaniganga were prepared; but nothing came of it and there can be no harm in now reconsidering the subject of the introduction of a paper-making industry into Ceylon. Why should the Government not take a hint and guarantee a bounty for the first ton of locally-made paper? The value of actual local industries must be insisted upon and we are glad to find our correspondent draws further attention to this subject. Possibly people in the past have been asleep; so our correspondent thinks: and it is within the region of the future that the fibre and grasses of Ceylon can be put to other uses than they now command. At any rate we live and learn and the man who shall introduce a paying Paper Mill into Ceylon, will deserve the cordial thanks of all of us.

DR. GEORGE WATT, C.I.E., who is retiring from the position of Reporter on Economic Products in the Department of Agriculture of the Indian Government, has been associated with this department since 1884. He will be recalled as having charge of the Imperial Indian Economic Court at the Colonial and Indian Exhibition of 1886.—*British and Colonial Druggist,* March 2.

"NATAL PLANTS."—It is highly satisfactory at this time to receive from Natal the second part of *Natal Plants.* This consists of a series of quarto lithographs, with accompanying descriptions, from Mr. Medley Wood and Mr. Maurice Evans. In the present number we find various plants of garden interest, such as Cyrtanthus Mackenni, t. 51; Leonotis leonurus, t. 53; Hæmanthus natalensis, t. 58.—*Gardeners' Chronicle.*

TEA.—According to the *Indian Daily News* the tea season in South Sylhet has begun on most of the gardens. Shamshernagar started "tipping" on the 3rd, which is early for the district. After a spell of hot dry weather, South Sylhet gardens since the 17th, have been getting a plentiful supply of rain, so that the lots of leaf may be expected. Red spider was in evidence, but the heavy rain experienced will wash a good deal of it away. Gardens, on the whole, are looking well.

APPOINTMENTS FROM KEW.—We learn that an extraordinary demand for trained gardeners for positions of importance has been experienced at Kew within the last year or so. In addition to changes of situation which have occurred in the ordinary way, nineteen appointments have been filled by the authorities. Amongst these are nursery-foremen, head gardeners, assistants in the Royal Botanic Gardens, Calcutta (N. Gill and W. F. Green); superintendent, Agri-Horticultural Society, Madras, (B Cavanagh); superintendent, Parks and Garden, Shanghai (A. Arthur); Curator, Botanic Station, Accra (W. Brown); Agricultural Instructors for the West Indies (A J Jordan and M McNiel); Curator, Botanic Gardens Antigua (W N Sands); Assistant Superintendent, Botanic Gardens, Trinidad (W Leslie). These appointments have all been filled from the improver-gardeners employed at Kew, *i.e.*, young men who after five years training in good private gardens or nurseries enter Kew for a two years' course.—*Gardeners' Chronicle.*

DESTRUCTION BY PAROQUETS.—A letter was read at a recent meeting of the Board of Management of the Jamaica Agricultural Society, from Mr. Charles H. Nunes and two others from Falmouth, Trelawny, bringing to the attention of the Board of Management, "serious loss sustained annually to the orange and lime crops by destruction thereof by parrots and paroquets, which birds were protected under the law. Not only did these birds destroy the above citrus plants, but they attacked young breadfruits. They asked the Board to bring the matter to the notice of the Government, in order that legislation might be amended in this respect, and thus yielding privilege to destroy the birds all the year round. The destruction of these birds was beyond description and they were really of no value whatever. They were sure that it opinion from different parishes be taken, if would corroborate the statement they made. The matter was referred to the Standing Committee on Fruit to report on the matter." —How about paroquets in Ceylon?

COFFEE, COCONUTS, RUBBER &c. AND PROGRESS.

(*From a Special Correspondent.*)

It is perhaps not so glowing a tale that is furnished when I turn to the world of planting and agriculture. The labour problem naturally enters largely into the former sphere and this remains still unsatisfactory. The Government has been a large employer of labour on railway and other works, and this has somewhat handicapped the planter in the way of cheap labour. In time this will right itself. The main planting industry has been coffee, but its existence in the Native States has, unfortunately, never been very flourishing, and recently the very low price of coffee, has been the means of bringing some of the best known estates to the hammer. In time those who have the financial strength will doubtless benefit, but meanwhile the weaker are being frozen out. When you see some thirteen piculs per acre as I did in the Klang district, it looks as though there should be a future. This was a lowland estate, and such a crop has not, I believe, been gathered on any of the estates on higher land. So much has been hoped for from coffee and so much capital expended, I can only hope that it will yet be a profitable industry to both individuals and the State. In other directions coconuts seem to be doing well and to be a fairly constant source of revenue, and Para rubber cultivation has made a good deal of headway and should in time make a fair show in the list of exports. I am not altogether sure, however, that the indigenous Getah Rumbong would not prove more profitable in the long run. If the price of its produce is not up to rubber, it is mnch more prolific in its yield, and as it is a native there is not the same difficulty about seed. Padi cultivation by natives has increased and gives signs of extension. It might well be the dream of every officer of the Government to see these Native States not only supplying their own rice requirements, but that they should be the granary of the colony of the Straits Settlements. It is well to know that land revenue is increasing, and that the cultivation of padi is being extended, but much more yet remains to be done. Unless I am mistaken, the Malay will increasingly go in for this class of work, but the progress will be less rapid than one might reasonably hope for. Some schemes for its larger cultivation have been, and are, under the consideration of the Government, and irrigation is being resorted to in more than one district.

It does not exactly come under the heading, but I may note a new industry at Ipoh that bids fair to do well. The Perak Marble Company (Limited) has been started to work on some excellent marble. It has first, good marble suitable for many domestic and ornamental uses; it is close to the line of railway, which gives the company good transport; it has good machinery, which was almost in working order at the time of my visit; and lastly, there should be a good market all around Malaya, and possibly over a more extended area. With good and economical management the company ought to do well. The material at its disposal is more than ample, and the marble is said to be of good grain.—*London and China Express*, March 9th.

TEA IN THE PHILIPPINES.

Mr. C. Ffolliott Pears, to whose adventures we have already referred fully in previous issues, having been enabled to publish a full account of them through the courtesy of Mrs. Pears, has returned from the Philippines, where he went in connection with the wreck of his vessel. He has given our evening contemporary a rough idea of what he thinks of the future of the island recently acquired by the Americans:—

TEA CULTIVATION.

"The country," said Mr. Pears, "is exceedingly fine, and I should think that some portions of it would be very suitable for tea cultivation. The soil looks as if it had plenty of iron in it. They grow coffee there already, and I did not notice any disease amongst it. Cacao is also cultivated, but the trees are sickly, and the pods very small. There is any amount of gold there, but it is not mined to any very great extent; and there is, as well, plenty of steel, from which the Filipinos make their swords. The climate of the country is exceedingly fine. In the early mornings it is nice and cool, similar to the climate of Dikoya. Of course, there is a certain amount of fever. Imported food stuffs are very dear and heavily taxed, but the industries in which there is ample room for development are sugar cultivation, saw-mills, and rice-mills. The English firms in Manila, I may say, do nearly all the business.

"The Americans," added Mr. Pears, "are just beginning to buy Ceylon tea. Dr. Stephens, a dentist who used to be in Ceylon, has imported it to Manila, and the Commissariat bought up all he had and wanted a lot more." Mr. Pears thought it would be advantageous if someone in Ceylon could secure a contract with the American Commissariat to supply Ceylon tea to the 60,000 odd troops in the Philippines.

COLOMBO COMMERCIAL CO., LD.

ANNUAL REPORT.

The following is the Report, which was to be presented to the fifth ordinary general meeting of the Company held in London, on Thursday, the 15th day of March, at noon.

The Directors have pleasure in placing before Shareholders statements shewing favourable results for the past year, viz.:—

Profit and Loss Account for the year ended 30th September, 1899.

Balance Sheet made up to 30th September, 1899.

It will be seen from the Profit and Loss Account that after debiting all charges, interest on Debentures, &c., the profit for the year amounted to..		£9,184 4 6
A balance was brought forward from last year of		1,303 8 2
Making the total at credit of Profit and Loss		£10,487 12 8
From this the following sums have been transferred, viz.:—		
To Exchange Reserve against Capital Expenditure ..	£1,400 18 5	
To Reserve Fund ..	1,000 0 0	
		2,400 18 5
Leaving available for Dividend, &c., a sum of		£8,086 14 3

CENSUS OF THE ANIMAL KINGDOM.—The editors of the *Zoological Record* have recently drawn up a table that indicates approximately the number of the living species of animals. The following are the figures given:—Mammals, 2,500; reptiles and batrachians, 4 400; tunicata, 900; brachiopods, 150; crustaceans, 20,000; myriapods, 3,000; echinoderms, 3,000; cœlenterata, 2,000; prtoozoans, 6,100; birds, 12,500; fishes, 12,000; mollusks, 50,000; bryozoans, 1,800; arachnids, 10,000; insects, 230,000; vermes, 6,150; sponges, 1,500. General total, 366,000 distinct species.—*British and Colonial Druggist.*

COCONUTS AND CHEMISTRY:

A SHORT CONTRIBUTION TO THE CHEMISTRY OF COCONUT CULTIVATION.

(By M. Cochran.)

It cannot fail to be of some service towards the perfecting of the art of manuring the coconut tree, if we compare, in respect of the more important constituents (from an agricultural point of view,) what the crop removes from the soil with what is added in manures by experienced planters.

There are several considerations which lead one to expect considerable diversity in the recommendations of experienced planters for the manuring of coconut trees, one of these is the great capability for increased yield which may legitimately be inferred from the great differences in the amounts of crop obtained from average trees grown under average conditions, and from trees grown under the most favourable conditions, thus, while the average crop all over the island is set down by some writers as between 14 and 20 nuts per tree per annum, there are trees to be found growing under very favourable conditions of soil, &c. which are said to yield for years in succession at the rate of 400 nuts per tree per annum. One writer in 1896, dating from Dombawinne estate, Mirigama, stated the maximum yield of a coconut tree as 900 nuts in one year. Another reason for the diversity in manurial recommendations is the fact that, in some cases, only the oil and part of the poonac, in others only the copra, is sent from the estate, while in other cases the whole nuts and some of the leaves are removed.

One system of manuring has for its object to return to the soil an amount of fertilising material equivalent to that removed by the copra. Taking 170 lb. of poonac as the produce of 1,000 nuts, and reckoning the poonac to contain 3·3 per cent of nitrogen, 1·35 per cent of phosphoric acid, and two per cent of potash, there would be removed in the poonac from 1,000 nuts 5·61 lb. of nitrogen, 2·295 lb of phosphoric acid, and 3·4 lb. of potash. Planters who manure expect to get at least 40 nuts per tree per annum. One planter informs me that he gets 15 nuts per picking per tree, and there are six pickings per annum, so that he gets 90 nuts per tree per annum. I shall suppose that, while some planters who manure get 40 nuts per tree, others get as many as 80. Each tree will at these rates of production remove from the soil in copra (as estimated from the poonac) in two years respectively.

	Trees yielding 40 nuts per annum. lb.	Trees yielding 80 nuts per annum. lb.
Nitrogen ..	·4488	·8376
Potash ..	·272	·5440
Phosphoric Acid ..	·1876	·3672

It is necessary, however, to take into account the fertilising ingredients removed from the soil in the husk, the shell and the "milk" of the ripe nut. From analyses I have made I find that

1,000 husks each weighing 1·789 lb.
1,000 shells each weighing ·666 „
500 lb. "milk" or ½ lb. per nut remove from the soil.

Nitrogen ..	..	2·6618 lb.
Potash ..	..	13·4706 „
Phospheric acid..	..	·6420 „

From these data, it is easy to calculate what is removed in two years by the husks shells and milk of 40 and 80 nuts respectively, and, adding the same to the quantities found in the poonac, we get:—

Amounts of nitrogen phosphoric acid and potash removed from the soil in two years by crops of 40 and 80 nuts per annum respectively.

Nitrogen	·6607 lb.	1·3214 lb.
Potash	1·3497 „	2·6984 „
Phosphoric acid ..	·2350 „	·4700 „

I shall now compare with these amounts of important ingredients removed by crop the amounts added to the soil by the different systems of manuring coconut trees as practised by experienced planters. First, we may consider the system of using the manure of cattle fed on the grass only of the coconut estate. This system, of course, adds nothing to the mineral ingredients of plant food of the estate; but it should increase the amount of nitrogen available for the tree, and even the mineral ingredients are rendered more available for plant food by being assimilated, first by the herbage, and afterwards by the cattle. It will be interesting, therefore, to calculate the amounts of the fertilising materials that are drawn from the soil by the grass, and converted into still more available forms of plant-food by the cattle grazing on the estate. For practical purposes, the amounts of fertilising material in the grass may be taken as the same as that supplied in the manure seeing the cattle are not being fed with a view to being fattened. I have no exact data as to the quantity of grass produced on an acre of coconut field; but I am informed by the well-known coconut planter Mr. Francis Beven, of Franklands estate, that 100 acres of coconut land can grow grass for 60 to 70 head of cattle. I also understand that he considers 50 lb. weight of grass, per head per day, as good average grazing, when there is no drought, but drought must be taken into the calculation, so I shall allow in this calculation 40 lb. of grass per head of cattle per diem. At this rate of consumption 65 cattle (the average per hundred acres) would require 2,600 lb of grass per day; and, to supply this, each acre would have to yield a little less than 4½ tons of grass per annum.

A sample of the grass on which the cattle on Franklands estate graze was analysed. In the anhydrous state it contained nitrogen 1·740 per cent. potash 2·375 per cent. and phosphoric acid ·487 per cent. If these results are calculated into fresh grass containing 75 per cent. of moisture we get:—

Fertilising ingredients in fodder grass.

		per cent.
Nitrogen ..	..	·435
Potash ..	..	·594
Phosphoric Acid	..	·122

An acre of the grass furnishing 4½ tons per annum would supply in the form of cattle manure in one year:—

Nitrogen ..	..	41·412 lb.
Potash ..	..	56·550 „
Phosphoric Acid	..	11·614 „

Taking 75 trees per acre each tree gets per annum, and during three years respectively:—

	per annum.	during 3 years
Nitrogen ..	·552 lb.	1·656 lb.
Potash ..	·754 „	2·262 „
Phosphoric Acid	·155 „	·464 „

Passing now to cattle shed manure, we find that Mr. W B Lamont recommended, as the

teaching of his experience, an application of 5 cwt. of cattle shed manure per tree once in three years. The composition of cattle shed manure varies considerably with the character of the food of the animals, of the litter, and of the management of the manure. If we reckon it as about equal in fertilising properties to the average of ordinary farm yard manure, *i.e.* as containing per ton about 8 lb. nitrogen, 9 lb. of potash, and 3·6 to 4½ lb. of phosphoric acid, then 5 cwt. per tree would furnish per tree—nitrogen 2 lb., Potash 2·25 lb., Phosphoric acid ·9 to 1·125 lb.

Another experienced planter, Mr. W Jardine, who has frequently written to the local press on the subject of coconut cultivation, has recommended the following mixture as a suitable application once in two years per tree :—

Castor Cake	..	12 lb.
Bone Dust	..	4 ,,
Wood Ashes	..	12 ,,

This mixture to be supplemented by one bushel of cattle manure when available. With materials of good quality these ingredients should furnish per tree about

Nitrogen	..	1·1 lb.
Potash	..	1 ,,
Phosphoric Acid	..	1·36 ,,

An experienced planter in the Kurunegala district informed me that, with liming the soil once in five years, the following mixture applied every two years yields 90 nuts per tree, viz. :—

Castor cake	6 lb.
Bone dust	3 ,,

This would supply at least half a pound of nitrogen per tree, about ·07 lb. potash and ·82 lb. phosphoric acid. The soil, in a case like this, must be rich in potash compounds on which the lime acts, liberating the alkali for the use of the plant; thus dispensing with the necessity of applying potash salts. Lime, by assisting in the process of nitrification, will also render available the more inert forms of nitrogen. Thus, by the addition of lime to the soil not only are applications of potash salts rendered unnecessary ; but the proportion of nitrogenous manures required are also, for a time at least, reduced. Of course, it must not be lost sight of that, in adding lime to the soil, the soil is not thereby enriched with any of the three important elements of plant, food, so that the success attendant upon liming the soil will be in proportion to the natural resources of the soil.

Gathering up the foregoing results, I shall draw out in tabular form, for easy comparison, the amounts of fertilising material drawn from the soil per tree per annum by crops of 40 and of 80 nuts per tree, and also the amounts of the same materials which the different systems of manuring referred to furnish per annum per tree, togetherwith some other interesting data :—

	LB. PER ANNUM PER TREE.		
	Nitrogen.	Potash.	Phosphoric Acid.
In 40 nuts with husks ..	·330	·675	·118
In 80 nuts with husks ...	·660	1·350	·236
In 40 nuts without husks	·269	·242	·102
In 80 nuts without husks	·538	·484	·204
In copra of 40 nuts ...	·225	·136	·092
In copra of 80 nuts ...	·450	·272	·184
In food or manure of grazing cattle—about 40 lb. grass per head per diem ..	·552	·754	·155
In 5 cwt. cattle shed manure equal in quality to ordinary farm-yard manure applied once in three years	·666	·750	·3 to ·375
In castor cake 12 lb., bone dust 4 lb., wood ashes 12 lb., cattle manure one bushel applied once in two years..	·550	·50	·680
In castor cake 6 lb., bone dust 3 lb. applied once in two years to soil that has been limed	·250	·035	410
Mixtures recommended by others vary from ...	·250	·09	·115
,, to ...	·500	·56*	·500
In large nuts according to a local analysis :		sodium chloride	
In 40 nuts with husk ...		·857	
In 80 do ..		1·714	
In a year's rainfall ac-according to Mr. Bamber's analyses for Colombo ..	·102	6·549	

On inspecting the foregoing table, it will be observed that the amounts of nitrogen the cattle manures supply, equal, or nearly equal, that required for good crops of whole nuts. It does not, however, follow that the trees require all this nitrogen to be supplied in the manure, as the amount of cattle manure required is determined more by the amount of phosphoric acid required, than by the nitrogen ; phosphoric acid being the fertilising ingredient in which cattle manure is most deficient. Cattle shed manure, supposing it to be equal in quality to ordinary farm yard manure, has an advantage over the manure of grazing cattle in respect of phosphoric acid, which in five cwt. of the former, is more than is in three crops of 80 nuts per tree. The amounts of potash, in these two forms of cattle manuring are about the same, and are in excess of what is required for crops of 40 nuts, but for crops of 80 nuts a very considerable balance has to be drawn from the soil.

In the mixture of manure recommended by Mr. Jardine, the amount of nitrogen slightly exceeds that in 80 nuts without husks and with the nitrogen in the rainfall added nearly approximates to that in two crops of whole nuts of 80 per tree per annum. The mixture has nearly three times the amount of phosphoric acid that is in the crops of 80 whole nuts; but it is mostly in the slowly available form and so cannot be regarded as excessive. The amount of potash is much greater than in the copra of two crops of 80 nuts per tree. It slightly exceeds that in 80 nuts without husks ; but falls short of that in 40 whole nut crops (unless the ashes used are much above the average of wood ashes in respect of content of potash) so that, for crops of 80 whole nuts, a considerable demand would be made on the potash of the soil.

In the mixture used by the Kurunegala planter, the amount of nitrogen plus that in the rainfall, falls short of the amount of copra from two crops of 80 nuts per tree ; but this planter gets 90 nuts per tree, hence the balance must be obtained from nitrification of the soil—nitrogen or other bacterial action, most of the potash is supplied in this case by the soil.

According to a recent local analysis, a tree bearing 80 nuts of large size removes from the soil in crop 1·714 lb. of common salt, while Mr. Bamber's analysis of a year's rainfall for Colombo shews a supply of common salt from this source of —6·549 lb. per tree per annum. These two re-

sults seem to demonstrate that applications of common salt to coconut estates, on the sea board at least, are unnecessary. They also suggest that the rain-water near the sea may possibly supply a not inappreciable amount of potassium chloride and magnesium chloride. Sea-water, according to an analysis of the water of the Irish Channel, contains between a thirty-fifth and a thirty-sixth as much potassium chloride as sodium chloride; and if it were borne on the sea-breeze in this proportion, the rain would furnish about ·184 lb. of potassium chloride per tree per annum.

It does not follow, however, supposing potassium chloride to be present in the sea-breeze, that it is present in the same relative proportion to sodium chloride as in sea water: the proportion would probably be less, the weight of the molecule of potassium chloride being greater.

M. COCHRAN.

COFFEE—COCONUTS—RUBBER: SELANGOR PLANTERS' ASSOCIATION.

The annual general meeting was held in the Selangor Club, Kuala Lumpur, on Saturday, 24th Feb.

The CHAIRMAN informed the meeting that Mr. Carey had intimated that he was not prepared to accept office in either of the Associations for 1900, and was sure the meeting would agree with him that this was a great loss. Mr. Gibson, who had been their Honorary Secretary for a number of years, had also decided not to accept office again; but he was glad to say that Mr. Hicks had allowed his name to be put forward in the event of no other being forthcoming. He thanked all the members for their indulgence during the past year and wished the Association continued success.

Mr. TOYNBEE proposed, and Mr. SKINNER seconded—that Mr. Carey take the chair *pro tem*, which was carried unanimously.

Mr. CAREY said that, before proceeding with the next item on the agenda, which was to elect office-bearers for the new year, he should like to make a few remarks in the annual report which had been handed to them today. This, though nominally the Committee's report, was was in reality the work of the Chairman and Secretary, who were to be congratulated in handing them such a good one. He was sure they would all agree with him that it was most encouraging to note that while coffee was selling at $18 in November and $20.50 in December last, it was now quoted at $25, and confidential reports from London and elsewhere were most encouraging. They had undergone a most hard and severe struggle during the last two years and it was most creditable to find that so few had gone under, and they had every reason to be proud that the acreage under coffee had not decreased. The low prices of coffee had induced many planters in Selangor and other States to plant up large areas with Para and other rubbers and this promised to be a most profitable investment, as he had reliable information that a Para rubber tree in a neighbouring State, which was tapped twice in 10 months, half the tree at each tapping had yielded the enormous quantity of 16 lb. of rubber and the tree in no way harmed. Now the most sanguine of men could not expect such a result all over, but even supposing they got one-tenth of the above amount it would mean a fortune. Another product, which was most deserving of consideration, was the coconut, which gave in their coast districts marvellous results—he had seen a tree in the Klang district which has been in bearing for over a year is now only five years' old and has over 70 nuts on it at present, and this tree was not at all singular. Altogether, he thought they would agree with him that the planters' prospects looked considerably brighter. Mr. Darby then proposed and Mr. Rendle seconded, a vote of thanks to the retiring office bearers, which was carried unanimously. TOM GIBSON, Hon. Secy., S.P.A.

TEA DUTY.

On tea the extra duty is 2d per lb It seems clear here that the consumer will have to bear the addition. The opinion of the Mazawattee Tea Company's chairman, which company, by the way, is advertising that it has paid the record duty cheque of £85,860, is that people will take a 2s tea where they have been accustomed to pay 1s 10d for the same quality, that the cheapest tea (1s per lb.) will drop out, and that a better tea will be sold at 1s 4d. All tea issued by this company is now advanced 2d per lb. in price. Lipton's have advanced their teas by the exact amount of the duty, their 1s quality being put up to 1s 2d. Some interesting remarks were made by the Chancellor of the Exchequer on the subject of the tea tax, which are here reproduced :—

At the time of the Crimean War the duty on tea was 1s 6d in the pound. It was promptly raised by 3d with practically, I think, no objection from anybody concerned. The duty on tea in 1889 was 6d per pound, and my right hon. friend Mr. Goschen raised it by 2d. At that time the average wholesale price per pound of tea was 10.79d, making, together with the 6d duty, 16.79d per pound. Now, I am informed that the average wholesale price of tea is 8.87d per pound. If I were to add 2d to the duty that would make, together with the duty, 14.87d per pound, or 2d per pound less than the price in 1889. I propose to add 2d per pound to the duty on tea. (Ministerial cheers) That will produce £1,800,000 in the course of the 12 months.

Mr. Labouchere pointed out that the tea-drinker would now have to pay one-sixth more for his tea, while the beer-drinker would only have to pay one-thirty-sixth more, and the whisky-drinker one-fortieth more.

Traders on the whole, with the exception of the produce brokers, are hearing the new duties with equanimity. True they made an unparalleled rush to escape the increases on Saturday and Monday, on the latter day nearly £500,000 being paid in London into the Customs House, on dutiable goods. The Chancellor of the Exchequer made some allowance for this rush in his calculations on what the duty would realise, but he was afraid afterwards that he had not allowed sufficient. The payments over the normal amount in the time were estimated at £1,000,000 sterling, and probably some £250,000 remained in the pockets of disappointed merchants who besieged the Customs on Monday. Some surprise has been expressed that a duty was not placed on coffee and ærated waters, and Mr. Gibson Bowles suggested a 100 per cent tax on diamonds, furs, feathers, lace, musical instruments, and artificial flowers, but the Chancellor of the Exchequer has preferred to keep to orthodox methods.—*British and Colonial Druggist*, March 9.

CHRISTY AGENCIES.—Messrs. Thos. Christy and Co. must surely have nearly the best—if not absolutely the best—claim to be the firm with the greatest number and variety of agencies, all suited to the drug trade. This is the reason why one can never call inopportunely at 25, Lime Street for notes on novelties.—*British and Colonial Druggist*, March 2.

AGRICULTURAL COURTSHIP.

A potato went out on a mash,
And sought an onion bed;
"That's pie for me!" observed the squash,
And all the beets turned red:
"Go 'way!" the onion, weeping cried,
"Your lover I cannot be;
The pumkin be your lawful bride—
You cantelope with me."

But onward still the tuber came
And lay down at her feet;
"You cauliflower by any name,
And it will smell as wheat;
And I, too, am an early rose;
And you I have come to see;
So don't turnip your lovely nose
But spinachat with me."

"I do not carrot all to wed,
So go, sir, if you please!"
The modest onion meekly said,
"And lettuce, pray, have peas!
Go, think that you have never seen
Myself, or smelled my sigh;
Too long a maiden I have been
For favours in your rye!"

"Ah, spare a cuss!" the tuber prayed,
"My cherryshed bride you'll be:
You are the only weeping maid
That's currant now, with me!"
And as the wily tuber spoke
He caught her by surprise,
And, giving her an artichoke,
Devoured her with his eyes.

—*Exchange.*]

PLANTING AND MINES ALONG THE ZAMBESI AND THE OPHIR OF SCRIPTURE.

Dr. Carl Peters read a paper on March 7th be fore the *Society of Arts*. We quote as follows:—

Macombe's country is situated in the Portuguese sphere of interest, but up to this time it is practically independent. He gave me the right of starting a store in his country, and I think that this is well worth having, as he is rich in gold, ivory, wax, and india-rubber, and a well-managed store is sure to pay. Altogether I think this part of Africa, from an industrial point of view, must have a future. The advantage of the navigable Zambesi leading to it cannot be valued highly enough. When the Mashonaland railway has been finished as far as Tete, you will soon perceive that as the Zambesi trade turns towards Mashonaland, the trade of Mashonaland will turn towards the Zambesi, and seek an outlet at the Indian ocean. The country of Macombe is well adapted for plantations along the Zambesi. The sugar-cane grows abundantly on the banks of the Zambesi, and I think that fine tobacco may be grown all over the country. At the western side of the country, we discovered a mountain range called Baraouro, which rises up to 4,000 feet, and is well watered. Here tea, cocoa, coffee, and other cultivations may be started, and in this part European settlers will find a healthy climate. The south of the country towards the Pungwe is again a big forest, full of game, an Eldorado for the hunter. I will not here enter on the question whether we have in the Fura district, the real spot of the ancient Ophir, as this question is only indirectly connected with the natural wealth of Macombe's counry. I personally have reasons which I will bring forward, that King Solomon's gold expeditions were directed to this part of the world. On the Zambesi Solomon's people could find all the goods, which are mentioned in the Bible as freight of the Ophir ships—gold, ivory, gum-trees, and guineafowls, as well as apes. Up to the Fura district was a continual water connection from the Red Sea. Merchants could sail up the river as far as the Lupata Gorge, and it is quite likely that they heard from the natives at the mouth of the Zambesi of the existence of this alluvial district. The likeness of the names, Fura and Afer, is perhaps not decisive, but still very remarkable. So also is the fact that Fura today has the same meaning in the Makalanga language as Ophir had in the ancient Semitic languages, "hole" or "mine." The existence of ancient Semitic ruins, as well as the survival of the old Semitic religious ideas in the population are also remarkable. What I am inclined to consider a strong evidence in favour of my Ophir theory, is the fact that when the Portuguese arrived in South Africa Arab traders told them that up the Zambesi river was the gold land of Afur, our Fura of today, and this was identical with King Solomon's Ophir. Now the Arabs were the natural decendants of the ancient Sabæan conquistadores, and a continuity of tradition from the ages of their ancestors on this point is not at all surprising. I think critical scholars will agree with me that this is, indeed, a very strong argument. The Chairman Sir Owen Burne said while public attention was entirely centred on South Africa, and the war going on there, Dr. Peters had taken them a trek up north to the Zambesi, and given them a most interesting and instructive paper. He had pointed out in a convincing manner that our modern name of Africa was practically the Latin adjective form of the ancient Semitic word "Ophir" or Afer as it was termed in South Arabia, and had shown that the links between Asia and parts of Equatorial Africa were numerous in ancient times. It seemed also to him (the Chairman) that the few specimens of the Macombe language, as given by Dr. Peters, had a certain resemblance both to Arabic and Hebrew, and this bore out a growing opinion rendered highly probable by the accurate researches of M. D'Anville and Mr. Bruce that the ancient fleets of King Solomon after passing the Straits of Bab-el-Mandeb did not sail on to Ceylon or India, as many had hitherto thought, but held their course along the south-east coast of Africa, as far as the Zambesi and the kingdom of Sofola, whence they drew their rich stores of gold and silver. It seemed to be probable also, as suggested by Dr. Peters, that from these same localities the Queen of Sheba collected those quantities of precious metals and stones which she presented in such abundance to King Solomon.

[So the claim of Ceylon to include the Ophir and Tarshish of Scripture is strongly disputed.—ED *T. A.*]

RUSSIAN FRUIT.—Mr. P. Stcherbina, horticulturist, of Simpheropol, Crimea, Russia, has sent us some elaborate and beautifully prepared tables, showing the qualities of the best sorts of Cherries, Plums, Apricots, and Peaches, as observed during eighteen years. The first column contains the name of the variety, then come eleven columns showing the degree of hardihood; 2, the vigour of the tree; 3, its fertility; 4, its size; 5, its quality; 6, its firmness; 7, its market value. To each of these an allotted number of points is assigned, and these numbers are added together in a column of totals. In addition the time or season in which the fruit is available its form and colour, are given in separate columns, but these are not numerically assessed. To give one example we may say that Grosse Mignonne Peach has for the column above mentioned 8 points, 8 for vigour, 8 for fertility, 10 for size, 9 for quality, 8 for firmness, 9 for market value (not otherwise determined), forming a total of 60 points; while Early Beatrice gets only 55. Madeleine rouge has the highest number of points, viz., 73. Eighty-three kinds of Cherries are thus tabulated; forty-five Plums, and twenty-five Apricots. Some of the sorts are not known in this country, and that circumstance added to the length of the tablet makes it undesirable for us to publish them as full length.—*Gardeners' Chronicle.*

SUGAR AND WEST INDIAN AGRICULTURE

The waking up of the West Indian sugar planters is of special interest to us as advocates of further trials locally with the sugar cane, and because it should help to keep before planters in the East—in Ceylon, India, the Straits, &c.—the importance of adopting the most advanced methods of cultivation and manufacture for each of their products. An Indian contemporary writes:—

The reports of the recent Agricultural Conference at Barbados afford some grounds for hoping that the very conservative sugar planters of the British West India Islands are at last beginning to realize that, if they are to keep their heads above water, they must abandon their old-world methods of business, and adopt the advanced scientific principles of the present day. They now recognize that the Bourbon cane, to which they have so long pinned their faith, must give way to the new seedling varieties, which yield much better results. Barbados 147 and Demerara 145, both improved canes, raised from recently-discovered seeds, yield about $3\frac{1}{2}$ tons of sugar per acre, and other seedlings, are nearly as good. Dr. Morris, the Imperial Commissioner, clearly anticipates that by following the example of the European beet-growers, it will be possible, by careful selection, cross fertilization, and so on, largely to increase the saccharine yield.

So great has been the change of feeling on the part of the planters as to central factories that, instead of scouting the idea, as they did formerly, they are now petitioning to have co-operative factories started on the most approved modern systems of perfection in every detail, and if this spirit is maintained and encouraged, we may look forward to the dispersal of the gloom which has so long hung over the islands.

While every endeavour is being made to encourage the staple industry, no opportunity is lost in inducing cultivators to have a second string to their bow, and increased prosperity is expected from the extension of such minor industries as cocao, coffee, fruit, and other things. The latest introduction is indiarubber, Mr. Esme Howard being now engaged in establishing a rubber plantation in Tobago, the first of its kind in the West Indies. Dr. Morris is evidently doing his best to justify the inauguration of the Imperial Agricultural Department less than eighteen months ago.

COFFEE, TEA AND NILGIRI PLANTERS' ASSOCIATION.

The following is taken from the proceedings of a general meeting of this Association held on the 8th instant:—

Lady Birds.—The Honorary Secretary gave details under this heading and on his intimating that a limited supply of the Cape Lady Bird was available from Ceylon, several Members present booked the available supply.

Proposed Tea Cess.—Read reply from Indian Tea Association to negative the proposition passed by the U. P. A. S. I. at its 1899 meeting at Bangalore, viz., that the Secretary be instructed to write to the Indian Tea Association and press upon that body the great importance of obtaining funds for the American and Continental funds and to request it to approach the Supreme Government with the object of securing an Act, on the same lines as the Ceylon Act IV of 1894.

Separate Taring of Tea.—Proposed by Mr. Edmiston that as the subject is an important one and as tea interests are so inadequately represented at this Meeting that relative papers be circulated among tea planting members with a request that they communicate their views on the subject to the Honorary Secretary. Secondedd by Mr. Scovell and carried.

PUBLIC SALES OF TEA IN COLOMBO

DURING THE 1st QUARTER OF 1900

	Offered	Sold	Avg.	Exchange Demand Drafts. 1900.	1899
	lb.	lb.	c.	s. d.	s. d.
Jan. 10	1,831,280	1,614 158	35	1 4 1-8	1 4 1-8
„ 17	1,364,973	1,185,022	37	1 4 5-16	1 4 1-8
„ 24	1,139,005	827 628	34	1 4 3-16	1 4 3-32
„ 31	737,556	588,927	34	1 4 3-16	1 4 3-32
Feb. 7	599,791	516,696	35	1 4 5-32	1 4 3-32
„ 14	782,790	653,888	34	1 4 5-32	1 4 1-32
„ 21	1,185,369	973,956	35	1 4 1-8	1 4 1-16
„ 28	740,953	566,329	34	1 4 3-32	1 4 1-32
Mar. 7	891,630	653,715	32	1 4 1-8	1 4
„ 14	819,759	681,953	34	1 4 3-32	1 4
„ 21	951,759	807,324	35	1 4 1-32	1 4
„ 28	902,110	744,408	35	1 4	1 4
Total for 1900—	11,946,607	9,814,004	$34\frac{1}{2}$	1 4 1-8	1 4 1-16
Same period 1899—	9,044,806	7,986,005	39		

PUBLIC SALES OF TEA IN LONDON

DURING THE 1st QUARTER OF 1900.

	Packages Offered.	Packages Sold.	Reuter's Average. 1900	Gow. Wilsons and Stanton's Average. 1900.	1899.
Jan. 11	24,000	23,000	8	8	8
„ 18	31,000	29,000	$7\frac{3}{4}$	$7\frac{3}{4}$	8
„ 25	38,000	29,000	$7\frac{1}{2}$	$7\frac{1}{2}$	8
Feb. 1	25,000	21,000	$7\frac{1}{4}$	$7\frac{1}{4}$	$8\frac{1}{4}$
„ 8	24,000	22,000	$7\frac{1}{2}$	$7\frac{1}{2}$	8
„ 15	25,000	23,000	$7\frac{1}{2}$	$7\frac{1}{2}$	8
„ 22	23,000	21,000	$7\frac{3}{4}$	$7\frac{5}{8}$	8
Mar. 1	32,000	29,000	$7\frac{5}{8}$	$7\frac{5}{8}$	$8\frac{3}{4}$
„ 8	—	—	—	—	—
„ 15	27,000	22,000	$7\frac{1}{2}$	$7\frac{1}{2}$	$8\frac{3}{4}$
„ 22	28,000	26,000	$7\frac{1}{2}$	$7\frac{5}{8}$	$8\frac{1}{2}$
„ 29	26,000	25,000	$7\frac{3}{8}$	$7\frac{3}{8}$	$8\frac{3}{4}$
Total for 1900	303,000	270,000	$7\frac{1}{2}$	$7\frac{1}{2}$	$8\frac{3}{4}$
Same period 1899	263,000	248,000	$8\frac{1}{2}$		

[The figures for local sales are compiled from the weekly circular of Messrs. Forbes & Walker, while those for London sales are from the telegrams received weekly.]

Government Scientists for Tea.—Says the London correspondent of the Calcutta *Planter*, on March 2nd:—Each day that passes those engaged in practical agriculture show a greater desire to call in the aid of science to help them in their difficulties. Mr. Bamber, who for some time gave counsel to Indian Planters on the chemistry of the tea plant, has now been received with open arms by the Planters in Ceylon. This week another gentleman, Mr. J. B. Carruthers, has also left for Ceylon to give his help as mycologist, against the ravages of Fungi. Not to be left behind, the Indian Tea Association has decided to engage the services of Mr. Mann, an experienced agricultural chemist, who will in the course of this month, proceed to India to take up his duties. He is instructed by the Calcutta Committee to provide himself at the expense of the Association with all the needful requirements of a chemical laboratory. It is arranged that Mr. Mann shall visit the Ceylon tea districts *en route*.

AN OLD PROPRIETARY COLONIST:

MR. W. S. BENNETT RE-VISITING CEYLON AND THE STRAITS:—TEA, LIBERIAN COFFEE, RUBBER AND COCONUTS.

It is encouraging to see a Ceylon colonist who can date back to 1858, looking so fresh and "up to work" (in travelling and inspecting) as does Mr. W. S. Bennett, who, although retired for a good many years to a delightful Buckinghamshire home, continues to retain a proprietary and directorial tea interest in Ceylon, and has added to it an interest in Liberian coffee, coconuts and rubber in the Straits. Mr. Bennett has just returned from a visit thither. He thinks Singapore cooler than Colombo, with more frequent though very partial rains. He was much pleased with planting prospects, though coffee had suffered from ravaging attacks of caterpillars, large gangs of coolies being employed to pick them off. ("If only some hundreds of Ceylon Tamil coolies were available on each plantation," is the cry—and why not, in this year of famine in India—even extending to Madras?) Mr. Bennett is right in considering the Straits a special home for rubber, considering all the indigenous gutta and rubber-yielding trees in that region; and no less true, we told him, is it that in the Straits, we are nearer the original habitat—the great Decandolle considers it to be in Sumatra and the Eastern Archipelago—of the coconut palm than in Ceylon. So, if only abundant labour could be got, the Straits plantations should surely go on and prosper (that is, ahem, if all the Managers read and profit by the *Tropical Agriculturist!*). While travelling on the Perak river, Mr. Bennett had a sharp experience of what a thunder and rain storm can mean in the Straits, reminding him of wild monsoon bursts in his early days in Ceylon.

Mr. Bennett went upcountry to continue the inspection of estates which he began before going to the Straits. Travelling at night some weeks ago in a bullock cart between Awissawella and Ratnapura, after inspecting plumbago lands, he had an experience of what a "chill" in the tropics means, which, no doubt, he would have laughed at, when we first saw him in rude vigorous health as a young Colonist and ever-cheerful Devonian. Mr. Bennett reminded us how the Railway should really have gone up the Kotmalie valley to Pundaluoya and Dimbula with a branch to Dikoya, and that was certainly Mr. Tottenham's route when, in 1872, he offered Government to construct a 3½ feet line from Nawalapitiya to Haputale Pass, and we most cordially backed him up. There is a new private road planned near Oolapane, with a bridge across the river, which we are glad to hear Government is to give - a good bargain for the latter to get a road made by a private Company if the bridge is supplied.—We hope Mr. Bennett's short visit has proved enjoyable, and that he carried home a good report of the old Colony in which he lived and laboured so many years.

SCIENCE AND AGRICULTURE IN CEYLON:

THE ENTOMOLOGIST AND MYCOLOGIST ON CIRCUIT.

The Director of the Royal Botanic Gardens makes, through the Planters' Association, a very important announcement and one that will be welcomed by the planting community as by intelligent agriculturists all over the island. It is to the effect that he intends the new scientific officers on his staff—more especially the Entomologist and Mycologist—should make periodical tours in connection with their work throughout the country, when they can not only observe and collect subjects for investigation, but also confer with planters and others on the spot about local pests of any kind. No better mode of operations for a portion of their time could possibly be devised, and we feel sure that the various District Planting Committees will co-operate to the utmost of their power in studying the convenience, and extending all possible aid to their visitors. The first tour announced is one for Mr. E. E. Green as Entomologist to Batticaloa, the great rice and palm growing district of the East coast, where he is due on April 15th. Such a journey should be fruitful in much interesting information and finally in practical results of value to both classes of cultivators. Travelling by land, Mr. Green will pass through the Badulla and Passara districts and he proposes to visit and deal with each, as far as he may be able, either on his outward or homeward journey. Perhaps as the notice is so short this time, the latter would be preferable, in enabling the District Committees to consider the "situation" and make all needful arrangements so as to reap the full benefit of the Entomologist's visit.

COFFEE AND THE CURRENCY.

To the Editor "Madras Mail."

Sir,—Two days ago I visited, with the proprietor, an estate near this which I went over with him in 1865, and found that it looks better now than it did then. The coffee, indeed, is so flourishing that, though an old propety, I should say that it will last as long as the world chooses to drink coffee. Another estate that I went over is in an equally thriving condition. In Mysore I know on the best authority that well managed estates never looked better, or more promising for the future. And yet, with these facts which ought to attract capital to the industry, we find that advances are being refused, mortgages foreclosed, and, the surest sign of all of decadence, that wages have been reduced from the North of Mysore down to the Shevaroy Hills, and on the Nilgiris also. All of this, of course, indicates that the saleable value of estates has declined, and in the opinion of capitalists may still further decline should, as seems very probable, the wants of the Government induce it still further to force up the exchange. I need hardly add that with a decline in saleable value, and the possibility of a still further decline, the capitalist buttons up his pockets as regards loans on the security of plantations, and hastens to try and recover the money he has already sunk in mortgages.* * *

R bert H. Elliot,

Coonoor, 25th, March.

A FARMER'S EVERYDAY LIFE.

(*By* " *Cosmopolite.*")

The month of February is held responsible for more that is good and bad than any other month of the year, and poets of both classes—minor and major—have rhymed about the peculiarities of this distressful month, which, fortunately, is the shortest in the calendar, and, therefore, soonest brought to a close. One rhymer tells how all the other months hate a *good* February, and another sings of February filling the dyke,—be it black or be it white,—and, if the latter poet is to be depended upon, we should have a bumper harvest this year, for February has been characterised by a continual downpour of snow and rain alternately. Our roads have been blocked up, one week, by great snow-wreaths, and the next week, by flooded streams, so that I am beginning to think that, if this sort of thing goes on much longer, Nature will require to provide us with webbed feet, as only amphibious animals will be able to exist in our watter-logged island.

In such weather

THE WORK ON A FARM

during this month consists in feeding the stock in the houses, and digging those sheep that are feeding on turnips out from under the huge drifts of snow. Happy is the farmer who has a plentiful supply of turnips stored in pits near his steading, thus saving his men from the most trying work on a farm,—the digging of turnips out from under the snow, and carting them through slush, mud and heavy snowdrifts. Many sheep have been smothered, this month, in different parts of the conntry: one of my neighbonrs having lost 330 out of a mob of 360,—which must spell bankruptcy to him. I have been fortunate in this respect, having only lost two old ewes, who had out-lived their usefulness, and would neither breed nor fatten, owing to extreme old age.

However, as the poet says :—

" Soon, full soon, will the South wind blow,
Winter is passing, and under the snow
Violet and primrose find strength to grow."

And, as a matter of fact, now that the snow is melting, the crocuses and snow-drops are beginning to appear, in thousands, around my house, through the trees and under the hedgerows.

In the

AGRICULTURAL WORLD, FEBRUARY

is chiefly known as the month of Bull Sales and Seed Shows, the former being held at Perth, Aberdeen, and Inverness, the latter wherever two or three farmers can be gathered together. Our little Agricultural Society held its Seed Show, in spite of the distressing weather, and was remarkable on account of the indifferent judging, and the fact that the members of Committee took all the prizes. It is a truism, in rural circles, that it is better to be a friend of the judges or a member of Committee, than to own the best stock at the Show,—and this rule seems to have held good in this instance.

The Bull Sales are said to have been somewhat stiff, which is accounted for by the fact that hundreds of young bulls are sent to these sales that are not fit for stud work, and, indeed, are mere mongrels ; and these sell for a trifle, which, of course, reduces the general average ; but a good bull always brings a good price, and such has been the case, this year, although nothing approaching the £1,200 paid by Sir Wilfrid Lawson to the Duke of Devonshire for one, which died shortly afterwards of tuberculosis, and Sir Wilfrid suitably expressed his feelings in the following epitaph :—

" Here lies ' Duke of Oxford,' quiet and cool,
Bred by a Duke, and bought by a fool,"

During this month the Laird of our parish has crossed the mystic line dividing the world of men and things from that of shades and oblivion, at the ripe age of 81 years, and his remains were followed to the churchyard by all the countryside, as well as his own tenantry, wading through three feet of snow-drift. He was one of the most successful farming landlords in Scotland, and this was attributed to his having gained his experience in the best school in the world, namely that of Australia.

TRAVANCORE TEA SALES.

Average 7·97d. March 23rd.

Garden.	Total. Quantity.	Aver. Price.	Bro. Or. Pek. or Flowery Pekoe. Quantity.	Bro. Or. Pek. or Flowery Pekoe. Price.	Pekoe and Unassorted. Quantity.	Pekoe and Unassorted. Price.	Bro. Pekoe. Quantity.	Bro. Pekoe. Price.	Pekoe Sou. Quantity.	Pekoe Sou. Price.	Broken and Souchong. Quantity.	Broken and Souchong. Price.	Fannings, Dust, and Various. Quantity.	Fannings, Dust, and Various. Price.
Travancore ...	1440	6·65												
Atchencoil ...	200½c	6	96½c	†6¼ †6¾	46½c	†6	—	—	35½c	5¾	14½c	5	9½c	5 5¾
Bonaccord ...	39 p	6	—	—	9	6	13	6½	7	5¾	—	—	10½c	5¼ 6
CMR ...	24	5¾	—	—	21	5¾	—	—	—	—	2	4¾	1	4¾
Home ...	80½c	6	—	—	50½c	5¾	27½c	6¼	—	—	1½c	4½	2½c	4¾
Inverceauld ...	42	6¼	—	—	18	6	16	7	8	5¾	—	—	—	—
Isfield TCoIsfield	124 p	6¼	—	—	30	†6	88	6½	—	—	—	—	6	†4¾ 5¾
Kanan Dev Hill M	164½c	7½	29½c	8¾	28½c	7	12½c	1/0¼	55½c	6½	—	—	40½c	6 8
Merchiston ..	107 p	6¼	—	—	37	6¼	37½c	6¾	—	—	17	5¾	16½c	5¼ 6½
Penshurst ...	116	7½	32	7½	43	6¾	18	10¼	17	6¼	—	—	6	6¼
" ...	48 b	7¾	24 b	9	—	—	24 b	6¼	—	—	—	—	—	—
Sth Trav Co Ven	156	6¾	—	—	71	6¾	51	6¾ 7¾	28	6½	—	—	6	5 5½
SITCo Kuduwa K	186 p	7	51	6¾	15	6¼	75	†7¾	15	6	—	—	30 p	5¼ 6¼
" Nagamalle	11	5¼	—	—	—	—	—	—	—	—	5	4¾	6	5¾
Trav TEst Co BA	143	6½	—	—	71	6¼	72	†6¼ 7	—	—	—	—	—	—

THE PANAWAL TEA COMPANY, LIMITED.

The following is from the report of the directors to be presented to the shareholders at the eighth annual ordinary general meeting, to be held on Tuesday, the 27th inst :—

The directors beg to submit the general balance sheet and profit and loss account for the year ending December 31, 1899, duly audited. The net amount at credit of profit and loss account, including balance brought forward at December 31, 1898, after providing for general expenses, directors and auditors' fees £ 3,210 6s 8d: dividends on the seven per cent cumulative preference shares were paid for 1899 in full, amounting to £371; an interim dividend of 2 per cent on the ordinary shares was paid on Sept. 15, 1899, amounting to £340, it is proposed to pay a final dividend of eight per cent on the ordinary shares for the year ending December 31, 1899, making a distribution for the year of 10 per cent free of income tax, which will absorb £1,360, to increase the reserve funds to a total of £1,000 by the addition of a sum of £508 14s 6d, to write down the estates purchased account by the sum £487 10s 5d and to write the cost of coolie advances down by £133 6s 8d leaving a balance to be carried forward to next season of £9 15s 1d. The directors recommend the distribution of a final dividend at the rate of eight per cent on the ordinary shares of the company for the year ending Dec. 31, 1899, making with the interim dividend paid to June 30, a distribution at the rate of 10 per cent for the year. No alteration has taken place during the last twelve months in the acreage of the company's properties, which stands at: tea in full bearing on December 31 last, 590 acres; jungle, on December 31st last 341½ acres. The directors consider that the shareholders have every reason to be satisfied with the result of the year's working. The crop realised for 1899 was 334,922, as against an estimate of 315,000. The yield in 1898 was 293,933. The visiting agent reported the properties as being in every way in excellent order at the date of his last inspection.—*H and C Mail,* March 16.

CACAO SUPPLY AND CONSUMPTION.

"WANTED: MORE CACAO."

Such is the heading put to a review of the cacao market by Mr. H. Hamel Smith, whose weekly reports must of late have attracted the attention of our cacao planters. We give prominence to the remarks and statistics furnished to show that the demand for cacao exceeds the supply :—

"The striking proofs which meet the eye on every side, of the steadily increasing popularity of cocoa and chocolate, either as a beverage, a highly nourishing food, or a sweetmeat, ought to encourage everyone interested in the planting of the raw article to push on and increase the area under cultivation as much as possible in order to avoid any chance of the demand exceeding the supply; for should it do so the result would be serious to producers and manufacturers alike, as it would force the price above the "margin of profit" limit, causing the makers to have to choose between losing money on their output, which they will not do, even if the scarcity was only temporary; or the very undesirable alternative of raising their list prices, which would not only check the consumption immediately, but would disorganise the trade for a very long time, as it is most difficult to get the public to agree to pay a rise in the price of an article which they have been in the habit of buying at a fixed price ever since its introduction; they do not quarrel if the price is reduced by a cutting shopkeeper, but rather than agree to a rise, the general public do without the article, and the ground gained after years of fighting our way into public favour, by means of expensive advertisements and costly machinery would be speedily lost. And yet, unless more energetic steps are taken to increase the supply than is now being done one can see by the figures given below, unmistakable signs of the demand outgrowing the supply in a few years.

"The continental manufacturers, we are told are realising the true state of affairs much quicker than their English confreres, whose one dread seems centred in the fear that the spot price may go higher than they wish. As the increase both in the deliveries and consumption has been maintained, the three years given below will be sufficient guide to go by, and so prevent the reader being bothered with unnecessary figures :

The increase in the supply is :—

	1894. lb.	1898. lb.	1899. lb.
Guayaquil	38,951,000	42,172,000	50,444,800
Trinidad	20,961,200	24,568,700	24,808,000
Ceylon	2,156,000	4,319,700	4,786,880
Grenada	9,463,200	9,062,500	8,915,200
St. Thomé (African)	12,865,700	10,564,600	30,455,040
	84,397,100	98,687,500	119,409,920

Shewing an increase in 1898 of 17 per cent, and in 1899 of 39 per cent. over 1894.

The increase in the consumption is as follows :—

	1894. lb.	1898. lb.	1899. lb.
United Kingdom	22,441,000	32,087,084	34,013,812
Germany	17,227,100	32,351,100	37,255,300
Holland	19,896,300	29,086,900	28,923,600
France	30,112,300	35,145,900	35,383,400
Spain	1,166,800	9,592,300	12,467,500
Italy	471,700	690,400	778,200
U. S. A.	15,940,500	21,095,700	35,260,000
	107,255,700	160,049,384	184,081,812

Showing an increase in 1898 of 50 per cent. and in 1899 of 64 per cent. over 1894.

Although it is true the above are neither all the producing nor consuming countries, they are by far the most important ones, and can be taken as a sound basis on which to form calculations, and to show that even if the consumption does not increase during the next five or six years, it would take all that time for the supply to come up to the same proportion of increase. But the consumption is not going to stop growing; for instance, Russia, although I believe, its consumption is increasing rapidly is almost a non-cocoa country, but when she takes to cocoa for her army as England and Germany are doing, and which Russia with its cold climate will do also before long, that alone will increase the consumption some millions of pounds; but putting the world's increase on a moderate basis, say 10 per cent per annum, during the next six years; if the present supply and demand of the whole world is two-hundred-and-fifty million pounds per annum (there is no doubt they are almost equal now, and as the seven countries mentioned account for 184 millions, and we have Russia, Austria, Portugal, Belgium, and the rest of Europe, as well as

all the cocoa producing countries which consume their own growths, I do not think another 66 million pounds too high an estimate) in six years, the supply would by adding the same increase (40 per cent) that has taken place since 1894, amount to 350 million pounds a year; whilst the consumption at a yearly increase of 10 per cent for six years, making 60 per cent in all, would amount to 400 million pounds; and as far as can be judged at present it is the consumption rather than the supply, that is the most likely to keep on steadily increasing during this period, so that about 1,907 there will be a deficit of about 50 million pounds or 280,000 bags, which would take at least 100,000 acres of land to produce.

At present, thanks to the large stocks that had been accumulating since 1895-1896, the sudden spurt in the demand has been able to satisfy itself, but this will not be the case in the future, as at present we are not only reducing the stocks, but are eating up the new crops as fast as they arrive. When Guayaquil and St. Thomé poured their bumper crops last year into the European markets, a tremendous fall in prices was prophesied, instead of which they were bought up greedily, and at the beginning of the year prices were higher than ever, and will be so again as soon as the first pressure to sell is over. If this year, and 1901 are large crop years (to humour the old fable of three fat years and one lean one) after that there is every sign of a much larger supply being needed by the manufacturers if the present demand for chocolate by the million is to be maintained. Meanwhile here are the figures comparing the present stocks for the past five years, by which it will be seen that in spite of the 21 million pounds extra, which the five producing countries mentioned gave last year over 1898, the present stock shows we have reduced the recent accumulations by 110,000 bags = another 20 million pounds, so that I am not far wrong in estimating the shortage in the next six years at about 50 million pounds unless the present rate of increase in the supply is considerably enlarged:—

	1900.	1899.	1898.	1897.	1896.
Stock—	Bags.	Bags.	Bags.	Bags.	Bags.
London	77,820	91,038	121,044	140,995	151,323
Liverpool	2,445	3,384	954	3,631	6,469
Havre	80,031	77,657	60,326	123,135	112,553
	160,296	172,079	180,324	267,761	270,345

ROYAL BOTANIC GARDENS.

With this issue of the *Tropical Agriculturist* we include in a *Supplement* the greater portion of Mr. Willis's Administration Report for 1899. There is no special novelty about it, save the first appearance of a subsidiary Report from the Entomologist; but there is a great deal of useful information under a variety of beads and signs of progress in a variety of directions. The Curator furnishes a good deal of interest respecting the Peradeniya Gardens (telling us, among other things, that the Experimental Plots now represent thirty different tropical products) just as Mr. Nock does regarding the Hakgala Gardens where, however, besides drought, such enemies as hares, moosedeer, rats and porcupine are troublesome; while a small herd of elephants put in an appearance within 50 yards of the Superintendent's bungalow in June last! The laying out of the ground near the new Picnic Arbour is one of the great improvements of the year; and the young camphor trees are reported to be growing vigorously. As usual Mr. Willis has a good deal to say on our staple products and the closing paragraph on tea is so significant that we must quote:—

> The planting community is now well acquainted with their appearance and with the ways of treating them (the tea blights.) There is thus every ground for hope that the industry will never suffer from blight in the way that coffee did, as the danger is much more likely to be recognized and taken in time by preventive measures. A "scientific" era is now beginning for this industry, and success will be to those who most intelligently apply to practice the improved methods of cultivation, manufacture, prevention of disease, &c., just as is the case with other long-established cultivation industries.

This must be reassuring; but we do not suppose that Mr. Willis quite means that had "a scientific era" been inaugurated during the early "seventies", it would have saved "coffee"? We have the fact that Dr. Thwaites, F.R.S., the then highest living authority as regards fungi, declared that he knew of no remedy for *hemileia vastatrix* in its attacks on coffee from the first day he saw it and his judgment was borne out by all after-experience under Dr. Trimen, Dr. Morris and Professor Marshall Ward. The drawing is to be allowed. Already, those engaged in the latter calling are protesting against the rule which compels them to take out a license—nominally free, but which they cannot easily obtain without sundry santosums to subordinate Goverment servants. They are not likely to be pleased with the further proposed curtailment of their rights in regard to the enjoyment of their own property, by the refusal to allow sweet toddy to be drawn at all, in areas in which trees are taxed for fermented toddy. In South Canara, Tinnevelly and Madras City, the Abkari Commissioner, while separating the two industries, has given instructions that jaggery manufacturers be allowed to commence work before their trees are marked and registered, and also be given longer hours than hitherto for plying their calling. Even these concessions have failed to satisfy Tinnevelly, where there is a great jaggery industry, and which has set on foot an agitation for the removal of all rules and restrictions which harass an untaxed trade through blackmailers. Bombay has solved the difficulty by holding all palm juice to be fermented liquor, and taxing every coconut tree that is tapped, in some places as high as R12! How would that work out for Ceylon, with its 300,000 coconut trees tapped for toddy? It would yield R3,600,000, *plus* the income from licenses for taverns for the sale of arrack! But it is the illicit trade in toddy we are dealing with now, and which we should like to see checked by a system of taxation which will leave the jaggery industry free, and that can best

be done by ensuring the free licensing of sweet toddy trees under efficient and trustworthy Inspectors, whose remuneration can easily be found from the new and necessary tax, and whose employment will be amply compensated by the suppression of the illicit trade and all the evils which follow in its train. The relative value of the two industries in Madras is shown by the fact that the annual toddy revenue of the district is over two lakhs of rupees, and the annual value of the purchases of jaggery by a single Madras firm in the district is over 15 lakhs! Absolutely no information is available in Ceylon on these points. Verily they manage these things much better in India, notwithstanding its immense area!

CEYLON TEA IN 1899 AND PROSPECTS.

A recent mail has brought us the annual report of Messrs. Geo, White & Co. on "Indian, Ceylon and Java tea." Writing of Ceylon tea, this Firm says:—"On the whole, prospects seem favourable to expansion in the sale of good liquoring descriptions, while that for very common may be partially abandoned, and the prevailing lowest retail price be 1s 4d per lb. If the purveyors to the public can induce their customers to purchase a slightly better blend than they have lately perhaps been accustomed to, they would not only benefit themselves, but also help to raise the whole Trade to a higher level than it has been on for some time."

It is interesting to note how the annual averages for the different divisions of Ceylon —as always specified in Messrs. Geo. White & Co.'s Reports—vary. Thus for,—

Udapussellawa, Nuwara Eliya, New Galway, Dimbula and Lindula, the average runs:— 1897 = $9\frac{3}{8}$d; 1898 = $9\frac{1}{4}$d; 1899 = $9\frac{1}{8}$d.

Maskeliya, Dikoya and Bogawantalawa:— 1897 = $8\frac{3}{8}$; 1898 = $8\frac{1}{2}$; 1899 = $8\frac{1}{2}$.

Lower Dikoya, Ambagamuwa, Kotmale, Yakdessa, and Dolosbage, it runs:—$7\frac{1}{8}$; 7; $7\frac{3}{8}$.

Pusellawa, Ramboda, &c.—$7\frac{1}{2}$; $7\frac{3}{8}$; $7\frac{5}{8}$.

Hantane, Hewaheta, Maturata, Rangala, &c.— $7\frac{1}{2}$; $7\frac{1}{2}$; $7\frac{5}{8}$.

Kelebokka, Knuckles, Hunasgeriya.—$6\frac{7}{8}$; 7; $7\frac{3}{8}$.

Matale.—$6\frac{1}{2}$; $6\frac{5}{8}$; $7\frac{1}{8}$.

Kurunegala, &c.—$5\frac{7}{8}$; $6\frac{1}{8}$; $6\frac{7}{8}$.

Kelani Valley, &c.—$6\frac{1}{2}$; $6\frac{1}{2}$; 7.

Ratnapura, Rakwana, &c.—7; $6\frac{7}{8}$; $7\frac{3}{8}$.

Kalutara.—$6\frac{1}{2}$; $6\frac{5}{8}$; $7\frac{1}{8}$.

Udagama and Morawak Korale.—$7\frac{1}{4}$; $7\frac{1}{4}$; $7\frac{3}{8}$d.

Haputale and all Uva.—$8\frac{1}{8}$; $8\frac{1}{4}$; $8\frac{1}{8}$d.

General Average for all = 8d; $7\frac{7}{8}$d; and 8d.

MOSQUITOS AND MALARIA.

A SCHOOL OF TROPICAL MEDICINE.

In the absence of Lord Loch, Sir Henry J. Jourdain presided last night at a meeting of the Royal Colonial Institute, held at the Whitehall Rooms, Hotel Metropole, when a paper was read by Dr. Manson, medical adviser to the Colonial Office, on "A School of Tropical Medicine." Among those present were Lady Gort, Sir Cecil Clementi Smith, Sir Henry Norman, Sir William Robinson, Sir C G Walpole, Sir J Goldney, the President of the Royal College of Physicians, and Mr. J O'Halloran (Secretary).

TROPICAL DISEASES.

After some prefatory remarks on the specialisation and division of diseases, Dr. Manson proceeded to draw attention to certain forms of tropical disease, indicating their importance, showing the necessity for a special system of study to be applied to them, and pointing out how such a system could be best carried out. Dividing tropical diseases into the two classes, endemic and epidemic, Dr. Manson placed malaria first in importance under the former. It was, he maintained, the great disease of the tropics, the principal cause of sickness and death and of social stagnation. Malaria was the true reason why Africa was called the Dark Continent; and five millions died annually of fever, mainly malaria, in British India; while one-third of our soldiers in that country, European and native, suffered annually from that disease. The unhealthy, that is to say malarious, character of West Africa more than doubled the cost of government, and the death-rate there was 85·2 per 1,000. In fact, what with death and invaliding and leave of absence, two men were required to do the work of one, and to induce them to accept the employment double pay had to be offered.

PROPAGATION OF MALARIA.

The question was how could the cloud of malaria ever floating over such districts be dispelled. It was a common and misleading fallacy that disease was caused by climate: it was really caused by beasts and plants which were subject to man's dominion. The first thing was to discover the disease germ, and Dr. Manson proceeded to consider the underlying principles which govern the distribution, the propagation, the acquisition and the suppression of the malarial germ, adding that those principles would equally apply to nearly all tropical diseases. The germ of malaria lived in the human blood, it could be easily discovered there when present, and transferred by the needle of a hypodermic syringe into the veins of a healthy subject, who in a few days would develop malarial fever. This could be done in any country or climate by such artificial means, but Nature's needle and syringe was the mosquito. This was the reason why malaria was only acquired under natural conditions where and when the mosquito was to be found. The geographical distribution of malaria was therefore determined by the geographical distribution of the mosquito. Fortunately there was only a limited number of the hundred species of mosquito that propagated the malarial germ and until an insect had partaken of the blood of a germ-laden subject its bite would not be dangerous.—*Morning Herald.*

TEA DISEASES.—We have already given Mr. Collett's paper on this subject and intimated that we thought he deserved well of his brother planters for the same. We learn that while Mr. Collett does not at all presume to pose as an authority on plant diseases—although he has paid attention to the subject for a number of years—yet he thought it as well to commence thus early in the 'season' to agitate upon this question: (1) because many planters are as yet unable to identify the principal tea-diseases when they see them; and (2) because it occurred to him that an exposition of what is known of grey and brown blights, etc., up to the present time, might prevent much of the anxiety likely to follow the outbreaks of disease in July-August, which, he fears, are inevitable.

THE COCONUT PALM AND FERTILIZERS.

Following on Mr. Cochran's valuable exposition of the chemistry of the coconut, (see page 764) we have the needful commentary and illustrations on the said scientific paper, which only a practical planter can supply. "W. J." is well-known as an authority on the culture of the palm, second to none in the length and variety of his experience. On the whole, he is not only cordially appreciative of the value of the analyses supplied by Mr. Cochran; but his recommendations are to a great extent in correspondence, though he shows good reasons for pursuing an original course in the application of his fertilizers. This plan of application is just what an experienced planter might be expected to devise after, probably, a long course of experimental cultivation. We commend Mr. Jardine's counsel to the careful consideration of young coconut planters, of whom there are a good many now-a-days in different parts of the island. It has long ago been accepted as an axiom that no plant is so greedy of manure, or so responsive in profitable crops, as the coconut palm. One old veteran cultivator has been accustomed to say that for every rupee sunk in manure in a coconut garden, a return of from five to ten rupees may fairly be anticipated; while in our Manual, figures will be found recorded, showing how a proprietor raised the nett annual return from his garden to R130 an acre through judicious manuring. But here comes in the heresy of our friend "W. J.": he doubts the value of applying salt to the coconut palm!—and bases his argument on the fact that trees 50 or 60 miles inland yield as good crops as do palms by the seashore, where, of course, salt is more freely available in the soil and atmosphere. All we can say is that if trees in the interior do so well, they ought to do even better, after a judicious application of salt! But, of course, "W. J." is speaking from ordinary observation and not as the result of a definite experiment, taking gardens of about the same age, soil and planting—the one near the sea and the other say in Kurunegala district? Of course, if the rainfall in the interior is as rich in "salt" as Mr. Kelway-Bamber shows the Colombo rainfall to be, there is no more to be said. But it should be remembered that "common salt" (sodium chloride) is most useful in other respects besides that of being a direct fertilizer. It increases, for instance, the power of certain soils to absorb moisture from the atmosphere. What could be a more useful property than this in some parts of the interior? Scientifically, the fertilizing properties of salt when applied to land are thus given:—

1st.—It promotes decomposition of animal and vegetable substances in all cultivated soils.

2nd.—It destroys vermin, kills weeds, &c., which are thus coverted into manure.

3rd.—It is a direct constituent or food of some plants.

4th.—It acts on vegetable substauces as a stimulant.—Dr. Priestly proved this by various interesting experiments shewing that while an overdose of salt killed plants, a limited application in water kept them alive longer than those treated with water alone. A solution of chlorine in water will make certain seeds vegetate whi would otherwise rot in the earth.

5th.—Salt preserves vegetables from injury by sudden transitions in the temperature of the atmosphere.

6th (and most important).—Salt renders earth more capable of absorbing the moisture of the atmosphere, a property of the first importance, since those soils which absorb the greatest proportion of moisture, are always the most valuable to the cultivator. "It affords" (said Davy, Agric. Chem. p. 184) "one method of judging of the productiveness of land." The absorbent powers of common salt applied to land, are shewn by a table of experiments to be greater than those of six other well known manures.

And now we come to "W. J."'s closing challenge as to any coconut estate in the island in good cultivation yielding crop at the rate of 90 nuts per tree per annum over any considerable extent? We are not prepared to point to any such plantation; but after all that has been said of the wonderful effect of manure on the palm, it is very strange that there are no such model plantations available. Here, for instance, is what Mr. W. B. Lamont wrote on this part of the subject in December 1897:—

WHAT MAY BE EXPECTED OF PROPER TREATMENT.—The whole system consists of the regular tillage of the soil, and the periodical application of a fixed amount of suitable manure. There is no increase of crop in the first year of applying manure; but there is a considerable increase in the second, and a still greater one in the third; but in the fourth there will be a falling-off from the crop of the third year. To renew the operation of digging and manuring every second year, will therefore not only maintain the highest yield reached, but increase it year by year without any practical limit. It is well-known that individual coconut trees of good jat, that have happened to grow on a spot of naturally rich soil, habitually yield from 300 to 400 nuts per annum without any cultivation. It is then an extravagant idea that a field yielding from two to three thousand nuts per acre, with little or no cultivation, may with scientific treatment be made to yield double those numbers in a few years.

Surely it is time some practical man in our midst, with a young garden, gave a thorough test to the statement that there is no limit (in reason) to the crop of coconuts, which judicious cultivation and liberal manuring may be expected to produce.

..BBER ESTATES OF PARA, LIMITED.

WHY CRUDE RUBBER REMAINS HIGH.

The reports submitted at the second ordinary general meeting of the Rubber Estates of Para, Ltd., held in London on December 22, were far from satisfactory to the shareholders. They contain some points however, which may be of general interest as helping to show why Para rubber is high in price. The company employ rubber collectors, each of whom works two *estradas* (roads) of about 100 trees each. The company charge each collector a yearly rental per *estrada* of 25 kilograms (equal to 55 pounds) of rubber regarded as equivalent at this time to £7 6s. The remaining rubber collected is bought by the company at a price which on the average is 7d per pound below the price in the Para market. There are thus two sources of income to the company against which they must pay the expenses of sending the collectors from their homes to the rubber fields and supplying them with working equipment. There is a further source of profit to the company in selling to the collectors all the food and other supplies needed by them and their families, for which purpose stores are maintained on the estates. But the company are far from realizing as net profit, the total selling

value of the rubber which they have to dispose of in the Para market. The expenses at Para have been large, and the cost of management at the London end has also been so heavy that retrenchment in the latter respect has already been agreed upon.

The statement made to the shareholders in April last as to the number of collectors at work was by no means fulfilled. It was based upon estimates made by the manager on the estate, who said at that time there were at least 650 men working, but that figure was subsequently reduced to 450, afterwards to 328 and finally to 290. Then it was estimated that it would require £12,000 to equip these 650 workers, whereas £23,000 was actually spent in equipping the smaller number. This sum is partially offset by the stores on hand at the end of the season ending June 30. The report was adopted, subject to an investigation by a committee of shareholders.

The estate referred to, on the island of Marajo, consisting of 284 square miles, was purchased in 1898 from the Visconde Sao Domingos who was reported to have derived from it as much as 250 tons of rubber per year. On account of delays in making the transfer, the company were unable to collect any rubber during the first crop season. During the second season the company received 58 tons (equal to 255,390 pounds) as a result of using up £23,000 of their working capital. Naturally there have been no dividends on the company's £350,000 in shares.

The *India Rubber World* has obtained some points from Mr. Henry A Cowles who for some time past has been in charge of a rubber estate in Peru, owned by New York capitalists. The company pay for rubber collected on their own lands about 35 *sols* per *arroba* of 33 pounds, or in the neighborhood of 50 cents per pound. The rubber is sold in the Iquitos market at a certain advance, after which it passes, as a rule through several hands before reaching the manufacturer. There is no such thing as paying wages to the collectors; they keep closely informed as to the prices ruling in Iquitos, and with every advance in the market they demand a higher price. On account of the great scarcity of laborers throughout the Amazonian rubber districts, they are able practically to make their own terms. The company make a certain profit on the supplies furnished to the collectors, but the prices which can be charged is limited by prices in the Iquitos market, with which the rubber workers also keep well acquainted. The laborers are always in debt to the company, and the death or desertion of one of their number means a clear loss to the company. In answer to a question as who has profited by the rise in rubber which has been steady since the middle of 1895, Mr. Cowles says that the greater part of the advance has gone to the rubber collectors. Moreover, there is no hope of a lower scale of payment for their work for the reason that, having become accustomed to high wages, it will be difficult in future to get the men to go into the forest for less money. Good profits have also been made by the traders who explore every part of the rubber country, buying rubber in small lots for all kinds of goods, and selling the rubber collected to the exporting houses along the Amazon. Mr. Cowles is of the opinion, however, that manufacturers might profit by buying rubber nearer the sources of supply than is now the rule. He mentioned the case of one New York manufacturer who, within a year, has arranged for the purchase of rubber for direct shipment from Manaos, with very satisfactory results. He is convinced that the greater part of the Amazonian rubber resources have not yet been touched, but as new districts are gone into the labor supply becomes worse rather than better, with the result of pointing to higher costs of collection.—*India Rubber World*, March 1.

A FARMER'S EVERYDAY LIFE.

No. III.

(*By Cosmopolite.*)

March came not in like the proverbial lion, but like Mary's little pet lamb, and it has continued to provide us with quiet, mild and summer-like days, which materially help farmers to overtake the work that fell into arrears during the snowstorm of February. The ploughs are rapidly turning over the soil and the appearance of March dust—a peck of which is said to be worth a king's ransom—gives indication of an early sowing season.

The microbe of influenza has taken its departure from our midst, and the late sufferers from this dire disease have begun to prance around on their bicycles, thereby laying the seeds of *Kyphosis bicyclistarium*, which is, I understand, the scientific term of bicycle rider's stoop. In a late number of the *Tropical Agriculturist*, I read an article to the effect that Eucalyptus Globulus is a preventative against influenza, but, although I have a healthy plant of some 8 feet in height, in my own special study, it yet failed to keep me in a state of immunity from the plague; indeed, on the contrary, I think, I had a more severe attack this year than ever I had before, and so another of our cherished beliefs in the beneficial influence of the Blue Gum is thus ruthlessly destroyed.

It is not every couple who can expect to live to see the

SPIRITS AND BEER

has been announced by the Chancellor of the Exchequer, in his budget speech, has filled with consternation, the drinking men of our Parish—and I regret to say their name is legion. Strong efforts have been made during the past two years to convert the "drunks" of our village to the paths of sobriety, but with very indifferent results. Let us hope that the extra duty on spirits may prove more successful. I was told that one of the most capable drinkers of our community had declared his intention of giving up the habit rather than pay the extra duty, and this augurs well, for he was about the last man that I would have expected it of. He speaks with a Scotch accent, so broad that one could cut it with a spade, and drinks whisky and water strong enough to float a marlinespike; but when I asked a neighbour if it was true that this dissipated member of society had given up spirits entirely, he replied:—"Well, I would not exactly say that, although it is quite true that he does not drink whisky since he took the pledge: he only soaks his bread in it." After that I am inclined to think his conversion to teetotalism will take place—as the bumper coffee crop of Ceylon was always expected—next year—"naleki"!

I am surprised to find that so many of my neighbours are shareholders in wildcat

AFRICAN MINING SCHEMES.

Hardly a day passes without my getting prospectuses of companies to be floated in Westralia, Africa, South America or some other outlandish place; but these prospectuses quickly find their way to the back of the fire. My astonishment therefore was great when I learned that the reason why so many residents in this parish are taking a lively interest in the war in Africa is because of the shares they own in the mines of Johannesburg, etc. Faith, after all, is the lever that moves the world. The German-Jewish miner of Africa in his lonely hut knows this full well, and so he digs a hole and sends up specimens, and then, like

the sterling fellow he is, he lets the public into the good thing—"there's millions in it"—and the shares are snapped up by all and sundry, even to the farmers of this remote corner of Scotland and scrip is in every man's packet. Then comes the calls, even to the hundred and tenth, and the shareholders file up to the bankruptcy court, and there is an end of it. Ah! how many promising affairs such as these have turned out like the baseless fabric of a dream and left but the scrip behind. In this age the terrible desire to get on has become general. Poverty is dreaded, riches are worshipped, so that farmers even have taken to dabbling in shares and other speculative transactions, because they know too well that fortunes are rarely made at their own legitimate profession. I do not know that large fortunes have ever been made in farming; if they have, the process must have been slow and gradual. Unfortunately, it only happens about once in seven years that a good season is accompanied by good prices for farming produce, but that year gives the farmer a good lift to tide over the two or three middling years and, at least, one pretty bad one which generally follows, so that the utmost benefit a farmer derives from a fat year is that he can hold his own against the lean years which follow. But the pleasure of a farmer's life weighs against these untoward circumstances, and it is comforting to know that money made by legitimate farming, must be made honestly and no one is deceived or loses by his neighbour's success: whereas in commercial dealings, one man's gain is another man's loss. There is an old saying:—"Shoemaker, stick to your last," and I would recommend my brother farmers to stick to the slow process of accumulating wealth by farming, and not attempt to gain a rapid fortune by dabbling in shares. I know the game well, and saw plenty of it in Australia; so the prospectuses which I receive daily, by the post, go to the back of the grate in my house.

CEYLON TEA PLANTATION COMPANIES:

WONDERFUL RESULTS FROM LIBERAL CULTIVATION IN THE BASE OF THE PITAKANDE COMPANY.

Elsewhere we give the Reports of three local Plantation Companies; but two of them, we may briefly dismiss, remarking that we trust there are better days very near at hand for the Agra Tea Company with its fine property when a much more satisfactory dividend will be declared. The case is very different with the Drayton Company, which pays a magnificent 15 per cent and holds a very strong position with its fine compact Dimbula estates,—estates too, that can scarcely be said to have lost much of their pristine vigour duing the coffee era.

But now we come to a very different group of properties, in those appertaining to the Pitakande Company, (which also pays its shareholders 15 per cent); for, the Pitakande and Damboolagalla estates must have been first planted in coffee by Mr. R. B. Tytler not later than 1841-42; while Sylvakande and Kinrara are also among our very oldest coffee plantations. In 1878, for instance, when coffee had reached its maximum, this group of Matale estates is returned in our Directory for almost exactly the same acreage of coffee as is now under tea. Here is how the group stood in 1878:—

Pitakande	... 300	acres coffee up to 37 years old.
Damboolgalla	... 300	" " "
Sylvakande	... 338	" 34 "
Kinrara	... 203	" " "
Total	1,141	acres coffee.

And the Pitakande report gives 1,144 acres of tea on land, which has nearly all been in continuous cultivation from 50 to 60 years! It is, of course, when we take the results in crop that surprise and satisfaction may be felt; for, Mr. Fraser has brought his average yield up to 728 lb. per acre, with a maximum of 1,025 lb. Surely no such result has ever been achieved before on land so long in cultivation and it is all due to judicious manuring. the effect of which Mr. Fraser demonstrates to be cumulative. When tea is turned out at a cost of less than 23 cents per lb., or without manuring at 18·40 cents, while the nett return is over 36 cents, we need not speak of success—it is self-evident; and verily the working of the Pitakande Company affords an object lesson of a very attractive character to all tea cultivators; for, apart from the age of the estates, it must be remembered that the elevation—1,500 to 3,000 feet above sea-level—of the properties does not justify any expectation of more than ordinary teas.

THE USES OF TEA SEED OIL.—Tea seed oil is regularly used in Hongkong and the Southern parts of China as an illuminating oil. It will not, however, burn in a cold climate. We have in former issues, says the *Indian Planters' Gazette*, pointed out the many uses to which tea seed oil may be put. When tea seed becomes a veritable drug in the market,—and the day does not appear so very far distant,—planters may turn their attention to expressing the oil, and find a profitable market by so doing. We are aware that one or two planters tried experiments with tea seed oil, but they were on such a small scale that for commercial purposes they were valueless, and afforded no criterion to go by. An old skipper who has had considerable experience in the China seas, informs us that in the China trade, tea seed oil was looked upon as the best vegetable oil for preserving wood, owing to its possessing great penetrating power on dry wood; and that if it is put on fairly thick on the underwater side of a ship's wooden deck exposed to the hot sun, it comes to the surface in a few hours and materially adds to the hardness of the deck and to its life. The penetrating properties of tea seed oil on wood are superior to the ordinary bright varnish or pine oil in common use for preserving wood in Europe, and, like coconut oil, it possesses the peculiar property of shrinkage.

PLANTING NOTES.

SWEET POTATOES.—Here is what a Jamaica planter has to say regarding his method of treating vines of sweet potatoes:—"Cut in pieces the right length to plant (about 15 inches long) and pile them in a house or some other shade where they are entirely concealed from the sun, and wet them with water and let them lie in a pile until little roots put out, which will take a day or two; then stick them out in well prepared moist ground or in dry ground and water them, and you will hardly lose a plant. Stick them down with a small stick and if you water them do not fill the hole."—*Journal of the Jamaica Agricultural Society.*

CURING OF LIBERIAN COFFEE.—One of the drawbacks to the use of Liberian Coffee has been a strong unpleasant taste, and various remedies have been suggested. According to the *North Borneo Herald* it has now been successfully overcome on the Borneo Coffee Co's estate in Marudu Bay by washing the coffee after pulping and before fermenting. The washed coffee is in this way cleaned from all the minute bits of pulp which doubtless imparted an unpleasant taste and before being placed in the fermenting cistern it is thrown into large baskets—"coal baskets"—for a few minutes to allow the surplus water to drain off and is then fermented in a comparatively dry state. To increase the heat sacks are placed on the top of the coffee and after some hours the top layer is turned in below so as to ferment the parcel equally. The "tip" may be worth something, but we are somewhat inclined to lower our estimate of its value after reading our contemporary's further remarks, viz.:—"Liberian coffee, properly cured, has a splendid flavour which is wellknown by the trade who value it highly owing to the amount of chicory it can assimilate. As an after dinner coffee nothing comes up to pure Liberian coffee if properly cured."—*Planting Opinion*, March 31.

THE SUPPLY OF RUBBER.—An American who, for some time, has had charge of a rubber estate in Peru, from which the profits are small because of the difficulty about labour, is convinced that a great part of the Amazonian rubber resources have not yet been touched; but as new districts are gone into, the labour supply becomes worse, increasing the cost of collection.—Mr. C. D. Scott, of Nicaragua, reports rubber culture a failure in Central America; but we see it stated that the American Government is planning a series of experiments in Cuba, Porto Rico and the Philippines to demonstrate whether rubber can be produced in these islands. As the United States imports of rubber have increased as follows:—

Year.	Pounds.	Import Value.	Average Price.
1897	42,159,129	$21,670,019	51·4 cents.
1898	44,236,070	25,937,108	58·6 ,,
1899	54,408,495	34,219,019	62·9 ,,

It can be judged how important is the trade in the Far West.—Just as we are writing, there reaches us from a Colombo merchant, an order for several of our "rubber manuals" for use in Central Africa and the Manager of the Company concerned adds below his order:—

British Central Africa exports a very good quality of rubber at present, but in a year or so the supply will be exhausted, unless steps are taken to plant up; for at present it is only growing wild and the natives usually exterminate the vines in collecting the rubber."

COFFEE HULLING: DUTCH EAST INDIES.—A French Official Report from Java says:—The coffee-planter has always been very desirous of finding a huller which, whilst not deteriorating the bean, would at the same time be able to deal with different kinds of coffee. The problem has now been solved by M Schaap, one of the planters, who has invented a machine which can hull all the kinds of coffee grown in the colony. At the last coffee-planters' congress held at Malany in Oct. 1898, a prize of 2 000 florins was voted for the improvement of Schaap's system which could be made lighter, more economical in motive power, and able to treat at least three piculs per hour. Coffee hullers come generally from England and Germany, but on many plantations this work is still done in a very rudimentary way. The U S A are now introducing machines made by the "Engelberg Huller Co.," of Syracuse, New York. They are giving great satisfaction and will soon become very widely spread.—*Planting Opinion*, March 31.

DR. MORRIS'S SCHEME FOR AN AGRICULTURAL DEPARTMENT—is not to be accepted in Jamaica without criticism and opposition. A Mr. Robert Craig writes very pungently on the matter and we quote as follows:—

A Board of Agriculture of nominated persons giving voluntary services, will not, I feel assured, be the solution. The department ought to have a capable responsible head, and to aid him an advisory Board of practical men representing the different branches of agriculture, and also commerce might be at his service. These men should be paid a fee to ensure regular attendance at meetings, I say this because few men connected with agriculture can today afford the necessary outlay for travelling expenses. The head of the department should be a man really interested in agriculture, with some knowledge of it, and if possible, with a training such as tho work of the English Board of Agriculture would furnish. His first duty would be to promote good agriculture in every way—to help on Agricultural education and training—to advise the Government as to measures likely to advance and benefit agriculture—to facilitate the transport and inspection of produce—to assist in the suppression of contagious diseases in animals, and the improvement of their breeds, to collate statistics and generally maintain a bureau of agricultural information open to any one in or out of the Colony. The Agricultural Chemist should belong to his department, and the Public Gardens might be utilized for experimental purposes—whether the head of the Batanical Department should be subordinate is I think very doubtful—my own opinion is that he should not.

Agricultural and Botanical researches are not closely allied, and it has always appeared to me unjust and even absurd to regard, as many persons do, the Island Botanist as a referee in agricultural matters. If the Island cannot afford to maintain a Botanical Department—although that is not my opinion—it would I think be better to abolish it than attempt, as our economy, to amalgamate it with an agricultural bureau. A high degree of science should not in my view be aimed at, while the practice of agriculture remains primitive and so defective.

I am strongly opposed to the domination of the Secretary of State in this matter, and to the inclusion of Jamaica in Dr. Morris's Department of Agriculture for the West Indies. If a grant of money involves either control, it should, in my opinion be refused. It is certain, it would be a mere pittance, and to abandon our freedom of action for a dole would be contemptible.

The result was a special meeting of the Jamaica Agricultural Society on 25th Jan., largely attended, when after a full discussion, a special Committee was appointed to consider the Report recommending an Agricultural Department. Dr. Morris was not present and is not, of course, on the Committee.

RAMIE FIBRE SPINNING SYNDICATE, LIMITED. —Registered on March 23rd, by Holman, Birdwood and Co., 50, Lime-street, E.C., with a capital of £15,000 in £1 shares. Object, to adopt an agreement with J. F. Woods, and to grow, cultivate, manufacture, and deal in rhea and other fibre. The first directors (to number not less than two nor more than seven) are to be appointed by the subscribers. Qualification, £100. Remuneration, one guinea each per board meeting attended. Registered office: 71-72, King William-street, E.C.—*Financial News*, March 30.

INDIAN TEA: CLOSE OF THE SEASON AND PROSPECTS.—Here is the record from Messrs. Baines & Co. for the three past seasons:—

1897-98	...	147,070,755 lb.
1898-99	...	153,196,217 ,,
1899-1900	...	170,475,965 ,,

The detailed table below shews that, apart from the large increase of shipments to the United Kingdom, there are satisfactory increases in direct returns to America and Australia; but only a slight addition in the case of "foreign Europe." We direct attention to what is said in respect of prospects in the several districts for next crop. Hail-storms have done damage in Assam as well as, we may be sure from our special telegram, in Darjeeling; but there is no reason to suppose there will be an appreciative, if any, falling-off.

THE FUTURE OF COFFEE.—It may be of interest to coffee planters to consider to what extent prospects have improved since this question was first raised, and to try to ascertain what probability there is of the present level of prices being maintained or improved. The actual present price of coffee, says the *Madras Mail*, is a complete refutation of the gloomy forecasts of last year that planters must look forward to a long continuance of the prices then ruling. The following quotations from which exceptionally fine marks of both E India and Costa Rica coffee are excluded, show that the rise has been about 50 per cent for all classes of coffee:—

	Aug. to Oct., 1899	Feb., 1900.
No. 7 Rio.	4·30 to 4·50 cents per lb.	6·70 to 7·30 cents per lb.
Costa Rica Ordinary to Middling	28s to 52s p. cwt.	48s to 71s 6d p. cwt.
E India B ...	30s to 50s do.	50s to 74s 0d do.

As regards the effect of the recent rise in prices on the Brazil industry, it is to be remembered that nearly all Brazilian planters are heavily handicapped with mortgages incurred during the last four years of b d prices. Many planters have been ruined, and it will probably take some time to restore confidence in the industry. After the crisis of 1·82-86, which was not nearly so severe in Brazil as the late crisis, it took five years of good prices to restore confidence, so as to increase the planted area; for it was not until 1896-97 that production began to increase materially. As the *American Grocer* recently remarked, it takes four years for coffee to come into bearing, and however low prices may stimulate planting, there must be a period of high prices before production can overtake consumption. In 1890 to 1898, moreover, Brazilian exchange fell rapidly. Now it is rising, and the chances are that it will continue to rise.

THE TOMATO AS A TONIC.—The tomato has a high dietetic value and has been especially recommended for use in cases of blood impoverishment—a suggestion which, perhaps, rests upon the fact that it contains a considerable amount of iron. The presence of iron may easily be detected by applying to the cut surface of a tomato the ordinary re-agent. As a food for supplying iron, the tomato is far superior to any of the combinations of iron as commonly used as a means of enriching the blood. It has long been known that these inorganic compounds cannot enter into the composition of the blood It is possible, however, that they may sometimes be useful, for, as has recently been suggested, while they do not enter into the composition of the blood, they serve to neutralize acid substances which form insoluble salts with the iron of food, and thus prevent its absorption and assimilation. In other words they act as protectives of the nutritive iron compounds of food. The tomato may serve a similar purpose, and not only by supplying the source of iron, but the introduction of a larger amount than is needed, providing for the conservation of the amount actually required—*Journal of the Jamaica Agricultural Society*.

UNIVERSITY EXTENSION IN AGRICULTURE.—Mr. A. C. True has a paper in the *Forum* dealing with the American University Extension Movement on agricultural lines, at the head of which are the United States Department of Agriculture and the Agricultural Experiment Stations, which are departments of universities and colleges, and largely endowed by national grants of land and money. The American Department of Agriculture distributes 7,000,000 copies of 500 different publications annually. There are now fifty-six agricultural department stations in the United States, all of which publish reports of their own investigations:—

Under the direction of the agricultural experiment stations thousands of simple co-operative experiments in which farmers take part are now annually carried on in different parts of the country. They consist principally in the growing of different kinds of crops, such as wheat, grasses, sugar beets, vegetables, and fruits, or in the testing of different kinds of fertilisers as applied to the soils and crops in different localities. These experiments are performed in accordance with plans furnished by the experiment stations; and when they are conducted in the most effective way the co-operating farmers are visited, from time to time, by the officers in immediate charge of the experiments. Usually the experiment stations furnish the seeds, fertilisers, or other materials to be used in the experiments, while the farmers supply the land and the labour.

Farmers' institutes are also regularly held in at least thirty States. In th se States where they have reached their highest development their importance as educational institutions is very great. This is indicated by the number of institutes annually conducted. In New York, Pennsylvania, and Ohio hundreds of them are held each year; in Massachusetts there are now 125, with an attendance of about 13,000 persons; in Indiana about 100, with an attendance of over 25,000; in Minnesota 50, with an attendance ranging from 300 to 1,000; in Wisconsin 120, with an attendance of over 50,000. In Michigan institutes are held in nearly every county, and the total attendance is reported to reach 120,000. Sixty thousand copies of the annual bulletin of the Wisconsin institutes, in which the best addresses are grouped together to make a book of over 300 pages, are annually distributed. A copy of this book is put into very school library in the State.

Correspondence.

To the Editor.

THE CHEMISTRY OF COCONUT CULTIVATION.

SIR,—Mr. Cochran's contributions to the literature of agriculture are always of interest and profit. His last deliverance is no exception to the rule.

As regards Manuring, we are to a great extent groping in the dark. The fact and figures placed before us by Mr. Cochran are decided steps towards the goal of scientific manuring. More, and of importance, remains to be done. We want a complete analysis of all parts of the tree. Mr. Cochran gives us analyses of copra, husks, shells, milk and pasturage, but he has omitted the leaves, very important organs that play the part, both of lungs and stomach. A good head of leaves is of great importance to the tree, to assimilate the food taken up by the roots. What is of great importance and should be borne in mind, is that the mineral constituents of the leaves are richer in fertilizing matter than any other single product of the tree. According to the analysis of Lepine, the leaves have less chloride of sodium and potash than only the husks, and have over 5-6ths of phosphate of lime, of the total quantity in every other part of the tree. And they have more lime than every other part of the tree. This will demonstrate the importance of manuring, not only for crop but for leaves.

It will be interesting to compare the mineral matter removed by the soil by 80 nuts per tree per annum according to Messrs. Lepine and Cochran. It is necessary to bear in mind that the latter gentleman's analysis includes only every part of the nut, while those of Mons. Lepine are of every part of the tree. The figures are in round numbers without decimals:—

LEPINE.

	lb.
Chloride of Sodium	100
Potash	734
Phosphate of Lime	300
Salts of Lime	262

COCHRAN.

	lb.
Potash	101
Phosphoric Acid	18
Chloride of Sodium (previous analysis of)	1
Lime " "	·97

According to Lepine all parts of the nut remove in mineral matter by 80 nuts:—

	lb.
Chloride of Sodium	48
Salt of Potash	530
Phosphate of Lime	27
Salts of Lime	116

This is a great deal higher than Mr. Cochran's analysis.

However if, as I maintain, we must, manure for the proper growth of the tree and for the production of nuts, the manure we apply must be on the basis of Lepine's analysis. But the question will naturally arise, can Lepine's analysis be accepted as absolutely trustworthy and correct? In July 1897, Mr. Cochran had occasion to analyse the husk of a coconut. The result proved so divergent from Lepine's analysis as tabulated by Davidson, that he felt compelled to impugn its correctness, or attribute the difference to the difference in the soil on which the trees grew. Mr. Davidson himself is not inclined to place absolute reliance on Lepine's analysis.

Mr. Cochran will be adding greatly to the obligation under which coconut planters are to him, if he will add to his analysis of the whole coconut, Lepine's analysis of the other parts of the tree and suggest a mixture sufficient to meet the annual drain on the mineral constituents of the soil. The mixture suggested by Mr. Davidson, to replace the mineral matter removed by 75 trees yielding 80 nuts per tree per annum is:—

	lb.
Salt	25
Wood ashes	240
Bones	45
Lime	15

Mr. Jardine's mixture which provides for organic matter as well, per acre, is

	lb.
Castor cake	900
Bone dust	300
Wood ashes.. ..	900

or the half of that for one year. This mixture errs on the side of liberality. It will be interesting to now compare the mineral constituents removed by 75 trees yielding 80 nuts per annum as given by Lepine, with the mineral constituents returned to the soil by Mr. Jardine's mixture:—

LEPINE.	lb.
Salt	100
Potash	734
Phosphate of lime ..	300
Salts of lime ..	262
JARDINE.	
Potash	374
Phosphoric acid ..	51

The number of cattle that 100 acres of coconut land can support in full health and feed depends on many circumstances—climate, soil, age of tree &c. A wet climate and a rich heavy soil will of necessity produce more pasturage than a light soil in a dry climate. Grass grows more luxuriantly, sometimes too luxuriantly, on a young plantation than on one whose leaves shade the soil and whose roots are in full occupation of it. On an old plantation on soil with body, there is an even sward; on a light, sandy soil the grass seems to grow in individual blades and in tufts. Under these circumstances, it is not safe to fix the number of cattle that 100 acres of coconut land can keep in food. I am inclined to think that on old plantations with average soil, two acres for each head of cattle is fair; and on light sandy soil, where pasturage is scant, four acres for each head of cattle. So with the weight of grass per head of cattle per day. It is dependent on circumstances. I think 50 lb. of grass per head per day a high average and exceptional.

Since the above was written I have read with much interest and profit Mr. Jardine's letter.

My experience is one with Mr. Jardine's of the value of the droppings of cattle tethered to trees at night. The cattle were only grazed on very poor pasturage and their droppings were dug in without the addition of the bones, castor-cake and ashes, Mr. Jardine rightly suggests, and the results were most encouraging—in fact better than the results of applying other manures. The trees had a head of dark green leaves and gave good crops for two years and the color of the leaves did not change to a yellow as is usual during a period of drought. I think the chief value of

cattle droppings is in the extreme solubility of their manurial constituents. A mixture approximating this will be of great value to coconut planters.

The system of carting husks and burning them with leaves, between every four trees, is a rational form of cultivation; but its cost is against it being carried out on a large scale. The more economical system would be to burn the husks where the coconut heaps are, and to appply to each tree, when manuring, ashes representing the husks of twice the annual average crop.

Mr. Jardine's experience of "hungry" soils must be the experience of all those who unfortunately have to do with them. A very large proportion of the manure applied goes to build up the tree and a very little to put on crop. If manure be not applied to trees growing on such soils every other year, the results of less frequent applications are positively *nil*.

Mr. Jardine's heresy as regards the use of salt in coconut cultivation is unfortunately not his only heresy. I always maintain that even if salt was not a manure, it was of great value agriculturally, owing to the chemical and mechanical changes it caused in the soil, more especially in heavy soils. Mr. Davidson, than whom perhaps no more competent man ever engaged in the cultivation of coconuts, and who was the Gamaliel at whose feet Mr. Jardine as a young man learnt the lessons in coconut planting which entitle his opinions to respect, held very decided opinions of the value of salt in coconut cultivation. I am a great believer of the use of salt in coconut cultivation especially in inland districts having heavy clay or alluvium soils. Perhaps if Mr. Jardine gives salt a trial, say on ten acres, he may find the yield of nuts so increase that he will apply it on a large scale and will no more be able to say: "I have never known any estate in Ceylon where the trees have 90 nuts each, per annum, over any extent of land." He will then be under no necessity to "go a long distance to see it," as he will be residing on it. B.

PAPER MAKING FOR CEYLON.

SIR,—Will anybody tell me why ordinary printing papers are not manufactured in Ceylon. I am not unfortunately a chemist, or a paper expert, but I think I am right in saying that, within 20 miles of Colombo, there is an opening for this industry, not merely as regards its local sale, but in respect to the supply to the Far East and India.

Of course Ceylon mills would have to do what the Indian mills have to do: import (not necessarily from Great Britain) from other countries a great part of the chemicals used in the manufacture.

There is plenty of water power not far from Colombo, which would meet all the requirements of a mill working both day and night, and all through the year it sufficient demand arose.

If a paper mill could be established in the vicinity of Colombo I need hardly say how valuable it would be (1) to the local papers; and (2) to all other consumers of papers. Once start the industry and each of the several branches would rapidly develop.

By simple machinery, though I do not say it would not be costly, the light timber on our hills could be floated down to a convenient point, and then converted into wood-pulp, and could be used on the spot in the manufacture of paper or exported to Indian mills.

The light wood (easily re-grown) is what is wanted, and mixed with constituents Ceylon possesses would probably prove of great value in the making of good paper.

It would pay the Government to have a special report made by an expert on the subject; if the Government decline, why should not the Chamber of Commerce take the question up? Our fibres and grasses are not sufficiently valuable for export to other paper-making countries, but delivered to a paper-mill near at hand they would be a most remunerative help in producing the material required for good paper for writings and printings of various qualities.

The volume and quality of the water available at the spot where the mill is placed must also be taken into consideration.

Paper is now and has been rising in price in England, India and America: the paper market of England, if ever shut off by war with the Continent, will take a leap, the extent of which few can suspect; and I write this letter in view of the possibility (and may I hope the probability of Ceylon stepping in the way and trying establish a paper mill on the banks of one of the rivers or canals on this side of the island that would at any rate feed part of our local supply at once, and in due course become an industry of considerable benefit, not only to Ceylon, but to neighbouring countries.

It seems to me that the local Government would do well, as they cannot take the initiative, if they were to offer a prize through Ceylon, English, American or Australian papers of a fairly substantial amount which would result in an experiment being carried out on lines that I have ventured to refer to. WANDERER.

Herewith a cutting which I met with after writing the above:—

The offer of the New Orleans *Times-Democrat* to give 500 dols. as its share of a prize to be offered by the newspapers of the United States to the inventor who may find a cheap and suitable substitute for wood pulp in the manufacture of paper has brought forth suggestions of cotton-wood or sweet gum, bagasse or the refuse from sugar-cane, cotton-seed hulls, rice straw, and pine straw as the substitute. Against these products of the South the objection has been made that they do not quite reach the market. But the *Times-Democrat* is urging chemists and inventors to do all in their power to overcome the suggested difficulties. W.

THE INDIAN MUSEUM, CALCUTTA.

Indian Museum, Calcutta, March 4th.

From GEO. WATT, Esq., M.B., C.M., C.I.E., etc., Reporter on Economic Products to the Government of India.

SIR,—I have the honour to acknowledge, with many thanks, the receipt of your letter dated the 3rd March 1900, together with the marginally noted publications.* These have been recorded as presented by you and placed in the Commercial Room of this Museum.—I have the honour to be, sir, your most obedient servant.

GEO. WATT, Reporter.

[Dr. Watt having applied for one or two of our publications for his Museum, we sent him several more. Hence this acknowledgment.—ED. *T.A.*]

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* 1.—Ceylon Handbook and Directory, 1898-99.
2.—The Coffee Planter's Manual.
3.—All about Rubber.
4.—Map of Ceylon, on rollers.
5.—Map, Ceylon Plantations, on rollers.

TEA IN CHINA AND ITS CULTIVATION, &c.

March 30.

Dear Sir,—It may be interesting to some of your readers to know what Samuel Ball in his book on Cultivation of Tea in China has to say incidentally on the effect of manure on the lasting qualities of the tea bush.

In the first place the Chinese did not manure the 'black tea,' because for one reason the demand would not make it profitable and also because as one of these authors says:—'That tea is the most fragrant which is not manured.'

They do not manure it, but Mr. Ball goes on to quote a Spanish missionary's account of its culture:—"Every year in February and August the ground is weeded, raking up even the grass. When the ground is hilly, and appears exhausted and sterile, after having weeded it in February, it is usual to go and dig soil from a neighbouring mountain and bring it and place it around the roots of the shrubs. If this soil be previously exposed to the sun or burnt, it improves it.' And of such tea he says '*it will last fifty years*.'

With regard to the 'green tea' culture we read:—'The shrubs are manured twice a year, in spring and autumn; the ground weeded and turned up about the roots four times a year. In about seven years they are cut down, nearly close to the ground, to produce an exuberance of succulent shoots and leaves; and *in about thirty years* they become useless, when they are rooted up.

It is impossible scientifically that these tea bushes should differ in lasting power intrinsically, though of course, the 'green tea' is grown in the soil of the plains and the 'black tea' in the mountainous soil. Yet discarding that factor it is shown that the highly manured 'green tea' does not last so long as the *un-manured* 'black tea.'

In reality this is an argument for scientific manuring as against the injurious stimulating of the plant with constant applications of ordinary manure, for the virgin soil from a neighbouring mountain added to the black tea would contain all the good qualities which the soil of that district had been chosen for possesssing.—Yours, etc., Z.

[But the difference between "green" and "black" tea is all in the preparation, not in the bushes—though perhaps the Chinese make a distinction. Ed. *T.A.*]

PROPOSED PERIODICAL TOURS OF THE SCIENTIFIC OFFICERS OF THE R. B. GARDENS.

Planters' Association of Ceylon Kandy, March 30.

Dear Sir,—I herein enclose, and would invite attention to, letter received from the Director of the Royal Botanic Gardens, Peradeniya, on the subject of proposed periodical tours by the new scientific officers of his department, which speaks for itself. Commending the scheme to cordial co-operation by those interested.—I am, dear sir, Yours faithfully, A. PHILIP.

From the Director, Royal Botanic Gardens, Peradeniya, to the Secretary, Planters' Association, dated 28th, March, 1900, subject:—

TOURS OF ENTOMOLOGIST AND MYCOLOGIST.

Sir,—I have the honour to inform you that the periodical tours of the new scientific officers of this department will shortly be commenced, and to ask your assistance in making them of as much value to planters and to the work of the officers themselves as possible. It is impossible for them to go over every estate looking for diseases, and they must depend upon the help of the planters for information. I propose that, if you agree, I should give notice to you some time in advance of the districts proposed for visitation and the approximate dates. If you would then be so kind as to inform the local Committee, perhaps a meeting could be arranged between the travelling officer and the Committee to discuss the diseases, etc., prevalent in the district (the Committee having previously collected information from the planters of their district), At this meeting arrangements could then be made for visiting particular estates, and notice given to planters as to the movements of the officer concerned in the district.

As a definite instance, I may mention that the Entomologist is going to Batticaloa to reach that place about April 15th and that he proposes to visit the Badulla and Passara districts either on the outward or homeward journey.—I am, sir, your obedient servant,

(Signed) JOHN C. WILLIS,
Director, Royal Botanic Gardens,

COCONUT PALM CULTIVATION IN CEYLON:

THE VALUE OF DIFFERENT MANURES; THE VALUE OF SALT; DOES ANY ESTATE IN CEYLON GIVE 90 NUTS PER TREE PER ANNUM?

April 2.

Dear Sir,—I have read with very great interest Mr. Cochran's most useful paper on "Coconuts and Chemistry," (see page 764). I am sure that all who are interested in the cultivation of the coconut palm will appreciate highly the care and trouble Mr. Cochran has taken to place before them, such full and valuable information on the subject of the proper manures to be used in securing the best results in the cropping of their trees. Mr. Cochran's analyses being authoritative, we cannot do better than to endeavour to follow his advice, and to restore to the soil the manurial ingredients removed from it in crops of nuts, in the proportions pointed out by him.

I have not much faith in the value of cattle-shed manure where the cattle are fed only on the grass of the estate, and a ot of weeds and grass are thrown in daily to swell the bulk; for, by the time the manure is sufficiently rotted to allow of its being applied, it will have lost its most valuable constituent, ammonia; and the chief value of what remains will, in my opinion, be its mechanical action in the better subdivision of the particles of the soil. I should not apply manure of this description alone, but it would be a useful addition to bones, castor-cake, &c. Even the droppings of cattle, fed largely on oil cakes—as in the case of animals used in chekko yards,—loses much of its value after a short exposure, and is greatly inferior in results to that obtained where cattle are tied direct to the trees and the manure dug in so soon as they are removed to other trees. The very best results are obtained by tying two head of cattle to each tree

at night, spread evenly the droppings in a 6 foot radius and scatter upon this 3 lb. finely grown bone dust and 4 lb. white castor-cake, then dig to a depth of six to eight inches, mixing the soil and manures in the process; upon this dug-surface sprinkle 8 to 12 lb. good wood ashes and rake lightly in. The object of applying the ashes on the surface is to allow of the soluble potash being absorbed by the soil, in its passage down with the rain water, before it can get below the reach of the feeding rootlets. Where cattle are not available for tying to the trees, good chekku yard manure or white castor-cake must be used.

I have seen good results follow the application of *lime* to reclaimed swamp and low-lying land, and on lands containing much marl and clay. Its cost, however, in some districts prevents its being used to any great extent. With reference to the insufficient amount of potash in the mixture I recommend, I wonld point ont that the husks are never allowed to be removed from the land, but are carted out to the field, and the quantity of husks removed from the average field of nuts per tree per annum are burnt between every four trees; thus the potash removed from the soil by the husks is each year returned to it, and it is only necessary to add what has been removed in the kernels, water and shells, and the quantity I allow, Mr. Cochran says. slightly exceeds this. Where husks are removed, or where they are burnt in large heaps and the ashes applied to only a few hundred trees, as is too often the practice, the quantity of ashes or potash in some other form, equal to what is removed in the husks, should be added.

Mr. Cochran's analyses refer only to the manurial ingredients removed in the crops of nuts, but takes no account of what is taken up by the roots, stem and leaves of the tree for their maintenance in health and vigour. My experience has taught me that when an estate has beeu at all neglected, or where the soil is a hungry one, a very large proportion of the manures of the first and second application, goes to build up the trees and fit them to bear crops; and even after the trees are in full vigour, a certain proportion of the manures of subsequent applications, must go to keep them in that condition; so that when manuring is first begun upon an estate it would be well, in the first and second applications, to allow one-third more than would be necessary afterwards.

Never having applied salt to coconut trees I cannot speak as to its value. If it really is a necessary ingredient in the successful cultivation of the coconut tree then nature, in her chemical laboratory, is able to produce it from substances existing in the soil, else how is it that we find trees from 40 to 60 miles inland growing and cropping better than most of those within the influence of the sea breeze? Salt, like lime, I believe to be a solvent of animal and vegetable substances in the soil and a destroyer of vermin and weeds, but that it is a manure, in the true sense, I doubt.

I have never known any estate in Ceylon where the trees have 90 nuts each, per annum, over any extent of land, even with high cultivation; and I much doubt if there is any such estate in Ceylon. If there is, I would go a long distance to see it. I admit that under exceptionally favourable conditions there are fields, even up to 100 acres, which produce 90 nuts per tree and even more; but those are exceedingly rare. It is a very general practice with native owners of coconut property when asked as to the yield per acre to reply that they get so many nuts at a picking, and they are sure to name the largest number gathered at any one picking. Now this is very misleading, as no two pickings are alike. If the two largest pickings of an estate for the year are, say, 100,000 nuts each, the next largest will be about 70,000, and the remaining three will be say, from about 30,000 to 40,000 each picking.

Messrs. Freudenberg and Baur have introduced several manures which have not been much in use until recently, but are now having a fair trial. It would be interesting and useful if either of these firms would supply us with the information as to the money value of the unit of nitrogen, potash and phosphoric acid in their manures as compared with its value in white castor-cake, bone dust and wood ashes. W. J.

COCONUTS IN MATALE.

Awliscombe Estate, Matale, April 11.

SIR,—Coconut planters have been much interested in the articles appearing in your esteemed paper, on the subject of coconut cultivation. The district of Matale, though famed for cacao, has not yet drawn the attention it deserves in the matter of coconut cultivation. This estate, situated on the North Road six miles from Matale, was planted with coconuts and tea in the latter end of 1896. It was abandoned in the middle of last year and purchased by Mr. C. M. Fernando two months ago, since when I have been in charge. A palm, which the kanakkapulle, who was in charge tells me, was planted just three years and five months ago, is in bloom, and contains three separate bunches and two flowers. Other trees give promise of an early blossom. The plants came from Veyangoda and were from six to eight months old when laid down—the estate was never manured and the land was originally in chena. Does it not seem as if Matale North is deserving the attention of those interested in the staple product of the island?—I remain, sir, yours faithfully,

LEO. P. FERNANDO.

MINOR PRODUCTS REPORT.

CINNAMON.—In auction 26 packages Ceylon offered and part sold at 8d per pound for coarse and 6d for low. Of "wild" bark 621 packages offered, and 200 sold—thick bark 1⅛d to 1⅜d, broken quill ¾d. and thin quill 1¾d to 2½d per lb. Chips and bark dull of sale.

CINTRONELLA OIL.—The market is easier inclined since the auction sale of last week. It is reported that 10¾d per pound c. i. f., has been refused this week for drums. 11d being wanted. In cases 11½d is quoted on the spot.

LEMONGRASS OIL.—Dull of sale at 2⅞d to 3d per ounce spot,—*Chemist and Draggist* March 24.

RAINFALL RETURN FOR COLOMBO.

(*Supplied by the Surveyor-General.*)

	1895.	1896.	1897.	1898.	1899.	Av of 30yrs.	1900.
	Inch.	Inch	Inch	Inch	Inch.	Inch.	Inch.
January ..	5·00	2·92	3·81	2·32	6·98	3·22	3·72
February ..	0·81	0·35	1·68	1·98	2·78	1·93	0·63
March ..	1·84	5·64	3·66	4·21	0·88	4·78	3·71
April ..	9·34	5·93	10·97	22·81	6·66	11·31	15·12
May ..	10·09	9·31	8·30	5·80	17·73	12·09	4 96*
June ..	13·99	8·37	10·14	10·94	9·23	8·37	
July ..	0·52	2·85	5·24	6·15	1·11	4·38	
August ..	0·92	6·35	9·09	0·97	0·62	3·67	
September	4·09	10·99	4·58	6·90	1·48	5·01	
October ..	30·36	16·78	4·71	20·60	12 99	14·52	
November..	5·83	19.81	11·66	17·38	8·58	12·66	
December..	9·44	11·76	8·89	3·05	4·44	6·39	
Total..	92·23	101·06	82·73	103·11	73·48	88·33	28·14

* From 1st to 2nd May 4·96 inches that is up to 9·30 a.m on 2nd May.—ED. *T.A.*

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS OF MARCH, 1900.—We append the Monthly Return of rain from which it will be seen that the highest fall in March, was at Haldummulla in the Uva Province, 14·67 inches and the lowest at Pallai in the Northern Province, 0·10 inches.

WESTERN PROVINCE.

Negombo, Mr. Bucknall (6) ...	0·20
Kalutara Mr. Gregson (36) ...	1·85
Labugama, Mr. Bond (369) ...	4·78
Henaratgoda, Mr. Silva (33) ..	2·82

CENTRAL PROVINCE.

Katugastota, Mr. Morgan (1,500) ...	1·48
New Valley, (Dikoya) Mr. Ward (3,700) ..	7 40
Helboda (Pussellawa) Mr. Anderson (3,300) ..	2·67
Yarrow Estate, Mr. Peto (3,400) ...	5·05
Peradeniya Mr. MacMillan (1,540) ...	7·28
Duckwari, Mr. Edwin (3,300) ...	0·34
Caledonia, Mr. Goork (4,273) ..	3·00
Pussellawa, Mr. Powell (3,000) ..	3·67
Hakgala, Mr. Nock (5,581) ..	1·11
S. Wanarajah Estate, Mr. Tatham (3,700) ..	9 45
Padupola, Mr. Ward .. (1,636) ...	1·72
Mylapitiya, Mr. Fletcher (1,707) ...	0.50

NORTHERN PROVINCE.

Mullaittivu, Mr. Sanmukam (12) ..	1 10
Jaffna Mr. Kretser (8)	0·34
Mankulam, (N. Road) Mr. Walker (167) ...	1·44
Elephant Pass, Mr Silva (7) ..	1·11
Vangalachettykulam, Mr. Oorloff (179) ..	N l
Point Pedro, Mr. Chitampalam (24) ...	0·34
Jaffna College, Mr. Cooke (9)	Nil
Kayts, Mr. Kretser .. (8) ..	Nil
Kankesanturai, Mr. .. Pararachasingha (10) ..	1·84
Pallai, Mr. Silva (24) ..	0·10
Murikandy, (North-Central Road) Mr. Silva —	1·00
Nedunkeni, Mr. Sanmukam (122) ...	Nil
Chavakachcheri, Mr. Silva (16) ...	0·75
Udupiddi, Mr. Bowes (35) ..	1·12
Marichchukaddi, Mr. Thamotharampillay (14)	0·50
Murungan, Mr. Ramalinkam (52)	0·93
Vavuniya Mr. Walker (318)	2 53

SOUTHERN PROVINCE.

Ella Vella Mr. Caldicott (262)	2·55
Kekauadura, do (150)	2·82
Denagama, do (286)	0·62
Udukiriwila Mr. Lourenz (235) ..	1·06
Kirama, Not received (260)	—
Hali-ela Mr. Caldicott (200)	3·70
Tissa Mr. Peries (75) ..	1·36
Matara Mr. Caldicott (15)	0·81
Dandeniya, do (157) ..	5·87

Urubokka, Mr. Caldicott (890)	6·15
Tangalla Mr. Fox (94) ..	2·60
Mamadola, Mr. Cade (56) ..	1·15

EASTERN PROVINCE.

Irrakkamam, Mr. E ge (42) ...	0·42
Devilana, Mr. Vanderstraaten (136)	Nil
Sagamata, Mr. Edge (40)	0·40
Ambare, do (65)	1·11
Kanthalai, Mr. Carte (150)	0·31
Allai, Mr. Carte (95)	Nil
Rukam, Mr. Vanderstraaten (120) ...	Nil
Periyakulam, Mr. Carte (20) ...	Nil
Chadaiyantalawa, Mr. Edge (57)	1·54
Kalmunai, do (12)	Nil
Rotewewa, do (30)	0·.9
Lahugala, do (70)	0·30
Naulla, do (30)	0·30
Audankulam, Mr. Carte (41) ...	Nil
Manalpuddy, Mr. Vanderstraaten (21)	Nil
Maha-Oya-Tank, Mr. Vanderstraaten (190)	Nil

N.-W. PROVINCE.

Magalawewa, Mr. Soopera-yan (176) ..	2·25
Maha Uswewa tank, Mr. Addams (160) ...	0·25
Tenepitiya. Mr. Churchill (8) ...	0·50
Batalagoda, Mr. Madahapola —	0·46

N.-C. PROVINCE.

Kalawewa, Mr. Emerson (268)	3·25
Maradankadawala, Mr. Emerson (443) ..	4·80
Mihintale, Mr MacBride (354)	3·40
Horowapotana, Mr. MacBride (217) ..	Nil
Madawachchiya, Mr. MacBride (285) ..	0·90
Topare, Mr. Jayewardane (200) ..	Nil
Minneriya Mr. Eves —	Nil

UVA PROVINCE.

Bandarawela, Mr. Tocke (4,000) ..	2·00
Haldummulla, Mr. Viramuttu (3,160) ..	14·67
Kumbukan, Mr. Rowland (446) ...	3·69
Koslanda, Mr. Rowland (2,258) ...	14·33
Tanamalwila, Not received (550) ..	—
Bibile, Mr. Silva (680)	1·62
Taldena, Mr. Fernando (1,100) ..	Ni
Allutnuwara—Mr. Leembruggen (300)	3·88

SABARAGAMUWA.

Ambanpitiya, Mr. Dassanayaka (729)	3·93
Pelmadulla, Mr. Clarke (408)	9·90
Kolonna Korale (Hulanda-oya) Mr. Dabre (203)	3·49
Avisawella, Mr. Clarke (105) ..	7·03

S. G. O. METEOROLOGICAL OBSERVATIONS FOR DECEMBER, 1899.

The following is the return of the total fall of rain for December, from which it will be seen that the highest fall was at St. Martins, Rangalla, 38·79 inches, and the lowest at Welhelmina, Puttalam 1·76 inches.

Colombo	(40)	4·44
Ratnapura	(84)	5·85
Puttalam	(27)	2·38
Anuradhapura	(295)	6·21
Mannar	(12)	3·55
Jaffna	(9)	3·28
Trincomalee	(12)	20·16
Batticaloa	(26)	21·90
Hambantota	(50)	7·56
Galle	(48)	4·42
Kandy	(1,654)	7·60
Nuwara Eliya	(6,188)	5·06
Hakgala, Nuwara Eliya	(5,581)	8·56
Badulla	(2,225)	12·11
Kurunegala	(381)	6·55
Maligakanda, Colombo Mr. Johnson	(70)	6·63
Agricultural School Colombo, Mr. Rodrigo	—	6·50
Passara Hospital, Passara (Mr. Thomasz)	2,200	7·72
Welhelmina, Puttalam, Mr. Ratnayeke	(131)	1·76
Horakele Estate, Chilaw, Mr. Bevcu	(50)	..
Chilaw Kachcheri Chilaw, Mr. Koch	(10)	0
Franklands Estate		—
Veyangoda, Mr. Beven		4·05
Orange Hill, Ragama Mr. Bury	(50)	3·01
Henaratgoda Gardens, Henaratgoda, Mr. de Silva	(33)	3·65
Kotua Godella, Rambukana Mr. Windus	(580)	..
Eadella or Liberia Estate Polgahawela Mr. Craighead	(425)	4·10
Geekianakanda, Neboda Mr. Towgood	(200)	..
Polgahakanda, Neboda Mr. Wight	(300)	..
Labugama, Hauwella, Mr. Bond	(369)	8·06
Rayigam, Horana, Mr. Dawson,	(300)	7·59
Kanangma, Avissawella Mr. Cooke	(200)	8·65
Dunedin Estate, Avissawella, Mr. Bayley,	(400)	6·17
Digalla Avisawella, Mr. Tottenham,	(400)	6·47
Pambagama, Avisawella. Mr. Bridgman	(600)	9·53
Avisawella Estate Avisawella Mr. Byrde	(250)	4·63
Yatideriya, Kegalla, Mr. Fairweather	—	7·14
Mahawalatenna, Balangoda Mahawalatenna R. M.	—	18·41
Agarsland Estate Balangoda Mr. Boyd	(2,215)	..
Maduwanwala, Rakwana, Maduwanwela R.M.	(750)	5·55
Anninkanda, Morawaka, Mr. Anderson,	(1,400)	17·79
Panilkanda, Morawaka, Mr. Davidson.	(1,900)	18·38
St. John Del Rey, Bogawantalawa Mr. Glanville	(4,300)	6·19
Friedland, Bogawantalawa Mr. Rammell	(5,200)	..
Campion, Bogawantalawa, Mr. Gidden,	(4,840)	...
Blair Athol, Dikoya, Mr. Lane	(3,641)	2·87
Aunfield, Dikoya, Mr. Knight	(4,300)	2·66
Maskeliya Hospital, Maskeliya Dr. Brohier	(4,200)	3·64
Hope Estate, Hewaheta, Mr. Bagot	(5,000)	13·03
Coldstream Estate, Watawala Mr. Spedding	(3,800)	1·87
Holmwood Est., Agrapatana, Mr. Gray	(5,240)	...
Sandringham, Agrapatana Mr. Orchard	(5,200)	3·21
Gingran-oya, Kotmale, Mr. Cox	(3,800)	4·35
Labookeile, Ramboda, Mr. Stone	(5,000)	12.33
Dunsinane, Pundalu-oya, Mr. Metcalfe	4,800	5·98
Sogama, Pussellawa, Mr. Eustace	(3,500)	5·15
Kurundu-oya, Maturata, Mr. Corbetta	(5,150)	16·69
Kabaragalla, Maturata, Mr. Maclean	(4,400)	12·56
Maragalla Estate, Moopana, Mr. Betts,	(2,200)	10,34
Mupana, Hospital, Mupana (Mr. Selai)	(500)	9·11
Madulsima Hospital Lunugala Dr. Vethecan	(4,600)	13·23
Meeriabedda, Haputale, Mr. Dupuis	(3,600)	9·27
Udahena Estate, Haputale, Mr. Bisset,	(4,400)	8·48
Haputale Hospital Haputale Mr. VanRooyen	(4800)	10·41
Post Office, Bandarawela, Mr. Mendis	(4,035)	6·99
Callander, Ohiya Mr. Green	(5,125)	...
Mariawatte, Gampola Mr. Salmond	(1,600)	3·83
Orwell Estate, Gampola Mr. Taylor	(1,800)	2·97
New Forest, Deltota. Mr. Wardrop	(3,500)	8·72
Rajawella, Estate, Telleniya Mr. Miller,	(1,500)	4·51
Lower Spring Valley, Badulla Mr. Rettie	(3,650)	12·34
Gourakele Estate, Badulla Mr. Hope	(1,200)	9·15
Mousagala Estate, Badulla, Mr. Deaker	(4,500)	10·52
Ledgerwatte, Badulla Mr. Rettie	(4,000)	28·07
Hambegamuwa Tank, Badulla (Raubanda Korala) ...		7·87
Dea Ella Estate, M'walatenna Mr. Vanderslott	(800)	8·82
Sembawatte Estate, N'pitiya Mr. Roe	(1,600)	6·13
Gammaduwa, Estate, Rattota Mr. Westland	(2,400)	21·87
Koboneila Estate, Rangala. Mr. Pole	(3,300)	25·27
St. Martins, Rangala, Mr. Wyllie	(3,600)	*38.79*
Crystal Hill, Matale, Mr. Van Starrex	(1,400)	11·93
Vicarton Estate, Matale Mr. Carrie	(3,250)	13·44
Matale Mr. Tisseverasinghe	(1,208)	9·66
Wariapolla, Matale. Mr. Dickenson	(1,200)	9·95
Dambulla, Mr. Sinnetamby	(400)	11·72
Kotta Estate, Pallai, Mr. Todd	(13)	...
Mantota Hospital, Mannar. Mr. Adams	(17)	7·28
Buttala Hospital, Buttala, Mr. Somasundaram		5·25
Police Station, Hatton Police Constable Miskin	(1,141)	2·92
Medway Estate Nilaveli, Mr. Abraham, ..		15·82
Delwita, Kurunegala Mr. Neame	(490)	...
Woodside, Uragalla Mr. MacMahon	(3,000)	15·24
Gillardstown, Wattegama Mr. Hardy	(2,500)	10·99
Ja-ela Hospital, Ja-ela Mr. Fernando	(4)	2·94
Maspana, Uda Pussellawa Mr. Jones	(2,000)	21·60

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Agra Ouvah Estates Co., Ltd.	500	900	..	900
Ceylon Tea and Coconut Estates	500	..	500 n'l	..
Castlereagh Tea Co., Ltd.	100	90	—	90
Ceylon Hills Estates Co., Ltd.	100	—	—	—
Ceylon Provincial Estates Co. Ltd.	500	—	500	500
Claremont Estates Co., Ltd.	100	—	—	—
Clunes Tea Co., Ltd.	100	—	—	—
Clyde Estates Co., Ltd.	100	..	—	—
Doomoo Tea Co., Ltd.	100	—	60	—
Drayton Estate Co., Ltd.	100	—	..	..
Ella Tea Co., of Ceylon, Ltd.	100	60	65	—
Estates Co., of Uva, Ltd.	500	220	250	...
Gangawatta	500	...	..	—
Glasgow Estate Co., Ltd.	500	905	—	...
Great Western Tea Co.,	500	640	—	—
Hapugahalande Tea Estate Co.	200	200	—	..
High Forests Estates Co., Ltd	500	500	525	525
Do part paid	350	...	400	—
Horekelly Estates Co., Ltd.	100	...	—	..
Kalutara Co., Ltd.	500	..	375	—
Kandyan Hills Co., Ltd.	100	—	70	—
Kanapedlwatte Ltd.	100	—	85	—
Kelani Tea Garden Co., Ltd.	100	40	..	..
Klrklees Estates Co., Ltd.	100	—	..	—
Knavesmlre Estates Co., Ltd.	100	—	67½	...
Maha Uva Estates Co., Ltd	500	..	425	.
Mocha Tea Co., of Ceylon, Ltd.	500	600	...	—
Nahavilla Estate Co., Ltd.	500	—	450	...
Neboda Tea., Co. Ltd	500	..	500	..
Nyassaland Coffee Co. Ltd	100	—	..	..
Ottery Estate Co., Ltd.	100	..	—	—
Palmerston Tea Co., Ltd.	500	—	400	...
Penrhos Estates Co., Ltd.	100	—	100	..
Plne Hill Estate Co., Ltd.	60	40		..
Pitakanda Tea Company	500	..	—	..
Putupaula Tea Co., Ltd.	100	—	120	—
Ratwatte Cocoa Co., Ltd.	500	—	—	..
Raylgam Tea Co., Ltd.	100	52·50	60	—
Roeberry Tea Co., Ltd.	100	..	45	—
Ruanwella Tea Co., Ltd.	100	—	40	..
St. Hellers Tea Co., Ltd.	500	510	—	..
Talgaswela Tea Co., Ltd.	100	30	—	30
Do 7 per cent. Prefs.	100	...	..	..
Tonacombe Estate Co., Ltd.	500	—	450	—
Udabage Estate Co., Ltd.	100	..	—	—
Udugama Tea & Timber Co., Ltd.	50	—	..	..
Union Estate Co., Ltd.	500	—	275	—
Upper Maskeliya Estate Co., Ltd.	500	..	470	...
Uvakellle Tea Co., of Ceylon, Ltd.	100	—	70	...
Vogan Tea Co., Ltd.	100	..	80	80
Wanarajah Tea Co.,Ltd.	500	..	1086	.
Yataderiya Tea Co., Ltd.	100	—	395	..

CEYLON COMMERCIAL COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Adam's Peak Hotel Co., Ltd.	100	—	—	..
Bristol Hotel Co., Ltd.	100	—	85	85
Do 7 per cent Debts.	100	105	—	—
Ceylon Gen. Steam Navgtn. Co., Ltd.	100	212½	—	215
Colombo Apothecaries Co., Ltd	100	—	140	137·50
Colombo Assembly Rooms Co., Ltd.	20	12·50	..	..
Do prefs.	20	—	..	..
Colombo Fort Land and Building Co., Ltd.	100	...	85	85
Colombo Hotels Company	100	297·50	300	...
Galle Face Hotel Co., Ltd.	100	..	150	..
Kandy Hotels Co., Ltd.	100	..	117·50	...
Kandy Stations Hotels Co.	100	..	30	—
Mount Lavinla Hotels Co., Ltd.	500	150	200	..
New Colombo Ice Co., Ltd.	100	177½	—	177·50
Nuwara Eliya Hotels Co., Ltd.	100	30	...	31½
Public Hall Co., Ltd.	20	15	—	—
Petroleum Storage Co.	100	—	—	—
Do 10 % prefs.	100	—	...	—

LONDON COMPANIES *

Company.	paid p. sh	Buyers.	Sellers.	Transactions
Alliance Tea Co., of Ceylon,	10	8½	—	..
Anglo Ceylon General Estates Co.	100	—	35—40	..
Associated Estates Co., of Ceylon	10	—	3—5	...
Do. 6 per cent prefs.	10	..	7½	..
Ceylon Proprietary Co.	1	...	..	26¾ ex div
Ceylon Tea Plantation Co., Ltd.	10	—	24½—25½	—
Dimbula Valley Co., Ltd.	5	..	5½—6	—
Do prefs.	5	..	..	—
Eastern Produce & Estates Co.	5	...	5½—6	...
Ederapolla Tea Co.,	10	...	7—8	..
Imperial Tea Estates Co., Ltd.	10	...	5—6	..
Kelani Valley Tea Asscn., Ltd.	5	..	5—6	..
Kintyre Estates Co., Ltd.	10	7½	7—9	..
Lanka Plantation Co., Ltd.	10	4½	4—5	..
Nahalma Estates Co.,Ltd.	1	—	¼—¾	..
New Dimbula Co., Ltd.	1	—	2½—3	..
Nuwara Eliya Tea Estate Co., Ld.	10	...	—	...
Onvah Coffee Co., Ltd.	10	—	—	9¾ ex div
Ragalla Tea Estates Co., Ltd.	10	—	10	..
Scottish Coylon Tea Co.,Ltd.	10	—	14—15	.
Spring Valley Tea Co., Ltd.	10	3	4—5	..
Standard Tea Co., Ltd.	6	—	11—12	..
The Shell Transport and Trading Company, Ltd.	100	280	200	280
Yatiyantota Ceylon Tea Co., Ltd.	10	—	8-9	..
Do. pref. 6 o/o	10	—	9¾—10¼	..

BY ORDER OF THE COMMITTEE

Colombo, May 4th, 1900

* Latest London Prices.

THE LOCAL MARKET.

(By Mr. James Gibson. Baillie St., Fort.)
Colombo, May 1st 1900.

COFFEE:—	
Estate Parchment per bushel	None offering.
Chetty do do	
Native Coffee per cwt.	
do F. O. B per cwt.	
Liberian coffee:—per bushel	
do cleaned coffee:—per cwt	
Cocoa unpicked:—per cwt	
do cleaned do	
Cardamoms Malabar per lb	R1·00 to 1·10
do Mysore do	R1·35 to 1·75
RICE:—	
Soolai per bag of 164 lb. nett	R9·30 to 9·60
Slate or 1st quality:—per bushel	R3·43 to 3·48
Soolai 2 & 3rd. do do	R3·35 to 3·44
Coast Calunda	R3·95 to 4·00 Scarce
Coast Kara	R3·87 to 3·92 do
Kazala	R3·33 to 3·35
Muttusamba Ordinary	R4·50 to 4·62
Cinnamon per lb No 1 to 4	R00·55
do do 1 to 2	R00·66
do Chips per candy	R87·50 to 90·00
Coconuts Ordinary per thousand	R35·00 to 38·50
do Selected do	R36·00 to 39·50
Coconut Oil per cwt	R13·75 to 14·00
do do F. O. B. per ton	R275·00 to 280·00
POONAC:—	
Gingelly per ton	R128·00 to 132·50
Coconut Chekku do	R85·00 to 87·50
do Mill (retail) do	R85·00 to 87·50
Cotton Seed per ton	R80·00 to 82·50
Copra per candy	
Kalpitiya do	R44 50 to 45·25
Marawilla do	R43·00 to 44·00
Cart Copra do	R37·00 to 42·00
Satinwood per cubic feet.	R2·00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R28·00 to 30·00
Palmyra do do	R8·00 to 15·50
Jaffna Black Cleaned per cwt	R14·00 to 15·50
do mixed do	R12·00 to 12·00
Indian do	R8·00 to 13·50
do Cleaned do	R10·00 to 15·50
Sapanwood per ton	R55·00
Kerosene oil American per cases	R8·25 to 8·35
do bulk Russian per tin	R3·52 to 3·60
do Russian per cases	R7-30 to 7·40
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R23·00 to 28·00
Kapok cleaned f o b per cwt	R24·00
do uncleaned do	R5·50
Plumbago per ton, according to grade — Large lumps	R500·00 to 950·00
do	R400·00 to 850·00
Chips	R200·00 to 00·00
Dust	R75·00 to 500·00

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)
Colombo, 30th April, 1900.

CARDAMOMS:—
All round parcel, well bleached per lb. R1·45
Do. dull medium do. 1·10 } No transactions.
Special assortment, 0 and 1 only do. }
Seeds do. 1·35

CINCHONA BARK:—
Per unit of Sulphate of Quinine 9c—1 to 4 o/o

CINNAMON:—
Ordinary assortment per lb. 60c.
Nos. 1 and 2 only per lb. 66c.
Nos. 3 and 4 only per lb. 55c. Nominal

CINNAMON CHIPS:—
Per candy of 560 lb R90·00 Sellers at R97·50

COCOA:—
Finest estate red; unpicked per cwt None offering
Medium do do " } None offering
Bright native, unpicked and undried " }
Ordinary do do do " }

COCONUTS—(husked).
Selected per thousand R48·00
Ordinary " R40·00
Smalls " R30·00

COCONUT CAKE—
Poonac in robins f. o. b. per ton R80·00
Do. in bags R65·00

COCONUT (Desiccated).
Assorted all grades per lb. 13¾c

COCONUT OIL—
Dealers' Oil per cwt. R14·25 Business done at R14.
Coconut Oil in ordinary packages, f. o. b. per ton R317·50.—Market quiet.

COFFEE—
Plantation Estate Parchment on the spot per bus. —None offering.
Plantation Estate Coffee f.o.b. (ready) per cwt.—None offering.
Native Coffee, f.o.b per cwt.—None offering.

CITRONELLA OIL—
Ready do per lb. 65c—In drums of 800 lbs exclusive of packages.
do do per lb. 64c—In cases of 90 lbs.

COPRA—
Boat Copra per candy of 560 lb. R45·00
Calpentyn Copra do do R45·00
Cart do do do R42·00
Estate do do do R45·00

CROTON SEED per cwt R24·00

EBONY—
Sound per ton at Govt. depot R175.—As per last Government Sales, of 15th November.
Inferior R120.—As per last Government sales of 15th November.

FIBRES—
Coconut Bristle No. 1 per cwt R11·00
Do " 2 " 8·00
Do mattress " 1 " 2·75
Do " 2 " 2·00
Coir Yarn Kogalla " 1 to 8 18·00
Do Colombo " 1 to 8 16·00
Kitool all sizes 38·00
Palmyrah 16·00

PEPPER—Black per lb 28c.

PLUMBAGO—
Large lumps " per ton R950 }
Ordinary lumps " " 800 } Small transactions.
Chips " " 550 }
Dust " " 450 }
Do (Flying) 150 }

SAPANWOOD— per ton R54
SATINWOOD (ordinary) per cubic ft. R2·40

TEA—	High Grown Average.	Medium Average.	Low Grown Average.
	cts	cts	cts
Broken Pekoe and Broken Orange Pekoe per lb	63	46	34
Orange Pekoe do	57	44	34
Pekoe do	44	39	30
Pekoe Souchong do	38	33	28
Pekoe Fannings do	34	30	28
Broken mixed—dust, &c. per lb	28	27	26

CEYLON EXPORTS AND DISTRIBUTION 1899-1900.

COUNTRIES	Tea. 1900 lbs.	Tea. 1899 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.
To U K.	36381598	28746863	1576	..	1576	10308	145374	227664	91328
" Austria	2569	1041	..	..	..	..	..	...	19600
" Belgium	1880	8183	30	..	30	63	...	21134	24600
" France	63632	43810	..	...	..	33	3407	68988	10604
" Germany	108551	122269	..	..	..	131	54323	168700	234138
" Holland	2000	..	..	..	..	...	...	..	22400
" Italy	2433	4550	..	..	..	...	430	37100	37296
" Russia	2315235	625030	15	..	15	..	..	..	...
" Spain	11970	5300	..	...	..	...	..	65000	16800
" Sweden	35235	12008	9	..	9	..	3958	2000	..
" Turkey	7061	8494	..	..	..	..	1000	...	..
" India	202861	150850	58	4	62	...	22013	..	..
" Australia	4669260	4276109	635	..	635	..	...	2700	8736
" America	1733022	865938	72	..	72	278	..	141800	72800
" Africa	58633	89044	..	..	..	..	1120	100	2408
" China	276023	322966	21	...	21	82	1800	10000	...
" Singapore	30776	18385	..	..	..	405	..	..	..
" Mauritius	...	12390	..	..	..	..	...	...	..
" Malta	154053	67817	..	...	..	..	..	..	.
Total export from 1st Jan. to 30th April 1900	46056792	35381047	2416	4	2420	11300	233425	745186	540710

COUNTRIES	Coconut Oil. 1900 cwt	Coconut Oil. 1899 cwts	Copra cwts.	Desiccated Coconut lb.	Poonac cwts.	Coconuts. No.	Plumbago. 1900 cwts.	Plumbago. 1899 cwts.	Ebony cwts.	Sapanwood cwts.
To U K.	80445	35617	7779	1849604	..	2940976	30959	39898	280	4238
" Austria	2220	851	5906	525	...	..	..	14	..	480
" Belgium	125	321	40670	34200	2[illegible]974	...	13628	8252	...	..
" France	...	...	13287	3602	201	..	..	306	220	..
" Germany	3634	401	30409	323936	24296	250709	21772	23458	1730	2190
" Holland	..	..	..	49100	.	25050	912	2926	...	...
" Italy	..	205	1500	..	..	2048	...	..	45	...
" Russia	..	..	26003	..	...	1590	...	..	..	..
" Spain	..	..	..	...	...	..	..	...	..	..
" Sweden	...	..	4403	...	..	..	105	208	...	...
" Turkey	...	..	..	...	..	..	...	..	...	...
" India	15016	9126	..	..	..	9500	69	93	..	23
" Australia	83	251	..	165942	..	..	554	729	...	.
" America	26253	31221	..	616400	...	..	65345	81841	..	..
" Africa	...	..	..	9275	...	551055	..	..	..	...
" China	520	2773	..	22960	...	..	..	100	..	...
" Singapore	...	17812	..	...	..	—	...	..	...	..
" Mauritius	..	..	...	...	..	...	..	...	..	...
" Malta	...	...	...	..	..	..	..	..	..	...
Total export from 1st Jan. to 30th April 1900	128296	98578	129957	3075544	45471	3780928	133344	160825	2275	6981

MARKET RATES FOR OLD AND NEW PRODUCTS

(From Lewis & Peat's Fortnightly Prices Current, London, March 21st, 1900.

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ...	44s a 85s
Zanzibar & Hepatic ,,	Common to good ..	20s a 60s
BEES' WAX, ,,		
Zanzibar & Bombay White ,,	Good to fine	£6 a £7 10s
Yellow ,,	Fair ,,	£5 15s a £7
Madagascar ,,	Dark to good palish	£6 5s a £6 12s 6d
CAMPHOR, China ,,	Fair average quality	175s
Japan ,,	,, ,, ,,	130s
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 5d a 1s 7d
Ceylon.—Mysore ,,	Fair to fine plump ..	3s 5d a 4s 3d
	Seeds .	1s 6d a 2s 6d
,, Tellicherry,,	Good to fine ..	2s 11d a 3s
	Brownish .	2s 6d
,, Long ,,	Shelly to good ..	2s 11d a 4s
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4¼d
Madras ,,	..	
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	37s 6d a 47s 6d
CINCHONA BARK.— lb. Ceylon	Ledgeriana Orig. Stem	3½d a 6¾d
	Crown, Renewed	5d a 7d
	Org. Stem	3¼d a 5½d
	Red Org. Stem	4½d a 5¾d
	Renewed	5½d a 7½d
	Root	3¾d a 4d
CINNAMON, Ceylon 1sts per lb	Ordinary to fine quill	10d a 1s 8d
2nds	,, ,,	9½d a 1s 5d
3rds	,, ,,	8½d a 1s 4d
4ths	,, ,,	8d a 11½d
Chips	,, ,,	2½d a 8d
CLOVES, Penang lb.	Dull to fine bright bold	5½d a 9d
Amboyna ..	Dull to fine	4½d a 5½d
Zanzibar and Pemba	Good and fine bright	4¾d
	Common dull to fair	4d a 4¼d
Stems ..	Fair	1¾d
COFFEE Ceylon Plantation ,,	Bold to fine bold colory	100s a 115s
	Middling to fine mid ...	85s a 95s
	Low mid. and low grown	75s a 82s 6d
	Smalls	55s a 75s
Native	Good ordinary	30s a 70s
Liberian ,,	Small to bold	33s a 40s
COCOA, Ceylon ,,	Bold to fine bold	84s 6d a 95s
	Medium and fair	73s a 82s 6d
	Triage to ordinary	60s a 70s
COLOMBO ROOT ,,	Fair to good	22s 6d a 30s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair ..	£17 a £20 10s
FIBRE, Brush ,,	Ord. to fine long straight	£16 a £19
Cochin ,,	Ordinary to good clean	£18 a £24
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	,, ,, very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	38s a 45s
CUTCH ,, ,,	Fair to fine dry	23s a 35s
GINGER, Bengal, rough ,,	Fair	27s
Calicut, Cut A ,,	Good to fine bold	87s 6d a 92s 6d
B & C ,,	Small and medium	35s a 72s 6d
Cochin Rough ,,	Common to fine bold	25s a 34s
	Small and D's	25s a 28s
Japan ,,	Unsplit	26s
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £20
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 2/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ...	£4 8s a £8
	,, ,, red ...	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	35s a 60s
Turkey sorts ,,		67s 6d a 85s
Ghatti ,,	Pickings to fine pale ...	12s 6d a 35s
Kurrachee ,,	Good and fine pale ...	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras ,,	Dark to fine pale ...	23s a 35s
ASSAFŒTIDA ,,	Clean fr. to gd. almonds	40s a 80s
	Ord. stony and blocky	8s a 25s
KINO ,,	Fine bright	1s 6d
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	17s a 20s
siftings ,,	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 4d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 3½d
Borneo	Common to fine	1s a 2s 4d

	QUALITY.	QUOTATIONS.
INDIARUBBER, (Contd). Java, Sing. & Penang lb.	Foul to good clean ..	8d a 3s 3½d
Mozambique ,,	Good to fine Ball	2s 8d a 3s 7d
	Ordinary to fair Ball..	2s a 2s 10½d
	Low sandy Ball ..	1s 3d a 1s 7d
	Sausage, fair to good..	3s 2d a 3s 6d
	Liver and livery Ball	2s 4d a 3s 2½d
Madagascar ,,	Fr. to fine pinky & white	3s a 3s 6½d
	Fair to good black ..	2s a 2s 10½d
	Niggers, low to fine ..	1s 4d a 2s 10d
INDIGO, E.I. ,,	Bengal—	
	Shipping mid to gd violet	3s 9d a 4s 6d
	Consuming mid. to gd.	3s 6d a 3s 8d
	Ordinary to mid.	3s 2d a 3s 5d
	Mid. to good Kurpah	2s 2d a 2s 8d
	Low to ordinary	1s 11d a 2s 1d
	Mid. to good Madras	1s 5d a 2s 6d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 4d a 1s 11d
	Pickings	1s 4d a 1s 4½d
MYRABOLANES, Madras cwt	Dark to fine pale UG	6s a 7s
	Fair Coast	5s 6d a 6s
Bombay ,,	Jubblepore	4s 3d a 7s
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	11½d a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 21s
NUX VOMICA, Bombay per cwt.	Ordinary to middling	4s a 5s 6d
Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	5s 9d
CASSIA ,,	According to analysis	3s 6d a 4s
LEMONGRASS ,,	Good flavour & colour	2½d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3½d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1/0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody..	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf ..	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER—(Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	6¼d a 6 3-16d
Singapore ..	Fair	6⅛d a 6 3-16d
Acheen & W. C. Penang	Dull to fine	5½d a 5⅞d
PLUMBAGO, lump cwt.	Fair to fine bright bold	55s a 60s
	Middling to good small	41s a 53s
chips ,,	Dull to fine bright ..	21s a 45s
dust ,,	Ordinary to fine bright	7s a 20s
SAFFLOWER ,,	Good to fine pinky .	65s a 75s
	Inferior and pickings .	40s a 60s
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £50
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay,,	Lean to good ..	£4 a £5
Madras ,,	Good average ..	£4 a £5 nom.
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth...	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	53s a 59s
SENNA, Tinnevelly lb	Good to fine bold green	5d a 8d
	Fair middling medium	4d a 5½d
	Common dark and small	1¼d a 3½d
SHELLS, M. o'PEARL— Bombay cwt.	Bold and A's D's and B's Small ...	£4 a £5 12s 6d
Mergui ,,	Small to bold ..	£6 a £9 2s 6d
Mussel ,,	Small to bold ..	18s a £3
TAMARINDS, Calcutta... per cwt.	Mid. to fine bl'k not stony	15s a 16s
Madras	Stony and inferior ..	7s 6d a 11s
TORTOISESHELL— Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	19s a 22s 6d
TURMERIC, Bengal cwt.	Fair ...	30s
Madras ,,	Finger fair to fine bold bright	30s a 32s 6d
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger .	21s
	Bulbs ...	9s a 10s 6d
VANILLOES— lb.		
Mauritius and Bourbon 1sts	Gd. crystallized 3½ a 9 in	17s 6d a 27s
2nds	Foxy & reddish 4½ a 8 ,,	17s a 24s
Seychelles 3rds	Lean and inferior ...	10s a 16s
VERMILION lb.	Fine, pure, bright ...	3s 3d
WAX, Japan, squares cwt	Good white hard ...	33s a 34s

THE

AGRICULTURAL MAGAZINE,

COLOMBO

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST,"

The following pages include the Contents of the *Agricultural Magazine* for May:—

Vol. XI.] MAY, 1900. [No. 11.

A LOCAL WORK ON CATTLE.

"CATTLE Notes" is the title of a booklet by W. A. De Silva, V.S. This is not the first little work published by the author who has already written more than one useful pamphlet on Agricultural subjects.

The contents are tabulated under the following heads: 1, Cattle and Buffaloes; 2, Description and Aging; 3, Cattle Food; 4, Cattle Sheds; 5, Handling of Cattle; 6, Signs of Ill-health; 7, Nursing and Attendence; 8, Medicinal Materials; 9, Prevention of Disease; 10, Disease and Treatment; 11, Milk Cows.

Chapter 10, dealing with diseases and their treatment, will, perhaps, be considered of most value by cattle owners, who should be glad to be furnished with directions and prescriptions in which common and easily-obtained drugs are recommended. A convenient list of these medicinal agents, together with their Sinhalese and Tamil names, is supplied on pages 39-42. We regret, however, to find that the author writes disparagingly of the value of protective inoculation against rinderpest, a means which we are confident is bound to play an important part in the stamping out of this scourge. We are quite at one with the writer when he says that "it is a great mistake to repose complete reliance in any one measure or remedy," and as a result neglect all ordinary recognised methods of prevention, but when modern science offers us an admittedly valuable means of controlling the spread of epizootic diseases, it would be hardly wise on our part not to take advantage of the offer and so make the most of every means at our disposal. However, that doctors disagree is proverbial, and considering the class for whom "cattle notes" is intended, we think that the author has succeeded admirably in explaining himself in simple and popular language so as to be easily understood by all classes of stock-owners.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF APRIL, 1900.

1	Sunday ..	Nil	17	Tuesday ..	·98
2	Monday ..	·13	18	Wednesday	·21
3	Tuesday ..	Nil	19	Thursday ..	·92
4	Wednesday	Nil	20	Friday ..	·4
5	Thursday ..	Nil	21	Saturday ..	1·02
6	Friday ..	Nil	22	Sunday ..	·14
7	Saturday ..	Nil	23	Monday ..	·28
8	Sunday ..	Nil	24	Tuesday ..	1·8
9	Monday ..	Nil	25	Wednesday	·88
10	Tuesday ..	Nil	26	Thursday ..	1·87
11	Wednesday	Nil	27	Friday ..	1·95
12	Thursday ..	Nil	28	Saturday ..	Nil
13	Friday ..	Nil	29	Sunday ..	·45
14	Saturday ..	Nil	30	Monday ..	·2
15	Sunday ..	Nil	1	Tuesday ..	5·28
16	Monday ..	Nil			

Total.. 16·01
Mean.. ·53

Greatest amount of rainfall in any 24 hours on the 1st May, 1900, inches 5·28.

Recorded by Mr. J. A. G. RODRIGO.

THE CULTIVATION OF YAMS.

It cannot be denied that the cultivation of yams is not sufficiently carried on in Ceylon, and that the product is not sufficiently made use of for food purposes. Indeed, such cultivation as we have is on the most limited scale, and only unsystematically carried on. In the West Indies on the other hand the yam is a regularly grown crop and duly appreciated as a food product.

In Ceylon we are accustomed to hear the word "yam" applied indiscriminately to the produce both of true yam plants, members of the natural order Dioscoraceæ and that of the Colocasias which belong the order Araceæ. But in the West Indies the name is confined to the former only, while the word "tania" is used to distinguish the produce of the Colocasias.

The following account of yam cultivation in the West Indies by Dr. Alford Nicholls is worthy of reproduction, as containing many valuable hints which should prove useful to local cultivators.

Yams are the esculent tubers of several species of Dioscorea that have been cultivated in warm countries for ages. More nutritious than the common potato, they supply an abundance of wholesome food to the inhabitants of tropical and sub-tropical regions: and, in the West Indies they enter very largely into the diet of all classes of the population.

Most of the cultivated varieties of yams are probably natives of tropical Asia, that have been introduced into the West Indies at an early period of their colonisation by Europeans, and now become almost wild. The only yam of good flavour and food value, that naturally belongs to the flora of the West Indies, is the "Wawwaw" of Dominica, *Rajania pleioneura*, which grows abundantly in the forests of that Island. It is dug up by the woodmen and sold in the markets of the chief town, for it is deservedly held in much estimation. After the hurricane of 1883, when most of the provision grounds in Dominica were laid waste, many of the country people subsisted for weeks almost entirely on wawwaws, dug up in the forests. All the yams are the produce of plants with slender twining stems measuring often as much as twenty feet in height, and bearing underground tubers which spring from the principal roots. The tubers vary in size and weight from the small cush-cush no larger than ordinary potato to the enormons yam weighing thirty or forty pounds, and measuring three feet in length. There is confusion in regard to the names and characters of the different yams, each country appearing to have its own nomenclature. There are four kinds of yams, however, commonly cultivated in the West Indies, and the most noticeable particulars concerning them are as follows:—

White Yam (*Dioscorea Alata*).—This is sometimes called the Barbados yam, is a native of the Moluccas and Java. The stem is square and winged at each angle. The leaves are large, heart-shaped and opposite on the stem. A peculiarity of this plant is that bulbils or small yams are borne on the stem, and when they are ripe they fall to the ground and reproduce the species. The tubers are large weighing from eight to ten pounds when grown in good soil. There are two principal kinds, the white and the red, the surface of the latter is of a deep purplish, and the interior of the tuber of a light purplish colour. A third kind called the water yam is characterised by the interior of the tuber being of a moist and clammy nature. These yams will keep well out of the ground, and they are much liked on account of their digestibility and their superior flavour.

Negro Yam (*Dioscorea Sativa*).—This is sometimes called the yellow, creole, or common yam, and it is a native of Java and the Philippine Islands. The stem, which grows to a length of fifteen or twenty feet, is round, prickly below and smooth above. The leaves are heart-shaped and alternate on the stem. The tubers grow to a large size weighing usually about ten pounds; they are palmated in shape and they are so brittle as to be easily broken. They are of a white or yellowish colour within, but the white kind is liked best. These yams do not keep in good condition for any length of time after their removal from the ground.

Guinea Yam (*Dioscorea Aculeata*).—In Jamaica this is sometimes called the Afou yam. It is largely cultivated throughout the West Indies, but its native country is Cochin China, and it comes also from Malabar. The stem is round, prickly and much branched. The leaves are broadly heartshaped, and either alternate or opposite on the stem. The tubers are very large, reaching a length of two or three feet, a diameter of six or eight inches, and a weight of from fifteen to twenty pounds. The interior is of a white or yellow colour, and when cooked the flavour is somewhat bitter.

Cush-cush Yam (*Dioscorea Triphylla*).—In Jamaica this is sometimes called the Indian yam; and in Guiana it is known as the Buck yam. The stem is roundish, the leaves are opposite on the stem and divided into three leaflets. The tubers are roundish—indeed, something like a potato in shape. They rarely exceed nine inches in length and three inches in diameter, but they are usually much smaller. It is said to be the smallest and most delicate of all the yams. The plant is prolific, sometimes bearing a dozen tubers on the roots. There are two principal kinds, the white and red, the latter bearing tubers that are purplish within.

Soil and climate.—All the yams require a rich sandy loam, deep and friable, for the rich tubers will not be able to develop properly in stiff heavy soils. The white yam, however, will grow well on calcarious soils of moderate depth. Good drainage is necessary, and this applies to most plants bearing underground tubers. The climate must be warm but not necessarily hot, as the plant thrives in the mountains and in extra-tropical regions. One authority states that yams will grow within a wide zone extending thirty degrees north and south of the equator.

Cultivation.—Most of the yams are propagated in the following way:—When the tubers are ready to be dug up, the tops are cut off with the vines attached, and care is taken not to disturb the plant more than is really necessary. The top is then buried again in the ground, and it and the base of the vine is moulded up with good soil and left undisturbed for about three months, when another

yam called the *head* is produced. Plants are then made by cutting the head into pieces, care being taken that each cutting possesses an eye, or bud, from which the new plant develops.

The land is usually lined out at distances of two feet each way or in rows three feet apart, the plants being set at distances of eighteen feet in the rows. At the site of the pickets the land is dug up, all stones and roots being removed, and the surrounding soil is then raked up so as to form a support for the vine to climb on. Sometimes two plants are set in each hill. The land must be kept weeded and an occasional moulding up may be necessary, as the heavy rains tend to wash down the hills. Catch crops of maize and sweet potatoes are sometimes taken off the land between the rows, but this system is a bad one except in very rich soil. From January till April is the best planting season, and the yams require from nine to eleven months to mature. Planting may, however, be undertaken in every month of the year so as to ensure a constant supply of esculent tubers. It has been calculated that an acre of land will yield four or five tons of yams in the year, and it is said that the same quantity of sweet potatoes may be taken as a catch crop of the ground; this brings the return up to nine tons, that is, the yield of ordinary potatoes from an acre of good land in England. But as yams and sweet potatoes contain more nutrient matter than the common potato, the actual yield of food is greater in the case of the tropical vegetables.

THE VALUE OF SEA-WEED AS MANURE.

Chemists tell us that the composition of sea-weed is very similar to that of farm-yard manure; if so, it is a matter for regret that so little use is made of it for manuring cultivated lands near the sea-borde. As is to be expected sea-weed contains a large percentage of moisture, and for that reason its carriage for long distances inland would not pay, but those whose lands lie near the sea should not neglect the opportunity thereby offered of a plentiful and cheap supply of manure, at certain seasons, that contains all the necessary elements of food for cultivated plants.

We are induced to take over from the *Australasian* the following account of the successful use of sea-weed in fruit culture in England, in the hope that it will encourage those who have an opportunity of using this waste material as a fertilizer, of doing so:—

A writer in *The Garden* says that those who have not tried seaweed in their orchards and fruit-gardens would be surprised at the beneficial effect it has on the trees, especially apples and pears, when, of course, it is used with care and moderation. This is particularly the case during dry seasons. An illustration of the value of seawood is given. At Bembridge, Isle of Wight, some land was recently reclaimed from the sea, and it was converted into a fruit, flower and vegetable garden. There is a great depth of sandy soil, composed to a great extent of thoroughly decayed seaweed and sand, and the way all vegetation thrives in it is marvellous. In other places during the last two summers crops were collapsing from the want of moisture, in spite of the mulching of stable litter freely applied. For light soils and for use during a very dry season seaweed will undoubtedly prove more valuable as a mulch than any other material generally used for this purpose.

Apart from any manurial properties it contains, it is, like salt, moisture-holding as well as feeding, the value and importance of which should not be ignored by those whose fruit trees are growing in too porous soils and where the rainfall is light. No healthier trees or better samples of apples could be seen than those growing in the garden referred to. It is not recommended that fresh seaweed be buried near to the roots of established trees, or that it be incorporated with the soil in forming a new orchard or fruit-garden, but frequent mulchings of the surface ground, piecemeal, are a safe means of stimulating growth and sustaining the trees under the trying influence of a long drought. By this means it would gradually find its way into the lower ground and undoubtedly improve its staple.

Another instance of the value of seaweed is given. The gardens at Arundel Castle are justly celebrated for their extent and the fine order in which they are kept. For many years past heavy mulchings of stable litter were annually applied to the fruit-trees, but it was found that the manure formed fine harbours for woodlice, beetles, earwigs, and weevils, as well as for sparrows and other birds; the fruits suffered in consequence, and the finest specimens formed the feeding ground at night of the numerous insect depredators. It occurred to the head gardener to use for a mulch seaweed, this was done, and now the fruit is large, bright, without a speck, and uninjured by any of the above-named pests.

Occasional dressings of seaweed to vines are also recommended. Too frequent applications of stable manure cause the soil to become sour or uncongenial to proper root-action. Seaweed varies considerably, some being far too coarse and heavy for the purposes mentioned, unless it has first had sufficient time for partial decomposition. Preference is given to that of a finer and lighter character, which, when collected, generally contains a fair amount of sand, making it more suitable in every way for use in the garden, whether it be for asparagus, fruit-trees, or even as a plunging material for pot plants during the summer months.

AN ACCOUNT OF THE COCONUT PALM.

There is hardly a tropical country on the face of the globe where the cocoa palm does not flourish, and it is impossible to ascertain its native country, though it is thought to be indigenous to some parts of Asia, perhaps Southern India. In the Coromandel and Malabar districts, and in the adjacent islands, it grows in the greatest luxuriance, preferring the sandy and rocky sea shores to the higher country, though it is often found some distance inland. It is common in Africa, and abounds in America and the West Indian Islands. Dr. Parry found it plentiful on the Islands of Santo Domingo, where it forms groves

on the sandy beaches at the outlet of mountain streams and bears fruit abundantly. It is found in Southern Florida, 20,000 trees having been planted on Long, Lignum-vitae and Sands keys alone, while examples 80 feet high and 50 years old are found at the mouth of the Miami River. Grows to 100 feet.

Its extensive geographical distribution is accounted for by the fact that the tree growing in such close proximity to the sea, the fruits falling on the beach are washed away by the waves and afterwards cast upon some far distant shore, where they rapidly vegetate. It is in this way that the Coral Islands in the Indian Ocean have been covered with these palms.

Coir fibre appears in the form of large, stiff, and very elastic filaments, each individual of which is round, smooth, very clean, resembling horse-hair. It possesses a remarkable tenacity and curls easily. Its colour is a cinnamon brown. These filaments are bundles of fibres, which, when treated with the alkaline bath and ground in a mortar, are with difficulty separated by the needles for microscopic examination.

The individual fibres are short and stiff, their walls very thick, notwithstanding which this thickness does not equal the size of the interior canal. The surface does not appear smooth; it is often sinuous and the profile appears dentated. The diameter is not very regular. The points terminate suddenly and are not very sharp. The walls appear broken in places as if they were pierced with fibres, corresponding with the tissues of the broken sections.

The fibre of the coconut palm is contained in the husk of the nut, which is composed of a mass of coir, as the separated fibre is called. The husks are removed by forcing the nuts into sharp iron or wooden spikes fixed in the ground, one man being able to remove the husks from 1000 nuts daily. The proper time for cutting the fruit is in the tenth month, as the fruit must not be allowed to get thoroughly ripe, for the fibre becomes coarser and more difficult to twist, and must remain longer in the soaking pits, which is a disadvantage, as the fibre is rendered darker. These pits in some of the islands are merely holes in the sand, and the nuts lie under the influence of the salt water a year, kept from floating away by large stones placed over them. Sometimes the nuts are soaked in freshwater tanks, and as the water is not changed, it becomes in time very foul and dark-coloured, which affects the colour of the coir. After soaking the fibre is readily extracted by beating. Fresh water is said to weaken the fibre, and, in fact, too long soaking will produce this result in any event. The coir from the islands of Kadamat, Kelton and Chetlat in the Laccadives is said to be of the best description, and the manufacture into cordage is done entirely by women. After it is taken from the pit and sufficiently beaten, the extraneous matter is separated from the fibrous portion by rubbing between the hands. After it is thoroughly cleaned it is arranged into a loose rowing preparatory to being twisted, which is done in a very ingenious manner between the palms of the hands, so that it produces a yarn of two strands at once. According to the old native system of treatment, the nuts sometimes remained in the pits eighteen months. The best commercial coir of today is obtained by better methods, and the soaking is accomplished in tanks of stone, brick, iron, or wood, the water being warmed by steam, which shortens the duration of the treatment very materially. Where machinery is used (in the after processes), the husks when sufficiently soaked are passed through a crushing mill, which flattens and crushes them ready for the extractor or breaking down machine.

In the latter the fibres are completely disintegrated, and are then passed through a "willowing" machine, to free them from dust and refuse. It is calculated that when treated in England 10,000 husks will produce 45 to 50 cwt. of spinning fibre and 9 to 18 cwt. of brush fibre. In the process of separating the fibre, the following commercial qualities are produced: The mat, or long fibres used for spinning purposes; the shorter, or more stubborn fibres (bristles) for brooms or brushes; the low or curled fibre for stuffing cushions, and the dust or refuse for gardening purposes. When dyed black, the tow has been used as a substitute for horse-hair. A singular use was proposed a short time ago for coconut dust or refuse. Taken before it is quite dry and subjected to great pressure, it is capable of forming plates of varying thickness, like mill board, only much more brittle. These boards, if used as backing for steel plates of ironclads, swell up on being punctured below the water line and soon close the orifice. If really effective, such plates could be produced at a trifling cost, for thousands of tons of coconut refuse float away annually down the rivers in India and elsewhere.

Three large coast coconuts will yield 1 lb. of coir, measuring about 130 feet, whereas ten small inland nuts are required for 1 lb., but it will give over 200 feet. Two lbs. of such yarn, averaging from 70 to 75 fathoms, are made up into sooties, of which there are fourteen in a bundle, averaging about a maund (28 lbs.). A Mangalore candy (560 lbs.) will thus be the produce of 5,600 nuts, and should contain 20,000 fathoms (20,000 feet) of yarn.

Coir fibre is used by the Spaniards of the South Seas instead of oakum for calking their vessels, and it claimed that it will never rot. Coarse cloth is sometimes made from the fibre which is used for sails. The principal use of coir, however, in the commercial world is for cordage and matting. "The character of coir has long been established in the East, and is now in Europe, as one of the best materials for cables, on account of its lightness as well as elasticity." Ships furnished with coir cables have been known to ride out a storm in security, while the stronger made but less elastic ropes of the other vessels snapped like pack thread. Coir cables were used extensively in the Indian Seas until chain cables were introduced. It is rougher to handle and not so neat looking as hemp rigging, but it is well suited to running rigging where lightness and elasticity are desired, as for the more lofty sheets; it, however, is too elastic for standing rigging. In vessels of 600 tons it is generally used for lower rigging. Tests of coir cordage by Dr. Wright gave the following results: *Hibiscus cannabinus* broke with 190 lbs. strain, coir broke with 224 lbs., but

bowstring hemp (*Sanseviera zeylanica*) required a strain of 316 lbs. to break it. In another series of experiments made at the office of the Marine Board of Calcutta, palm coir stood a strain of 823 lbs., when a remarkably fine specimen of European hemp stood 1,967 lbs. In this test the coir stood No. 12 in strength and No. 1 in elasticity, stretching 32 inches against 9½ inches of the hemp. Unfortunately, the length of rope was not given, though its size was 1½ in circumference.

The cocoa palm has other uses than for fibre which are of sufficient interest in connection with its textile uses, to briefly mention: The Cocoa-nuts are sometimes used for illuminating purposes, to light roads, and an excellent charcoal is yielded by the burnt shells. These in the entire state are manufactured into a great variety of vessels for household use. The tree itself is used in the manufacture of small boats, frames for houses, rafters, spear-handles, furniture, and fancy articles of different kinds. It is exported under the name of porcupine wood. "The Cingalese split the fronds in halves and plait the leaves so nicely as to make excellent baskets, and they form the usual covering of their huts, as well as the bungalows of the Europeans." These dried fronds also furnish fuel and are used for torches, or they are made into brooms by trying the midribs together. The leaves furnish mats, baskets and screens, and combs are made of the midribs of the leaflets in the Friendly Isles. Mats are also made of the coconut leaf cut out of the heart of the tree, which are described as of fine quality and used in the Laccadive Islands as sails for boats. A downy fibre is also taken from the plant which is used to stanch the blood in wounds after the manner of lint.

Coconut oil is one of the best-known products of the palm, especially as it is employed in the manufactue of stearine candles. In the East it is employed as lamp oil, and also for anointing the body. Fifteen coconuts produce about 2 quarts of oil. The drink known as toddy or palm wine is derived from the flower spathes before they have expanded. It is also distilled and produces an intoxicating liquor or arrack. It is also made into vinegar, or, if it is not allowed to ferment may be made to yield jaggery or sugar which is brown and coarse.

The palm grows well in Southern Florida, and while already producing nuts the coconut industry has assumed no importance, though a single company in Massachusetts extracts the fibre from imported nuts.—*Dr. Dodge, Washington.*

PRACTICAL HINTS TO HORSE OWNERS.

By A. CHINNIAH, G.B.V.C.

CHAPTER I.—(*Continued.*)

The eaves of the stable roof should be so constructed as to admit of the free passage of air.

Ridge or roof ventilation is an important condition in a stable. The absence of it induces the accumulation of impure air which would otherwise rise and pass out of the stable making way for a supply of pure air. Other systems of ventilation are adopted in continental cities, but it is unnecessary to describe these as they will be hardly of any practical use to my readers.

CHAPTER II.—FOOD AND FEEDING.

There is a great variety of horse foods, and a description of the chief foods, together will analyses, will be given later.

By nature the horse is intended to serve as an animal of activity and speed, but in a state of nature, where speed and activity are exercised either for pleasure or as a means of security against assailants, natural herbage suffices for the nutrition of the animal, which, to a great extent, expends its energy according to its strength. In a state of captivity, however, and as a slave to man, expending energy not according to its own instincts or inclinations, but according to the will and fancy of his master, the same food does not suffice to supply the wear and tear of the tissues induced by regular and hard work. While grass alone does not supply sufficient nurtriment to a hard-working animal, it is also to be objected to on the ground that if partaken of in large quantities, from its bulky nature it interferes with the free action of the lungs, and as a result incapacitates the animal from hard and fast work which it is expected to perform; while again energy is unnecessarily exhausted in the effort to digest and assimilate so bulky a food. It is for these reasons that working animals are fed on artificial concentrated food-stuffs. No single foodstufl, however, can be said to contain every element required for the proper nutrition of the animal economy, and it therefore becomes necessary to make up for the deficiency of certain elements of nutrition in one foodstuff by using with it another which supplies the want, and so two or more ingredients are mixed till the required standard of diet is attained. For instance, oleaginous seeds have to be mixed with cereals rich in starch and so on. For many reasons grains raised in the country are selected; they are of course to be preferred on the score of convenience and cheapness.

(*To be continued.*)

THE RATTAN INDUSTRY.

We are indebted to the *Kew Bulletin* of September-October, 1899, for the following account of the Rattan industry extracted from the Report of Henry P. du Bellet, United States Consul at Rheims for January, 1898:—

"Rattan is the name given to more than one hundred species of climbing palms of the genus *Calamus*, natives of inter-tropical Asia and Africa, most or all of which are perennial, simple or unbranched, cylindrical, jointed, very tough and strong, from the size of a goose quill to the size of the human wrist, and from 50 to 100 feet in length.

In the regions where it grows wild, rattan renders forests inaccessible by reason of its long, tough, and thorny stems, running from tree to tree and on the ground. These stems are used in the manufacture of numerous articles, the principal among which are walking sticks (very much in demand and often very high priced), riding sticks, cables, and very strong ropes, and when split into thin strips, are used for making seats of chairs,

baskets, withes and thongs, and all sorts of wicker ware.

One species of rattan—the *Calamus Draco*—from which is extracted a red, resinous substance, is employed for medicinal purposes.

From India is taken the rattan used in making walking sticks; its stem is very long, a little over 0·39 inch in thickness, with joints 19·63 to 39·37 inches apart.

From Cochin China and the Sunda Islands are annually exported large quantities of *Calamus rudentum*, one of the largest kinds of rattan used for cables and ropes. Its stem is very long and 0·78 inch thick near the middle, and from 1·37 to 1·96 inches in the lower part, its joints being often 78·74 inches distant from each other. These natural cables are so resistant and strong that, it is said, they are used for capturing wild elephants. Strong and handsome walking sticks are made from this species, and also from the *Calamus Draco*, the joints of the latter being from 59 to 62 inches apart.

From the Sunda and Philippine Islands are taken: (1) the *Calamus equestris*, used in the manufacture of riding sticks, a species from 196 to 221 feet in length and no more than 0·39 inch in thickness, with its joints 7·87 inches apart; (2) the *Calamus viminalis*, a species slimmer than the latter, which is used for wicker ware.

The manufacturers of rattan in the consular district of Rheims buy their raw material in Germany and Holland, whither it is shipped from Dutch India after a first preparation.

First of all, the bark is taken off and is used for making seats of chairs. The core of the stem is then split into several thin pieces and rounded off, when it is ready for making baskets.

To whatever use the rattan is put, it must be first decorticated and scraped. If it is desired to bend or plait it, it is softened in hot water, to which is added muriatic acid. Thick rattan is bent with light saw cuts, as is done with ordinary mouldings.

The output of the factories of this region is mostly consumed in the neighbouring territory and sold to wicker workers residing therein; the balance is purchased by Paris and a few London firms.

There are only two important and well-known rattan factories in this consular district which do a very good business.

Raw rattan, taken on board vessels in French ports, sells as follows: First quality $15·44, and second quality $13·51, per 100 kilograms (220,46 pounds.)

[The following are the species of Calamus (which belongs to the Palm family) found in Ceylon: 1, C. Thwaitsii; 2, C. Pseudo-tenuis; 3, C. Rotang; 4, C. Rivalis; 5, C. Delicatulus; 6, C. Radiatus; 7, C. Pachystemouus; 8, C. Digitatus; 9, C. Zeylanicus; 10, C. Ovoidens; all of which except the second (also found in India) are endemic.]

CLASSIFICATION OF USEFUL FIBRES.

(*Continued.*)

The surface fibres are still more varied in form. They may be the elongated hairs surrounding the individual pods which contain the single seeds of the thistle, familiarly known as thistledown, or they may be the hairy growths covering the clusters of seeds contained within large pods, as the cotton boll, the pod of the milk weed, or the seed envelope of species of Bombax found in tropical countries. In this group also is placed the leaf-scales or tomentum found on the under surface of leaves, &c., or on the leaf buds of both endogenous and exogenous plants, which can only be used for uphol tery or as tinder. Epidermal strips of palm leaves, raffia being an example, are also included with the surface fibres.

The pseudo fibres are not fibres but substances used as their substitutes. However, they are so clearly defined in the scheme of classification, it will not be necessary to describe them further or to give examples.

The highest use for which a fibre may be employed is in the manufacture of cloth or woven fabric. As these fabrics vary greatly in texture from the fineness of the delicate linen cambric to the coarseness of jute bagging, it would seem that a large number of fibres might be considered spinnable forms and capable of manufacture. In point of fact, however, a comparatively small number are actually spun and woven as commercial articles, these having proved their superior adaptability for special purposes for which they are employed, and the form and appearance of the different manufuctures from them having become in a measure so fixed that change could not be made without serious result. And, besides, it should be recognised that such change might necessitate complete change in the entire system of textile machinery employed in a special industry. Examples of the fabric fibres of the first rank are China grass (bast fibre), pineapple (structural fibre), and cotton (surface fibre); of the second rank, jute (bast fibre) and coir or coconut (structural fibre). The fabric fibres are, therefore, easily disposed of, and we come to the next of the higher uses in which fibres are employed, the manufacture of threads, twines, cords, and ropes, or, reduced to a term, cordage. The fibres employed for this group of manufactures include all the spinning and weaving fibres, which for the most part are employed in the manufacture of thread and fine twines, and a large number of coarser fibres, which also have their substitutes, for the manufacture of which ordinary systems of cordage machinery are generally adapted. In this group must also be included a still larger number of "native" fibres, or those which are extracted, prepared, and rudely spun or wrought into ropes by hand by the natives of the countries where they are produced, the finer kinds being used for sewing thread, fish lines, nets, and hammocks. Even the group of native fibres used for cordage is capable of subdivision into *prepared* fibrous material for spinning and twisting, and *unprepared* bark, or the whole stems or leaves of plants or bundles of unprepared bast, simply twisted together to form a very rough rope or cable. Such cordage has been largely used in South America and in India in the construction of rope bridges. Examples of the cordage fibres are: Commercial—for threads, flax (bast fibre); for twines, common hemp (structural fibre); Native—for fine twines, fish lines, &c., Indian hemp (or *Apocynum*) (bast fibre); for ropes, the Yuccas

(structural fibre); for binding and rough sewing material, spruce roots (woody fibre); and for fish lines, kelp or sea-weed, used in Alaska and other high norther latitudes (pseudo fibre).

The third use is the preparation of certain tree basts that are extracted from the bark in layers or sheets, and which, by pounding, are made into rough substitutes for cloth. Such cloth has long been used by the natives of the Pacific Islands, and is known as *Tappa* or *Kapa*. Other forms, such as the *Damajagua* of Ecuador, are used in South America as cloth, while similar fibrous bast is employed in India in its primary form for sacks, &c. In this group are also included the more delicate tree basts that are extracted in thin lace-like layers and known as lace-barks, as well as other forms of which the cigarette bast or Cuban bast is an example. Certain close-textured fibrous growths from palm trees, when they may be secured in thin sheets, likewise come into this category.

A fourth use is in the manufacture of brushes and brooms for which a different class of fibres are employed than either the fabric or cordage fibres. The first essentials of a brush fibre are toughness and stiffness, qualities found in many of the fibres from Endogens, and the brush fibres, therefore, especially the commercial species, are largely derived from palms. Grasses and grass roots are also used, while the best substitute for animal bristles is a species of Agave, the fibre-vascular bundles of which are large, smooth, rigid, and cylindrical. The most important commercial brush fibres derived from palms are noted as Piassaba or Bass, of which there are several forms from as many different species. An American example of palm brush fibre is found in the finished product from crushed and softened palmetto leaf stems. Coarser brush material consists of twigs or small stems of woody plants, or even of splints of wood, while the aborigines and "natives" use anything that has the requisite stiffness, from a bunch of grass to the small branches of bushes tied together. Examples of commercial brush fibres are Tampico from *Agave heteracantha*; Piassaba or Bass, from *Attalea funifera*, a palm; and broom root, from the roots of *Epicampes Macroura*, a Mexican grass.

The fifth group of uses comprises plaited or coarsely-wowen manufactures of articles employed in the domestic economy, some of which are of commercial importance, while the greater number are "native" productions. The materials used are the whole stems of weeds, rushes, or grasses, palm leaves, coarse tree basts, &c., wrought or plaited together in the simplest manner possible. Some of these articles may be enumerated as follows:—Mats and mattings, screens, wallets, bags, saddle cloths, sandles, hats, toys, chair seats, and basketry in endless form.

Examples of the commercial manufactures are the Japanese mattings from the mat rush (*Juncus effusus*), the Russian mattings from the bast of the linden tree, the finely-subdivided leaves of *Carludovica palmata* for panama hats, and the split stems or straw of wheat, rye, barley, and rice for braids or straw plait, all of which are structural fibres save the Russian bast. Examples of "native" or aboriginal manufacture are the sleeping mats from various sedges or grasses, the East Indian *tattees* and screens from the fragrant roots of the khus-khus; the split leaves of Yucca used for making sandals, and the rain-coats of China and Japan.—*Useful Fibre Plants of the World.*

THE DIFFERENT FORMS IN WHICH NITROGEN IS UTILISED BY PLANTS.

If we follow the example of Boussingault and plant a sunflower seed in a sterile soil to which the necessary mineral matter and increasing amounts of nitrates are added, or if we repeat the experiment of Hellriegel and plant barley in well-washed sand to which sufficient mineral matter and increasing amounts of calcium nitrate are added, we shall find that the crop produced increases with the amount of nitrate added. In Hellriegel's experiments less than 1 gm. of dry matter was produced when nitrates were not added, the production of dry matter increasing to 25 gm. when sufficient nitrates were supplied.

These experiments, however, simply demonstrated in an exact manner facts which were already well known in practice. The consumption of nitrate of soda would never have reached its present enormous proportions if farmers had not learned to appreciate the efficacy of nitrates as a fertiliser. At the present time they enter into all fertiliser formulas. The application of this fertiliser is necessary, because we are not yet able to so control nitrification in the soil that it can be made to furnish sufficient nitrates for the demands of the crop at exactly the time in the spring when they are most needed. Nitrates are produced only in warm and moist soils, and they are found in the drainage water in larger proportion in autumn than in any other season. Fortunately the roots of living plants have great capacity for retaining the nitrates, and thus reduce the loss in drainage.

If wheat roots are drawn from the soil during the winter, dried and soaked in sulphate of diphenylamin, they will take on a deep blue colouration. The amount of nitrates contained in wheat roots is surprisingly large. The author has found as much as 1 per cent. in dried roots, but the proportion decreases as growth advances. They pass from the roots to the stems and then to the leaves, where they are used in the formation of albuminoid substances. It might be a matter of surprise that substances which are so easily soluble in water as the nitrates can nevertheless be taken up and retained by roots even when surrounded by moist soil. Demoussy has shown that nitrates can not be removed from the roots by washing in cold water, but are extracted when the roots are treated with warm water or when they are subjected for some time to an atmosphere of chloroform and then washed with cold water. It appears, therefore, that the nitrates penerate by osmosis into the interior of the cells and form unstable combinations with the protoplasm, resuming their normal state only when the protoplasm is modified by elevation of temperature or the action of chloroform.

Experience has shown that whether nitrates are formed in the soil by the action of micro-organism, or introduced in the form of fertilisers, they exert a decided influence upon the crop. Nitrates are not formed in soils like those of meadows or forests, which are highly charged with decaying organic matter, since these soils are acid and therefore do not furnish a suitable medium for the nitric ferment. Liming renders such soils more favourable to the activity of the nitric organisms.

In meadow and forest soils nitrogen appears to be taken up by plants in the form of ammonia. Bréal has shown that nitrogen is also taken up by plants in the form of humates of lime or potash.

Hellriegel has shown in experiments with barley fertilised with variable amounts of nitrates that the amount of water transpired by the plant per gram of dry matter increases as the amount of nitrates applied decreases. Barley, which received the most favourable amount of nitrates, evaporated 260 gm. of water per gram of dry matter produced. The plants which received no nitrates and which made a sickly growth evaporated from 700 to 800 gm. of water per gram of dry matter. Normal, vigorous plants obviously evaporate more water than sickly ones, but if we calculate the ratio of the quantity of water transpired to the weight of dry matter produced we find that the proportion is greater in the sickly than in the vigorous plants. This fact may be useful in determining the efficacy of a fertiliser.

By pursuing this method of investigation the author found that the Gramineæ and Leguminosæ do not take up and utilise plant food in the same manner. The Gramineæ are especially benefited by chemical fertilisers, particularly nitrates, while they do not utilise humus substances to very great advantage. On the other hand, Leguminosæ are more benefited by the humates than by nitrates or ammonia salts.

Rye grass and clover were planted in large pots, each of which contained 50 kg. of soil exhausted by continuous cropping. Equal amounts of phosphoric acid, potash, and nitrogen were applied. In one case the nitrogen was applied in the form of nitrates, in the other in the form of humate. A black extract from manure which contained a mixture of humate of potash and humate of ammonia was also used. At the end of the experiment it was found that the rye grass which had received no manure had transpired 682 gm. of water per gram of dry matter, that which had received humates 435 and 469 gm., and that which had received only chemical fertiliser 233 gm. The results were quite different with clover. In this case the transpiration was: without manure 454 gm., with chemical fertilisers 398 gm., and with humates 272 and 265 gm. These results confirm the conclusions of Bréal, Snyder, and Lawes and Gilbert. The latter have shown at Rothamsted that it was impossible to grow clover continuously on the same land unless the soil was abundantly supplied with organic manures.

To summarise, then, nitrogen is taken up by plants in the form of nitrates, ammonium salts, and alkaline humates. The Leguminosæ can utilise free nitrogen only when it has been brought into combination by the action of the organisms of the root tubercles. It has frequently been claimed that other plants besides the Leguminosæ are capable of absorbing free nitrogen, but it has been shown that this absorption does not take place without the intervention of the organisms which fix nitrogen.

THE BANANA AS AN ARTICLE OF FOOD.

[SPECIALLY TRANSLATED FOR "INDIAN GARDENING" FROM THE *Belgique Coloniale.*]

In the Congo country, and in almost all tropical countries, the Banana constitutes an important resource of food for European and native alike. Hardly is a new station or village formed than a Banana plantation is started to ensure, after a brief period, food in abundance.

The Banana is very nutritious and forms almost a complete sustenance; it contains more than 25 per cent. of assimilable organic matters. According to Humboldt, it is 48 times more nuritious than potatoes; and according to Crighton Campbell, the apostle of the diffusion of the Banana in America, it is 28 times as nutritious as the best wheaten bread.

The negroes occasionally consume Banana meal, which they prepare in an altogether primitive manner. They dry the fruits and pound them in a mortar. Placed in jars or sacks, away from damp, this meal remains good for a long time. It is also very nourishing and used especially on journeys. A very healthy and refreshing drink is made from it. In Central America, Columbia and Venezuela, Banana meal is made on a great scale.

For the preparation of Banana meal the fruit is stripped of its skin and cut in rounds, which are placed in a drying apparatus. After it is completely dry, it is ground and passed through a sieve. The production of meal is from 20 to 25 per cent. An amount of raw material 15 lbs. in weight gives 3 lbs. of meal.

In order to obtain more exact ideas of the nutritive value of Banana meal, Dr. Thoms, Director of the Laboratory of Pharmaceutical Chemistry at the University of Berlin, has analysed it. It contains 1·455 per cent. of nitrogen, corresponding to 9·01 per cent. of nitrogenous matter. In consequence, the nutritive value of Banana meal is very great and sensibly approaches that of the best wheat flours, which do not contain more than 9 to 11 per cent. of nitrogenous matter. For the manufacture of meal, it is preferable to use fruit which is not altogether ripe, as the starch which is contained changes to sugar in a measure as it arrives at maturity. For the rest, the following results of analysis show its value abundantly :—

	Unripe Bananas.	Ripe Bananas.
Water	70·92	67·78
Starch	12·06	Traces
Grape Sugar	0·08	20·47
Cane Sugar	1·34	4·50
Fat	0·21	0·58
Nitrogenous matter	3·04	4·72
Crude fibre	0·36	0·17
Tannin	6·53	0·34
Ash	1·04	0·95
Other matters ...	4·62	0·79

In Venezuela Banana meal is specially given to children; it is recommended also to aged persons, convalescents, to wet nurses and to all who suffer from disorders of the stomach.

According to the *Tropenflanzer*, Banana meal is put to the following uses in Central America and Venezuela, where it is sometimes sold under the name of *Musarina*.

1. *Atol commun.*—A spoonful of *Musarina*, a small cup of milk, a little sugar and salt. After dissolving the meal and sugar separately in a little water, the ingredients are mixed together, and after baking (*cuisson*) for a few minutes, the salt is added.

2. *Atol tonico.*—The same preparation, water being substituted for milk; a little cloves, cinnamon, aniseed, fine herbs, or orange may be added.

3. *Chocolate or cocoa.*—A small spoonful of *Musarina* is mixed with a cup of chocolate or cocoa to facilitate digestion of these beverages, and to render them more nutritious; in this fashion also feeble stomachs may be habituated to cocoa.

4. *Sopa salada.*—A spoonful of *Musarina* dissolved in cold water is added to a cup of broth and left for some minutes; a few spices may be added.

5. *Cordial.*—The yolk of an egg is beaten up and mixed with 30 grammes (about 1 oz.) of sugar and one spoonful of *Musarina* dissolved in a cup of milk. A little powdered cinnamon may be added.

6. *Postre.*—Three well beaten eggs, 250 grammes ($\frac{1}{2}$ lb.) of sugar, the rind of a citron, 125 grammes ($\frac{1}{4}$ lb.) of *Musarina* dissolved in a cup of milk; mix, adding 30 grammes (1 oz.) of butter and place in an oven in a buttered shape.

Torta à la sarten—Sixty grammes (2 oz.) of *Musarina*, a well beaten egg, a cup of milk, a little salt, and a small spoonful of butter; mix and cook.

Banana meal may be utilised also in the same manner as the "superior" flours, except for the making of bread, the Banana containing no gluten.

Banana meal is delivered at the London market at 27 livres per ton (ex warehouse at the London docks); but the sale is insignificant owing to the high price and the ignorance concerning the employment of the product.

The day may perhaps come when Europe will have, like America, its Crighton Campbell to devote himself to the diffiusion of the Banana as an article of food.

GENERAL ITEMS.

Rinderpest has broken out in more than one part of the Island. In Colombo there have been but few cases so far, but the disease appears to have appeared with greater virulence upcountry, in the neighbourhood of Talawakele and Nanuoya, and both the Government Veterinary Officer (Mr. Hoole) and Veterinary Surgeon Chinniah have been in requisition in these districts, where the latter has been carrying on preventive inoculation. We trust that with the change in the weather the outbreak will soon disappear.

Professor Farmer, of the Royal College of Science, South Kensington, has been appointed assistant to Dr. Watt, Reporter on Economic Products to the Government of India, to which post it is expected he will succeed on the retirement of Dr. Watt.

It will astonish not a few to hear of buttons made of milk, but this is no hoax, as the following from the *Queensland Agricultural Journal* will prove:—Those creamy-looking white buttons which you see street hawkers in London offering you at twelve for a penny, one of which you may wear on your shirt collar, are made of milk. The milk is that which has become sour at the large dairies. It is sent to three large manufactories in the East End of London, and there churned very much after the manner of making cheese, into buttons. This cheese is then put under enormous pressure until every drop of moisture is wrung from it, when it is passed into a chemically heated room. It is then, while under great heat, bleached white and flattened out, ready to be punched into the required shapes. It is found that buttons can be made in this way at less than half the cost entailed in manufacturing bone ones, and, besides never rubbing away, do not turn their colour.

The watering of live stock is an important part of the farm work. But, while all animals on the farm requlre more or less attention in this particular, none need it more than the cow giving milk. Many farmers fail to realise the importance of giving their milch cows all the pure water they require both winter and summer. The amount of water a cow will drink depends upon the kind of feed she is getting. Where roots or ensilage is fed the amount of water is considerably lessened, because there is a considerable amount of water in these feeds. Cows, as a rnle, require more water during the winter than during the summer when on fresh pasture, and a cow in a full flow of milk requires a great deal more than one not in milk. In fact, a cow cannot give the very best returns in the milk pail unless she is liberally supplied with drinking water. Several experiment stations in the United States have tested this question with somewhat varying results. At the Copenhagen station it was found that seventy-six cows required an average of 97·9 lb. of water per day, or about 12 gallons each. At the Pennsylvania station it was found that cows averaging 733 lb. in weight confined in stalls in the summer and living on fresh grass drank 61 lb. each per day, while confined in stalls at a temperature of 73 degrees and fed on dry grass they drank 107 lb. According to Professor Henry, cows, generally speaking, require about 4 lb., or half-a-gallon of water to each pound of dry matter in their food. A New York authority says that provision should be made for eight gallons a day per cow in order to be sure of a full supply. At the Geneva station it was found that cows in full milk required $4\frac{3}{5}$ lb. of water for every pound of milk. It follows, therefore, that the heavier the milk the larger the amount of water is necessary.—*Scottish Farmer.*

The *Queensland Agricultural Journal*, quoting the following from the *Danish Milk Times*, says:—The question has been asked: Ought milking to be done in quick or slow tempo? To answer this a series of trials have taken place in Germany, one of which we herewith publish. On the farm where the trials took place were the same lot of cows—five in number—alternately milked by an elderly woman, who milked very slowly, and by a very able young milkmaid, who finished her work in a very much shorter length of time. The following figures gives the milk-yield from the same number of cows—milked at the same time of the day—in pounds:—

No.		Slow Milking.		Quick Milking.
1	...	32	...	38½
2	...	34½	...	51½
3	...	50	...	68½
4	...	40½	...	43
5	...	44½	...	50

As an explanation of this enormous difference it is said that, by the quick milking, the milk-glands were influenced so as to give a larger quantity of milk.

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A SKETCH OF THE HISTORY OF INDIAN BOTANY.*

BY SIR. GEORGE KING, K.C.I.E., LL.D., M.B., F.R.S.

(Concluded from page 731.)

THE preservation in good condition of a type specimen is therefore, from the point of view of a Systematic Botanist, as important as is the preservation to the British merchant of the standard pound weight and the standard yard measure on which the operations of British commerce depend. 'Types' also stand to the Systematic Botanist much in the same relation as the national records do to the national historian. The latter are guarded in the Record Office, I understand, with all the skill which the makers of fire-proof, damp-proof, and burglar-proof depositories can suggest. If, however, the type of a species happens to be deposited at Kew, what are the probabilities of its preservation? Such a type at Kew is incorporated in what is admitted to be in every sense the largest and, for its size, the most accurately named, the most easily consulted, and therefore the most valuable Herbarium in the world, the destruction of which would be a calamity commensurate in extent with that of the burning of the Library at Alexandria. One might therefore reasonably expect that a people who rather resent being called a 'nation of shopkeepers' would feel pride in providing for this priceless national collection a home which, although perhaps somewhat inferior to that provided for the National Historical Records, might at least be safe from fire. This expectation is not fulfilled. The infinitely valuable Kew Herbarium and library have no safer home than an old dwelling-house on Kew Green, to which a cheap additional wing has been built. The floor, galleries, and open inner roof of this additional wing are constructed of pine coated with an inflammable varnish, and on the floor and galleries are arranged cabinets (also made of pine-wood), in which the specimens (which are mounted on paper) are lodged The provision of a fire-proof building, capable of expansion as the collections extend, is surely not beyond the means of an exchequer which last year netted over one hundred and six millions sterling of revenue. On behalf of the Flora of India, I venture to express the hope that the provision of a proper home for its types may receive early and favourable consideration by the holders of the national purse strings. But India is by no means the only portion of the Empire interested in this matter, for the types of the Australasian Floras, those of a large part of the North American Flora, and those of many species inhabiting countries outside British rule or influence, find their resting-place at Kew. The safe custody of the Kew Herbarium is, therefore, not merely a national, but a cosmopolitan responsibility.

In this address I have hitherto made little reference to Cryptogamic and Economic Botany. As regards Cryptogamic Botany there is a little to relate. Except Griffith, no Indian Botanist of the earlier of the two periods into which I have divided my sketch ever did any serious work amongst non-vascular Cryptogams. During the second period two men have done gallant work under difficulties which no one who has not lived in a tropical country can thoroughly appreciate. I refer to Drs. Arthur Barclay and D. D. Cunningham. The former made some progress in the study of Uredinous fungi, which was cut short by his untimely death, while the latter, in addition to his bacterial and other researches connected with the causation of human disease, conducted protracted investigations into some diseases of plants of fungal

* From the Report of the Sixty-ninth Meeting of the British Association for the Advancement of Science held at Dover in September, 1899.

or algal origin. Some of the results of Dr. Cunningham's labours were published in the 'Transactions' of the Linnean Society, and in a series entitled the 'Scientific Memoirs, by Medical Officers of the Indian Army.' To the 'Annals of the Botanic Garden, Calcutta,' Dr. Cunningham also contributed elaborate memoirs on the phenomena of Nyctitropism, and on the mode of fertilisation in an Indian species of *Ficus* (*F. Roxburghii*). There is no doubt that in the past Cryptogamic Botany has not been studied in India as it ought to have been and might have been. This discredit will, I hope, be soon removed; and I trust that, by the time the twentieth century opens, a Cryptogamist may have been appointed to the staff of the Calcutta Botanic Garden. The collecting of Cryptogams was not, however, altogether neglected in India in time past. For, from materials sent to England, Mitten was able to elaborate a Moss Flora of India, while Berkeley and Browne were enabled to prepare their account of the *Fungi* of Ceylon. Dr. George Wallich, in whom the Botanical genius of his father burnt with a clear though flickering flame, did some excellent work amongst Desmids, and was among the earliest of deep-sea dredgers.

Economic Botany has, on the other hand, by no means been neglected. It was chiefly on economic grounds that the establishment of a Botanic Garden at Calcutta was pressed upon the Court of Directors of the East India Company. And almost every one of the workers whose labours I have alluded to, has incidentally devoted some attention to the economic aspect of Botany. Roxburgh's 'Flora Indica' contains all that was known up to his day of the uses of the plants described in it. Much of Wight's time was spent in improving the races of cotton grown in India. The Botanists of the Seharunpore Garden during the middle of the century were especially prominent in the branch of Botanical activity. Royle wrote largely on cotton and on other fibres, on drugs, and on various vegetable products used, or likely to be of use, in the arts. These Botanists introduced into the Himalayas more than fifty years ago the best European fruits. From gardens which owe their origin to Royle, Falconer, and Jameson, excellent apples grown in Gharwal and Kamaon are to-day purchasable in Calcutta. Peaches, nectarines, grapes, strawberries, of European origin, are plentiful and cheap all over the North-West Himalaya, and are obtainable also in the submontane districts. Potatoes, and all the best European vegetables, were introduced long age; and at Seharunpore there is still kept up a large vegetable garden from which seeds of most European vegetables are issued for cultivation during the cold season in the gardens of the various regiments of the Queen's troops quartered in Upper India. More or less attention has been given in the past by Government Botanists in India generally to the improvement of the cultivation of flax, hemp, rhea, tobacco, henbane, dandelion, vanilla, sarsaparilla, coffee (Arabian and Liberian), cocoa, ipecacuanha, aloes, Jalap, indiarubber, Japanese paper-mulberry, cardamoms, tapioca, coca, tea, and cinchona. Only to three economic enterprises, however, have I time to allude in any detail. These are (1) the cultivation of tea, (2) the introduction of cinchona, and (3) the formation of the Forest Department. But before proceeding to the consideration of these I wish to give a short account of the inauguration of the office of Reporter on Economic Products. Up to the year 1883 there had been no special Government department in India for dealing with questions connected with the natural products of the Empire. Whatever has been done prior to that date (and the amount was by no means unimportant) was the result of isolated and uncoordinated effort. In 1883 the Government of India founded a department for dealing with the Economic Products of the Indian Empire, and under the title of Reporter on these products they were fortunate enough to secure Dr. George Watt, a member of the Bengal Educational Service. Dr. Watt is an accomplished and able Botanist. He has collected Indian plants largely, and has made numerous notes both in the field and in the bazaar. The great work which, on the initiative of Sir Edward Buck, Secretary to the Department of Revenue and Agriculture, and of Sir W. Thiselton Dyer, of Kew, Dr. Watt began and carried to a successful termination was the compilation of his 'Dictionary of Economic Products,' in which valuable book is collected all that is known of almost every Indian product, whether vegetable, animal, or mineral. The study of Economic Botany is now pursued in India as part of a highly specialised system of inquiry and experiment. Dr. Watt has a competent staff under him in Calcutta, one of whom is Mr. D. Hooper, well known for his original researches into the properties of various Indian drugs. Dr. Watt has arranged in Calcutta a magnificent museum of economic products, and there is no doubt the economic resources of the empire are now being studied with as much energy as intelligence.

Tea cultivation is one of the enterprises in the introduction and development of which Botanists took a very leading part. The advisability of introducing the industry was first pressed on the attention of the East India Company by Dr. Govan (of Saharunpore), and in this he was seconded by Sir Joseph Banks as President of the Royal Society. Royle in 1827, and Falconer slightly later, again urged it as regards the North-West Himalaya. In 1826 David Scott demonstrated to rather unwilling eyes in Calcutta the fact that real tea grows wild in Assam. In 1835 Wallich, Griffith, and McClelland were deputed by Government to visit Assam, to report on the indigenous tea. In the year 1838 the first consignment of Indian-grown tea was offered for sale in London. The consignment consisted of twelve chests containing 20 lb. each. This first sample of 240 lb. was favourably reported upon. Last year the exports of tea from India to all countries reached 157 millions of pounds, besides 120 millions of pounds exported from Ceylon.

The introduction of cinchona into India originated purely with the Government Botanists. As everybody knows quinine, and to a less extent the other alkaloids present in cinchona bark, are practically the only remedies for the commonest, and in some if its forms one of the most fatal, of all Indian diseases, viz. *malarious fever*. The sources of supply of the cinchona barks in their native countries in South America were known to be gradually failing, and the price of quinine had for long been increasing. The advisability of growing cinchona in the mountains of British India was therefore passed upon Government by Dr. Royle in 1835, and he repeated his suggestion in 1847, 1853, and 1856. Dr. Falconer, in his capacity of Superintendent of the Botanic Garden, Calcutta, made a similar suggestion in 1852; and his successors at Calcutta, Dr. T. Thomson and Dr. T. Anderson, in turn advocated the proposal. In 1858 Government at last took action, and, as the result of the labours of Sir Clements Markham and Sir W. J. Hooker, of Kew, the medicinal cinchonas were finally, in the period between 1861 and 1865, successfully introduced into British India—on the Nilgris under Mr. McIvor, and on the Sikkim-Himalaya under Dr. T. Anderson. Various experiments on the best mode of utilising the alkaloids contained in red cinchona bark resulted in the production in 1870 by Mr. Broughton, Quinologist on the Nilgiri plantation, of an amorphous preparation containing all the alkaloids of that bark. This preparation was named *Amorphous Quinine*. Somewhat later (1875) a similar preparation, under the name of *Cinchona Febrifuge*, was produced at the Sikkim plantation by Mr. C. H. Wood, the Quinologist there; and of these drugs about fifty-one tons had been distributed from the Sikkim plantation up to the end of last year. The preparation of pure quinine from the yellow cinchona barks, so successfully grown in the Sikkim plantation, long remained a serious problem. The manufacture of quinine had hitherto been practically a trade secret. And when the Indian Government had succeeded in providing the raw material from which a cheap quinine might be made for dis-

ribution amongst its fever-stricken subjects, the knowledge of the means of extracting this quinine was wanting. Philanthropic platitudes were freely bandied about as to the immensity of the boon which cheap quinine would be to a fever-stricken population numbering so many millions. But there was a singular absence of any practical help in the shape of proposals, or even hints, as to how quinine was to be extracted from the rapidly increasing stock of crown and yellow bark. The officers in charge of the cinchona plantations in India had therefore to their best to solve the problem for themselves. And it was ultimately solved by Mr. C. H. Wood, at one time Government Quinologist in Sikkim, who suggested, and Mr. J. A. Gammie, Deputy-Superintendent of the plantation there, who carried into practice a method of extraction by the use, as solvents of the cinchona alkaloids, of a mixture of fusel-oil and petroleum. The details of this process were published in the 'Calcutta Official Gazette,' for the benefit of all whom it might concern. Very soon after the introduction of this method of manufacture the Government factories in Sikkim and the Nilgiris were able to supply the whole of the Government hospitals and dispensaries in India with all the quinine required in them (some 5,000 or 6,000 pounds annually), besides providing an almost equal quantity for the supply of Government officers for charitable purposes. The latest development of the quinine enterprise in India has been the organisation of a scheme for the sale at all the post-offices, in the province of Bengal, and in some of those of Madras, of packets each containing five grains of pure quinine, that being a sufficient dose for an ordinary case of fever in a native of India. These packets (of which some are on the table for distribution) are sold at one pice each, the pice being a coin which is equal, at the current rate of exchange, to one farthing sterling !

In conclusion, I wish to make a few remarks on the third great economic enterprise connected with Botany in India, viz. the Forest Department. The necessity for taking some steps to preserve a continuity of supply of timber, bamboos, and other products from the jungles which had for generations been exploited in the most reckless fashion, was first recognised by the Government of Bombay, who in 1807 appointed commissioners to fix the boundaries of and to guard the forests in that Presidency. This scheme was abandoned in 1822, but was resumed in a modified form during 1839-40. Seven years later a regular forest service was established in Bombay, and Dr. Gibson was its first head. Dr. Gibson in turn was succeeded by Mr. Delzell—and both were Botanists. In the Madras Presidency the first man to recognise the necessity of perpetuating the supply of teak for ship-building was Mr. Connolly, collector of Malabar, who in 1843 established a teak plantation at Nelumbur, which has been carried on, and annually added to, down to the present time. In 1847 Dr. Cleghorn (a Botanist) was appointed to report on the conservation of the forests of Mysore (which contain the well-known sandal-wood), and the following year Lieutenant Michael (still with us as General Michael, a hale and hearty veteran) was appointed to organise and conserve the public forests in Coimbatore and Cochin. The crowning merit of General Michael's administration was the establishment, for the first time in India, of a system of protection against the fires which annually used to work such deadly havoc. In 1850 the British Association, at their Edinburgh Meeting, appointed a Committee to consider and report upon the probable effects, from an economic and physical point of view, of the destruction of tropical forests. This committee's Report was submitted to the Association at the Meeting at Ipswich in 1851. The weighty evidence collected in this Report so impressed the Court of Directors of the East India Company that, within a few years, regular forest establishments were sanctioned for Madras and British Burma, the two main sources of the supply of teak.

In 1856 Mr. (now Sir Dietrich) Brandis was appointed to the care of the forest of the latter province. These forests had been the object of spasmodic efforts in conservancy for many years previously. In 1827 Dr. Wallich reported on the teak forests, and five years later a small conservancy establishment was organised, officered by natives. This, however, was kept up for only three or four years. In 1837 and 1838 Dr. Halfer reported on these forests, and an English conservator was appointed In 1842 and 1847 Codes of Forest Laws were drawn up, but do not appear to have been enforced to any extent. In 1853 Dr. McClelland was appointed superintendent, but he continued to hold the office for only a short time. A few years after Sir Dietrich Brandis's assumption of the charge of the Burmese Forests, he was appointed Inspector-General of all the Government Forests in British India ; and it is to him that we owe for the most part the organisation of the Indian Forest Department as it now exists. That organisation includes two Schools of Forestry (in both of which Botany is taught), one in connection with Cooper's Hill and the other at Dehra Dun in Upper India. The latter has for many years been under the direction of a gentleman who is distinguished both as a Forester and as a Botanist. In the Cooper's Hill School, the higher grades of Forest officers received training; at Dehra Dun those of the lower grades receive theirs. The officers of the Department on the Imperial list, according to the latest official returns, now number 208, divided into the grades of conservator, deputy-and assistant-conservator, with a single inspector-general as chief. In the addition to these, there are 566 provincial officers, ranking from ranges upwards to extra deputy-conservators.

Botanists took a leading part in moulding the department in its earlier years; for, as already stated, its pioneers—Gibson, Balzell, Cleghorn, Anderson, Stewart, and Brandis—were all Botanists. And to most people, who give even casual attention to the matter, it appears fitting that the possession of a knowledge and liking for Botany should form a strong characteristic of officers, whose main duties are to be in the forest. And this belief did for some time exercise considerable influence in the selection of recruits for tho department. But, except in the Dehra Dun School, it does not appear to guide the department any longer. For example, at the Entrance Examination to the Forest School at Cooper's Hill only three subjects are obligatory for a candidate viz. mathematics, to which 3,000 marks are allowed ; German, to which, 2,000 are allowed; and English, for which 1,000 are given. Botany is one of the nine optional subjects of which a candidate may take up two, and in each of which 2,000 marks may be made.

Botany is taught at Cooper's Hill, and (according to the Calendar of the College) it forms one of the 'special auxiliary subjects' for the Forest student. I do not wish to say a single word in depreciation of the Botanical teaching at this College, which is probably excellent of its sort. I do not know what value, as part of their professional equipment, students are accustomed or encouraged to attach to the possession of the means of acquiring a knowledge of the trees and shrubs in the midst of which they are to pass their lives in India. But this I do know, that the ordinary Forest officer educated in England now arrives in India without sufficient knowledge to enable him to recognise from their Botanical characters the most well-marked Indian trees. To tell such an officer the name of the natural family to which a plant belongs conveys no information to him whatever, for he knows nothing of Botanical affinities. Moreover, the Forest officer after he has arrived in India is not encouraged to familiarise himself with the contents of the forests under his charge. This will be better appreciated by giving an example than by any number of remarks. Some three years ago, Mr. J. S. Gamble (a Forest officer) published a monograph of the Bamboos of British India. From bam-

boos, as you may possibly be aware, a very large amount of Forest revenue is annually derived. The sales of Bamboos for the year 1896-97 amounted to no less than 110 millions of stems. A great number of the species of bamboos have the curious habit of flowering gregariously at remote intervals of thirty or forty years, and the flowering is followed by death. The absence from the forests for years in succession of flowers of a number of the species, and the similarity of many of them in leaves, had hitherto made members of the group most difficulty of identification. Mr. Gamble had devoted himself to their study for many years. He had carefully examined all the previously collected materials stored in the Herbaria at Kew, the British Museum, Calcutta, and elsewhere; and large special collections had been made for him by Mr. Gustav Mann and other officers of Government. Moreover, he had General Munro's great paper in the 'Linnean Transactions' as a basis. Mr. Gamble's work was undertaken with the full approval of Sir Joseph Hooker, who indeed accepted Mr. Gamble's account of the bamboos for his 'Flora of British India.' Mr. Gamble's monograph is illustrated by a life-sized drawing of each species, with analyses of the flowers on a large scale. When completed, the book was published as one of the volumes of the 'Annals of the Calcutta Botanic Garden.' In consideration of the supposed great importance of the book to the forester, and in the belief that the copies would be eagerly taken by the Forest Department, an extra hundred copies were printed, and these hundred copies were put into stout canvas binding suitable for camp use. These copies, or as many of them as he cared to take, were offered to the Head of the Forest Department in India at the reduced price of fifteen rupees per copy. The result was an official refusal to buy a single one, although the purchase of the whole hundred (which was not asked for) would have cost only fifteen hundred rupees—a sum which would have reduced the revenue of the year by about one twelve-thousandth part! An appeal against this ruling having been made to a still higher authority, a modified order was subsequently issued permitted such Forest officers as desired to possess the book to buy copies and charge the cost in their office expenditure. I may state that the book was not a private venture. It was produced at the expense of the Government of Bengal.

It is not because I like to play the censor that I have made these remarks about the Forest Department. Having myself served in it from 1869 to 1871, I can speak from my own experience as to the value, from the utilitarian point of view, of a knowledge of the names, affinities, and properties of the trees, shrubs, and herbs which compose an Indian jungle, and of a knowledge of these as individual members of the vegetable kingdom rather than as masses of tissue to be studied through a microscope. The appointment which I held in India for twenty-six years after leaving the Forest Department gave me full opportunity of getting into touch with all who interest themselves in a knowledge of plants, and of discovering how few of these at the present day are Forest officers. The majority of the latter, if they love their trees, are content to do so without knowing their names or relationships! There are, of course, splendid exceptions who know as well as love. The general decadence of the teaching of Systematic Botany in England during the past twenty years is, perhaps, to some extent, the cause of the low estimation in which the science is held by the authorities of the Indian Forest Department. Twenty-five years ago Systematic and Morphological Botany, no doubt had too great prominence given to them in the teaching at universities and colleges of this country, and the other branches of Botanical science were too much neglected, although I do not think they were despised. Now it appears to me that Systematic Botany is too much neglected. I hope it is not also despised! Few of the systematists who survive in England are now be found attached to the universities. They are mostly clustered round the two great Herbaria in London; and such of them as have to look to Systematic Botany for the means of livelihood are not in the receipt of salaries such as one might reasonably expect in one of the richest countries in the world!

NOTES OF A CAMP ON THE PERIAR DAM, TRAVANCORE.

SPORT WITH BISON &c.

6th April.—Count Teleki and self left Stagbrook Estate at 1·30 p.m.; arrived at Carradygoodie Estate at 3·30 p.m.; stayed the night with Mr Leahy.

7th April.—Left at 6·30 a.m.; reached Thakady, the head of the Periar dam, at 6-30 a.m; got on the steam launch at 11 a.m., and steamed down to the dam itself, which we reached at 1 p.m. The dam is still full of standing timber; it covers 16 square miles of water. We put up at a bungalow kept for use by the Engineers, and found our servants and stores all safely housed. The launch then returned, leaving a jolly boat and a canoe for our use. We started out at 3 p.m. and rowed some 2 miles, landed, and after some walking I saw a herd of 14 Bison with a very fine bull. I made the stalk ahead of the Count and got within 50 yards of them and waited for Count Teleki to come up; by the time he arrived they were about 200 yards away. He fired at the bull with his 577, hit him, but he got off into thick Eta jungle, and getting dark we had to give him up but expect to find him dead later on. Got back to camp at 7-15 p.m.

8th April.—The Count had a blistered foot, so I started alone at 5-30 a.m. below the dam down the river bed and went in the direction of Placard Estate. About 7 a.m. I came suddenly on a large solitary bull in long grass about 25 paces off. I fired with the 10 bore and hit the base of the horn; he then charged but I was slightly above him, and had no difficulty in bringing him down at close quarters. He proved a splendid beast, and having a measuring tape with me I took the following measurements:—Height from foot to wither in straight line 76 inches; spread of horns 41 inches; between tips 27 inches; girth of horn at base 22 inches; neck from 18 inches below ear 95 inches; length from nose to rump 11 foot 7 inches. After lunch I saw a herd of 5 Bison, and after a difficult stalk came up to them in long grass, but unfortunately came right on a young cow who gave the alarm, and I could not get a shot at the bull; so returned to Bungalow about 6 p.m. pretty well tired out.

9th April.—The Count and myself got up at 4 a.m. and left at 5 a.m. in the jolly boat and rowed up the right arm of the dam under the guidance of a "Mannam" villager called "Lord George." We then climbed and walked about 2 miles when I saw with my glasses a solitary bull. The Count got within about 200 yards and fired with his 577, wounding him; he then got into a small piece of Eta jungle; I ran to far end to stop him with my Estate Kangany named Assurwathen, and the bull came very close to us and snorted, but I could not see to fire. Mr. Assurwathen threw away my small rifle and threw himself into the Eta tearing off the lobe of his year. He crawled out and swore the bull had put his horn through it. Meanwhile the bull had tried to get back at other end of the Eta jungle, where Count Teleki was waiting, and he finished him off at 100 yards. This bull measured 37 inch, spread, 21 inch between tips, and 17 inch girth of horn at base. We tried on until 4·30, when a heavy thunder-storm came on, so we returned to camp very wet at about 6-45 p.m.

10th.—The Count's foot was bad again, so I started by myself at 5 a.m., landed at 5-45 walked until 8, when I saw a herd of Bison, but they got our wind and went into jungle, did a good deal of walking, but saw nothing else. Returned at 7 p.m.

11th.—Left at 5 a.m., rowed about one and a half hour, and then walked for about half an hour. We got close to 6 small sambur at different places, then we came on fresh Bison tracks, which I proceeded to explore, leaving the Count sitting down. I tracked them into a small piece of jungle, perhaps 200 acres, and then wrote to the Count to join me. Just then I heard a shot and found the Count had shot a stag, but with a poor head. We waited all day for the Bison to come out, but the shot had disturbed them and they never appeared. I took a round about 4-30 p.m. in the hopes of seeing them, and the Count took the direct cut to the boat. I saw nothing, but the Count came on a single Bison which he thought was a bull and shot, when, much to his disgust, it proved to be a large cow. We had hardly got in the boat when a terrible thunder-storm came on—one of the worst I have ever been out in. We arrived back drenched to the skin and found letters with English mail.

12th April.—Got up late for first time at 6 a.m. and wrote letters till 9 a.m., when the steam launch came by arrangement and took us up to head of lake to a place called Malowpara, which we reached soon after noon, walking from river to camp about one mile. We found a small native hut made of Eta, which we bought from the owner for servants and stores and put up my tent. About 3 p.m. I went out alone and climbed a hill about 2 miles away, and while stalking a big stag with but a poor head I saw 3 bears on a rock in some long grass about 400 yards away. I tried to get near them, but though not frightened, they got in the grass and I could not see them, so gave them up and finished the stalk of my stag which I shot dead. Reached camp about 6 p.m.

13th April.—Left with the Count at 5·30 a.m. and walked till 7-15, when I saw a fine solitary bull below me. Waited for the Count and gave him the shot, which he took at quite 200 yards, and dropped him dead in his tracks. He measured: Spread 36 inch; between tips 25 inches, girth of horn 19 inch, height at wither 74 inch, nose to rump 10 feet 6 inch, neck 90 inch, girth of nose 26 inch. After this I went for a long climb after Ibex but found none, but came on eight hinds and one large stag, I could not get nearer than 250 yards. Fired and wounded him in foreleg, but he got away into Eta jungle.

14th April.—Count Teleki was so shaken by a fall he had yesterday he could not come out. I left at 5 a.m., and 5-30 saw a long way off a herd of Bison, 15 in all. After a very stiff climb at 7-10 a.m. I was under a ridge over which they were feeding. I had only about 50 yards to complete my stalk when I saw two cows' heads over the cliff looking at me, and they immediately gave the alarm and I could hear them running. I had to run up the ridge and managed to get a shot at the bull, but I was so out of breath. I shot and hit him in the back. He got away into a steep jungle, and though I followed for some time I had to give him up. I then walked till 11 in another direction, but saw nothing except a stag that got our wind, and returned at 4-30 p.m. very tired.

15th.—Went out at 5-30 a.m. in a heavy mist which did not clear until 7-15. The Count was unable to come. I climbed the big Ibex hill, having seen one buck Ibex, but after a long tiring climb came on two female Ibex who gave the alarm, and I never got a shot. On way home saw and shot a hind sambur as we wanted meat for the camp, the Mannams not eating Bison flesh.

16th.—The launch came for us and we reached the dam again about 11 a.m. I went out alone below dam and heard two tigers move off the carcase of my first Bison, but could not see them. Saw fresh tracks but no Bison. Coming home saw 12 hind samburs. Returned to camp at 7-15 p.m.

17th.—We got up at 3-30 a.m. by moonlight, left at 4-30 a.m. and round up lake, landing at 5-30 a.m. After half an hour's walk came on Bison tracks, and shortly afterwards a herd of 11 with 2 bulls. Gave Count Teleki the stalk, and he got one barrel at and wounded a fine bull, who went into thick Eta jungle. I followed him alone till 8-30 a.m., when I came up to him on my hands and knees and shot him dead with my 10 bore. He proved a big beast, 11 foot 6 inch nose to rump, tip to tip 21 inch, spread 36 inch girth of horn 19 inch. Got back to camp at 2 p.m.

18th.—Left at 4·35 a.m. and got to a place known as Upu Para at 6 a.m. After an hour's walk disturbed 3 bulls together, no cows with them; they went off over some hills about 1½ miles. I took the stalk, and about 7 a.m. came up with one on edge of an Eta shola in long grass. Had to fire at 200 yards with small 500 rifle and wounded beast in foreleg. He moved into the jungle; at same moment a big tiger came bounding down the long grass. I seized the 10 bore and had two shots, but missed him. In same time as it takes to write the other two bulls came running down the same ravine in the long grass, and I got one of them with my 500 rifle. On going up to him I heard the tiger growling, but could not see him. I then began to follow bull No. 1, who made off up the shola in the direction of where I had left Count Teleki, who saw him come out with a broken leg and fired at and hit him with his sight up at 300 yards, but he got away into thick Eta jungle almost impenetrable and of large dimensions, and we never got him, but hope to get his head later on as he is bound to die.

19th.—The Count was feeling unwell, so I went alone. Tramped till 10-20 from 5-30 a.m. and saw nothing; then again from 1 p.m. till 4 p.m., when I heard elephants in some jungle below me. Went round and came on them feeding in short grass about 4-45 p.m. I got within 100 yards and took a snap-shot with my kodak. Then they fed close up to me, but the tusker, a fine beast, kept behind, and as the herd was unpleasantly close I had to fire at 90 paces at him. Hit him twice in the head but missed the brain, and he got away; blood and water tracks, but I could not get him. Hope I may yet find him dead and get his tusks.

20th.—Returned to Carradygoodie Estate—a 16 mile ride—and slept there; next day rode 14 miles and arrived home for breakfast.

H. DRUMMOND DEANE.

AGRICULTURAL EDUCATION IN GREATER BRITAIN.

PAPER READ BEFORE THE FOREIGN AND COLONIAL SECTION OF THE SOCIETY OF ARTS, ON TUESDAY FEBRUARY 27, 1900.

BY R. HEDGER WALLACE.

(Continued from page 136.)

"In the province of Quebec there are several smaller agricultural schools in different parts of the province, the most important of which is located at Compton, Quebec, in connection with an experimental farm.

"A School of Agriculture has been in operation at Truro, Nova Scotia, associated with an experimental station, for ten or twelve years past, and in the same province a School of Horticulture has been in operation for the past three or four years at Wolfville, N. S.

"2. *Other organisation.*—Other agencies which also render valuable help in this connection are Dairy Schools, Travelling Dairies, Farmers' Institutes, Live Stock and Dairy Associations, Fruit Growers' Associations, Poultry Associations, and Agricultural and Horticultural Societies. These are all maintained or assisted by the several provinces, by annual grants, and there are many of such organisations in every province. The members connected with these associations, &c., meet from time to time to discuss matters relating to the branches of agriculture they represent, and the more important papers read at such meetings are published by the provincial governments, and distributed, free of charge, to farmers who desire to receive them.

DOMINION AIDS TO AGRICULTURE.

"The progress of agriculture in Canada has been greatly stimulated by the organisation and maintenance of experimental farms by the Dominion Government. Five of these farms have been established in different parts of the Dominion. This work was begun in 1887, the institutes being so located as to tender efficient help to the farmers in the more thickly settled districts, and at the same time to cover the most varied climatic and other conditions which influence agriculture in this country. The Central experimental Farm is situated at Ottawa, near the boundary line between Ontario and Quebec, where it serves as an aid to agriculture in these two important provinces. A site for one of the four-branch experimental farms was chosen at Nappan, Nova Scotia, near the boundary between that province and New Brunswick, where it serves the purpose of the three maritime provinces. A second branch farm has been established at Brandon, in the central portion of Manitoba; a third at Indian Head, a town in Assiniboia, one of the North-West Territories; and a fourth at Agassiz in the Coast climate of British Columbia.

"At all these farms, experiments are conducted to gain information as to the best methods of preparing the land for crop, and of maintaining its fertility, the most useful and profitable crops, to grow, and how the various crops grown can be disposed of to the greatest advantage. To this end experiments are conducted in the feeding of cattle, sheep, and swine for flesh, the feeding of cows for the production of milk, butter, and cheese and of poultry both for flesh and eg gs. Experiments are also conducted to test the merits of new or untried varieties, of cereals and other food crops, of grasses, forage plants, and trees and samples particularly of the most promising cereals, are distributed freely among farmers for trial, so that such as promise to be most profitable may be rapidly brought into general cultivation. New varieties of cereals and fruits are also produced by cross fertilising and selection.

"At the Central Experimental Farm there is a scientific staff engaged in solving such problems as may arise in connection with the chemistry of Agriculture, the diseases to which cultivated plants and trees are subject, the ravages of insect pests and the spread of noxious weeds. Experiments are also conducted in the planting of trees for timber and shelter and in the testing of ornamental trees, shrubs and plants.

"An annual report is published containing particulars of the work done at each farm, and the report is sent, free of charge, to every farmer in the Dominion who ask for it. The annual edition now required to meet the demand is 60,000. Occasional bulletins on special subjects of immediate importance are also issued from time to time as required. A large correspondence is conducted with farmers in all parts of the Dominion, who are encouraged to ask advice and information from the experimental farms in reference to all questions affecting their calling. Farmers are also invited to visit the various farms, and inspect the work in progress. The officers attend many of the more important gatherings of farmers in different parts of Canada, at which opportunities are afforded of giving fuller information regarding the work conducted and the results achieved from year to year."

As noted by Dr. Saunders, the province of Quebec has several small agricultural schools or colleges. For instance, the schools and farms, three in number, belonging to the Corporation of the College of St. Ann's, Richmond, and L'Assomption, have each but one regular professor—that on agriculture. There are many schools also at which the pupils receive lessons in agriculture and horticulture, such as, for example, that at Roberval, Lake St. John, and at the Monastery of the Good Shepherd, Montreal. In the province of Quebec more also has been done in the way of editing and publishing text-books in various departments of agriculture than in any other province.

Turning now what might be termed the sister province Ontario—I find that though between 1870 and 1898 five text-book on agriculture for use in Ontario public schools have been published, yet the Deputy-Minister of Agriculture, speaking in 1898 before the Provincial Teachers' Association, is reported to have said that an interesting discussion might be made on the subject of why the trustees of rural, public schools in that province have not insisted upon having instruction given in agriculture. The five text-books in question referred to are one by Dr. Ryerson, one by Professor Henry Youle Hind, one by Sir Wm. Dawson, the "first Principles of Agriculture," by Dr. Mills and Professor Shaw of the Guelph College, and "Agriculture," by the Deputy-minister for Agriculture himself. The text-book coming from the Guelph College, I may add, seems to be regarded as the "most perfect and complete text-book of agriculture" publised in Canada. In the technical schools also in this province instruction in agriculture may be given, and a special feature of the School of Mining and agriculture at Kingston—an institution affiliated to Queen's University is the dairy school under the control of the provincial government. As Dr. Saunders points out, the best known institution in Canada is the Ontario Agricultural College at Guelph, which is also affiliated with the provincial university. The course of study at this institution is one of two years for the diploma, which admits to the status of "Associate of the Ontario Agricultural College," with a further course, for associates only, of an additional year which qualifies for the degree of B. S. A. (Bachelor of the Science of Agriculture). The subjects embraced in the two years' course of study are the following:—English and political economy, drawing and book-keeping, mathematics, physics, and mensuration; agriculture, including stock-breeding and rearing, and dairying; horticulture, including fruit-growing, vegetable gardening, and forestry; chemistry, agricultural, and analytical; botany, geology and zoology; economic entomology and bacteriology. Those who remain for the third year have to take a general course in English, agriculture, chemistry, geology, and botany and one special course either in agriculture, dairying, horticulture, biology, bacteriology or chemistry, and physics. A feature of the training the college provides is that the students have to devote their afternoons to practical work outside; from one to five in the winter and one to six during the rest of the year, while during the summer term all students in attendance are required to work at least 10 hours per day and receive pay. Another feature is the scale of tuition fees. All residents of the Province of Ontario who are farmers' sons, or can produce evidence that they have served one year at least on a farm, are charged $20 a year, and those of this class who cannot produce satisfactory evidence of this are charged $30 a year. Outside students, that is, from the other provinces or from foreign countries who can show satisfactory evidence that they have served at least one year on a farm are charged $50 a year; but if they cannot produce this and have had, therefore, simply an urban training, they are charged $100 for the first year and $50 for the second year. This scale recognises, in a practical form, that more care and labour has to be spent in teaching a youth entirely unacqaiuted with the practices and processes of agriculture, than in teaching one who has already gained only a slight familiarty with them. This college has also a dairying course which lasts for three months, and short special courses in various branches of practical work, which can be taken as convenient.

Before leaving the Dominion of Canada it might be as well to note that in the graded schools of Nova Scotia agricultural chemistry is taught in the rural schools in the summer in the second year. Of the two schools in this province mentioned by Mr. Saunders, it may be of further interest to add that

Mr. Mackay, the Superintendent of Education for the province, made the following report in 1897:—

"The Provincial School of Agriculture at Truro, established in 1885, has now two instructors, in addition to the manager of the farm. The attendance in 1896 was 81 for full and special courses, besides the 141 students taking the Normal school special courses. The school has conveniences for the practical study of agriculture and horticulture and dairying. The school building proper is fitted up with qualitative and quantitative chemical laboratories, a dissecting room, biological laboratory and apparatus, reading-room, and technical library. Under the annual inspection of the School, there are five local agricultural schools in the charge of graduates, who also conduct, in affiliation with the agricultural work, the ordinary public schools of the section.

"The Provincial School of Horticulture at Wolfville was established in 1893, by the Fruitgrowers' Association, with the aid of an annual grant of $2,000 from the Provincial Government. The attendance in 1896 was 67."

In the Province of Manitoba, a course of agricultural instruction has been laid down and a text-book prepared adapted to the conditions of that province. In British Columbia agriculture has been introduced and made a compulsory part of the curriculum in the schools. There seems also to be a movement in New Brunswick, to have there an Agricultural College affiliated to the Provincial University—and where students may take advantage of certain courses of lectures likely to be helpful to them. All the provinces also employ, from time to time, specialists to go round and lecture in different parts of the country, especially on noxious insects, or "bugs," as they are usually termed.

Leaving the Dominion of Canada, I pass on to what claims to be our oldest colony—Newfoundland. In reply to my inquiries, the Minister of Agriculture in this colony states that he regrets—

"That to all your queries I have to answer in the negative. Agriculture is not taught in any of our schools, we have neither farm schools nor agricultural colleges, neither have we any lecturers nor experiment stations. The Government of this colony appointed a Commisson last year to inquire into Agriculture and Industries, and in their report they recommend the adoption of nearly the whole of the methods of agricultural education above mentioned, and I hope that in the near future many of them will be carried into effect".

The Government however, I find, issues reports dealing with agricultural subjects, and Mr. Moore states that there is an Orphanage at St. John's where the boys are instructed in agriculture as well as in various trades.

The Report of the Commission referred to by the Minister of Agriculture states, I find, that agriculture in Newfoundland is not as yet sufficiently advanced to warrant the Government in establishing special institutions, such as agricultural colleges, farming schools, model farms, and experimental stations, but it recommends instead, "that a modicum of agricultural instruction be imparted in our present schools, and under our present educational system." It is also recommended that the "high schools should undertake to teach an elementary course in agricultural chemistry," and that "in the colleges of the colony should be taught more fully than in the schools already enumerated the technic of agriculture, and a more advanced knowledge of agricultural chemistry." The Commissioners "further recommend that the theoretical knowledge imparted in the schools be supplemented by instruction given by travelling professors or teachers."

It must be borne in mind, with respect to Newfoundland, that though the agricultural resources of the colony are considerable, yet, in the past, they have been neglected, as the staple industry hitherto has been the fisheries.

Leaving in turn Newfoundland I now come to the West Indies. Here the economic conditions must be first studied and understood. I have to acknowledge my own indebtedness to Sir William Thiselton Dyer, the Director of Kew Gardens, for having pointed out to me the scope of the work undertaken in the West Indies in regard to agricultural education, and for having placed at my disposal much of the information embodied in this paper. The aim and object of the agricultural instruction organised in the West Indies appears to be to change the system of cultivating crops on large estates or plantations by a coloured race directed by a few of a white race, to that of small areas owned, directed, and worked by the coloured race themselves, it being accepted as proved that under present economic conditions plantations and the planting system of agriculture is a failure. It is to bring about this change, as far as I can gather, that the present educational policy as regards agriculture in the West Indies is directed.

It must also be borne in mind that the agriculture to be taught here differs from that of other portions of the Empire—Canada for instance—in being tropical. If a reference, for example, be made to Dr. Alford Nicholls' "Text-book of Tropical Agriculture," published by the Government of Jamaica in 1891, it will be found that the following crops are treated, *i. e.*, coffee, cacao, tea, sugar-cane, orange, lime, banana and plaintain, coconut, pine-apple, nutmeg, clove, pimento, cinnamon, ginger, cardamons, pepper, vanilla, tobacco, cinchona, castor oil, coca, Jalap, sarsaparilla, anatto, turmeric, logwood, indigo, maize, rice, guinea-corn, cassava, arrowroot, yams, and sweet potatoes; and these are all new to the farmer of Britain or Canada. Some of the tools used are also new to one acquainted simply with temperate agriculture, for instance, the digger or earth chisel and the cutlass.

IS SUGARCANE A PROFITABLE CROP?

To the Editor, "Indian Gardening."

Sir,—I have carefully perused your article on the above subject. Your conclusions seem to be based on the result of experiments carried on in the Government Farm in Cawnpore. In the absence of any detailed statement of expenses and returns, it is impossible to check the correctness of the figures *viz.*, R910, the total proceeds of the crop, and R3,004 representing the total cost of cultivation, which shows a loss of R2,094 on the working, which is in other words, a loss of 66 per cent., a very high percentage indeed! This is a result which can only be possible in a Government farm, and no where else. The farms under the Bengal Agricultural Department, however, show better results. If you read the reports of the Sibpur and Burdwan farms you will seldom find such a disastrous result as referred to by you. These farms generally pay the cost of their cultivation of all crops and sometimes show large profits on particular crops.

I have been engaging myself in the pursuit of agriculture for the last seven years, and although my cultivations, especially of certain crops, have been mostly of an experimental nature, I have during this period never suffered such a loss.

I experimented in sugarcane cultivation with very little loss, as will be seen from the appended copy of statement, which I submitted to the Director of Land Records and Agriculture, Bengal, for comparison with the results obtained in the farms under his Department. Of course, the result was far from encouraging but the loss was chiefly attributable to the free distribution of canes and juice, which is customary in the mofussil, and which in my case was greater, owing to there being no other cane growers in my place that year. My expenses also were rather heavy and above normal, and so susceptible of some reduction.

I am fully convinced, and my conviction has been established by long years of experiment, that the cultivation of Sugarcane is sufficiently remunerative, al-

though the margin of profit may not be large enough in comparison with crops like paddy, jute and potatoes.

Yours faithfully,
JOGENDRA NATH MITRA
Proprietor, Pioneer Agricultural Farm,
Ajhapur.

21, STRAND ROAD,
Calcutta, 5th March, 1900.

Statement of outlay on production of sugarcane in the undersigned farm at Ajhapur, Burdwan.

EXPENSES.

	R.	a.	p.	R.	a.	p.	R.	a.	p.
Cuttings—"Shamshara"...	6	2	0						
"Khari"	3	8	0						
				9	10	0			
Manure—10 mds. Castor Cake	19	0	0						
450 lb. Bonemeal ..	15	0	0						
2mds. Rapeseed Cake..	2	4	0						
				36	4	0			
Fencing—				12	0	0			
Cultivation—Including ploughing, planting, hoeing, irrigating and tying up of leaves ..				79	3	9			
Crushing—Hire of Mills ...	8	0	0						
Hire of Bullocks ..	7	8	0						
				15	8	0			
Fuel—				1	9	6			
Earthern Vessels—for boiling and keeping juice and gur				3	1	9			
Labour—for making gur...				27	4	0			
							184	9	0

RETURNS.

	R.	a.	p.	R.	a.	p.
Gur—B. mds. 29-20 0, at R. ...	147	8	0			
Cuttings—7 Kahons at R3	21	0	0			
				168	8	0
Loss R.	16	1	0			

Area cultivated, 26 cottahs. Mill used—Thompson and Mylnes 2 roller.

(Sd.) JOGENDRA NATH MITRA.

CALCUTTA, 25*th February* 1895.

[NOTE].—We have much pleasure in publishing the above, as it goes to show that agricultural experiments are conducted by the sons of the soil in an intelligent spirit of enquiry. Our figures were taken *as a whole* from the report on the Cawnpore Experimental Farm for 1898-99. The detailed figures will be found at page 12 of the report. Here are the figures for one plot, 968 square yards :—Rent, R12; ploughing, R6-4; manures, R13-5-3; wages of weighing, carting and spreading, R2-8; seed, R68-14; wages of sowing, R4-12; weeding, hoeing, etc., R18-14-6; irrigation; canal dues, R3-5-4; labour, R14-2; cutting, crushing and gur-making, R189-7 3; total, R338-8-10; estimated price of gur per acre, R151-9; loss, R181-15-10. It is added that "the actual price of gur sold in the market, including commission of the auctioneer at 5 per cent., has been distributed according to the outturn of gur from each plot."—ED. *I.G.*]

SUGAR CULTIVATION IN AUSTRALIA.

The cultivation of sugarcane is largely carried on in the northern coast districts of New South Wales, where soil and climate are admirably adapted for that purpose. In a recent issue of the *Agricultural Gazette*, published by the New South Wales Department of Agriculture, some details of the cutting and latter processes of the industry are given, and sugar-planters in the West Indies and India may thus compare these with their own methods. As regards cane-cutting, it is said a gang of good men can each cut, top, and load about six tons of cane a day. After the cane has been hauled to the nearest mill, of which there are several, the largest being owned by the Colonial Sugar Refining Company, which virtually has control of the Australian sugar supply, it is taken to the carrier—a great endless belt made of wooden battens—about 5 feet wide, running from a sort of trough to the shredding and crushing machinery. On each side of the trough a cane laden drogher is moored, and men throw the canes evenly on the belt, which revolves slowly, and is at times stopped to prevent checking of the shredding appliances. As the cane is carried up it is toppled on to the shredder, and falls from there, commingled with water, on to a crusher. The juice flows away beneath, and the woody matter is elevated to a macerating tank, and again passed through powerful rollers, which crunch out the last possible vestige of juice. Then the megass is carried away by means of an elevator to a loft from which it is fed—down shutes—to the furnaces, which it assists in feeding. The juice from the rollers pours down channels—The stream from the first crushing being far more copious than from the second—and into a reservoir, whence it is raised to vats in the next storey. Here it is heated to boiling-point, and lime is added to precipitate organic matter mechanically suspended in the juice. A quantity of waste matter is also cast to the surface, and this is skimmed off by the men in charge of the vats. After a couple of skimmings, the hot juice runs into the subsider, a huge vat on the ground floor. It is left in the subsider a little while to enable any dirt to settle down to the bottom. Meanwhile, the refuse from the skimmings and precipitation, with a little more lime added, is passed through the filter presses, contrivances in which enormous pressure is effected by means of screw turned by wheels. The presses are not unlike concertinas in construction, and at each bugle or segment there is a tap—a regular regiment of taps—opening over a little gutter, from which any juice extracted runs into the subsider. The residue is a dark, slightly moist mass of material, called filter-press muck, which, on account of the lime it contains in the first place, and of the organic matter, is a comparatively useful fertiliser and source of soil humus. The juice is taken from the subsider to the evaporators (on the top floor). These are huge vats, in which the juice is raised to boiling-point again, with the object of driving off in the form of steam, the water that has been added in maceration and is contained in the juice itself. The juice (or solution as it is called) goes into the evaporator at a certain temperature to an appliance for determining the density or percentage of sugar, and passes through a series of four evaporators. In each evaporator there is a sort of window, in which the solution can be observed boiling furiously. On emerging from the fourth and last evaporator the solution has become a fairly thick syrup, and is passed up into the vacuum pans and afterwards to the centrifugals. When cooled the sugar is removed to a funnel, through which it passes in a brownish yellow stream into bags holding about two hundred-weight each. Each bag is sewn up with twine, each mill employing a distinctive colour, and shipped to the refineries in Sydney, from which it finds its way into every part of the Southern Hemisphere.

CHINA TEA: A HOPEFUL OUTLOOK.—In his report of the Foreign trade of China in 1899, Mr. Taylor, the Statistical Secretary at Hongkong, states that the black tea export trade is reviving, in spite of the hold of Indian and Ceylon teas on the English market. Mr. Taylor derives comfort, not dissatisfaction, from comparison of Chinese and Indian exports. If, he says in effect, India with her excellent roads, her railway system, and her light taxation, can show a total export trade three times the size of China's, has he not reason to be optimistic about the future of China, larger in extent, naturally richer, inhabited by a more numerous and more industrious population, when she shakes off the burden of a lack of roads, absence of railways and a crushing taxation ?—*Pioneer*, April 27.

PERAK SUGAR CULTIVATION CO., LD.

(From the address of the Chairman, Mr. W. V. Drummond, March 14th.)

A new concession of 5,600 acres was in 1894 offered to this company and the directors agreed to take it over for the sum of $1,000. The land was reported as being excellent for sugar cultivation. It adjoined the company's estate and was situated on the banks of the Gula-Kalumpong Canal, the rights over which the directors were anxious to acquire as being a means of supplying the estate with fresh water from the Kurau river. The acquisition of the property also secured the company against the formation of a rival estate situated on its borders, which might seriously complicate the estate labour question. Between 1894 and the present time a sum of slightly over Tls. 12,000 has been spent in quit rents, survey fees, clearing jungle and opening up the land, and against this outlay we have received. Tls. 7,300 ($10,000) for about one-third of the property—an outlying block on which nothing had been spent and which the company would not have been able to utilise for several years, if at all. As you will see from the accounts the sum of Tls. 4,828·89 now stands as an asset in

THE BALANCE SHEET

representing a property of 3,500 acres, of which about 800 acres have been cleared of jungle, 28 acres have been planted with canes, 21,000 feet of drainage, navigation and boundary canals, and over 10,000 feet of drains have been dug. A small bungalow for a foreign overseer, and buildings sufficient for the accommodation of 250 coolies have been erected.

With regard to the development of this property, you will remember that the company is under certain obligations to the Perak Government. A *bona fide* commencement to cultivate had to be made within twelve months from the date of the lease (30th June 1896). This condition has been complied with—further, at least one-fourth of the whole area must be in cultivation at the end of ten years, that is by 30th June 1906; otherwise the whole of the uncultivated portion of the land will lapse to the Perak Government. The directors have had before them for some time a scheme for the cultivation of sugar cane on this property for the manufacture of basket sugar. Basket sugar, or as it is sometimes called Muscovado, is a coarse kind of sugar which is used largely by the natives in the East and is also exported to Europe, where it is sold to refiners and brewers. It has been

CULTIVATED IN THE MALAY PENINSULA

for the last fifty years with success, but the cultivation has hitherto been in the hands of natives. There is a large local market for it and considerable quantities are shipped to England. The market for it is, we learn, practically unlimited. The adoption of a scheme for such cultivation involved the raising of new capital, and the financial position of the company has hitherto hardly warranted the directors in placing it before the shareholders. The financial position of the company has now however, undergone a considerable change for the better; the profits of last season paid a handsome dividend, besides placing a substantial sum to reserve, and the prospects for the current season are fully as good as, if not better than the last. At the same time the directors feel that any extension of the company's operations must be provided for by new capital, one of the great difficulties which the company has had to contend with in the past having been insufficient capital. This difficulty, in the earlier days of the company, necessitated the expenditure on capital account of a considerable amount of money out of the earnings of the company, and the borrowing of money at a high rate of interest. At the present time, however, the company is in possession of a fine property of nearly 2,500 acres in cultivation, and an up-to-date plant capable of earning good dividends on the capital. The manufacture of basket sugar possesses these advantages over the higher grade sugars, in that it requires much simpler and therefore much less expensive plant, it finds a ready market, and the profits calculated on a most conservative estimate are considerable. Moreover, with a comparatively

SMALL OUTLAY OF CAPITAL

the company is able to fulfil its obligations under its lease to the Perak government. The erection of a second factory will provide the means, in the event of a serious breakdown in the principal factory, of taking off the estate canes which might otherwise be lost through over-ripeness, or have to be sold at a great sacrifice to neighbouring estates. It is proposed to erect the factory in a central position as regards the whole property and to arrange it in such a way that at some future time, should it be deemed advisable, the vacuum pan and centrifugal process can be introduced without difficulty. It may interest you to know that other foreign companies working in the neighbourhood of our estate have also recently entered into arrangements for the manufacturing of basket sugar, which has been hitherto confined to native planters. An article in a recent issue of the International Sugar Journal, the principal organ of the sugar industry describes a plant, the first of several to be erected in the Straits for the manufacture of this product. The names of the promoters who are also largely connected with our successful neighbours in Province Wellesley, the Penang Sugar Estates Company are a sufficient guarantee of the soundness of the undertaking. The amount of capital which it is estimated is required to provide a factory and plant capable of crushing canes from 2,000 to 2,500 acres, and to open up an area of about 1,600 acres is roughly Tls. 75,000.—*N. C. Herald*, March 21.

THE "CUNDALL" OIL ENGINES.

Messrs. Brown & Davidson, of Talawakelle, have just brought out a new catalogue, with testimonials, of the patent oil engines, for which they are sole agents in Ceylon and Southern India. We must in the first place congratulate Messrs. Jordan of "the Lindula press" for the very creditable work in turning out this catalogue with its gold lettering and border on brown and dark cloth cover—all extremely neat and effective. We gather that the Talawakelle Engineering Firm is quietly effecting a notable work upcountry in superseding steam engines with the "Cundall" oil engine, and if it be true that the saving (in fuel &c.) is equal to one cent and upwards per lb. of made tea in many cases, we can readily see the great inducement, more especially in districts where fuel is scarce. In the book before us we see such thoroughly practical managers as Messrs. A. Cantlay, W. H. Morrison, Bowie, Rolland, Hudson, Peile, J. R. Jenkins, &c., all testifying to their great satisfaction with the new oil engines, there can be no doubt of success. We understand that the demand is now so considerable that there is a steady flow of the engines for orders to the island. To ensure proper erection and a good start, an assistant thoroughly acquainted with the engines was got out from Messrs. Cundall & Co., a circumstance which adds to the confidence of all using this special motor.

The Indian Forest Department.—The number of officers recruited annually in England for the superior branch of the Indian Forest Service will be raised from six to nine for the next few years, to meet the heavy losses the Forest Department has been sustaining from invaliding.—*Madras Mail.*

SPORT IN CEYLON:

SNIPE SHOOTING ROUND KANTHALAI LAKE, TRINCOMALEE.

Kanthalai Lake is on the coach road between Kandy and Trincomalee, twenty-five miles from the latter place. The eastern portion of Ceylon is infinitely superior to Colombo in point of climate; the atmosphere is much drier, and there is none of that damp hot-house sensation that one experiences on the Western Coast. Kanthalai is excellent as regards climate, being not far from the Eastern Coast. It has the same dryness as Trincomalee, while for some reason or other it always appears to be a good deal cooler. The rest house is in a condition of hopeless dirt and decay; the erection of a new one a little east of the ancient site has been approved, but goodness knows when the work will be done. At present those who stay at Kanthalai must be prepared for a good deal of discomfort; strange reptiles, many of which bite virulently, abound. There are also piles of old tiles close to the bungalow, in which some cobras live; these are said to roam from room to room in the night, but as I was always fast asleep then, I cannot vouch for the accuracy or otherwise of this report. The dining room of the next house is a curiosity in the way of architecture. Imagine a large square space with a ramshackle roof over it with a bit of wall in front, and closed in behind, but open completely to the air and the poochies of heaven at the two sides. Here and there are crooked trunks of trees serving as pillars to prevent the ancient roof falling upon one. The floor is of concrete seamed with great irregular fissures as if by an earthquake: from these great cracks battalions of ants and other things march forth, to devour and destroy squads of geckos, chase each other and catch flies up and down the decaying walls, or drop from the roof with a plob on the floor. Down below gleams the lovely lake,

A MYSTERIOUS FAIRYLAND

bathed in mystic moonbeams. Looking over the moonlit water one dreams of the armies of workmen who built the great bund sixteen-hundred years ago. Wonders how many thousands of lives the huge work cost, and then almost expects to see a procession of dusky Sinhalese flitting along the huge dam which they spent their lives over in those ancient days, when stately cities stood on sites which have since become pathless jungle. So utterly forgotten are those once beautiful temples that the villagers even are utterly ignorant of the positions of the ruins, and they are only discovered by the survey parties when mapping out the country. The Government surveyors often find forgotten tanks and ruins within a few miles of a village, of which the villagers themselves are completely ignorant.

There are

NO PROPER SHIKARIS IN CEYLON,

there are nocastes who dare leave the beaten tracks in the jungle; the mysterious forests which clothes so great a portion of this beautiful island are practically a sealed book. Anyone who has the time might with great profit to himself explore these jungles, and discover patches of open country where he could shoot to his heart's content, among cheetal and sambhur, which have probably never even heard the crack of a rifle. But I intended to

WRITE ABOUT SNIPE SHOOTING,

and I have stayed away to talk of deer. The coach road passes the resthouse running along the great bund for a couple of miles. Two or three hundreds yards east of the resthouse there is a sluice by which the paddy fields below are irrigated. One can see the paddy fields from the bungalow, and a path leads straight down to them, so that one can reach their edge in a few minutes walking. Here and there among the paddy are small patches of bush, and by beating these one can nearly always get a few snipe out. The snipe go into the shade during the heat of the day, and if there happens to be a handy bush in the middle of the paddy some of them sit under it, in preference to betaking themselves to the big jungle round the edges of the cultivation. One can get very sporting shots by sending a coolie just inside the big jungle at the edge of the paddy, and instructing him to walk along making a noise parallel to the edge and about twenty yards inside. If the trees are large the snipe get very high up before they come out, and one gets high overhead rocketters of the most superior description.

Although the paddy just below the resthouse always holds a few snipe it is not worth taking seriously. Supposing one wants a few birds for the larder an hour or an hour and a quarter will be enough time to go down and get back again with two or three couple.

To get to ground where the snipe are numerous one follows the little stream which comes from the sluice, across the near paddy and then turns away to the right by a jungle path which after a walk of three-quarters of a mile brings one out in some old cultivation which is known locally by the name of the "Director's Paddy-fields." Here the snipe, though usually wild,

ARE AT ANY RATE PLENTIFUL.

In two hours shooting a couple of guns can easily get twenty or twenty-five couple, and of course if one stuck at it the whole day working the ground backwards and forwards systematically it would be easy to make a large bag. There are, however, snakes, as I discovered one day to my cost, and I would strongly advise any one shooting there to wear putties or gaiters, not stockings alone. I was shooting one day in short knickerbockers and socks with my legs bare. I had two snipe down near some bushes in long grass, and was looking for them. All at once I felt what I thought was one of those jungle ropes round one leg and glancing down saw I had a snake in a large loose coil round my bare leg. I gave one instinctive and very high jump, and the snake fell off and vanished at once in the grass. I did not see its head, but I am almost certain from the hurried glance I got of part of its body that it was a cobra. I never found the snipe which I had marked down to just about the spot where I encountered the snake, and it struck me afterwards that perhaps the snipe fell near the snake, and the snake bagged it and had it in its mouth when it was round my leg, and so did not bite me. I don't know enough about snakes to venture an opinion as to whether a snake would take a dead or dying bird which fell near it. This adventure gave me a lesson, and I never intend to shoot among long grass without putties again in any snake-infested country. Some of the shooting in the "Doctor's Paddy-fields" was among big trees spaced well apart, and was about as pretty as anything one could desire. The trees were not too leafy, and the chances one got at snipe as they zigzagged through the openings were quite ideal. One bad deplorable habit the Kanthalai birds have: When they are shot at a bit they make off to the thick jungle where one cannot get at them again: so it is a case of

"gathering the rose buds while ye may." I do think, by the bye, that the snipe shooter in Ceylon wants a choked gun, for on some days all the shots seem to be long ones, and I never found it the custom of the snipe anywhere to rise close to one's feet as they sometimes do in India. I used an "Ubique" which is three-quarter choked, as regards pattern, in both barrels, and found the possession of such a gun quite an advantage. I also tried an ounce of No. 8, but soon went back to one and an eight ounce, as you want all the shot you can use comfortably. We will now leave the "Doctor's Paddy-fields" remembering that it is there the heavy bags are to be made if any where, and visit one or two other spots round Kanthalai where one can always bag a few couple without difficulty. Across the lake, *i e.* about two miles by boat from the resthouse, the shore is edged with short turf with here and there patches of reeds. In a few places one will find small bushes near the water which are moist and shady underneath. All about this part of the lake there are quite a number of snipe ; they rise from the reeds or bushes and usually fly straight out over the water so that sometimes they fall where it is too deep to get them out. A boat should therefore be handy to recover dead birds, for Kanthalai abounds with fish-eagles which are always on the look out ; and if a bird of any kind falls on the water and is not gathered at once, one of these ever-watchful osprey swoops down and carries it off in triumph. I lost one or two teal and several snipe in this way.

EAST OF KANTHALAI

and about a mile from it there is another tank, along the edges of which one can shoot a good many snipe. The best way to reach the place is to walk about five hundred yards along the coach road from the rest-house in the direction of Trincomalee. and then turn off to the left along the eastern shore of Kanthalai. A branch path to the right takes one away for the Kanthalai shore through a gap in the "women's bund" to the smaller tank. The "women's bund" is so called because it was built entirely by female labour ; it skirts the eastern shore of Kanthalai and evidently the lake once was of considerably larger dimensions, as this bund is now at its nearest point about a hundred yards from the shores of the lake, *when it is at its fullest.*

The smaller tank is very irregular in shape, and has long stretches of grass here and there between the water and the jungle. This grass is in some places very high, and consequently the place is beloved of pig and wild buffalo, while deer are also to be got round its shores, the snipe are all round the edges of the tank, but there is one place in particular where the shooting is very pretty. This is along the south bank where the hill side rises jungle-clad almost from the edge of the water. Big forest trees, open underneath, grow near the tank and beneath their shade are stretches of damp cool earth. During the hot part of the day the snipe sit under these trees, and on one's approach they dash out from beneath over the tank, giving the most charming shots. The walking as in fact all about Kanthalai

(INCLUDING THE "DOCTOR'S PADDY-FIELDS,")

is quite easy, and one can shoot snipe under the most perfect conditions. You can go out in the early morning, bag a pig or cheetah, and then walking back round the edges of this tank shoot five or six couple of snipe, and then stroll back to the bungalow via the "women's bund" under shade the whole way, in time for breakfast. Both Kanthalai and the smaller tank abound with teal but it requires a certain amount of enginering to make a bag. The jungles too swarm with pigeons of three kinds ; one is the small green pigeon, the second is about the same size, but is brightly coloured with an orange breast ; then there is a great big pigeon with a green back, and the rest of the body, with the exception of a rufous patch at the vent, dove colour. By sitting under one of their favourite fruit trees one can bag any number of these pigeons. The difficulty is of course to find a tree they resort to. In some places they can be shot flighting to and from the trees ; but undoubtedly the best way of getting sport with them would be to use a small bore rook rifle, and shoot them sitting.

I killed about a hundred of them at Kanthalai, but most of them were killed sitting with a shot gun. I used to go and sit under a pigeon tree, and wait for pigeons when I had had a hard morning's work after deer, and felt too slack to tackle the snipe. "FLEUR-DE-LYS."

—*Asian,* April 3.

CEYLON PIGS BUILD HUTS.

Mr. Gordon Reeves writes to the *Field* of March 17 as follows :—

In your issue of January 27th last, your correspondent, "H.H.C." describes a colony of pigs and their dwellings ("huts"). These pig-huts are well-known to sportsmen in the hill country of Ceylon, though I have never seen them in the plains, or heard of them there. They are commonly found, and more usually single, on the forest and jungle edges, where rank "mana" (lemar grass) is found, and are composed of this grass. When built in the forest itself, which is a more unusual procedure, they are generally composed of "nilla," a species of acanthus which forms the greater proportion of the undergrowth at elevations between 3,000 to 5,000 ft. Having been a constant observer and hunter of pig for the last twensty five years, I have on more than one occasion witnessed the building of a hut, and on both occasions the work demanded the attention of two pigs. One pig simply laid down, while number two grubbed up the grass by the roots and heaped it over the recumbent one. I cannot account for the fact that pig-huts in this country are more frequently found single. I have on occasion found colonies of three and four, but the almost invariable rule is a single hut. They are not built for family purposes, for, although I have occasionally turned out a single sow, I have much oftener found the huts to be tenanted by boars. Their occupation does not appear to last more than a day or two, and then only during wet weather. I have on one occasion known a wounded pig to take refuge in a hut. I had noticed the hut in the morning, and had also noticed that it was untenanted, owing to its shape. On following up my pig, I at once recognised, by the dome shape of the hut, that he had gone home.

E. G. REEVES.

Ratnatenne, Madulkele, Ceylon, Feb. 21st.

CLOSE OF THE INDIAN TEA SEASON.

Total quantity of Tea passed through Calcutta from 1st April to end of Season:—

lb.	1899-1900.	1898-1899.	1897-1898.
Great Britain	149,374,164	135,381,722	133,782,962
Foreign Europe	1,435.146	1,171,146	797,313
America	5,923,404	3,273,096	2,086,369
Asia	5,492,815	6,972,251	3,601,532
Australia	8,250,436	6,398,002	6,802,579
Total lb.	170,475,965	153,196,217	147,070,755

AGRA TEA COMPANY, OF CEYLON, LTD.

ANNUAL REPORT.

The Directors have the pleasure of submitting their report on the transactions of the Company for the year ending 31st December, 1899.

The acreage of the Company's property is as under:—

Tea in full bearing ..	197 acres.	
Tea in partial do ..	5 do.	
Tea not in do ..	30 do.	
		332 acres.
Forest ..		26 do.
Grass, waste land, &c.		9 do.
Total area		367 acres.

The estimated crop for 1899 was 160,000 lb. and the out-turn 167,880 lb., or a surplus of 7,880 lb. This crop realized R70,159·8 equivalent to 41·79 cents per lb., as against 45 cents in 1898. The expenditure on Sackarawatte, as shown in the accompanying accounts, was R45,138·63, or 26·89 cents per lb. as against 27½ cents in 1898. The estimated crop for 1900 is 180,000 lb. tea to be produced at 28 cents per lb., which includes a liberal allowance for manuring.

The net profits on the working of Sackarawatte Estate amounted to R25,020·45, which, after deduction of R2,177·88 written off for depreciation of machinery, represented about 5½ per cent on the value of that property as shown in the balance sheet.

In accordance with the resolution of the shareholders, passed at the last general meeting, the 1898 profits, amounting to R14,111·03, have been transferred to the General Reserve Fund.

The net profits for the year 1899 amount to R14,722·12, out of which the Directors propose to pay a dividend of 3 per cent on 559 shares (R8,385,) leaving R6,337·12 to be carried forward to next account.

With regard to Kalkudah Estate, the Directors have made arrangements with the vendors for the latter to take back the property for the price paid by the Company, viz:—R60,000, plus the amount expended on it with interest at 4 per cent. Payment is to be made by the surrender to the Company of 120 fully paid shares, and the sanction of the Court has recently been obtained to the capital of the Company being reduced by the cancellation of such shares.

The Standard Life Assurance Co.'s mortgage over the Company's property has been reduced by £1,000 sterling, and the mortgage over Kalkudah released, a loan of R15,000 having been obtained for that purpose.

The condition of the Sackarawatte Estate is satisfactory as regards general appearance, cultivation, and crop prospects.

In terms of the Articles of Association Mr. John Symonds retires from the Board of Directors, but is eligible for re-election.

PITAKANDE TEA CO., OF CEYLON, LTD. ANNUAL MEETING.

REPORT FOR 1899.

ACREAGE.

Tea in full bearing ..	500 acres	
Tea in partial bearing ..	260 do	
Tea not in bearing ..	240 do	
		1,060 acres
Cardamoms in bearing		44 do
Cacao and Crotons in bearing ..		100 do
Fuel Trees		40 do
Forest and Grass Land		227 do
Waste Land and Buildings, &c. ..		30 do
Total area..		1,441 acres

The Directors submit their report and accounts for 1898. The crop secured amounted to 553,130 lb. tea, being 143,177 lb. more than the yield in 1898. The net average price realized was 36 14 cts. per lb., whilst the cost f.o.b. was 23 916 including the cost of manuring or 18 400 cts. exclusive of this item. The average yield per acre was 727·775 lb. including all tea planted up to March, 1896. The cocoa and croton crops were disappointing, but the cardamoms exceeded expectations.

The net profit for the year including a balance of R440·05 from 1898 amounted to R69,588·51. Interim dividends aggregating 12 per cent have been paid, and the Directors recommend a final dividend of three per cent making a total of 15 per cent for this year, and that a sum of R23,000 be transferred to reserve or extension fund account as a set-off against capital expenditure, and that the balance of R838·51 be carried forward to next year's accounts.

In terms of the Articles of Association Mr. Robert Morison retires from the Board of Directors, but being eligible offers himself for re-election. The appointment of an Auditor for the current year rests with the meeting.

DRAYTON ESTATES CO., LTD.

REPORT FOR 1899

The crop secured from the Company's estates was:

Drayton	460,708 lb	increase	57,938 lb
Yuillefield	89,270 ,,	do	12,246 ,,
Cwm	35,452 ,,	do	3,660 ,,

Total 585,430 as against 560,000 estimated.

The following figures may be of interest to the Shareholders:—

	Acreage.	Yield per acre.	Acreage pruned.	Manured Artificial.	Manured Bulk.	Prunings buried with Basic Slag
Drayton ...	769	599	421	233	64	300
Yuillefield	218	469	86	60	—	—
Cwm ...	90	394	48	—	—	—

	Cost f.o.b. exclusive of Manure	Cost f.o.b. inclusive of Manure	Price per lb.	Profit per lb.	Profit per acre.
Drayton ...	20·97	24·77	46·26	21 78	R130·46
Yuillefield	26·34	28·98	45 00	16·79	68·76
Cwm ..	25 32	25·32	46·26	21·03	83·17

The total cost of 585,430 lb., exclusive of depreciation and Cwm rent, was 25 83 cts., against an estimated cost of 27·50 cts., and 657 acres were manured as against an estimate of 440 acres only.

Allowing 45 cts. per lb. for tea unsold, the nett value of whole crop will average 46·35 cts. or practically the same as last season, leaving a profit of 20·52 cts. as against 18·07 cts. in 1898 and 16·87 cts. in 1897.

On Drayton a new factory has been built 88 feet long by 48 feet broad, framework all of iron, with two withering lofts 88 feet by 36 feet. Machinery consists of a 9½ Oil Engine, 2 Economic Rollers, two Desiccators, and a Roll Breaker, cost complete, except as regards some factory fittings, was R31,483·64.

It has been used for withering purposes since May last.

A further sum of R4,241·35 was spent on lines, 34 new rooms having been built, and 44 rooms re-roofed with iron.

The Company's properties consist of:—

Drayton—	Tea in Bearing	...	769 acres.
	Grass Land	...	26
	Timber	...	10
	Forest	...	9
	Waste and Roads	...	69
Yuillefield—	Tea in Bearing	...	218
	Forest and Timber	...	7
	Waste	...	8
	Total	..	1,116 acres.

The Estimated Crop for 1900 is:—

Drayton	..	500,000 lb.
Yuillefield	..	100,000
Cwm	..	35,000
Total		635,000 lb.,

estimated cost 26 cents f.o.b

In terms of the Articles of Association Mr. H. Whitham retires from the Board by rotation, and, being eligible, offers himself for re-election as a Director. The Shareholders will be requested to appoint an Auditor for the current year.

A dividend of 10 per cent was declared, making 15 per cent for the year.

Mr. H Whitham was re-elected director.

Mr. H P Church was appointed auditor for the current year.

KELANI VALLEY TEA ASSOCIATION, LTD.

ANNUAL REPORT.

The Directors have the pleasure to submit to the Shareholders the Report and Accounts of the Company for the year ending 31st December, 1899. Since last Report Debentures for £850, which matured on 1st July last, were renewed for five years at 5 per cent. per annum. The total Crop from the Company's four Estates amounted to 575,255 lb, against 578,169 lb in 1898. The average price realised for the who Crop was 7d, against 6½d in 1898, and the average rate of exchange 1s 4 25-64d in place of 1s 4 19-64d in the previous year. There has been no alteration in the Company's acreage, details of which were given in the last Report.

The new factory for Wereagalla and Parusella has now been in use for some months, and the directors are pleased to say that the cost of production has thereby been materially reduced, and the quality of the tea is being improved. The planting of coconuts through the tea on Degalessa and Dover estates has been proceeded with, and Mr. Porter, on his recent visit to the estates, reported that they were looking well.

The directors have written 10 per cent off the cost of buildings and machinery for depreciation, and the amount, £1,098 1s 3d, appears in the accounts. The net profit for the year, after deducting the above sum of £1,098 1s 3d, written off for depreciation, amounts to £2,167 3s 3d, which, with £341 2s 7d brought forward from last account, gives £2,508 5s 10d to be now dealt with, and this it is proposed to appropriate as follows:—

Amount as above		£2,508 5 10
Interim dividend of 3 per cent (free of income tax on £18,765 paid in September ..	£562 19 0	
It is now proposed to pay a final dividend of 7 per cent (free of income tax) on £18,765 (making 10 per cent for the year)	1,313 11 0	
To write off amount expended on new clearings, etc. in 1899	212 13 5	
		2,089 3 5
Leaving a balance to carry forward of		£419 2 5

In accordance with the Articles of Association, the Hon. D A C Scott retires from the Board, and, being eligible, offers himself for re-election. Mr. J B Laurie, C.A., offers himself for re-election as Auditor.

By the Articles of Association the Annual Ordinary Meeting has to be held each year in the month of April. In consequence of this limitation the Directors have been unable to convene the meetings as early as they would otherwise have done, and they now propose that the Articles should be altered so that in future the meetings may be held at such time as the Board see fit. For this purpose an Extraordinary General Meeting will be held at the conclusion of the Ordinary Meeting, and formal notice of the Extraordinary Meeting accompanies this Report. G. W. PAINE, Chairman 16, Philot Lane, London, E.C., 21st March.

THE VELLIKELLIE TEA COMPANY OF CEYLON, LTD.

ANNUAL REPORT.

Presented at the Third Ordinary General Meeting of the Vellikellie Tea Company, of Ceylon Limited, held at the offices of the Company, 12, Fenchurch Street, London, E.C., on Thursday, the 29th March, at two o'clock. Your Directors have the pleasure of submitting their Report and Balance sheet for the year ending 31st December, 1899.

The yield of the Estates has been 234,200 lb. of which 218,755 lb. have been shipped to London, and sold at a net average of 8d per lb. The total yield of the Estates netted 7·75d per lb.

The acreage and yields of the respective Estates were as follows:—

	Acreage.	Yield. lb.	Average per Acre. lb.	
Ouvahkellie	279 ..	118,802 ...	426	including 40 acres of young tea.
Vellikellie	259 ...	115,398 ...	446	No young tea.

The average cost of the tea f.o.b. Colombo was 30.43 cents per lb.

The crop for 1900 is estimated at 242,950 lb.

Exchange has averaged 1s 4 9-32d per rupee against 1s 4 13-64d in 1898.

The working Account discloses a surplus of receipts (£2,596 17s 1d), which after the addition of the balance brought forward (£119 16s 5d) and the deduction of dividend on Preference Shares (£285 0s 0d), of an interim dividend of of 2 per cent. on Ordinary Shares (£705), and of Preliminary Expenses (£127 8s 0d), and Income Tax (£27 17s 0d), leaves sufficient for the payment of a final dividend of 4 per cent., free of income tax, on Ordinary Share (£1,410), and a balance to be carried forward of £161 8s 6d in respect of Superintendent's commission on net profits, income tax, etc.

Mr. G A DICK, at present in Ceylon, expresses himself as thoroughly pleased with the local management of the Company's property and affairs, and considers that the present season opens with prospects of increased financial success.

Mr. P L JOHNSON retires from the Board on this occasion, and, being eligible, offers himself for re-election.

Mr. J HAMILTON ALSTON, the Auditor, also offers himself for re-election.

TALAWAKELLE ESTATES COMPANY, LTD.

ANNUAL REPORT.

Presented at the second ordinary annual general meeting of the Company, held at the Office of the Company, on Tuesday, the 3rd April, at noon.

The Directors have the pleasure to submit the balance sheet and accounts of the Company for the year ending 31s December, 1899, duly audited.

The mortgages has been reduced to £18,500, by the payment of the second instalment of £1,500 on the 31st December last, which has been charged against the profit of the year.

The estates are reported to be in excellent condition and are being liberally cultivated. The Directors are well satisfied with the result of the season's working, for although the balance carried to profit aud loss account is £344 11s 2d less than last year, the expenditure includes the sum of £200 4s 8d spent on felling and clearing 30 acres

of forest and on the purchase of tea seed; a larger acreage has been manured, and the average rate of exchange was 1/4 5-16ths against 1/4 3-16ths last year.

The total yield was 419,541 lb. Tea plucked off 802 acres, being at the rate of 523 lb. per acre costing about 27 cents, or say 4½d per lb. free on board Colombo. The gross average price of the 419,110 lb. sold in London was 10·23d per lb. Last year the crop amounted to 421,281 lb. tea, and was sold at an average price of 10·57d per lb.

The Net Profit for the year amounted to ..	£7,291 7 2	
To which has to be added Interest ...	87 6 10	
And the balance from last year of ..	924 19 9	
		£8,303 13 9
Interest on the Mortgage *less* Income Tax, has been paid, amounting to ..	£966 13 4	
The second instalment of the Mortgage of £21,500 has been paid, viz. ..	1,500 0 0	
Dividend on the 6 per cent Preference Shares for the year *less* Income Tax has been paid ..	319 0 0	
An Interim Dividend of 4 per cent, free of Income Tax, on the Ordinary Shares was paid on the 30th September ..	1,482 16 0	
Income Tax ..	320 9 4	
It is proposed—		
To pay a Final Dividend of 8½ per cent on the Ordinary Shares free of Income Tax, making 12½ per cent. for the year, which will require ..	3,150 19 0	
And to carry forward the balance of ..	563 16 1	
		£8,303 13 9

The Directors desire to place on record their appreciation of the efficient management of the estates by their Superintendent and his Staff.

The Director retiring on this occasion is Mr. Charles Murray Robertson, and he being eligible, offers himself for re-election.

Mr. John Smith, the Auditor, also retires and offers himself for re-election.—By order of the Board,

ROBERTSON, BOIS & Co., Agents and Secretaries.

SCHEDULE OF THE COMPANY'S ESTATES.

Estates.		Tea in bearing.	Forest and Timber.	Grass Land, Buildings, &c.	Approximate Total.
					Acres.
Talawakelle	...	(*a*) 302	81	(*b*) 22	405
Nanuoya	..	250	3	9	262
Kattookelle	..	250	30	8	288
Totals	..	802	114	39	955

(*a*). 3 acres leased from the Proprietors of the Boutiques.

(*b*). 2 acres leased to Messrs. Davidson and Browne.

BANDARAPOLA CEYLON COMPANY, LTD.

ANNUAL REPORT.

The following is from the report of the board of the directors presented to the shareholders at their seventh annual ordinary meeting, held at the office of the company on Thursday, April 5th:—

The directors have now the pleasure to submit to the shareholders the accounts and balance sheet for the year ending 31st December 1899.

After payment of debenture interest and all other charges, the net profits, for the year amount to £3,924 3s 6d, to which has to be added £54 6s 8d brought forward from the previous year, giving a total sum to be now dealt with of £3,978 10s 2d. An interim dividend of 3½ per cent. (free of income tax) paid in September, 1899, absorbed £735. It is now proposed to pay final dividend of 6½ per cent. (also free of income-tax), making 10 per cent. for the year, and amounting to £1,365. To write off for depreciation on buildings and machinery, 10 per cent. on £5,850 12s 5d, £585 1s 3d; to write off the capital expenditure incurred during 1899, £606 10s 6d; and to place to reserve, bringing that account up to £2,000, £475, £3,766 11s 9d; leaving a balance to carry forward of £211 18s 5d. The crops secured during the past season amounted to 524,259 lb. tea, and 295 cwt. 3 qrs. 20 lb. cocoa, against 395,270 lb. tea, and 195 cwt. 0qrs. 1lb. cocoa in 1898, showing the very satisfactory increases of 128,989 lb. and 100 cwt. 3 qr. 19 lb. respectively. The average return over all the tea in full and partial bearing was 716 lb. per acre, which shows a considerable advance on previous years, while the average price realised was 6·633d against 6·155d for 1898. The systematic manuring of the company's property is being steadily proceeded with, 225 acres having been treated during 1899 at a cost of about £630, which, as usual, is included in the year's expenditure. During the course of the year a little lot of land, about two acres, has been bought and planted, and the acreage of the estate is now approximately as follows:—Tea in full bearing, 576 acres; Tea in partial bearing, 206 acres; Tea not in bearing, 2 acres; Cocoa in full and and partial bearing, 226 acres: Grass, &c., 12 acres; Total cultivated areas, 1,022 acres: reserve, jungle, &c., 520 acre: total estate, 1,542 acres. The board again take the opportunity of recording their appreciation of the services of their Ceylon manager, Mr. James Anderson. The debenture issue remains unchanged at £14,000, of which £2,500 matured for payment on January 1st last, and were renewed for a further period of three years at five per cent interest. In accordance with the articles of Association Mr. G. W. Pain retires from the Board, and, being eligible, offers himself for re-election. Mr. John Dalgleish, C.A., also offers himself for re-election as Auditor.—

G. W. PAINE, Chairman.

—*H. and C. Mail*, March 23rd.

HIGHLAND TEA CO. OF CEYLON, LTD.

ANNUAL REPORT.

Report of the Board of Directors. Presented to the Shareholders at their Fourth Annual Ordinary Meeting held at the Office of the Company, 16, Philpot Lane, London, E.C., on 3rd April, at noon.

The Directors have pleasure in submitting to the Shareholders the Report and Accounts of the Company for the year to 31st December, 1899.

		£. s. d.
The net profits for the year amount to £3,006 8s 4d, to which has to be added £70 2s 1d brought forward from previous accounts, giving a total to be dealt with of.		3,076 10 0
	£. s. d.	
An Interim Dividend of 3 per cent (free of Income Tax) paid in September, 1899, amounted to	960 0 0	
It is now proposed to pay a Final Dividend of 4 per cent. (also free of Income Tax) (making 7 per cent for the year) absorbing	1,280 0 0	
To place to Reserve Account ..	500 0 0	
And to write off New Clearings, &c.	250 0 0	
		2,990 0 0
Leaving a balance to carry forward of		86 10 5

The total crop of Tea secured from the Company's Estates was 259,233 lb., against 212,415 lb. in 1898, and the average yield per bearing acre was 443 lb., against 352 lb. for the previous twelve months, shewing the satisfactory increases of 46,818 lb., in the total and 91 lb. in the average.

The Tea sold in London realized an average price of 8½ per lb., against 9d for the previous year, and the rate of exchange was 1/4 25/64ths, against 1/4 5/16ths.

During the past year about 135 acres have been manured at a cost of about £350, which has been debited to 1899 expenditure, although the full benefit will not be derived until current season. The estimates for the new year provide for the further treatment of 144 acres, and it is the Board's intention to go on with the systematic manuring of the Company's Properties, from which they anticipate good results to accrue.

PUNDALOYA TEA CO. OF CEYLON LTD.

ANNUAL REPORT.

The following is from the report presented at the third ordinary annual general meeting of the company, held at the office of the company on Thursday, the 29th March :—

1 The directors now submit their Report for the year ending 31st December 1899 together with the balance sheets and accounts of the company made up to that date and duly audited.

2 The tea crop amounted to 644,565lb, of which 644,035lb, shipped to London realised a gross average of 9·28d per lb. The crop exceeded that of the previous year by 16,679 lb. and as it was plucked from the same acreage the increase is satisfactory. But the most satisfactory feature is the decreased cost of production, and although this is chiefly due to fortuitous circumstances, still a saving has been effected in the principal items of expenditure, and the board have much pleasure in recording their appreciation of the successful efforts of the estate managers in this direction. During the year thirty-nine acres of forest land have been planted with tea. On surveying the clearings opened in this and previous years however it has been found that the acreage planted in 1897 and 1898 turns out to be less than was estimated, and the total planted since the formation of the company is therefore 192 acres. During 1900 it is proposed to plant a further clearing of about fifty acres, for which there is an ample supply of plants in the nurseries.

The following statement gives details which may be of interest :—

Season.	Acreage Plucked.	Total Tea Crop.	Yield per Acre.	Cost of crop per lb. f.o.b. Colombo.	Gross average price obtained per lb. Tea.	Average rate of Exchange per Rupee.	Dividend on Ordinary Shares free of Income Tax.
	acres.	lb.	lb.	d.	d.	s. d.	per ct.
1899...	1,640	644,565	393	4·31	9·28	1 4 9-32	6
1898...	1,640	627,886	383	5·29	9·27	1 4 3-16	6
1897...	1,640	623,699	380	5·22	9·52	1 3 3-8	6

The net profit for the year amounted to £8,902 9s 9d, to which has to be added interest, £129 10s 4d, and the balance from last year of £127 0s 11d, making a total of £9,159 1s 0d. The directors have already paid out of this interest for the year upon the mortgage, less income-tax, £441 17s 4d ; dividend for the year upon the 6 per cent. preference shares, less income-tax, £1,914 ; income-tax, £216 14s 8d., and they propose to deal with the balance as follows :— To pay a dividend of six per cent, free of income tax, on the ordinary shares, requiring £3,960; to transfer to reserve for depreciation and general purposes (increasing this account to £4,500), £2,000 ; and to carry forward the balance of £626 9s. It will be seen that the above balance, which it is proposed to carry forward, is considerably larger than usual. The directors deem it expedient to do this in order to provide for special expenditure on various works, which are necessary or desirable in 1900. The Director retiring on this occasion is Mr. Frederick H. Christian who being eligible offers himself for re-election. Mr. John Smith, the Auditor also retires, and offers himself for re-election.—By order of the Board,

ROBERTSON BOIS & CO.,
Agents and Secretaries.

SCHEDULE OF THE COMPANY'S ESTATES, ON 31ST DECEMBER, 1899.

Estate.	Tea in full and partial bearing.	Tea not in bearing.	Forest and Patna Land.	Fuel and Timber Plantations.	Grass Land, Buildings, and Waste.	Total Acres.
Sheen ..	482	166	150	45	52	895
Pundaloya ..	452	43	25	19	95	634
Wootton ..	306	4	—	40	28	378
Deeside ..	400	—	10	—	26	436
Total ..	1,640	213	185	104	201	2,343

—*H. and C. Mail*, March 23rd.

BATTALGALLA ESTATE CO., LTD.

ANNUAL REPORT.

The following is a copy of the tenth annual report submitted to the Shareholders at the annual meeting held in London on March 28th :—

In presenting their report on the working of the Company's business for the past year, the Directors are pleased to be able to give again a satisfactory account.

The quantity manufactured shows a slight increase on last year, being 224,803 lb., against 222,414 lb. in 1898. The average selling price in London has been 8·43d., against 9·13d. in the previous year, and in Colombo 37·04 cents, against 32 cents.

London sales amounted to 191,350 lb., realizing net £5,835 7s., and Colombo sales to 32,600 lb., realising R12,075·20. This compares with 184,055 lb., realizing £6,153 15s. 1d., and 37,430 lb. realizing R12,016·10, sold in 1898 in London and Colombo respectively.

The average rate of exchange has been 1s. 4 13/32d., against 1s. 4 9/32d. in 1898. No further expenditure has been incurred on capital account.

An interim dividend of five per cent on the shares, free of income tax, was paid in September last, and, after writing off £221 15s. from machinery account, the Directors have a balance of £856 0s. 2d. at credit of profit and loss account left to deal with. They propose to pay a final dividend of five per cent, free of income tax, absorbing £750 and to carry forward £106 0s. 2d.

In accordance with the Articles of Association, Mr. Edward H Hancock retires from the Board by rotation, and, being eligible, offers himself for re-election.

The Directors wish again to express their best thanks to the superintendent on the estate, Mr. G C R Norman, and to their Colombo Agents, Messrs. E Benham & Co., for the attention shown to the Company's interests.

BALMORAL (CEYLON) ESTATES CO., LTD.

ANNUAL REPORT.

Report presented at the second annual general meeting of the Balmoral (Ceylon) Estates Company, Limited, held at the offices of the Company, 12, Fenchurch Street, E.C., on Tuesday, the 10th April, at noon.

Your Directors have the pleasure of submitting their report on the year's working for the season ending 31st December, 1899.

The estimated crop was 470,000 lb., and the yield has been 528,804 lb., or 58,804 lb. in excess of the estimate. Exchange has averaged throughout the year 1s. 4⁴⁄₆₄d. per Re as against 1s. 4³⁄₁₆d. in 1898.

Sales in London have averaged as follows:—

Sandringham, 9·44 per lb. gross } Combined average
Clydesdale, 9·51 per lb. gross } 9·47 per lb. gross.

The aproximate acreages are as follows:—

	Full Bearing.	Partial Bearing.	Not in Bearing.	Grass, Patna, etc.	Total.
Sandringham and Yarravale ..	413	114	4	12	543
Balmoral & Clydesdale	265	115	76	170	626
	678	229	80	182	1,169

The working account discloses a balance of profit £9,168 1s. 1d., which, with the addition of £726 18s. 2d. from last year, makes a total surplus of £9,894 19s. 3d., and such sum has been applied or is recommended for application as follows:—

PAYMENTS MADE:—

	£	s.	d.
Dividend on Preference Shares, £30,000 at six per cent	1,800	0	
Interim Dividend on Ordinary Shares, £52,035 at four per cent	2,081	8	0
Income Tax	115	6	8
Preliminary Expenses have been written off	322	10	8
AND IT IS PROPOSED:			
To pay a Final Dividend of 8½ per cent on Ordinary Shares (free of Income Tax) making 12½ per cent for the year	4,422	19	6
To carry forward a balance of .. (Out of which Income Tax has to be paid).	1,152	14	5
	£9,894	19	3

Mr. J. Hamilton Alston offers himself for re-election as Auditor.

TYSPANE TEA COMPANY, LIMITED.

ANNUAL REPORT.

Report presented at the fourth ordinary general meeting of the Tyspane Tea Company, Limited, held at the offices of the Company, 12, Fenchurch Street, London, E.C., on Tuesday, the 10th April, at 2-30 p.m.

The Directors beg to submit their report on the working of the Company's estates for 1899.

The crop was 258,370 lb. this year against only 226,410 lb. in 1898, when most unfavourable weather prevailed.

Shipments to London aggregated 181,250 lb., and realised net the amount of £4,865 2s 11, or a net average of 6·44 per lb. against 183,270 lb. in 1898, bringing in net proceeds of £4,605 10s 9d, and a net average of 6·03 per lb.

Exchange averaged 1/4 23-64th per rupee as against 1/4 7 32nds in 1898.

The result of the year's working and the application or proposed application of profits may be thus summarised:—

		£	s.	d.
Profit on working during 1899 ...		£1,589	11	6
Add Balance undistributed in 1898 ...		315	3	10
		£1,904	15	4
Less Interim dividend of 3 per cent paid ..	£540 0 0			
Proposed payment of Final Dividend of 5 per cent	900 0 0			
Proposed transfer to Depreciation Reserve (making the total £500) ..	250 0 0			
Balance to be carried forward	214 15 4			
		£1,904	15	4

It will be noticed that the Directors again propose to transfer £250 to Depreciation Reserve Account, in view of the considerable further capital expenditure (about £700) to be incurred during the current season, on an increase of withering accommodation, and the purchase and erection of two new fans.

Consequent on the death of Brigade-Surgeon John Bennett, and the protracted residence abroad of Mr. E. Dumaresq Thomas, the Directors have appointed Mr. Walter Cross-Buchanan and Colonel E D Newnham-Smith to seats on the Board, and their names are now submitted for election to the shareholders.

The Auditor, Mr. J Hamilton Alston, offers himself for re-slection.

The acreage of the estates is as follows:—

			Acres.
Tea in bearing	..	..	665
Tea in partial bearing	..	..	12
Tea planted in 1895	..	..	16
do 1896	..	...	47
do 1897	..	..	10
do 1898	..	..	28
do 1899	..	..	4
Timber clearings	..	...	22
Jungle, Scrub, &c.	..	..	164
			968

YATIYANTOTA CEYLON TEA CO., LTD.

ANNUAL REPORT.

Report of the Directors submitted at the third annual general meeting of shareholders held at the London Commercial Sale-rooms, Mincing Lane, London, E.C., on Monday, the 9th April, at 2-30 p.m.

The Directors now beg to submit their report on the working of the Company for 1899, together with the duly audited accounts to 31st December of that year, and they are pleased to be able to present a statement which they trust the shareholders will join them in regarding as satisfactory.

The plucking area, in full and partial bearing, on all the estates was 2,376 acres, and from this area the crops amounted to 1,343,387 lb. In addition, 8,128 lb. tea were made from purchased leaf, giving a total crop, as shown in the estates' working account, of 1,351,515 lb.

Of this quantity, 766,575 lb. were sold in Colombo, and the balance of 584,940 lb. was shipped to London; the net average realized for the whole being 5·68d. per lb.

Including purchased leaf, the average cost f.o.b. (or delivered to buyers in Colombo) was 3·48d. per lb, at an average exchange 4 of 1s5-16d. per

rupee. The outlay includes R15,859, being the cost of cultivating 614 acres not in bearing; but on the other hand, the year's expenditure has benefited by a profit on rice issues, amounting to R8,037.

The following comparive statement will be of interest:—

Year.	Crop secured from Company's Estates. lb.	Yield per Acre. lb.	Cost of Crop. per lb.	Net av'ge Sale price per lb.
1897 ..	1,014,291	499	3·91d	4·98d
1898 ..	1,135,794	507	3·62d	5·35d
1899 ..	1,343,387	565	3·48d	5·68d

The net profit for the year amounts to £12,117 10s 6d; to which has to be added, balance from 1898 account, £779 0s 7d; together 12,896 11s 1d.

Dividends have been paid, as follows:—On the preference shares at 6 per cent per annum—on 1st July, 1899, and first January, 1900, viz:—£2,700; on the ordinary shares —on 3rd October, 1899, an interim dividend of 3 per cent was paid which absorbed £2,700=£5,400 leaving now to be dealt with £7,496 11s 1d.

This the Directors propose to appropriate a follows:—(1) In payment of a final dividend on the ordinary capital, of 4 per cent (free of income tax), making in all 7 per cent for the year £3,600; (2) in writing off cost of properties, including depreciation of machinery and buildings £1,000; (3) in carrying forward to 1900 the balance of £2,896 11s 1d=£7,496 11s 1d.

During the year there was expended on additions to buildings and machinery the sum of £1,244 3s 4d; while, on the other hand, under the Branch Roads Ordinance, a sum of £361 5s 7d was received, which has been deducted from capital expenditure. The net addition to capital outlay is therefore £882 17s 9d.

The following are details of the acreage of the different properties as on January 1st, 1900:—

Estate.	Acreage under Tea. Bearing.	Partial Bearing.	Not Bearing.	Total.	Forest Reserves, &c.	Total Acreage.
Polatagama ..	665	72	54	791	251	1,042
Weoya & New Polatagama..	632	95	...	727	345	1,072
Walpola ..	671	200	...	871	145	1,016
Rondura ..	386	133	82	601	629	1,230
	2,354	500	136	2,990	1,370	4,360

The Directors are pleased to be able to state that the reports received from Ceylon, regarding the condition of the Company's properties, are of a very satisfactory character. With the maturing of the younger fields, steadily increasing crops may be expected, but, as regards the cost of production, the Directors wish to record their opinion that, compatible with efficient working, no further reduction can be reasonably looked for.

On leaving for a short visit to Ceylon, Mr. Alexander Thomson (in view of Mr. Harries' approaching return to the Island) resigned his seat on the Board, and Mr. W H Figg was appointed to the vacancy. Mr. Harries has since resigned his Directorship, and has again taken up the management of the Walpola group, and the Visiting Agency of the other properties of the Company. Mr. Thomson has been appointed to succeed to Mr. Harries on the Board, and the appointment will be submitted for confirmation by the Shareholders. The retiring Director is Mr. W H Figg, who does not seek re-election. The Directors recommend that Mr. W J Smith, who is now on his way home from Ceylon, be elected to fill the vacancy.

Messrs. Cape and Dalgleish, C. A., offer themselves for re-election as Auditors of the Company.

SOUTH WANARAJAH TEA ESTATES, LTD.

ANNUAL REPORT.

Report of the Directors submitted to the shareholders at the Ordinary General Meeting, held at 30, Mincing Lane, E.C., on Monday, 9th April, at 12 o'clock.

The Directors have pleasure in submitting their report, also Statement of Accounts duly audited for the year 1899.

The profit for the season, after writing off thes balance of £200 of Preliminary Expenses and £300 for Depreciation, is £2,978 17s. Out of which a dividend at the rate of 6 per cent. on £7,000 preference shares has been paid £420, leaving a balance of £2,558 17s. From this the Directors recommend the payment of a dividend at the rate of 7 per cent. on £20,000 Ordinary Shares, £1,400; and propose to carry the balance to the Reserve Fund £1,158 17s

During the season the tea crop, including bought leaf, was 551,981 lb., and the gross average price 7d per lb. The increased out-turn is owing to the very satisfactory yield from the Company's estates, and to the amount of bought leaf being larger than last year. The average rate of exchange was 1s 4-27d per rupee.

The outlay on capital account, as stated in the balance sheet, was £1,079 18s 11d, the greater part of this being for a new machinery house below the present Dartry Factory. The building is now complete, and will allow of a much larger crop being dealt with in future. A new bungalow was also built on the Blackburn estate for the use of the Assistant.

The Managing Director reports that all the estates are in good order, with well-equipped factories sufficient for all requirements.

The acreages of the Company's estates are as follows:—

	Tea 3 years and over.	Young Tea.	Grass, etc.	Total.
South Wanarajah ..	230	—	25	255
Dartry ...	584	28	68	680
	814	28	93	935

Under Clause 97 of the Articles of Association, Mr. O C Magniac retires from the Board, but, being eligible, offers himself for re-election.

Messrs. Fuller, Wise and Fisher, the Auditors, also retire, but offer themselves for re-election.

THE GALAHA CEYLON TEA ESTATES AND AGENCY COMPANY, LTD.

ANNUAL REPORT.

The following is from the report of the directors, submitted to the shareholders at the third annual ordinary general meeting, held at 30, Mincing Lane, E.C., on April 10:—

The gross profit for the season, after providing for depreciation on machinery, &c., is £12,555 12s 4d; add balance of last account, £173 6s 5d; from this has to be deducted—Interest on £55,000 debentures at 5 per cent per annum, £2,750; dividends on £60,000 preference shares at 6 per cent per annum, £3,600. London charges; Fees to trustees, directors, and auditors, &c., £795 7s 10d; interest on loan, £740 17s 2d, leaving a balance of £4,842 13s 9d; which the directors propose to appropriate as follows; Transfer to

reserve fund, £1,300; dividend, 7 per cent, on £50,000 ordinary shares, £3,500; balance to carry forward, £42, 13s 9d.

Notwithstanding that the buildings, machinery, and tramway have been maintained in the highest state of efficiency during the year, the directors have written off £700 for depreciation on the machinery and tramway, and propose, in pursuance of the policy indicated in their last report, to transfer the sum of £1,300 to the reserve fund, bringing it up to £2,300. In regard to crops, the out-turn of tea has been most satisfactory, the quantity having exceeded the estimate by over 74,000 lb. The total yield, including 5,704 lb. of bought leaf, was 1,164,876 pounds, which realised a net avercage price of 6·10d per pound. The yield of cardamoms, owing to the season being too dry for that product, did not reach the estimate, the quantity secured being 15,990 lb, which sold at a net average of 2s 0·76d per lb. The rate of exchange for the company's drafts on London for the year was 1s 4·29d per rupee. The capital outlay during the season slighty exceeded the estimate, owing to the purchase of some adjoining land and the planting of more cardamoms. On December 31 last the company had under cultivation in tea 2,867 acres, of which 2,375 acres were three years old and over, and in cardamoms 230 acres. The crops of the current season are estimated at—tea, 1,168,650 pounds; and cardamoms, 24,400 pounds. In addition to the cultivated land there is a large area of forest, Patana, &c.

EDERAPOLLA TEA CO. OF CEYLON, LTD.

ANNUAL REPORT.

The Directors beg to submit to the Shareholders the report and accounts of the Company for the year ending 31st December, 1899.

Inclusive of 12,767 lb. bought leaf, the total out-turn from the three factories amounted to 466,149 lb. tea, shewing an increase of 19,123 lb, over the output for last season.

The average price realised was 6·959d. per lb. as against 6·375d. per lb, last year, and the average rate of exchange 1/4 27/64ths against 1/4½d. for 1898.

Owing to the difficulties experienced in coming to a satisfactory working arrangement with the native contractors for mining plumbago at Ardross, it was decided early last year to stop all work.

Consequent on Mr. Porter's visit to the estate in January last, work has been resumed on a basis favourable to the Company, pending the drawing out of a formal agreement, which your Directors hope shortly to complete on terms satisfactory to the contractors and the Company.

The net profit for the year amounts to £2,921 9s. 5d., which with £56 17s. 7d. brought forward from last year, gives £2,978 7s. 0d. to be now dealt with and this it is proposed to apportion as follows:—

Amonnt as above		..£2,978 7 0
Interim Dividend of three per cent (free of Income Tax) paid in September, absorbed	£765 0 0	
It is now proposed to pay, a Final Dividend of five per cent (free of Income Tax), making eight per cent for the year, absorbing ..	1,275 0 0	
To write off Estates Account	500 0 0	
To place to Reserve Account (making it £1,300) ..	300 0 0	
		2,840 0 0
Leaving a balance to carry forward of..		£138 7 0

In accordance with the Articles of Association, Mr. Robert Porter retires from the Board, and, being eligible. offers himself for re-election.

Messrs. Cape and Dalgleish, C.A., also offer themselves for re-election as Auditors.

BURNSIDE TEA COMPANY OF CEYLON, LIMITED.

ANNUAL REPORT.

The Directors beg to submit to the shareholders the Report and Accounts of the Company for the year ending 31st December, 1899.

The total crop secured from the four estates during the year was 378,608 lb. made tea, against an estimate of 370,000 lb., and 62 maunds of tea seed and 226 lb. of cardamoms were obtained as against 116¼ maunds and 202 lb. respectively for last season.

The average yield per acre was 345 lb., the average price 7 3-16d per lb., and the average rate of exchange 1s 4 13-32 d per rupee.

During a recent visit to Ceylon, Mr. Porter inspected the Company's estates and his full and interesting reports on them have afforded satisfaction to the Board.

Mr. Charles M Henry has been appointed Manager of Midlothian estate and it is hoped that under his experienced management a larger yield, and better prices may be obtained for the tea from this estate.

On the recommendation of the Manger of the Burnside Group, your Directors have purchased for R500 the land at Udispattu, on which the Wattagalla Store stands, and for which a ground rent of R40 per annum has hitherto been paid. This is the only addition to the Company's property made daring the past year.

The net profit for the year amounts to £1,276 6s 4d, which with £70 13s 8d brought forward from last account, gives 1,347 to be now dealt with, and this it is proposed to appropriate as follows:—

Amount as above		£1,347
Interim Dividend of 2½ per cent. (free of Income Tax) paid in September absorbed ..	£440	
It is now proposed to pay a final Dividend of 2½ per cent. (free of Income Tax), making 5 per cent for the year absorbing	440	
To write off Estates Account ..	300	
		1,180
Leaving a balance to carry forward of..		£167

In accordance with the Articles of Association, Mr. Robert Porter retires from the Board, and, being eligible, offers himself for re-election.

Messrs. Cape and Dalgleish, C.A., also offer themselves for re-election as Auditors.

POONAGALLA VALLEY CEYLON COMPANY, LIMITED.

ANNUAL REPORT.

The Directors beg to submit to the Shareholders the Report and Accounts of the Company for the year ending 31st December, 1899.

The net profit for the year after providing for Debenture interest and other charges, amounts to £902 2s 7d., which with £164 11s 3d. brought forward from last account, gives £1,066 13s 10d to be

now dealt with, and this it is proposed to appropriate as follows :—

		£ s d
Amount as above		1,066 13 10
Interim Dividend of 2½ per cent. (free of Income Tax) paid in September, absorbed	£437 10 0	
It is now proposed to pay a final Dividend of 2½ per cent. (free of Income Tax), making 5 per cent. for the year, absorbing	437 10 0	
		875 0 0
Leaving a balance to carry forward of		£191 13 10

The total Tea Crop secured amounted to 302,614 lb. made Tea, against an estimate of 300,000 lb., showing an excess of 2,614 lb. over the estimate, and an increase of 41,450 lb. on the crop for previous year.

The following figures afford further comparison between the season now closed and the preceding year.

Total	1899.	1898.
Tea Crop secured	302,614 lb.	261,164 lb.
Coffee Crop secured	960 bushels	724 bushels
Average Price realised for Tea	7·509d per lb.	8·182d per lb.
Rate of Exchange	1s 4 29·64d per Rupee.	1s 4 9·32d per Rupee.

The new central Factory at Poonagalla is now practically complete, except for an important addition to the withering space, which is now being carried out, and when this is in good working order an improvement in the quality of the Tea made is confidently expected.

As intimated in the Circular issued to the Shareholders on 1st February, Catton Estate, adjoining the top Boundary of Luungalla, has been purchased for £3,250, and towards providing the necessary funds for this purchase and for extending and equipping Poonagalla Factory, a Call has been made of £2 per share on 2,500 shares.

Mr. Porter has recently visited the Company's Estates, with the condition and appearance of which he was greatly pleased, and was confirmed in the opinion held by the Board, that the new purchase will prove of considerable benefit to the Company.

In accordance with the Articles of Association, Sir George A. Pilkington, M.P., retires from the Board, and being eligible, offers himself for re-election.

Messrs. Cape and Dalgleish, C.A., also offer themselves for re-election as Auditors for the current year.

AUGUSTA TEA ESTATES COMPANY, LTD.

ANNUAL REPORT.

The following is the report submitted at the third annual general meeting of the shareholders of this Company held at the offices of the Company, 51, Lime Street, E.C., on 4th April :—

The directors beg to submit the audited accounts for the year closing 31st December, 1899. The accounts show a profit of £349 8s, after paying fixed charges ; out of this amount the preference dividend has been paid, and the directors propose to write off the remainder of the preliminary expenses account, viz., £130, and £50 off machinery account, and to carry forward the small balance.

The quantity of tea manufactured during the year has been 119,596 lb., of which 104,905 lb. have been sold in London at an average price of 6.94 per lb., and 14 691 lb. in Colombo at an average of 31 cents per lb. The average rate of exchange has been 1s 4 13-32d, and the average cost of production 28 cents, or 4·60d per lb. f.o.b. Colombo.

The year has been a more favorable one, prices have been higher, and the garden has produced more tea, and it is hoped that the coming season will also prove satisfactory.

By the articles of Association, Mr. T J Lawrance retires by rotation from the Board, and, being eligible, offers himself for re-election.

VISIT OF MR. SMITHETT TO CEYLON.

Mr. Smithett, senior (of the well-known Mincing Lane Firm) who arrived in Ceylon some time ago, returned to Colombo after a very pleasant visit upcountry. He went as far as Bandarawela, and also travelled through Maskeliya, Matale and Dolosbage. He is very much pleased with his visit, which has been a most enjoyable one. He walked through a number of tea and cacao estates, among them being Wariapola where he was shown over by Mr. Dickinson, and Pallekele and many others. As his trip was mainly on pleasure, he did not occupy his time in closely inspecting any of the estates or tea factories, although during his short stay upcountry, he travelled a great deal, covering 20 to 25 miles a day. Regarding the future of tea, Mr. Smithett is of opinion that Ceylon will hold her own for a long time to come, and he does not think too much tea is yet made in the island. Every pound of tea manufactured is put in the market and finds ready buyers, and the product is being pushed on in almost all parts of the world. Speaking of China tea, Mr. Smithett thinks that the Celestials as a body are not an exporting nation, hence the great fall in their teas. Ceylon is alright in his opinion as far as tea is concerned. It is most probable, Mr. Smithett added, that the price of fine teas may keep up and the average altogether for last year for Ceylon teas was a very good one. On the subject of cacao, Mr. Smithett says that the production and consumption of this product is extending in every direction. At the beginning of the current "cacao" year there was a shortage in crop and in stock ; but it is very likely to be made good before the close of the year.

Mr. Smithett, who is accompanied by the Misses Smithett and Miss Wardell, left for London on 10th April by the P. & O. ss, "Malta." The plan previously made was to visit Calcutta and Darjeeling; but owing to the prevalence of the plague in Calcutta, the arrangement had to be altered.

We trust Mr. Smithett and his party will have had a safe and enjoyable return home and carried away pleasant recollections of their visit to this

"Eden of the Eastern wave."

ORANGES AND LEMONS in profusion (in the Riviera) hang on their parent trees, and bananas ripen, in their second year, in the open air ; the ponderous bunches, however, have to be protected in wire cages from the depredations of rats, which live chiefly in the upper branches of the orange trees, and take heavy toll of the golden fruit.—*Travel.*

GAME IN THE MATALE DISTRICT.

INTERESTING ARTICLE IN "THE FIELD"

It is a common occurrence to hear, in connection with the advice given to a young man with planting intentions, words to the following effect :—"Don't you imagine, young man, that you are going to get hunting anywhere about the estates in Ceylon. Look at me! I have been a planter for twenty-five years. The only game I have seen was a hare; that was mobbed by my pluckers." I commence with this statement, because when, quite twenty-five years ago, I proposed to take up coffee-planting as a business, and big game hunting as a no less secondary pursuit. Words much to this effect troubled my mind during my outward voyage, which the old Messageries boat took twenty-six days to accomplish from Marseilles to Point de Galle. I still live to thank that honest old Channel Islander for his warning; it has served its purpose. Business is business, but none the less sport is sport; and, as my good friend has long since passed away, I can give no offence by saying that I have proved his statement to be incorrect—at least in part; for, of course, in Ceylon, as in other countries,

GAME MUST BE SOUGHT FOR

where it is likely to be found. The lover of society, with its concomitant joys, lawn tennis and croquet meets, &c., will naturally seek a billet or purchase a property, if he be a man of capital, in one of the so-called "favoured districts."

The general feature of these districts at the present time is one unbroken sheet of tea, tea, tea, stretching for miles, interspersed only with lines of grevilleas, the silver oak of the southern colonies, and a few clumps of gums and wattles. In such a country *Lepus nigricollis* is probably the only game which exists; such a district was probably in my old friend's mind when he used that warning note. My own proclivities, though by no means adverse to the company of my fellow creatures, led me to avoid such a country, and to look for employment rather in such places as would be most likely either to hold game, or to be within easy reach of its haunts. When, therefore, on arrival at Kandy, I became attached as assistant to a well-known

ESTATE ONLY FIVE MILES OUT

of that town, my eyes began to wander around; finally, from wandering they commenced to settle, like the compass needle, and the direction of that settlement was, also like that of the needle, due north.

In less than eighteen months I received the offer of the choice of two berths; one in a favoured district, and the other in the old and, as it was then considered, worn-out coffee district of Matale, lying some twenty to thirty miles north of Kandy. Needless to say, in spite of its imaginary drawbacks, I at once decided on the latter. The old district has now passed through its trials, and we can show fine fields of tea, though perhaps not such great stretches of it as some of those highly favoured and highly flavoured places where the day's work winds up with social gatherings and even at-homes and dancing; but we can show besides, what these more civilised places certainly canno show, fine clearings of cardamoms, cacao, coconuts, rubber, and vanilla walks, and amongst minerals, no small store of plumbago. On the whole, therefore, we are very well satisfied. Here amongst these northern outposts of the great mountain system of the island has been my home since the middle "seventies"—an

IDEAL HOME FOR A NOT TOO AMBITIOUS SPORTSMAN.

I have spoken of these hills as the northern outpost hills, and such they are, culminating at an elevation of 6200 ft., but lower spurs stretch north and east into the level plains, the home of the herd elephant, buffalo, leopard, bear, besides, of course, deer, peafowl, and in the season many species of waterfowl. Here we are perched 4,000 odd feet up in the mountains, yet not fifteen miles distant as the crow flies, and not more than one day's march with a good horse, from all this wealth of game. But of that more perhaps hereafter. We have now only to deal with such as comes within our daily observation.

In a district with such a range of climate and elevation as this possesses, every man can suit his taste. The lover of warmth and constant sunshine will find a California in miniature amongst the cacao walks and coconut groves of the Matale valley. Here at the

LITTLE TOWN OF MATALE,

the headquarters of the Government Agent, is the railway terminus, distant hence some sixteen miles. From this point a "bike" journey of about three hours will land the sportsman in good game country. The majority of men will, however, prefer the cooler climate of the hills, and they have for choice any elevation from 700 ft. to 5,000 ft. My own modest home stands at an elevation of 4,200 ft., almost in the centre of a natural amphitheatre formed by a lofty ridge and its projecting cliff-browed spur rising to 6,000 ft.

This forest-clad range, its loftier ridges scantily clad with gnarled and knotted rhododendrons, gay osbeckia bushes, downy slopes of tassock grass, with great slabs of the mother rock glistening in the warm sunshine;—this is a never-ending source of interest and pleasure. From the bungalow to the highest point of the ridge may be some 2,500 yards, but the atmosphere is so clear that the movement of game, and even of such smaller animals as Wanderoo monkeys (Presbytes), which frequent the open grass and slabs at mid-day to bask and gambol, are clearly visible without the aid of field glasses. In the fine weather, after the N.E. monsoon, from January to May, when the ridge is usually free from clouds, sambur are rarely out of sight, except at mid-day; sometimes as many as eight or ten may be seen at one time. One herd of five, with a magnificent master and a very warrantable second in command, we have seen almost daily for several weeks, and only last week took toll in the life of No. 2. Neither is

MY LORD

the elephant absent we have occasionally seen as many as three, but one old fellow is always with us, generally on view and more or less under our protection. A troublesome old gentleman; not so much

perhaps, owing to his own temper, never good at the best of times, as to the particular devotion of our dogs to the sport of elephant baiting. Elephant once winded, though perhaps half a mile distant, there is no getting those dogs off. A wild elephant bayed by a pack of dogs is a sight well worth seeing, and perhaps worth the risk of seeing once, not oftener. The one occasion on which I actually witnessed such a scene is not likely to fade from my memory. The terrible turmoil and tumult caused by the baying hounds, and the wrathful screams and trumpetings of

THE INDIGNANT ELEPHANT,

the wrenching off and thrashing of branches. the rattle of pebbles, the final flight of self and dog boy down the narrow game track, elephant giving chase, dogs, full cry bringing up the rear and threatening flanks Not again will I venture to view an elephant at bay in heavy jungle armed with a '40 Winchester rifle and a Canadian hand-axe. We escaped chiefly owing to an intimate knowledge of the forest, and the propinquity of some old sawpits, in which our pursuer got a check which enabled us to make the nearest tea clearing. The hounds thereafter enjoyed another good half hour's baiting, and came home beaming with pleasure at their morning's fun.

Sambur are, as I have inferred, very plentiful, being constantly supplied with reinforcements from the unbroken wilderness, extending from our ridge east and north; but, owing to a partial annual migration. more plentiful during the N. E. monsoon and its later fine weather season. During the dry season—February and March—these deer are found low down, and come into the tea and cardamoms at night, and may be heard roaring up to ten o'clock in the morning. I have heard a stag as late as ten o'clock roar a dozen times, apparently challenging the wailing cry of old watchmen set to frighten off monkeys in the cardamom clearing. At any rate, the stag replied roar for shout for fully a quarter of an hour.

Pig, which afford excellent sport hunted with the kind of dogs we keep—the only kind suitable to a very extensive and broken country, a mixed lot of half-breeds—are generally plentiful, and in some seasons extraordinarily numerous. The hill-country pig differs in one respect from his relative of the plains in being more massively built, of greater length, but comparatively lower at the withers. We can generally

"RAID PIG"

on the usual estate rounds without interfering with our day's work, more especially by making an earlier start than usual, and taking up a trail from one of the ravines and swamps interspersed in the tea fields where pig come down at night to grub. I have accounted for over thirty pig in a season by this plan. A very large, but not too old, boar will often supply sport and continue to inflict reverses and damages for weeks before he is finally brought home trotters up. This particular branch of hunting has a peculiar fascination of its own; the strained earnestness of one moment giving way, perhaps, at the next to some ludicrous incident. On the whole, however, it may b said of the hill-born pig that familiarity with him does not breed contempt, but usually something very much the reverse.

Amongst other game which this district holds is the barking deer, common in almost any low jungle and scrubland below 3,500 ft.

THE SPOTTED AXIS,

though numerous in the plains, is of less frequent occurrence in the planting district of Matale, yet fairly common about the estates lying in the northern end of the valley. With the barking deer excellent sport, similar in all respects to roedeer hunting, may be had with dogs on the open downs interspersed with clumps of trees and bracken and fern brake, which are a feature - the most beautiful feature—of the eastern slopes of our Matale Hill, and many an enjoyable camp can I recall in the company of old sporting chums. Given fine weather, it has always been good sport. Perhaps one, perhaps even three deer bagged before 9 a.m., not to mention such stray items as hare, jungle fowl, pigeon, and perhaps a couple or so of snipe.

As I look up from my writing table the upper slopes of the great ridge are glowing with the last rays of sunset. Below all the heavy forest is almost black. Far away to the left, just below the ridge, three objects keep appearing and disappearing. There is a red flash and it is gone, then another and another. The

SAMBUR ARE COMING DOWN

to graze on the young nilloo shoots. They are more succulent than on the eastern slope. The flanks of these deer are very glossy, and reflect the light to an extraordinary degree. Now at sunset they flash glowing red; after ten in the morning you should look for something almost white; at and soon after dawn, looking east, they will show almost black. Get the glasses off the old boar's head in the porch, and let us have a look at this lot. What do you make them out to be? All three bucks, all three in the pink of condition, but only one with a good head. They will disperse later on when they have done a bit of swaggering on that conical knoll, and we will start tomorrow early with a bottle of cold tea and a couple of cabin biscuits in the cartridge bag, and see if we can strike the trail of this fine fellow.
—*Field*, March 31. E.G.R.

THE ASSAM RUBBER PLANTATIONS.—The total quantity of home and foreign rubber turned out from the forests of Assam during 1898-99 was 3,599 maunds, which, compared with the total of the previous year showed an increase of 753 maunds. The increased outturn was most marked in the Cachar, Darrang and Lakhimpur Forest Divisions and was due to more active operations having been carried out in the Manipur, Dalfa, Naga, and other hills in response to an increased demand accompanied by a high rise in prices. The outturn, though considerably above that of the previous year, was below that of 1896-97, which was over 4,000 maunds, and is due to the constant but steady destruction of the trees by the excessive tapping of the previous years, induced by the great demand for rubber, which fetches about four shillings a pound on the London market.—*Pioneer*.

AN ELEPHANT HUNT:

IN THE SAHARANPUR SIWALIKS.

The junior classes of Imperial Forest School were encamped at Dolkhand on January 25th. They were to march on to Beribara early next morning. But the sun of the 26th, which was somewhat late in shewing itself, having to pierce through a heavy cloak of mist, saw them mustered strong at Chillawala, 5 miles in the opposite direction. Never was an order more welcome or more heartily appreciated than the one that was circulated late in the evening of the 25th postponing the march and permitting the students to witness the Khedda that was going to be held in the Siwaliks the next day, and the majority of them sat up the greater part of the night through sheer excitement. The Khedda party in question belonged to the Balrampur State. They had

ALREADY CAPTURED ONE ELEPHANT

in the Eastern Dun, and a large number in the hill forests of the Garhwal district, across the Ganges, and had, the previous day, moved from Beribara to Chilawala in hopes of capturing those that had been reported to have been sighted a day or two back in the hills behind that place.

The left bank of Chillawali Rau presented today a scene very different from its wont. There stood, tied to the strong-rooted Zizyphus and other study trees close upon a hundred elephants of all sizes—from the gigantic Negandar Gaj to the newly caught liliputian baby, with whom Nageshwar Parsad, another gigantic tusker is fond of playing. In low sheds, hastily put up the previous day, lay the caretakers and their families and the beaters of the Khedda, while shouldaries were pitched on one side to accommodate a small detachment of the State Cavalry together with the captain and his assistants, altogether a motley band quite 500 strong. Then there were a hundred camels and an adequate number of camel-men, no novelties to the Forest School. Add to all this the village folk, whom curiosity had brought there in large numbers.

After we had seen all the elephants, played with the youngest baby, and teased and vexed others until long after the appointed time, 8 o'clock, we ourselves began to show signs of impatience tinged with vague forebodings of disappointment, when a very powerful voice was heard above all the tumult. This was the order for

WATERING THE NEWLY-CAUGHT ELEPHANTS

which the Mahawats proceeded to obey at once. Two tamed elephants were detailed to each new captive, one on either side, with a strong hawser from neck to neck. The majority had been caught only two weeks ago, yet they did not seem to require much tugging or goading from their warders, and went to, and came back from the water very much of their own accord. While this was going on, the same voice shouted out an order for the *Dharwalas* or beaters to receive blank cartridges and percussion caps, and forthwith Jamadar Sultan Khan was seen dealing them out at the rate of six per gun. It was past 9 o'clock now, and our impatience was pitched a tone higher. We were told that scouts had been posted who were expected every moment to transmit *khabbar* by signal as to the exact position of the wild elephants. At 10 a.m., a bugle call announced that the much wished for *khabbar* had came at last, and thereupon the elephants were made ready for the sport.

Another, and yet another bugle sound, and the beaters filed out and let the van at a fast pace up the Chillawali Rau. They were about a hundred strong, draped in no particular uniform, and armed with fire-arms of all imaginable sizes and shapes, with the exception of a few stalwart Purbias who clung affectionately to the ancestral male-bamboo *lathis*, which, by the way, were by no means less effective than the guns for offensive or defensive purposes. They were closely followed by a long line of trained elephants, not less than sixty in number, headed by the formidable-looking Jamna Parsad whom Nanneh Khan the captain chose for his mount, all marching on in profound silence. Only

FOUR ELEPHANTS CARRIED PADS

all the rest were to participate in the Khedda, although it seemed rather incredible, for they were armed with nothing more formidable than a strong rope. The students of the Forest School were given a ride on these latter as far as the first halt, which was made where the Gadawali Sot joins the main Rau, about four miles from the Forest Chauki at Chillawalla. The *khabbar* was to the effect that there were seven wild elephants near the head of the Gadawali Sot. The beaters therefore parted company here to take up positions along the water-parting of the Sot, and shortly afterwards the captain proceeded up the Sot, very slowly and cautiously followed by the students, now on foot, with strict injunctions from him not make any noise.

We proceeded with the rest of the elephants up the Gadawali Sot, which became narrower and narrower as the mouths of successive tributaries were passed. Presently we sighted the captain coming towards us with a very long face, and we whispered to one another "what's the matter?' The matter appeared to be very serious indeed, and for a while the 'long face' malady was infectious. Before the beaters were well in possession of the vantage points

THE WILY HERD

had scented our designs had crossed clean over to the next *Khol*, and there was nothing for it but to beat a retreat with the forlorn hope of once more getting near them in time for a drive that day, for it was past 1 o'clock already.

The students, who had taken up positions high up on the hills, were then signalled to come down, and were told to be particularly careful not to make any noise until the game was over or finally given up, and it must be said to their credit that they obeyed this order very loyally.

Slowly then and not in an enviable frame of mind we came down the Gadawali Sot, and were once again in the main Rau, which we followed up for about a mile, and then entered a tributary to the left called the Patdwari Sot. This Sot splits into two about a mile from its mouth, leaving a triangular peninsula between the arms, the third side being formed by a precipitous cliff the crest of which is the main water-parting of the Siwalik range. At the point of junction of the two streams there is a

VERY STEEP KNIFE-EDGE SPUR

on the east or left bank, and a hill with a moderate declivity—over which, in fact, the elephants had entered this Khol—on the opposite side. We took up our positions on the former, from which we could command a full view of the forest clad peninsula where the elephants were hiding. Meanwhile, the Khedda elephants spread them-

selves along the streams across which alone was escape possible for their besieged brethren.

No sooner had this manœuvre been completed than the guns which were so long invisible, began firing from the heights overlooking the peninsula. Presently there was a movement in the forest, boulders rolled crashing down, bamboos and forest trees cracked and in a small glade we became aware of

SEVEN WILD ELEPHANTS

mad with fear and rushing helter-skelter through the jungle. For aught we knew, they might have been in that very glade ever since we had perched ourselves on our hill, but the unwashed brutes had a grey earthy hue, very different from the glossy slaty black of their domesticated friends and looked for all the world like huge ant-hills or exposed hill sides, both of which are common in the locality. With incredible agility the well-trained Khedda elephants hemmed them in from all sides, and very soon succeeded in dividing the herd. The main tactics of the captain seemed to be to avoid frontal attack, and to cut out individuals from the herd as opportunity offered. Each individual so cut out was pursued by several noosing elephants while the remainder kept guard.

The first capture was a female infant about a year old, which was noosed with great ease by Mahawat Allan Khan from Gaindkali. Besides being young the baby was maimed, facts which discounted the value of the capture. Little as she was she seemed to be of a vicious temper, for besides giving desperate tugs at her hawser oftener than any other captive, it was she that did nearly all the trumpeting, and was most troublesome in sundry other ways. The next capture was the largest female in the herd, presumably the baby's mother who, however, never missed an opportunity to disavow the relationship. She was lassoed by Saiti from the neck of Vinayak Parsad, a moderate size young elephant, of rather a slim build, who rejoices in only one tuck, but has, nevertheless, helped to capture more elephants than any of his stronger comrades. Next followed in quick succession four others, ranging from 8 to 18 years in age, two of which were males and two females.

But the most exciting event of the day had yet to take place. Of the herd of seven, six were already accounted for, but

THE HUGE TUSKER

who was seen towering over the rest, was not forthcoming. He had gone up the peninsula, and no amount of firing had for a time any effect towards dislodging him. Batches of Khedda elephants were then despatched to hunt him out. As soon as he sighted them the gigantic beast rushed down the hill with tremendous speed, smashing everything before him with a terrific crash. In a moment he was down in the Rau, crossed it, and made straight for the hill on the opposite side, and it seemed for a while as if he would cross over again to the Gadawali Valley. The Khedda elephants, however, foresaw this, and after a hard struggle succeeded in heading him back to the Rau. Once in the open, he ran straight down the Rau with a speed which must be witnessed to be fully realized. The mugrimen hammered harder than ever, the Mahawats caused streams of gore to flow down the heads, ears, and trunks of their charges, and the race was furious and prolonged. But the odds were very much against the poor wild brute whom at last Mahawat Bandu lassoed from Deo Parsad itself a splendid animal. He was promptly assisted by Nagendar Gaj, the pride of the Khedda. Then followed a brief period of trumpeting trugging and rampage, which however, ceased when about a score of tame elephants closed round him on all sides with their heads and all their might brought to bear on him, Thus reveted he was powerless to move. The

FEARLESS MUGRIMEN

then crept underneath his huge barrel and hobbled his hind legs with a very tight bandage of hawsers. Examined at close quarters, he turned out to be a fine young animal, for he was not more than 35, with a most splendid head. Altogether he was a most valuable capture, although the tusks were not particularly big, owing, we were told, to his constantly rubbing them on sand or stone, and they had yet to grow.

Thus ended a most successful Khedda operation in which neither a single elephant, wild or tame, was killed or wounded, nor did anything happen to the brave men who participated in it, beyond a few trifling cuts and bruises such as they are fairly well used to.

The *modus operandi* is most charmingly simple and judging from results, attended with a minimum of danger. Each elephant carries two men, the mahawat and an attendant called mugri-walla. It also carries on a small pad a strong cotton rope, 20 to 25 feet long, and about 2 inches in diameter, one end of which is securely tied to the elephant's neck, the other end being formed into a running noose. The attendant is armed with a spiked wooden club about a foot-and-half long, with which he beats the elephant near the root of its tail. Attached to the sides of the pad are the ends of a short rope somewhat resembling a pair of reins. The mugri-walla stands near the root of the elephants tail. With his left hand he keeps hold of the rope to maintain his position. With his right he vigorously plies the club. The manner in which he eftly avoids branches of trees and other obstruc ions in his way, now by leaning back or swinging round, and now by leaping over them when he is in danger of being brushed off, is simply marvellous. As soon

AS A WILD ELEPHANT

is approached near enough, the mahawat lifts the noose end of the rope, his attendant promptly lifts the rest of it, and then they together throw it over the head of the desired captive, who is kept running on ahead all the time and never given a chance to turn round and charge, If he has the trunk uplifted, which however he seldom has, the captors try to throw the noose round it, in which case it readily slides on to the neck. But more generally the terrified beast carries his trunk closely coiled, in which case the noose is made wide enough to go both round the head and the trunk. As soon as he feels the rope on the trunk, he lifts it, and naturally shoots ahead with great fury, both actions helping to bring the noose well round the neck. The capturing elephant keeps running after him as fast as it can to prevent strangulation. Almost simultaneously a second trained elephant hastens to the rescue, and throws another rope round the neck of the captive. Between the two the refractory brute is now steered pretty straight, and presently he finds himself surrounded by as many Khedda elephants as are available, and completely nonplussed. From this moment, his stubbornness gradually wears out, and in about two months' time, the whilom monarch of the forests becomes a willing slave of man, perchance a captor of his kin.—*Indian Forester*, March. U.K.

PLANTING NOTES.

Mining Leases and Royalties in India.—We direct attention to the letter of the Secretary of the Chamber of Mines on the above subject, in which he shows that 2½ per cent. *ad valorem* is the levy made by the Indian Government on plumbago. Taking so high an average value as £80 per ton, that would only mean £2 per ton; but of course this is for plumbago dug on private lands—if Government lands are entered on there will require to be a lease and annual rent besides.

Rubber.—The Burma Government contemplate starting a Government rubber plantation of 10,000 acres, which will probably be in the Mergui district. This Sir Frederick Fryer thinks should bring some benefit in the shape of a demand for labour, and will increase the trade of Mergui. It has been decided to set aside areas for unrestricted taungya cultivation in the Maliwun township. In these areas people will be allowed to cut down reserved trees, and it is reported that 191 families are prepared to take advantage of this concession. Arrangements have also been made to facilitate the supply of opium to Malays in Maliwun, who were said to be leaving the township because they could not procure opium there as cheaply as they could in Siam.—*Indian Agriculturist*, April 2.

Curing of Liberian Coffee.—One of the drawbacks to the use of Liberian Coffee has been a strong unpleasant taste, and various remedies have been suggested. It has now been successfully overcome on the Borneo Coffee Co.'s estate in Marudu Bay by washing the coffee after pulping and before fermenting. The washed coffee is in this way cleaned from all the minute bits of pulp which doubtless imparted an unpleasant taste and before being placed in the fermenting cistern it is thrown into large baskets "coal baskets" for a few minutes to allow the surplus water to drain off and is then fermented in a comparatively dry state. To increase the heat sacks are placed on the top of the coffee and after some hours the top layer is turned in below so as to ferment the parcel equally. Liberian Coffee, properly cured, has a splendid flavour which is well-known by the trade, who value it highly owing to the amount of chicory it can assimilate. As an after dinner coffee nothing comes up to pure Liberian Coffee if properly cured.—*British North Borneo Herald*, March 1.

The Indian Tea Trade.—Messrs. Thomas and Company—says the *Pioneer*,—publish in connection with their annual review of the Calcutta tea market an extremely interesting chart of the distribution of the Indian tea crop throughout the world. The most remarkable feature of the past season has been the growth of the North American trade, which increased by nearly 100 per cent. The figures for the last decade are an astonishing record of successful business enterprise. In 1890-1. North America took 133,290 lb. of Indian tea. There was a substantial increase the next year and then a drop of a hundred thousand pounds. But since that date the trade has grown by leaps and bounds, until in 1898 99 it had reached 3,032,027 lb., while in the present year no less than 6,191,685 lb. have been disposed of. In Australia and New Zealand too, the sale of Indian teas has largely increased, the figures for the last two years being 6,293,950 lb. and 8,229,190 lb., respectively. It is satisfactory to learn that the prospects of the coming season, so far as the Calcutta trade is concerned, are also considered good.

"The Tropical Agriculturist."—A busy planter writes:—"I always find it very convenient to note all the Tea Companies' Reports embodied in the *T.A.* from year to year—it is so easy to refer to them by the index. I trust, therefore, you are keeping up the practice of reprinting such reports." —We can assure our friend that careful attention is paid to giving a full reproduction in our monthly of all such Reports bearing on Ceylon.

Tea and Coconuts.—With reference to a paragraph from our evening contemporary, which we recently reproduced, a Veyangoda proprietor writes:—"There is evidence in the orders I continue to receive for seed coconuts and plants, that the planter has not lost faith in the combination of tea and coconuts. I have an order now for four thousand seed nuts from Yatiyantota. Ultimately, the shade created by spreading fronds and the net work of vigorous roots must prevent the profitable cropping of tea under coconuts; but for six or seven years the tea leaf should be a valuable catch-crop, while the cultivation of the tea should hasten the bearing of the coconuts.

Tea Planters in Java—says the Straits *Times*—rejoice at the progress in the cultivation of the shrub there last year. The advance was slow but none the less sure. The prices for the leaf were not high. But countervailing advantage lies in the fact that they are less liable to fluctuations than quotations for other produce articles exported from the island. The fluctuations in the price of cinchona, sugar, coffee, and indigo are so widely divergent that tea-growing in Java is the most stable line of cultivation open to investors. Tea planters had little to complain of as to insect-ravages last year, In the planting districts of West Java, the produce crops now suffer heavily from the unusal wetness of the season, The tea crop, this year, is expected to be of inferior quality. Coffee refuses to ripen well. The barries in many cases rot on the trees. Cinchona trees show signs of canker on branches and roots. The roads are in an almost impassable condition. It is well nigh impracticable for planters to convey produce to market.

"Is Tea Injurious?"—We are surprised, and rather disgusted to find our contemporary of the *American Grocer* republishing under the above heading, wellnigh a couple of columns of opinions—medical and otherwise—adverse to the use of tea, without a word on the other side! Is the *Grocer* tied up in the coffee or cacao interest? Surely the Editor is aware that the people most freely consuming tea—the Australians to wit—are among the healthiest and most athletic. And we fancy there are more dyspeptics per thousand of population to be picked up in the United States than in the United Kingdom. We know that both the *Grocer* and *Christian Advocate* are widely circulated in America, and to get the Editors to recognise the other side, we are sending them copies of our tri-lingual letter and of Mr. Kelway Bamber's "Dietetics of Tea." Our Commissioner should go and interview the Editors in question and get them to make amends.

WYNAAD NOTES.

(From an ex-Ceylon Planter.)

April 19.

While you appear to be having, or to have had, a somewhat longish spell of dry weather, through much of Ceylon, the Wynaad has been favoured with a great deal of

HEAVY RAIN,

and more especially since the 1st instant. On Jan. 10th, a thunderstorm gave us from ·50 to 1·40 over some 250 square miles of the country. On the 26th of the following month, we registered from ·25 to ·87 upon about the same extent, but south of the first downpour, while between the 18th ultimo, and the 31st idem, the rainfall varied between ·20 and 1·50 and several inches have been recorded this month, Good Friday, being one of the wettest days the writer has ever known during pluvius April,—the rain scarcely ceasing between 2 and 10 p.m.

This seasonable weather, has proved most beneficial to all growing vegetation,

THE COFFEE BUSHES

having been covered with several splendid blossoms, all of which appear to have set extremely well, while TEA, old and young, has had a famous start—more particularly during the past fortnight.

Though the Wynaad has been so highly favoured in the matter of these spring storms, other South Indian planting districts, such as Coorg and Mysore, are reported to have experienced an uninterrupted drought from the first week in November to the end of March ; but as coffee seems to be exceptionally well-cared for in those regions, both in the matter of shade, and high cultivation, fine crops are likely to be the rule, provided a heavy plump of rain *inaugurates* the insetting of the blossoming showers in these localities and no *hail* descends on the *open flower*.

The Wynaad has been entirely depleted of lowcountry

WEST COAST LABOUR,

the whole of which left the plateau two weeks ago, to foregather at the first of the two great annual Malabar Feasts, known as the "Vishoo," the ceremonies in connection with which drew to a close on Easter Monday, so that we shall have our Chermers, Kanacas, Tyens, Nairs and Moplahs trooping back in full force, in a few days, and in greater numbers than usual, as the failure of the wet crops, all over Malabar towards the close of 1899, has compelled, and will compel, a much larger proportion of these people to visit the district in search of employment, than under ordinary circumstances.

For a similar reason, the Mysore Canarese are likely to return to estates this spring, many weeks earlier than is their usual practice, for the distress now prevalent in the adjoining province—as the immediate consequence of failure of the Raggi harvest which forms the chief food staple of the whole of the labouring classes in Mysore—is likely to drive in the Canarese at an early date.

With two *successive* indifferent Raggi crops, the stocks of such grain held by all the poorer classes of ryots, have been almost entirely exhausted, and from advices just received, from unimpeachable sources, I gather that in addition to losing their cattle wholesale, from a deficiency in pasture and water, these unlucky Mysoreans are compelled to eke out their scanty food supply, with jungle produce, such as edible roots and berries. With such a

DEPLORABLE CRISIS

widely prevalent—it seems extraordinary that the Mysore Durbar are unable to allot funds for relief works—though a sum of a lakhs of rupees has just been assigned to defray the outlay incidental to the erection of a building, to be specially provided, on the occasion of the wedding ceremonials of the youthful Maharaja and of his younger sister on the 6th June next.

The area already planted with

TEA,

in South and South-East Wynaad, is to be largely increased during the ensuing South-West Monsoon ; and work on such extensions, is in a very advanced condition already, so that the whole of such tracts ought to be planted up by the end of June, if the monsoon reaches the west coast on a normal date; and as for the reasons already detailed, we are likely to suffer from a plethora of labour, there should be no difficulty in keeping every coffee and tea property in the acme of good order this year.

The improved tone of the home coffee markets, consequent (it is assumed in well informed quarters) on *consumption* having overtaken *supply*, is also likely to stimulate farther extensions under coffee, especially in North Wynaad, where some really splendid Arabica has been developed, within the past quinquennium, under the auspices of prominent Coorg planters—in proximity to the Coorg and Mysore boundary lines.

Another product, which is likely to be planted over a great deal of suitable land this year is

PEPPER

the market for which continues to be very firm. Where the best bearing variety of the pepper vine is cultivated, or rather grown—for no special cultivation is necessary—in conjunction with coffee, a nett profit on the sale of the spice of fully R250* per acre can be reasonably expected ; while pepper grown alone—where the vines have once been thoroughly well started—can be well cared for on an outlay of ten rupees per acre annually, and upon such tracts the nett profit should not fall below R500.†

HYBRID COFFEE

continues to promise extremely well, as all the best original trees are undoubtedly immune from leaf-disease,—though some are prone to occasional attacks of white bug—and by judiciously selecting the best strain, from the third generation, we are gradually covering our hybrid coffee lands, with very fine trees of a highly product ive bearing capa-

* "The poor Old Women"—a cryptic name for Ireland. Pronounced Shan Van Vo.

† We should say these figures are far too high or apply only to small patches highly cared for, —ED, *T.A.*

city and entirely free from leaf blights, the produce from which is valued by London brokers at an all round average of over £100 per ton.

Just now we are having a good deal of sickness in the district, for, in addition to the ordinary maladies prevalent at this time of year, such as malarial fever and dysentery amongst the native population, smallpox is rife and is claiming its victims from the local or indigenous tribes.

RUBBER INDUSTRY IN MEXICO.

The United States Consul at Mexico in a recent report on the rubber industry of that country, says that land suited to the growth of rubber can be had anywhere from 4s to 5s per acre. The titles will be found vested in private ownership: none are in the hands of the Government. The land will in all cases be a dense jungle. Cacao, pineapples and bananas can be grown as well as rubber. Prairie grass land is not adapted to this product. Rubber may be planted from branch cuttings, root cuttings, and from trees grown in the nursery from seeds. From 150 to 300 trees are set to the acre, and they are tapped anywhere from five to fifteen years after planting, according to the locality. Under the most favourable conditions a tree will yield an average of one to two pounds of rubber. The present market price at Frontera is about 2s 9d per lb. The tree is long lived and the production increases with age. No machinery is required for handling the gum. The rubber districts of Mexico, as a rule, are remote from centres of population; they are always thinly inhabited. Oriental labour must be imported. The approximate wage is four shillings per day. Knowledge of the language of the country is desirable for a person about to engage in the cultivation of rubber. As to the comparative cost of living in the United States and Mexico, the Consul is of opinion that if a man is content to live in Mexico as the natives live, he can exist very cheaply; but if he desires to live in the manner to which he is accustomed in the United States—eat the same food, prepared in the same way—it will cost him a great deal more than at home.

The rubber tree of Mexico is found growing from the Guatemalan boundary as far north as Tuxpan on the Gulf coast, and as far north as Colina on the Pacific coast. The maturity of the tree and its production are measured by the quantity and uniform distribution of the rainfall, together with high temperature throughout the year. In low altitudes, localities of 150 and 200 inches of rainfall distributed over eight or ten months in the year enjoy the best conditions, although rubber does grow where they have six months of rain and six months of dry weather; but in these localities it requires from twelve to fifteen years for the tree to mature, while in districts with an ample rainfall it will flower within five or six years.—*India-Rubber Journal*, April 2.

GROWTH AND MANUFACTURE OF SUGAR.

AN EXPERT OPINION FROM JAMAICA.

To the Editor of the *Times*.

Sir,—At the meeting of the Association of Chambers of Commerce, reported upon in your issue of yesterday, Sir Nevile Lubbock said:—

"It was true that *The Times* Special Commissioner to the West Indies estimated that, by the use of seedling canes and improved methods of manufacture the cost of producing sugar in the West Indies might be reduced 50 per cent. But, with all due respect to the Commissioner of *The Times*, he was evidently not a gentleman of large experience in the use of seedling canes or sugar manufacture, and he did not think his evidence was worthy anything at all."

Perhaps Sir Nevile Lubbock might be interested in the following communication which I contributed to last week's *Gardeners' Chronicle*. The conclusion at any rate coincides with that of your special commissioner.—I have, &c.,

ROBERT THOMSON, Late Supt. Botanical Dept., Jamaica.

March 16.

At pp. 127-128 in your issue of February 24, 1900 you reproduced from *American Gardening* a remarkable article on the above subject. Thus:—"The average yield of sugar to the acre of cane is greater in the Hawiian Islands than in any other cane-growing country in the world; and its position in this respect demands our attention. The average yield of Maui, for instance, is about 3½ tons of sugar to the acre; Hawaii's average is lowered by the smaller producing qualities of her leeward or dry side, but would not go lower than four tons; Kauai, from four to five tons; and Oahu, six to seven tons. There are of course, pieces of ground, even entire plantations, on each of these islands, where the yield would greatly exceed the average of the island; one plantation of Oahu, for instance, yields 10 tons of sugar to the acre (it takes seven to eight tons of cane to produce a ton of sugar), and special yields of even 16 tons per acre have been obtained from given sections of the same Oahu plantation." When we compare with the foregoing statement of results the average yield of sugar per acre from our West Indian colonies, including British Guiana, the latter are thrown completely into the shade. Thus the average yield per acre for a long period of years in Jamaica stands at less than one ton. British Guiana, Trinidad, and Barbados yield an average of about one-and-a half ton. Under peculiarly favourable conditions of soil, coupled with most propitious seasons, as much as five tons of sugar are produced per acre from time to time in our West Indian colonies, but this only on very limited areas—*i.e.*, from five to some ten acres. Three tons per acre are not, however, uncommon over somewhat larger areas. By way of further comparison, reference may be made to your leading article, dated February 10, 1900, p. 88, in which you advert to the special efforts of Dr. Morris, Imperial commissioner of Agriculture for the West Indies, relative to the improvement of sugar productions by means of new varieties of came—a new feature of cane cultivation. Thus, you say, "Several new canes, notably that known as 'B. 147,' had maintained their position, and were regarded by the planters as most valuable varieties. The amount of available sugar was at the rate of 3½ tons per acre." Of course, this does not mean the realization of a general average of 3½ tons; but if the average yield from the new varieties amounts to two or 2½ tons per acre, great benefit must eventually accrue to the welfare of the West Indies.—Robert Thomson, late Supt. Botanical Department, Jamaica.—London *Times* March 19.

ESTATE OF THE LATE MR. A. C. WHITE.

CEYLON PROPERTY VALUED AT R821,850.

At the Appeal Court today before the Hon, Mr. Justice Lawrie, Mr. Advocate Keppel Browne. instructed by Messrs. F J and R F de Saram, made application for an order confirming sole testamentary jurisdiction on the District Court of Colombo, with regard to the estate of the late Mr. Alexander Campbell White, of Weybourne, Cheltenham, in the County of Gloucester. He submitted that Mr. White died on the 1st January last, leaving a will dated the 30th Nov. 1899. By this will he appointed his five nephews—Messrs. William J Chrystal, John Chrystal, John Melville Stephens, Robert Francis Barclay and Fredrick Ticihurst—as trustees and executors of this will. All of them proved the will in the High Court in

England on the 16th February last. The executors have sent out a Power of Attorney dated the 3rd February last in favor of Mr. Alexander Cantlay, of Mount Vernon Estate, Kotagala, to administer the property in Ceylon belonging to to the estate of the deceased. The deceased's property in Ceylon consists of:—

		R.
Mount Vernon Estate in Dimbula		600,000
Mortgage executed at Hatton	...	30,000
Do at Gampola ...	...	15,000
Do ,, Hatton ...	...	9,750
Do ,, Nawalapitiya	...	75,000
Do ,, Colombo ...	...	63,750
Do ,, Kandy ...	...	15,000
Debts due to the Estate	...	13,350
Total		R821,850

He also stated that according to the will, the estates had to be sold, and debts recovered, and after payment of the legacies out of the proceeds, the balance had to be divided amongst the five nephews. He also submitted that though the estate was situated, and many of the mortgages were executed upcountry, it would be very convenient for the applicant as well as for his proctors, to have the testamentary proceedings in the Colombo District Court, and he cited some precedents, under similar circumstances where jurisdiction was conferred on the Colombo Court. He submitted an exemplification of the will, and an affidavit and petition from the applicant. Order was reserved by his lordship.

THE DRIEST SPOT ON EARTH.

The reputation of being the driest spot on earth is claimed by many spots in many climes. The latest claimant says "Sience Siftings," is Payta, in Peru, a place about five degrees south of the equator on the coast that has risen 40 ft. in historic times. Professor David G. Fairchild, a recent visitor, reports having reached there in February just after a rain of more than 24 hours, the first for eight years. The average interval between two showers is seven years. Sea fogs are common. Of about nine species of plants noted seven were annuals, and their seeds must have remained dormant in the ground for eight years. In spite of the lack of rain, the long-rooted Peruvian cotton is grown in the dried-up river bed, furnishing crops that yield subsistence to the natives.—*Globe*, March 23.

RUBBER: CONSULAR NOTES,

HINTS TO MERCHANTS AND TRADERS FROM INFORMANTS ABROAD.

The importance of the rubber industry to the State of Para, in Brazil, and the extent to which it is taxed will be realised when it is remembered that out of a total income of £476,000 from the taxation of exports, no less than £437,000 is derived from the imposts on the exports of india-rubber. The crop of 1898-99 amounted to 25,374 tons, of which 9,839 tons were produced in Para, as against 8,919 tons in the previous year; while the total shipments of Amazonian rubber during 1899 amounted to 25,401 tons, of which 8,954 tons were sent to the United Kingdom. According to Mr. Churchill, the British Consul for the district of Para, Belgian capitalists have lately been very active in the State. Syndicates have purchased not only an india-rubber estate, but also the goodwill and plant of an electric light company, and are in addition negotiating for the transfer to them of the tramway system and the electric lighting of the city of Para. There are now in the State three European companies engaged in the extraction and export of rubber, one only of which is British. It is interesting to note that the Belgian Rubber Company was the fist to introduce labour into the State from the British West Indies.—*Financial Times*, April 5.

EXPLORING AND PROSPECTING FOR MINERALS.

A recent *Gazette* contains rules regulating the grantof licenses to explore and prospect for minerals and the grant of leases of minerals. An exploring license granted by the Government Agent allows the holder to search the surface of Crown and unoccupied land and also occupied land with the consent of the owner for minerals of every description and to remove samples or specimens, but it does not authorise him to mine or quarry, The license is only for a year, but it may be renewed on a fee not exceeding R10, and a royalty, not exceeding 15 per cent on the value of all precious stones found and removed by a licensee will have to be paid to the Government, A prospecting license which will apply to Crown land only will enable the holder to mine, quarry, and remove any mineral found. No such license, however, shall be granted, except to a person approved by the Governor and security must be given to the extent of at least R1,000, which shall be carried to his credit, should the depositor afterwards become the lessee of the mining lease or be returned to him, should he decline or fail to obtain the lease. The license shall be granted for one year or such shorter term as the applicant may desire, and may be renewed for a further term not exceeding two years. A moderate rent, not exceeding one rupee per acre will be charged for the land covered by the license, and a royalty at a rate not exceeding 15 per cent be payable on the value of all precious stones at the rate of 10 per cent. on the value of all plumbago, and at the rate of 20 per cent. on the value of all other minerals won and carried away over and above the quantity the Government Agent may allow to be taken free for the purposes of experiment. No private property shall be cut or injured in any way without the consent of the owner and at the determination of the license the holder must restore the land and buildings that he may have damaged in the course of prospecting. As to mining leases, these may be granted for one or more blocks, each exceeding ten acres in extent and not exceeding one hundred acres in extent, provided that the total area does not exceed five hundred acres. The length of a block shall not be allowed to exceed four times its breadth, and the lessee must pay a royalty at the rate of 10 per cent on plumbago of R300 a ton and upwards in value, of 5 per cent on all plumbago below that price, and in the case of other minerals not exceeding 20 per cent of the value. The rent will be R100 per acre but no lessee shall pay both royalty and rent in respect of the same lease, but only such one of them as may be of the greater amount. For other land not used for mining purposes the yearly rent shall not exceed R10 per acre.

NOTES OF OBSERVATIONS OF SOME TEA DISEASES.

At a late meeting of the Ambagamuwa Planter's Association (Ceylon), under the presidency of Mr. HUTCHINSON, the following paper was read by Mr. OLIVER COLLETT :—

In a paper on the

PREVENTION OF TEA PESTS,

which I had the honour of reading before this Association last year*, one or two suggestions were made which attracted some attention at the time, and have since, in the case of a number of estates, been put into general practice. These related to the importance of removing moss from the stems of the bushes, of resting, poor and weakly plants and of generally paying more attention to the condition of individual trees, with a view to increasing their power of resistance against disease.

I now offer some further notes of what I have been able to observe of the nature and characteristics of some of our more prominent tea diseases and of their modes of attack, in the hope that they may serve as a contribution towards a more general knowledge of the subject.

It is, I think, now generally acknowledged that the

MOST DESTRUCTIVE DISEASES

by which ltea is likely to be affeeted, are those which beong to the order of fungoid or cryptogamic parasites. Insect pests are of course, always with us, but as the harm they do is of a more or less transient natnre and can, as a rule, be met by comparatively simple remedies, they are of less serious moment than those diseases which are due to the agency of parasitic fungi—especially as these latter, are very largely controlled as I am about to show, by the operations of climate and atmospheric conditions.

The two principal fungoid pests at present affecting tea are those commonly known as

THE GREY AND THE BROWN BLIGHT.

Grey Blight (*Pestalozzia Guepini*) is, according to Dr. Watt, "one of the most destructive and dangerous of parasitic fungi to which the tea plant is liable." It appears to be more or less prevalent in every district of the Island, and is particularly noticeable upon wind-blown ridges, and upon tea in exposed fields, where the soil is worn and poor. Its worst effects are, however, always seen upon bushes that have been too heavily plucked, and whose constitution has thereby become impaired.

The spores of this fungus are widely disseminated by winds in the dry season, and germination usually follows as soon as wet weather and sufficiently moist conditions prevail. A preliminary outbreak of the disease may be expected to appear, soon after the first April rains, but as a rule growth upon a large scale, does not take place until June, when wet and windy weather is continuous and the light is dull. Under these favouring conditions, a state of rapid infection and re-infection of the bushes is set up, and is prolonged throughout the months of July and August,—the last-named month being as a rule that in which the climax is reached.

Practically then, Grey Blight appears to be a

MONSOON DISEASE,

and it seems only too probable that it will (if measures be not taken to withstand its progress) increase in virulence with every season. It would therefore seem that it is of the first importance for us so to treat our bushes that they may be prevented from falling into that condition of health which invites disease. For we may safely assume that the power of each outbreak to cause permanent injury to tea, will, in every instance, be in exact proportion to the degree of vigour of the bushes at the time of the invasion.

There seems good reason to believe that all plants—particularly those under cultivation—have much to contend with during the monsoon; and that in an abnormal season (such as that which we experienced last year) their natural resources are severely taxed. At this time, not only is there wind to carry the spores of disease, and continuous moisture to secure their rapid germination, but the dull light prevailing diminishes the transpiration of the leaves (the tissues of which are now unduly filled with water) and by reducing their normal vitality predisposes them to ready infection.

Moreover, it has been observed that at this season the

GROWTH OF THE FEEDING ROOTLETS

of tea is suspended. This important fact which was first noticed in Ceylon by Mr. William Cameron of Ythanside Estate, is without doubt, one which will have to be taken into careful consideration in connection with the operations of pruning, manuring, etc. in different districts. It will probably be discovered (as Mr. Bamber has already suggested) that the seasons of root growth and decay vary to some extent in every part of the Island; and carefully recorded data from different localities would prove of the utmost value. In Ambagamuwa, I find that the rootlets die back in May, and commence to grow again in September; but my experiments in this direction are as yet far from being conclusive. It is curious that very little is known of this phenomenon up to the present time. Mr. Willis of the Peradeniya Gardens tells me that no observations have been hitherto recorded in Ceylon regarding it; though he points out its great significance in connection with the question of manuring. It is, for example, obviously inadvisable to manure tea at a time when its feeding rootlets aie not in a proper condition to assimilate it.

The actual effects of an attack of Grey Blight upon tea have been as yet very imperfectly observed in Ceylon. In some instances, an attack of the disease which has almost denuded the trees of their foliage, has been followed, after the monsoon, by healthy flushes, which might lead one to suppose that the blight had acted in the form of nothing more than

A SUBSIDIARY PRUNING.

In other cases—especially where the trees have run too long from pruning—they have shewn little power to withstand the effects of the attack; and here it seems likely that the result has been permanently harmful. It is at least very noticeable that Grey Blight does not attack young and succulent leaves; and the inference appears to be that more frequent pruning may tend to keep this disease in check.

In the case of

BROWN BLIGHT

(*Colletotrichum camelliæ*) the situation is somewhat different, and at present, I am inclined to regard this as the more serious disease of the two. For while grey blight is practically confinen (as just stated), to the older leaves of tea, browd blight is frequently found upon the younger growth (though not upon the flush itself), and it often

* *Tropical Agriculturist*, Oct. 1899.

does much damage in recently pruned fields. Further, this disease, although it is most troublesome in the monsoon season, is more or less prevalent throughout the year.

The effect of this disease upon the leaves is very similar, apparently, to that of grey blight, which at first glance it closely resembles; but the fungus is much more common, and, so far as my observations go, is able to reproduce itself with far greater rapidity. It is said to be generically distinct from grey blight, but little is as yet known of its complete life history.

There is another growth which is fast becoming noticeable upon tea in the Central Provice—more especially in the vicinity of jungle—and which I will refer to as the

"ORANGE DISC BLIGHT."

Though it is not a fungus, but belongs to the family of Algœ, its nature is undoubtedly parasitic. I think (though for reasons which need not be stated at present, I am not quite sure) that it is identical with the species observed by Dr. Cunningham in the tea districts of Assam, and named by him, *Mycoidea parasitica*. I have so far noticed it upon tea in Dikoya, Dimbula and Ambagamuwa, and also upon several species of plants in the jungles of those districts, hence it is probably widely distributed. According to Dr. Cunningham the growth in Assam appears to be harmless so long as it is confined to the leaves only, but when it attacks branches and stems it becomes a serious disease, and usually kills the parts affected. So far as I have seen in Ceylon, only the older and lower leaves of tea have been attacked and up to the present time the stems have remained untouched. The appearance of this blight upon tea has, I think, hitherto escaped the notice of planters, owing to its strong resemblance to blotches of "betel juice" upon the leaves These markings are found, upon closer examination, to consist of groups of minute flattened orange coloured discs, closely adhering to the surface of the leaves. I have counted as many as three hundred discs upon a single leaf. The life history of this parasite has not been observed in Ceylon, but it is probably very similar to that of its Indian representative; concerning which latter Dr. Watt has said that "its presence is in any case and under any circumstances to be regarded with suspicion."

There are several other

FUNGOID DISEASES

affecting tea which is it not possible to refer to today. Those here mentioned are probably the most destructive in Ceylon up to the present time. It has been suggested that tea diseases have been imported into the Ireland with seed from the Indian districts; but I am inclined to think that the view is erroneous, and that it is far more likely that they have emanated from our own jungles.

Fungi, it must be remembered, are the

SCAVENGERS OF THE FOREST.

It is their office to remove dead and decomposing organic matter, and assist in reducing it to its simple elements, in order that it may be re-converted into mould,—and so again enter into the life of plants and trees.

Now, recent science has brought to light the interesting fact that certain kinds of fungi which are by nature saprophytic (*i.e.* dependent for their nutrition upon dead matter only) may, where weakened powers of resistance form an inducement, become

PARASITIC,

and invade the tissues of living plants. This discovery (which is due to the researches of the Japanese botanist Myoshi) suggests a possible explanation for the apparently sudden appearance of fungoid parasites in localities where they have previously been unnoticed. Thus, it is conceivable that all the fungous diseases to which coffee and tea have been subjected in Ceylon are to be found in a more or less undeveloped condition in our jungles.

However this may be, experience has taught us that the long-continued cultivation of any one product in a given locality is very apt, sooner or later, to

ENGENDER CONDITIONS OF DISEASE.

On this account it behoves us to be constantly on the look-out, and to lose no time in learning to identify the different forms of fungi which are likely to prove harmful; so that we may know how to act for ourselves in an emergency. In this way much of the loss and trouble occasioned by outbreaks of disease may be circumvented.

The following specimens were exhibited in illustration of this paper:—

1. Typical examples of Grey, Brown and 'Orange Disc' Blights.
2. Under the microscope: a portion of a diseased tea-leaf, rendered transparent by the action of glycerine, in order to show the effects of the fungus upon its internal tissues.

SUGAR IN HAWAIIAN ISLANDS.

The average yield of sugar to the acre of cane is greater in the Hawaiian Islands than in any other cane-growing country in the world, and its position in this respect demands our attention. The average yield of Maui, for instance, is about 3½ tons of sugar to the acre; Hawaii's average is lowered by the small producing qualities of her leeward or dry side, but would not go lower than 4 tons; Kauai, from 4 to 5 tons; and Oahu, 6 to 7 tons. There are, of course, pieces of ground, even entire plantations, on each of these islands, where the yield would greatly exceed the average of the island; one plantation of Oahu, for instance, yields 10 tons of sugar to the acre (it takes 7 to 8 tons of cane to produce a ton of sugar), and special yields of even 16 tons per acre have been obtained from given sections of the same Oahu plantation. The quality of these figures is the better appreciated by comparison with the yield of Louisiana. The average yield of Louisiana—according to the figures of Professor W C Stubbs, director of the State Experiment Station, varies from 1 ton to 2½ tons of sugar per acre. the average being, perhaps, not over 1½ tons.—*American Gardening.*

ESTATE SALE IN THE WYNAAD.

The "Woodlands Estate," a property comprising over 800 acres of land, and containing some fine pepper and coffee, which is situated in close proximity to the Choondale-Sultan's Battery High Road, 46 miles from Calicut, has just changed hands, at an excellent price to the vendor, the purchaser being a well-known Tellicherry merchant. Under capable management, "Woodlands" could probably be developed into a fine tea garden. An experimental tea clearing, planted by the late Captain Alfred Griffin, of Ootacamund, about 14 years back, grew some very promising tea; moreover, this holding is remarkably well situated for local labour and market supplies, and enjoys a well distributed infall.—*Madras Mail,* May 1st.

MINERAL PRODUCTION OF INDIA.

(From the *Indian Agriculturist*, April 2.)

The Mineral Production of India during the four years between 1894 and 1898 has just been reported upon by the Director-General of Statistics. Foremost among the minerals, it may be well to place coal, especially as greater attention is now being paid to it, and one eminent specialist arrived in India a few weeks ago for the purpose of reporting upon the various coal fields of India. The industry is shown to be expanding so rapidly that the output almost doubled itself in four years. The total yield of the mines rose from 2,820,000 tons in 1894 to 4,605,000 in 1898. Indian coal is now exclusively used on some of the railways of this country and extensively for coasting and river-steamers, mills, and factories. We have enough for all steam purposes, but some of the coal-fields are so remote from railways and rivers that at present it would be impossible, profitably to work them. Until difficulties of transport are overcome, we shall still have to import from England and Japan 360,000 tons annually. But our coal will never make coke, and we shall forever have to import the foreign product if we wish to utilise our own iron deposits; as for smelting purposes Indian coal has been authoritatively pronounced useless. It is not cokeable. Of course the production of iron is quite in its infancy in India, the ore being worked only in the Raneegunge district of Bengal. Only fifty thousand tons of iron were produced in 1898, and whether it will be possible to utilise the iron deposits of the Central Provinces, Madras, and elsewhere, is a question which Mr. Morgans, the expert, of whom we have made mention, may be able to answer. The section of the report, which refers to gold, shows that the metal which used to be shipped from Bombay to London to be refined and coined is now minted in Bombay from Mysore, the only district in which it is found in any quantity. In 1898 the output of the Mysore mines amounted to 404,625 ounces, the product of Madras and the Nizam's territory being little over six thousand ounces. This metal realised four pounds an ounce, and thus the value of the gold obtained in India in 1898 was £1,642,000. The production of last year is known to have been materially larger, but the figures are not yet obtainable. The quantity of salt produced annually in this country averages a million tons. There are salt wells and lakes in Rajputana, rock-salt in the Punjab hills, and brine wells in Upper Burma, which contribute to the supply. But in Bombay, Sind, Madras, Lower Burma, and Aden salt is obtained from the sea. But what we obtain is not sufficient for our wants, and Bengal and Burma find it necessary to import from Liverpool, Hamburg, Aden, and Egyptian ports of the Red Sea. Saltpetre is plentiful. Indeed, the supply is now greater than the demand. It was formerly wanted in large quantities for the manufacture of gunpowder and for the preservation of food. But it has been superseded for both purposes, and now we only need produce about a quarter of a million tons per annum, which is refined in Calcutta, and then exported. The remaining minerals of the country are summed up in a few words. Rubies and jade are found in Burma, diamonds in Central India and garnets in Rajputana, and manganese, mica, and tin are produced in some quantities, but are of comparatively little commercial importance. No rubies have been obtained since 1896 when 144,011 carats were taken.

TEA IN INDIA: REVIEW FOR SEASON 1899-1900.

(From Baines & Co.'s Tea Review, 1899.)

CALCUTTA, 12th April, 1900.

The close of another season gives us the opportunity to review the market for the past year, and the prospects for the coming one.

No estimate of the crop was published at the commencement of the season, as the Committee of the Indian Tea Association decided that, with the climatic uncertainties, it would be better to work on a basis of results, and therefore waited until September, to give the actual outturn of manufacture to end of August, estimating the balance of the season upon the previous year's figures for the remaining period. From this it was assumed that the crop would be about 163¾ million lb., of which 135 was apportioned to the United Kingdom. Owing, partly, to an exceptionally favourable year in *Cachar* and *Sylhet*, the crop proved to be 11 millions in excess of this estimate, of which the United Kingdom absorbed 149¼ million lb. There is not much doubt that the high prices ruling for lower grades during the first five months of last year led to coarser plucking on many gardens, which may account, in someway, for the great increase in the crop.

CALCUTTA ACTUAL FIGURES OF CROP.

	1899-1900	1898-1899
Exports to United Kingdom ...	149,374,164*	135,381,722*
Australia ...	8,250,436	6,398,002
America	5,923,404	3,273,096
Asia	5,492,815	6,972,251
Foreign Europe ...	1,435,146	1,171,146
Local Consumption (estimated) ...	4,380,438	*not given.*
Total ...	174,856,403	153,196,217

* Re-exported to other countries to end of February 1900 ... 6,014,000
Do. 1899 ... 6,006,000

At the start of last season the statistical position was undoubtedly strong. The stock on 1st of May 1899 was 40¾ millions, being nearly 9 millions under that of the previous year, and the very small available supply of Pekoe Souchongs "for price," resulted in values for this description, being enhanced to 8d per lb. for commonest. By the 1st of June exports were 3 million lb. ahead, and during July and August continued to increase. The new season's crop proved unattractive in quality, and the result of these heavy arrivals, caused a quick decline in prices of common leaf, and medium descriptions, common leaf being 5¼d in August, which had been 8d in May.

Those who sold in Calcutta during the early part of the season have every reason to be satisfied, as these Teas could not be sold to cover cost on arrival in London, and most of them showed smart losses on the falling market.

Throughout the year, the abundance of medium teas, and the demand for common grades for the cheap canisters, resulted in a very low market for Pekoes and Broken Pekoes, which very often showed only a fractional difference in the prices ruling for Pekoe Souchong leaf. The average for the year being 8½d against 8¾d and 8⅝d for the two previous seasons.

At the present time, the end of March, visible stocks are under 40 millions, which, we have shewn, cannot be taken to represent the true statistical position, as all retail dealers must be more than usually well supplied owing to the heavy clearances before the duty was imposed, but at the same time, it would indicate that the Trade is capable of working off the surplus before new season's teas arrive in any quantity.

The deliveries for the ten months, from 1st June end of March, were 138,829,000 lb. against 119,886,000 lb. and 106,573,000 lb. during the two previous seasons.

Since May 1890 the duty on tea, which is now raised to 6d. per lb., had been 4d. per lb., and it remains to be seen what effect the additional 2d. will have upon the Trade. The tax represents about 80 per cent of the average value of tea, and the lowest retail price will therefore be about 1s. 2d. per lb. The opinion is held by some, that this should lead to greater use of medium and fine teas, the former of which have been unduly depressed for months past, while commonest kinds will be in less request.

The total crop from Ceylon was 129 millions against 120¼ for the previous season, and was distributed as follows:—

U.K.	AUSTRALIA.	AMERICA.	RUSSIA.	OTHER PORTS.
103¾	15	3	4	3¼

The estimate for 1900 is 137 millions, of which 106 are expected to go to London.

As will be seen our trade with outside markets continues to improve, and increase excepting in the case of the Bombay market, which was crippled, somewhat, by the scarcity which has prevailed on the Western Coast. In spite of this, the quantity sold in Calcutta, is less than it was in 1895, notwithstanding the crop has increased from 135 to 175 million lb. With the fact before us that the consumption of tea in England has nearly reached its limit, it becomes the duty of all concerned in the welfare of the industry, to contribute to the supply of new markets, and to open out fresh ones. In South Africa, and South America, we have markets which hitherto have not been exploited, while Australia and North America are capable of much expansion. We trust growers will now begin to recognize the importance to their own interests of fostering these markets, by supplying the Calcutta centre, thereby encouraging trade, checking oversupplies to the London market, and ultimately benefiting the producer by expanding the sale of the article.

AUSTRALIA.

Our trade with this country continues to develop, exports for the year being 8,250,436 lb., against 6,398,002 lb. and 6,802,579 lb. for the two previous seasons. The principal proportion of this export is common to medium leafy kinds, but a growing demand for the better class of teas is apparent, which, we regret to say, has been somewhat ignored, especially by Darjeeling gardens. A decided preference for Indian Teas against Ceylon has been shown by this market, notwithstanding this, our exports are only about half of those of Ceylon.

As we pointed out last year, Ceylon has better facilities in freight, with the many liners calling at Colombo, but this does not account for the large difference in exports in its favour.

AMERICA.

The Export figures are 5,923,404 lb., against 3,273,096 lb. and 2,086,369 lb. for the two previous seasons. In addition to this 2½ millions were re-exported from London. These results speak for themselves, and show that our trade with this country is increasing. A direct line of steamers running every month has been a boon to the Trade.

ASIA.

Exports are 5,492,815 lb., against 6,972,251 lb. and 3,601,532 lb. for the two previous seasons. The falling off in this trade has been due to the scarcity which has prevailed on the Western Coast, nevertheless the prices paid for suitable Pekoes by this market compare most favourably with the values ruling in London for similar teas. *Cachar* and *Sylhet* especially have reasons to be grateful for this outlet.

FOREIGN EUROPE.

Export figures 1,435,146 lb., against 1,171,146 lb. and 797,313 lb. for the two previous seasons.

The growing demand increases steadily from Germany, Constantinople and other European markets, the preference shewn for direct supplies from the country of growth continues. A regular line of German steamers now carries this country's produce direct.

THE CROP.

The Crop on the whole has been a useful medium one, the proportion of fine teas has been less than usual. The large increase of good medium teas from Cachar and Sylhet has naturally told against Assam, whose teas owing to cold wet weather in June-August have not been, on the whole, as good as usual, and cannot compete in cost of manufacture with the above named districts. The Dooars, in many instances, were hardly up to the usual standards, and Darjeelings, with few exceptions, have been disappointing.

MANUFACTURE.

We must again impress upon our friends, the Planters, to pay the closest attention to improvement of quality, every effort should be made to secure good appearance, and liquor by care in the manufacture. With the large increase in consumption of British grown teas both at Home and in Colonial and Foreign markets, the consumer has become more critical, and is no longer content to take poor liquoring, badly made, teas, such as were marketable in the days when China controlled the market. We would deprecate very coarse plucking, or the manufacture of common undesirable teas, as tending to lower the standard of excellence to be aimed at. With the extensions of 1896-1898 now coming into full bearing, we may look for an increase in the crop, but we do not anticipate this will be very much more than the past season, which was unusually favorable from some districts.

FACTORY BULKING.—During the past season greater care has been given, on the Factory, to bulking, which has been fully appreciated in London, where the saving of bulking charges has been made. But more especially has satisfaction been given in Australia and Foreign markets, and we would urge upon the grower, the great importance that attaches to level quality in invoice breaks. Equality in tares, well made boxes, and careful weighment, should have the individual attention of every manager. In recent years great improvements have been made in all these matters, which is proved by the great diminution in the number of claims for loss in weight. Care must be exercised, where boxes are home-made, that the wood is thoroughly dried and seasoned, as most of the claims for cheesy taint arise from neglect in these matters. Size of Breaks should not be less than 20 chests, 30 half-chests, 50 boxes, as lots of lesser size than these are sold separately at the end of the auctions; only, when a full sized break of 20 chests cannot be obtained, it might be packed into 30 half-chests; but we do not advocate many half-chests on account of increased charges.

ASSORTMENT.—There is no occasion for a garden of medium size to make more than four qualities; a Broken Pekoe, a good Pekoe, a Pekoe Souchong, and a leafy Broken Pekoe Souchong. In addition to this, a tippy Broken Orange Pekoe or Orange Pekoe can be sometimes made. Dusty teas should be avoided. The weight of chests should not exceed 100 to 110 lb. broken leaf and 90 to 100 lb. whole leaf. Dusts should be packed in half-chests or small chests, weighing not over 90 lb. nett, as above this, loss in weight frequently ensues.

PROGRESS IN THE PHILIPPINES.

(*By an ex-Ceylon Resident.*)

Manila, March 15.

I am trying to get the Government to go in for tea, and to give me a salary to superintend operations. They wrote to ask what salary I want to make Botanic Gardens on Negros Island, and I said R800 a month, and I have not had a reply yet. They only give colonels R800 a month and may not give me so much.

I know a rich man who has rice mills and sugarcane crushing mills and distillery, who might get desiccating machinery, and coconuts are plentiful at R30 per 1,000. What is the price of nuts in Colombo?* A lot of desiccated coconut is sent from Colombo to Australia, and freight from this to Australia is less than from Colombo to Australia. No arrack is made here. I saw salt being made by natives at Dagupan and Lingayen: it is very impure, sandy and dirty, and it would pay to make it as the Government does at Hambantota. Sea-water is used here, after it has drained over miles of slimy swamps, poisoned by drainage; the natives all have skin diseases, very probably from eating impure salt. Very little is being done in gold mining, as a party of prospectors were murdered and the Government stop parties from going, but there are about 50 men prospecting, and I have seen some of them bring in good samples of quartz. There are still some armed bands in the hills in this island, and over 100 natives were killed in a fight last week. The railway is very unsafe and since I came up, natives have removed rails twice and trains went off the line, but no one was hurt, as they do not go fast. Soldiers are not allowed to go out of these towns, and when I told them I walked eight miles alone from Dugupan to Lingayen, they thought I was a hero. I go bathing in the sea with them, only half a mile from Lingayen town and they all carry revolvers. Any natives caught with arms, will be hung in future, so that will put a stop to their nonsense.

PLANTING NOTES.

Sugar and Science.—A good many complaints have lately appeared in the Indian press about disease in their sugar-cane. We referred one report to a correspondent who is among the oldest and most successful of sugar planters. His reply coming at this time rather startles us:—

"About the Cane disease in Madras, it is not a thing to be feared, unless those so-called 'scientific experts' are allowed to go fooling with it. We have had both the forms of disease here which they mention, along with others; but they have never been allowed to do any harm, although our scientific men prophesied dire results and recommended impracticable remedies." Now we have two things to remark on this: —(1) that the information we quoted from the London *Times* yesterday, seemed to show that science had done a good deal for sugar planters in the West Indies at least; and (2) that in Ceylon we had in our coffee days full experience of scientific warnings which all planters at first scoffed at, but which nevertheless came true. So sending away the Scientist (any more than the Doctor) dont' always succeed!

* R35 to 40 per 1,000.—Ed. *T.A.*

Plant Doctors.—A writer in a contemporary urges the need of a new class of educated physicians, whose business shall be the care and cure of disease-threatened and disease-stricken plants. "The time will come," he says, "when every agricultural district will have its plant doctor." He even foresees the development of specialties by plant doctors just as by other physicians, so that in many difficult and obscure cases of disease affecting valuable plants the services of such specialists will be employed.—*Indian Gardening and Planting*,

Reported Bolivian Rubber Enterprise.—Newspaper despatches from New Orleans dated February 26th reported that Captain Frank Moritz, of Pennsylvania, and Robert J Skeffington had arrived in that city from Bolivia, in the interests of the Chicago and Bolivia Rubber Co., and had chartered a steamer from the United Fruit Co. to convey a force of negroes and supplies for them to the rubber fields. The general manager of the United Fruit Co. informs *The India Rubber World* that no steamer has been chartered from them, as reported. Inquiries made in other directions in regard to the Chicago and Bolivia Rubber Co. have not as yet elicited any information.

Rubber.—The United States Consul at Para has lately called attention to the recent extensive purchases of rubber estates in the Amazon Valley, which is evidence that considerable interest is being taken in the collection of the raw rubber, but warns India Rubber Manufacturers that they are in danger of finding themselves at the mercy of great syndicates. So far as the supply of Para rubber is concerned, I do not see there is much reason for fear, as it would be impossible for any syndicate to control the rubber market, this having already been attempted several times, but has met with the failure it deserves.—*India-Rubber Trade Journal*, April 2.

Green Teas.—Encouraged by the success they have made with black teas in America, the planters of Ceylon have been experimenting in order to produce a green tea—pure, uncoloured and unfermented—to compete with the so-called pure Japan teas. Samples have been coming over for several months for examination by our experts, says the *New York Mail and Express*, and in nearly every case the reports of the experts have been highly favourable, and to the effect that the teas are clean and free from adulteration and colouring matter (which Japans are not), and in body and strength are far superior to Japan teas. This greater strength (notwithstanding it makes the teas more economical) is an obstacle, according to some of the experts, as consumers in drawing the tea will use as much as they do of Japans, and therefore find the cup much too strong. But common sence in the end must prevail and show them that to obviate this objection they have only to put less tea in the pot. Several small lots of Ceylon greens, made after the manner of the most approved samples, have arrived and have been eagerly purchased, and at present the demand is in excess of the supply. Some distributors in New York raise the objection that grocers, finding these teas clean and uncoloured, will not take them, as their customers, having been accustomed to Japans, judge by the appearance of the leaf. A cup test, however, will convince the most sceptical of the superiority of the cleanly, uncoloured green teas of Ceylon.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees. R. N. Lyne, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price according to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Sterculia Acuminata.—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June. Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, Eucalyptus various varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—MESSRS. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address:
WILLIAM, VEYANGODA, CEYLON.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
HENARATGODA, CEYLON.

IMPERIAL CEYLON TEA ESTATES, LTD.

ANNUAL REPORT.

The Directors now beg to submit the balance sheet and profit and loss account for the year ending 31st December, 1899.

The Nett Profit, after payment of Debenture and other interest for the year, amounts to ...		£4,716 0 11
To which has to be added the balance brought forward from 1898		42 4 6
		£4,758 5 5

This the Directors propose to deal with as follows :—

(1) In writing off from cost of Properties, as Depreciation of Machinery, &c. ...	£500 0 0	
(2) In payment of a Dividend of 4 per cent (free of Income Tax) on the paid up share capital of the Company ..	3,600 0 0	
(3) In carrying forward to next year the balance of ..	658 5 5	
		£4,758 5 5

The item of £430 11s 8d for manuring brought forward from 1898, and the whole expenditure under this heading during 1899, have been charged in the Profit and Loss Account now presented.

The following table gives the acreage and results for the year :—

Estate.	Acreage in full and partial bearing.	Tea Crop. lb.	Yield per acre.	Cost of Crop per lb. in cents.	Nett Price realised per lb. in pence.	Working Profit. £ s d
Binoya ..	441	193,134	438	27.75	6.12	1,421 14 4
Endinburgh	362	175,267	484	24·60	7.14	2,961 2 10
Friedland	161	59,157	367	28.90	7.17	603 2 10
Mottingham	221	100,460	455	29.48	6.40	519 6 5
St. Vigeans	185	63,149	341	31.07	6.88	478 0 11
	1,370	591,167	432	27.59	6.59	5,983 7 4
Non-pareil	36 / Bgt. leaf :—	10,023 / 5,656	—	—	—	612 1 9
	1,406	606,846	432	27.58	6.56	6,595 9 1

The working profit of Nonpareil arises principally from the Coffee Crop of Bus. 2,548¾ which realised £1,912 3s 5d, as shown in the accounts. The Tea fields on this Estate have made very good growth during the year, and in this respect they have exceeded expectations. A larger acreage is therefore being retained in Tea than was stated in last year's report. Some land is being planted with Cardamoms, there being about 40 acres suitable for this product.

The returns from St. Vigeans were adversely affected by drought in the earlier months of the year, from which the bushes did not recover in time to benefit by the more favourable weather latterly experienced.

The total acreage of the Estates as on 1st January, 1900, was as follows :—

Estate.	Acreage under Tea. Tea in full bearing.	Tea in partial bearing.	Tea not in bearing.	Total.	Coffee and Cardamoms.	Forest Reserves, &c.	Total Acreage.
Binoya ..	441	—	85	526	—	403	929
Edinburgh ..	306	56	48	410	—	40	450
Friedland ..	161	—	—	161	—	2	163
Mottingham	212	9	—	221	—	37	258
St. Vigeans ...	185	—	—	185	—	—	185
Nonpareil ..	—	36	280	316	14	219	549
	1,305	101	413	1,819	14	701	2,534

The acreage given of Edinburgh includes 11 acres in full bearing and 2 acres in partial bearing of Tea, planted in reservation land rented from Government.

The Capital Expenditure during the year on Tea clearings was for the upkeep of 390 acres not in bearing, and for opening and planting with Tea 23 acres on Edinburgh.

NUWARA ELIYA TEA ESTATES CO., LD.

REPORT OF THE DIRECTORS FOR 1900.

The Directors have pleasure in submitting the duly audited accounts of the Company to 31st December, 1899, and they trust the Shareholders will join them in regarding as satisfactory the results of the working for the past year.

The Crop Account, after deducting £1,734 15s 6d, the cost of necessary additions to Buildings and Machinery during 1899, shews a profit on the year's working of £20,271 16s 1d.

The Profit and Loss Account includes £1,609 17s 10d brought forward from 1898. The Directors have written off the sum of £2,000 against the Estates Cost Account, and have added £300, as before, to the Sinking Fund against Cost of Leases. After providing for these items, as also for Debenture Interest and the usual General Expenses, there remains for distribution a balance of £16,599 0 10

An Interim Dividend of 3 per cent, free of Income Tax, was paid on 12th Oct., 1899, absorbing ..	£6,000 0 0	
It is now proposed to pay a Final Dividend of 4 per cent, free of Income Tax, making 7 per cent for the year, which will absorb a further ..	8,000 0 0	
		14,000 0 0
And to carry forward to next year the balance of		£2,599 0 10

The Crop of Tea from the Company's Estates amounted to 1,326,875 lb., which realised an average nett price of 8·62d per lb. shewing a decline of 0·59d. per lb. from the average price of 1898, and caused mainly by the markets during the year being more in favor of the lower kinds than of high grown Teas.

The average rate of Exchange for the year works out 1s 4 9·32d per rupee. The cost of the placing the crop free on board Steamer, or delivering to buyers in Colombo, was 4·77d per lb., which cost includes the rent of Leased lands, as also the

upkeep of 264 acres Tea not in bearing, and the planting of a new clearing of eight acres.

The following table shows the results of the working of the different Estates for the past year :—

Estate.	Acreage in bearing in 1899. Full.	Partial.	Tea Crop. lb.	Av. yield per bear'g acre. lb.	Nett price realized per lb. Tea d.	Profit per bearing acre. £	s.	d.
Park ..	242	22	168,390	638	9·41	14	6	10
Portswood ..	300	20	194,663	608	8·15	8	15	1
Naseby ..	125	66	98,188	514	7·95	4	17	1
Pedro ..	345	104	284,465	603	8·24	10	10	11
Concordia ..	280	80	192,176	533	9·70	10	6	0
Court Lodge	302	66	175,024	475	9·01	8	11	9
Hethersett ..	367	25	213,969	545	7·95	7	11	0
	1,961	383	1,326,875	566	8·62	9	8	5

The yield from Tea in full bearing was 605 lb. per acre, and that from Tea in partial bearing was 362 lb. per acre, as compared with 545 lb and 292 lb. respectively in the previous year. The improvement, as compared with 1898, was due, in part, to more favourable weather.

The acreage of the Company's properties as on 1st January, 1900, was as follows :—

	Acres.	Acres.
Tea in full bearing ..	1,922	
,, ,, leased lands ..	90	
,, partial bearing ..	373	
,, ,, leased lands	8	
,, not yet in bearing ..	222	
Total land under cultivation with Tea		2,615
Jungle, Patna and Scrub, and Fuel Trees, &c.		432
		3,047

Mr. W Megginson, who has been in Ceylon since December last, has reported specially upon all the Properties of the Companv, and the Directors are pleased to be able to state that the Estates are in excellent condition and responding in a satisfactory manner to careful and systematic work.

The Directors desire to express their satisfaction with the work of the entire Planting Staff during the season.

The whole of the Shares of the Company are now officially quoted on the London Stock Exchange.

CEYLON TEA PLANTATIONS COMPANY, LD.

ANNUAL REPORT.

Report of the Directors snbmitted at the thirteenth annnal ordinary general meeting of shareholders, to be held at the Office of the Company, on Wednesday, 25th April.

The Directors have the pleasure to snbmit the general balance sheet and profit and loss account for the year ending 30th December, 1899, duly audited.

	£	s.	d.
The net amount at credit of Profit and loss account, including balance brought forward at 31st December, 1898, and after providing for General Expenses, Directors' Fees, Income Tax, &c., is ..	51,971	16	2
Dividends on the 7 per cent. Preference Shares were paid for 1899 (less Income Tax) amounting to	5,486	16	0
An Interim Dividend of 7 per cent. on the Ordinary Sharse was paid 28th October, 1899, amounting to	11,716	12	0
It is proposed to pay a final Dividend of 8 per cent. on the Ordinary Shares (making 15 per cent. in all, free of Income Tax) which will absorb	13,390	8	0
To pay a Bonus of 3 per cent. on the Ordinary Share Capital (free of Income Tax) which will absorb	5,021	8	0
To add to Reseve Fund ...	5,000	0	0
To write off for Depreciation ..	5,000	0	0
And to carry forward to next year a balance of	6,356	12	2
	£51,971	16	2

Since the incorporation of the Company the production of Ceylon tea has risen from 13½ millions to 130 million lb. per annum. Notwithstanding this great increase, and the continued fall in the price of tea, the Directors are again in a position, for the thirteenth consecutive year, to recommend to the ordinary shareholders the usual dividend of 15 per cent., and in addition a bonus of 3 per cent.

It is proposed to write off for depreciation the snm of £5,000, and to add £5,000 to the Reserve Fund, which will then amount to £100,000, and to carry forward £6,356 12s 2d.

The yield of tea was 485 lb. per acre as against 460 lb. the previous year.

The crop for 1899 was as under :—

Estate Tea..	Bought Leaf Tea.	Tea manufactured for others:	Total.
lb.	lb.	lb.	lb.
3,973,820	566,664	517,663	5,058,147

The gross price realised for the Company's tea sold in London was 8·10d as against 8·24d in 1898, and the average rate of exchange 1s 4 19-64d compared with 1s 4 3-16d the previons year.

The coconut crop gave an increase of 236,323 nnts over previons year, and the crops for the last four years have been as under :—

Years.	Coconuts. No.
1896	875,570
1897	1,209,980
1898	1,180,520
1899	1,416,843

Enclosed with this report will be fonnd a Statement showing the resnlts of working for the last thirteen years, together with a schedule of acreages of the Company's properties.

The Directors would again desire to express their satisfaction with the services of the staff both in London and Ceylon.

ALLIANCE TEA CO. OF CEYLON, LTD.

REPORT OF THE DIRECTORS

Report submitted at the annual general meeting of shareholders, to be held at the Company's Offices, 9, Fenchurch Avenue, London, E.C., on Wednesday, 25th April, at 11-30 a.m.

The Directors have pleasure in submitting the balance sheet and profit and loss account for the year ending 31st December, 1899.

	£	s.	d.
The Nett Profit, after payment of Debenture and other interest for the year, amounts to	7,901	4	9

		£	s.	d.
To which has to be added the balance brought forward from 1898 ..		500	9	5
		£8,401	14	2
An Interim Dividend of 3 per cent was paid on 30th September, 1899 absorbing ..	£1,957 16 0			
And the Directors now propose to deal with the balance as follows—				
(1) In writing off from cost of properties as Depreciation of Machinery, &c. ...	1,000 0 0			
(2) In payment of a final Dividend (free of Income Tax) of 5 per cent (making 8 per cent for the year)	3,263 0 0			
(3) In carrying forward to next year the balance of ..	2,180 18 2			
		£8,401	14	2

These figures compare very favourably with the results for the season 1898, when the total dividend paid was 7 per cent, £300 was written off for Depreciation, and £500 9s 5d carried forward. The profit now available would admit of the payment of a larger dividend than is proposed, but the Directors consider it prudent and desirable to utilise the present favourable opportunity for strengthening the financial position of the Company by making a substantial deduction from the cost of properties and by retaining a large balance in hand.

The following table gives the acreages and results for the year :—

Estate.	Acreage in full and partial bearing.	Tea crop, lb.	Yield per Acre.	Cost of crop, per lb., in cents.	Net price realised per lb. in pence.	Working Profit. £	s.	d.
Aberdeen	347	139,361	402	24·61	5·68	968	3	3
Calsay	352	171,577	488	27·16	7·23	2,009	1	10
Dunkeld	517	207,296	401	29·18	6·59	1,589	1	4
Luccombe	550	219,184	399	29·38	6·03	1,181	12	0
Thornfield and Gleneagles	457	247,912	542	28·20	8·14	3,691	13	3
Radella	405	202,452	500	26·87	7·19	2,670	4	2
	2,628	1,187,782	452	27·80	6·96	12,109	15	10

From the above particulars it will be seen that all the estates have done well, Aberdeen and Luccombe exhibiting a considerable improvement on the previous year's working, owing to the higher range of values established this season for low-grade teas.

The total acreage of the estates as on 1st January, 1900, was as follows :—

Acreage under Tea.

Estate.	In full bearing.	In partial bearing.	Not in bearing.	Total.	Forest Reserves, &c.	Total Acreage.
Aberdeen	347	—	14	361	119	480
Calsay	342	10	13	365	22	387
Dunkeld	481	36	—	517	79	596
Luccombe	550	—	—	550	200	750
Thornfield and Gleneagles	457	—	7	464	48	512
Uda Radella	367	38	57	462	93	555
Kehelgama	—	—	—	—	322	322
	2,544	84	91	2,719	883	3,602

The prospects in Ceylon for the current yea are favourable, and the Directors look forward with confidence to satisfactory results from this season's operations.

In accordance with the articles of Association, Mr. J Bell-Irving retires from the Board at this meeting, and, being eligible, offers himself for re-election.

Messrs. W B Peat & Co. also offer themselves for re-appointment as Auditors to the Company — By order of the Board,

April 11th. W. H. BARTLETT, Secretary.

STANDARD TEA COMPANY (CEYLON) LTD.

REPORT FOR 1899.

The Profit and Loss Account shows a profit on the working of the Estates in Ceylon of £12,524 10r. 6d, which with amount brought forward from last year, less interest and home charges, shows a sum of £11,425 0s. 1d. available for division.

In August, 1899, the Directors, under the powers entrusted to them, distributed an interim dividend for the six months ending 30th June, 1899, of 5 per cent. (10 per cent. per annum), absorbing £2,975.

They now recomended a Dividend at the rate of 10 per cent. (making 15 per cent. for the year) absorbing £5,950; the placing £1,000 against reserve, and £700 against depreciation; and the carrying forward to the next year £800 0s. 1d.

The Coffee crop was 390 cwt.; it realised about £1,100.

The average Exchange for the Company as drawers in Colombo was 1/4 9-32, against 1/4 5-32 in 1898, and 1/3 15-32 in 1897.

Fine teas were again lower in price this las season. Uda Pussellawa Teas sold in Mincing Lane in 1899 averaged 1d per lb. lower than the preceding year.

The new Factory on Gordon, to deal with the produce of that Estate and Tulloes, was in working order on 28th Match, 1899.

The Directors have not issued any of the Preference Shares authorised; as money became dearer last year, and in consequence there walittle to be gained by disturbing existing arranges ments and substituting Preference Shares for the loans.

The Company's Properties at the close of 1899 were 3,465 acres, with 1,919 acres of Tea considered in full bearing, viz :—

In Uda Pussellawa—St. Leonard's, Coneygar, 901 acres399 acres Tea bearing.

Liddesdale	814 acres	145 acres Tea bearing.
Eskdale	240 „	220 „
Gordon	386 „	304 „
Tulloes	419 „	237 „

In Up. Maskeliya—Gouravilla and Up. Cruden 705 acres, 614 acres Tea bearing.

There are also 405 acres Tea in partial bearing, and some 160 acres in addition planted with Tea. On St. Leonards. Liddesdale and Gordon Estates there is still some Coffee interspersed through the Tea.

Mr. Alexander Brooke, the Director who retires by rotation, being eligible, offers himself for re-election. By Order, A. TRAFFORD BROOKE, 25, Fenchurch Street, Secretary.

London, 11th April, 1900.

EASTERN PRODUCE AND ESTATES COMPANY, LIMITED.

REPORT FOR 1899.

The Directors submit Report and Balance Sheet for the year ending 31st December, 1899.

The profit for the year is £32,892 0s 10d, which, added to £9,980 9s 10d, balance from last account, amounts to £42,872 10 8

From this has to be deducted :—

Interest in Debentures ...	£4,275 0 0		
Debentures for £7,500 drawn and paid off, with bonus of 5 per cent, on 31st Dec., 1899	7,875 0 0		
Interim Dividend 2½ per cent. on Preferred and Ordinary Share Capital, paid 4th November, 1899..	7,475 1 6		
		19,625 1 6	
leaving a balance of		23,247 9 2	
which it is proposed to appreciate as follows :—			
Final Dividend on the Preferred Shares of 2½ per cent., making 5 per cent. for the year, and on the Ordinary Shares of 4½ per cent., making 7 per cent. for the year ..	13,440 1 6		
Balance to be carried forward as provision for retirement of Debentures in the current year ...	9,807 7 8		
		£23,247 9 2	

It will be observed that the Debenture Debt, which originally stood at £195,200, will, after the appropriation of £7,500 provided for in this account, stand at £80,000.

As shown in the Schedule below, the Company on 31st December last, had 10,926 acres under Tea cultivation, of which 10,030 were over four years old.

The yield of tea in 1899 was 3,950,870 lb., the average gross sale price being 7·29d.

The average rate of exchange for the year was is 4⅜d, as compared with is 4 13-64d in 1898.

J. C. L. NICHOLSON, Chairman.

41, Eastcheap, E.C., 11th April, 1900.

Schedule of the Eastern Produce and Estates Company's estates at 31st December :—

Arapolakande, Asgeria and Bulatwatta, Colonna, Condegalla, Doombagastalawa, Dromoland, Hope, Ingurugalla and Berrewella, Kirrimettia, Kumaradole, Kumbukkan, Labukellie, Meddecoombra, Norwood, Rothschild, Sogamma, Vellai-oya and Dandukelawa, Wevekellie.

Under Tea	10,926
„ Cocoa	600
„ Coffee, Cardamoms and Sundries ...	406
„ Forest Grass and uncultivated Land	4,567
Total ...	16,499

RANGALA TEA COMPANY (CEYLON), LTD.

REPORT OF THE DIRECTORS.

The Directors beg to submit the Balance Sheet and Profit and Loss Account to 31st December 1899, duly audited.

	£ s d
The balance brought forward from last year amounted to ..	518 1 3
Less—Amount written off from cost of Properties as Depreciation of Machinery, etc ...	300 0 0
	218 1 3
To which has to be added the Profit for 1899	1,715 18 5
	1,933 19 8
An Interim Dividend for the year 1899 was paid on Sept. 21, '99 amounting to	660 0 0
Leaving a sum of	£1,273 19 8

Which it is proposed to deal with as follows :—

1 In payment of a Final Dividend of 2 per cent for 1899, free Income Tax (making 5 per cent for the year)	£440 0 0
2 In writing off from cost of Properties as depreciation of Machinery, etc.	500 0 0
3 In carrying forward the Balance of	333 19 8
	£1,273 19 8

The Tea crop amounted to 211,361 lb., and the Cardamoms to 4,211 lb. (or 3,743 lb. net) as against the original estimates of 210,000 lb. and 5,000 lb. respectively. The bought leaf was 13,867 lb. ing a total for the year of 225,228 lb. of Tea. The sales of Tea show a net average price per lb. of 7·03 pence, being equal to, say, 42 cents per lb. Exchange for the Company's drafts during the year has averaged 1s. 4 9-16d., as against the exchange for 1898 of 1s. 4 7-16d.

The following Table gives the acreage of the Estates for the last five years :—

	1895	1896	1897	1898	1899
Tea in bearing	591½	591½	591½	591½	591½
do partial bearing	—	63	63	90	90½
Tea not in bearing	112½	61	61	34½	34
Cardamoms	65½	56	56	56	56
do not in bearing	—	—	—	10	14
Grass and Fuel Timber	25	25	25	25	25
Forest and Waste Land	446½	444	444	434	430
Total	1,241	1,241	1,241	1,241	1,241

The following is a Statement of the Tea and Cardamom crops with the yield of Tea per acre for the same period :—

	Tea. lb.	Cardamoms. lb.	Yield of tea per acre. lb.
1895 ..	201,631	2,172	340
1896 ...	228,360	4,842	380
1897 ..	212,555	8,291	360
1898 ..	206,620	4,026	349
1899 ..	211,361	4,211	357

During the year an additional expenditure of £398 18s. has been incurred on Capital Account, but from this must be deducted £22 13s. 5d. realised by the sale of Tea Plants.

The prospects for the current year are so far satisfactory, the estimated yield being 220,000lb. of made Tea, and 4,000 lb. dry Cardamoms, and according to recent advices received from Ceylon the yield for the first two months of the present year was 4,175 lb. made Tea in excess of the corresponding period last season.

LINDOOLA TEA COMPANY, LIMITED.

REPORT FOR 1899.

Report presented at the third annual general meeting of the Lindoola Tea Company, Limited, held at 12, Fenchurch Street, London, on 10th April :—

The Directors have the pleasure to submit the balance sheet and accounts of the Company for the year ending 31st December, 1899, duly audited. The season proved a favourable one, and the total yeld was 189,020 lb, tea plucked off 320 acres, being at the rate of 590 lb. per acre, costing free on board Colombo 24·78 cents per lb. The gross average price of the 180,729 lb. sold in London was 8½ per lb. Last year the crop amounted to

186,776 lb. tea, and the average sale price in London was 8⅜d per lb. gross. The current season's crop is estimated at 185,000 lb. tea. The rate at which drafts were negotiated was 1s 4 19-64d against 1s 4 7-32d last year. The Directors desire to place on record their appreciation of the services of Mr. W. Sandy Thomas, the Manager in Ceylon. The net profit for the year amounts to £2,398 15s 11d; to which has to be added the balance from last year of £223 6s 6d; making together £2,622 2s 5d. Out of this the Directors have written off the balance of preliminary expenses account £223 15s 10d; the premium paid for consols £105 14s; the dividends on the 6 per cent preference shares for the year ending 31st December, 189g, have been paid £780; income tax £58 12s 8d; it is proposed:—To pay a dividend of 6 per cent free of income tax on ordinary shares, requiring £1,300; and to carry forward to next year the balance of £153 19s 11d. Total £2,622 2s 5d. The investment in consols has been written down to par; but in view of the expenditure on buildings and machinery charged to revenue account, the Directors do not consider it necessary to write off a specific sum for depreciation. The Directors have been deprived, through death, of the services of their late colleague, Brigade-Surgeon John Bennett. The Director who retires on this occasion is Mr. Charles Murray Robertson, who, being eligible, offers himself for re-election. The Auditor, Mr. J Hamilton Alston, also offers himself for re-election.

ROBERTSON, BOIS & Co., Agents and Secretaries.
London, March 30th, 1900.

CRAIGHEAD TEA COMPANY, LIMITED.

REPORT FOR 1899.

Reports presented at the second ordinary annual general meeting held at Fenchurch Street, London, on 12th April, 1900.

The Directors have the pleasure to submit the balance sheet and accounts of the Company for the year ending 31st December, 1899 duly audited. The mortgage has been reduced to £4,050 by the payment of the first instalment of £450 on the 31st December last, which has been charged against the profit of the year. The estates are reported to be in good condition and are being liberally cultivated. The total yield, excluding 5,025 lb. tea from purchased leaf, was 342,250 lb. tea and the gross average price obtained in London was 7·82d per lb. The expenditure included the sum of £350 spent on buildings and machinery and the up-keep of young tea not yet in bearing which has this year been charged against revenue. In the coming year a new roller and drying machine will be necessary, and the withering shed will be completed.

The net profit for the year amounted to £3,145 17s 10d; to which has to be added the balance last year of £457 0s 8d. Total £3,604 18s 6d. Interest on the mortgage has been paid £225; the first instalment of the mortgage (£4,500) has been paid £450; dividend on the six per cent. preference shares for the year has been paid £421 16s; an interim dividend of 2½ per cent on the ordinary shares, free of income tax has been paid £572 15s; preliminary expenses have been written off £153 8s 3d. It is proposed to pay a final dividend of five per cent free of income tax on the ordinasy shares which will require £1,145 10s; and to carry forward the balance of £636 9s 3d. Total £3,604 18s 6d. Mr. George Alston, the Director who retires on his occasion, being eligible, offers himself for re-election. Mr. J Hamilton Alson, the Auditor, also retires and offers himself for re-election.

ROBERTSON BOIS & CO., Agents and Secretaries,
London, April 3rd, 1900.

CEYLON PROPRIETARY TEA ESTATES CO., LTD.

REPORT FOR 1899.

Report of the Directors submitted at the Third Annual Ordinary General Meeting of Shareholders held at the Office of the Company, on Wednesday, 9th May, 1900.

The Directors herewith snbmit the General Balance Sheet and Profit and Loss Account for the the year ending 30th December, 1899, duly audited

The net amount at Credit of Profit and Loss Account after providing for General Expenses, Income Tax, &c., is ...				£6,911	12	9
Debenture Interest paid paid to 30th September, 1899 (*less* Income Tax), amounts to	£725	0	0			
less from last Account ...	181	5	0			
	£543	15	0			
Three months' Debentures Interest to 30th Dec., 1899, (*less* Income Tax) amounts to				181	5	0
Preference Dividends paid for 1899 (*less* Income Tax) amounts to				1,262	16	0
Interim Dividend of two per cent on the Ordinary Shares paid 31st October, 1899, amounts to				1,567	12	0
It is proposed to pay a final Dividend of three per cent on the Ordinary Shares (making five per cent in all, free of Inoome Tax), which will absorb				2,351	8	0
And to oarry forward to next year a balance of				1,004	16	9
				£6,911	12	9

For the past year the Company's Estates have given an increased crop of tea of 70,000 lb, and a yield of 439 lb per acre as against 407 lb, the previous year.

The gross price realised for the teas sold in London and Ceylon averaged 7·11d as against 6·94d last year, and the average rate of Exchange 1/4 26-64 against 1/4 15-64.

The following statement shows the results of the working of the Company for the last three years:—

Year.	Acreage of Tea in Bearing.	Yield per Acre.	Rate of Exchange per R.	Sale Price of Tea.
		lb.		d.
1897 ..	2100	413	1/3 15-32	6·90
1898 ..	2105	407	1/4 15-64	6·94
1899 ..	2111	439	1/4 13-32	7·11

Year.	Estate Tea.	Bought Leaf Tea.	Tea manufact'd for others.	Total	Profits £	s.	d.
	lb.	lb.	lb.	lb.	£	s.	d.
1897 ..	868,710	32,799	89,307	990,816	6,277	6	9
1898 ..	857,351	38,530	94,370	990,251	4,834	3	11
1899 ..	927,395	61,772	1,681	990,848	6,790	2	5

There are 2,356 acres planted with tea and the total area of the Estates comprises 3,058 acres.

The Radella factory was totally destroyed by fire on 26th October last. The loss was covered by Insurance, and it is expected that tea manufactnre will be resumed in the new bnilding in June next.

Under clause 69 of the Articles of Association, Mr. G. A. Talbot retires from the Board on this occasion, but, being eligible, offers himself for re-eclection.

The Auditors, Messrs. Harper Brothers, Chartered Accountants, retire from office and offer themselves for re-election.

RAGALLA TEA ESTATES, LTD.

REPORT FOR 1899.

Report of the Directors to be submitted to the shareholders at the fifth annual ordinary general meeting, to be held at 30, Mincing Lane, E.C., on Wednesday, May 2nd, 1900, at 12 o'clock noon.

The Directors beg to submit their report, and also statement of accounts duly audited, for the period of 18 months ending 31st December last—

		£ s. d.
Showing a net profit for that period of		3178 13 10
Add the balance of last account		64 14 9
		£3243 8 7
Out of which the following dividends have been paid :—		
1899, 1st January—Preference shares	£1050 0 0	
1899, 1st July—Preference shares	1050 0 0	
1900, 1st Jan.—Preference shares	1050 0 0	
		3150 0 0
Leaving a balance to carry forward of		£93 8 7

The Directors much regret that they have to present accounts, the results of which do not allow of a dividend on the ordinary shares, but owing to the shortage of crop on Kelburne, the higher exchange and the low prices obtained for the high grown Ragalla teas last season, the profits have not reached the amount anticipated.

During the season, which covers 18th months as arranged at the last meeting, the crops realized were :—

Tea, 700,398 lb., at a gross average of 8·92d per lb.

Coffee, 147 cwt. 0 qr. 24 lb., at a gross average of 78s 11d per cwt.

The following are the acreages of the Company's estates :—

Name.	Tea.	Coffee.	Timber.	Patna, &c.	Total.
Ragalla and Haigran Oya	907	—	180	303	1390
Kelburne	742	10	165	64	981
	1649	10	345	367	2371

The estimates for the current season, from 1st January to 31st December, are :—

Ragalla Tea, 425,000 lb.

Kelburne Do 240,000 lb. Coffee, 20 cwt.

Under Clause 97 of the articles of Association Mr. M. P Evans retires from the Board, and being eligible offers himself for re-election.

The appointment of Auditors rests with the shareholders, and Messrs. Fuller, Wise and Fisher offer themselves for re-election. C. E. STRACHAN and M. P. EVANS, Directors, and M. P. EVANS & Co., Secretaries.

London, 24th April, 1900.

SALE OF MADULKELLY ESTATE.

Madulkelly estate in the Kelebokka Valley, which has just been sold by Mr. M. H. Thomas for £7,500 to Mr. J. G. Mutter, covers no less than 785 acres, of which 258 or thereabouts are in tea. It was at one time a very fine coffee estate, being one of the earliest opened in "the Valley," and always a favorite. We believe it has also been doing very well in tea. Mr. M. H. Thomas still retains Galheria (427 cultivated acres) and Oonoonagalla with 487 acres in cultivation.

THE LONDON COCOA MARKET.

(BY HAROLD HAMEL SMITH.)

FANCY PRICES FOR GRENADA COCOA.

April 12, 1900.

The Grenada cacao planters have shewn a novel but practical way of proving the interest they take in the South African War Fund. Twelve of them sent over 14 bags of cocoa for sale with instructions that the net proceeds were to go to the credit of the fund. In consideration of this, the cocoa was carried freight free, and no dock or landing charges commission, &c., were charged by those buying or selling the cocoa, in order that the fund might get the benefit of the full amount realised, and to show their appreciation of this generosity fancy prices were offered by the trade for the 12 lots offered. Seven bags sold at 90s, 5½ bags at 105s and one half bag at 106s or about 25s to 35s above their normal value.

The sales went off this week with good competition, and at higher prices all round, especially for Grenadas. The market is still bare of Guayaquil, and there are no signs of the large receipts at Guayaquil to rival last year, which were prophesied at the beginning of the crop, the total receipts at that Port to 31st March being 72,300 quintals, against 88,500 qts. in 1899, 70,000 in 1898, and 91,500 in 1897; and the present stock in London is under 19,000 bags, while there are 25,000 at Havre. On Monday (9th) 500 bags Summer Arriba sold at 78s to 80s. All the Grenadas, and nearly all the Trinidads and Ceylons offered sold this week. Next week, owing to the holidays there will be no sales, but those to take place on 31st April will be fairly well supplied with Grenadas and Trinidad, now being landed or "en route" but the present rise in price is expected; to be maintained, if not augmented, as the Government, who have not been buyers for some times, are expected to come in, and the way the demand, without the Government competing, is taking up all available supplies as they land, gives increasing strength to this idea.

The reports from Trinidad this mail complain of the shortness of supplies, and that the quantity of cocoa coming to market grows sensibly less. The total shipments to 29th March were 7,600 bags behind last year's (67,564 bags against 75,117 bags) and large orders were in hand for Europe and America when the mail left, which owing to the short supplies coming forward could not be filled. The future prospects depend entirely on the weather, but no improvement is looked forward to till July or August, and only then, provided the weather continues favorable.

In answer to my enquiries as to the cause of "worminess" in Trinidad cocoa, Mr. Eugene Smith, a Trinidad planter of great experience and who is now looking after a cacao estate belonging to a well-known English manufacturer, writes that "it is caused sometimes by putting the cocoa into bags whilst still warm; or keeping it after being bagged in a damp place, The 'worm' is in the seed itself, that is the cocoa seeds produce it. If you examine the insect carefully you will see it is very much like a weevil, but of a rounder build and with bigger wings. Whether the insect first starts as a worm

and then develops into a weevil, I am not in a position to say, but I believe it does so as it is in the shape of a worm that it 'rots' the cocoas as it is called, though that is hardly the proper term. I think if you take note you will find that it happens in the better fermented cocoa oftener than in the commoner class."

Of the 7,204 bags offered this week 6,506 bags sold at, and after, the sales. Of the 4,367 bags of Trinidad offered 4,120 bags sold, middling to good red 71s to 73s, fine marks 75s to 79s. One lot of "San Antonia" mark 83s 6d. Of 1,512 bags Grenadas offered all sold, common to good 67s to 69s 6s, fine 70s and 71s.

Of 829 bags of Ceylon offered 686 bags sold, smalls 64s 6d to 70s, dark red 70s to 72s, fair 76s 6d to 80s, good to fine 82s 6d to 89s 6d. One lot of 2 bags picked beans, fine bright red 92s. There is still a good demand for fine bright red. The sales included Maria 70s and 71s, Rosebury and Benveula 76s 6d, Lower Haloya 77s, Kepitigalla 78s 6d, Wiharagama and Marakona 80s, Gangaroowa 82s. (4 bags 83s bid refused), Palli 102 bags 85s. 130 bags 88s to 89s 6d, CTC 2 bags 92s.

	1899 Bags	1900 Bags
Stock of all growth in London	108,197	92,547
,, ,, at Havre ...	82,897	80,872
Ceylon & Java stock in Londn	12,000	8.813

(BY HAROLD HAMEL SMITH.)

London, E.C., April 20.

Owing to the Easter holidays there were no cocoa sales this week, and except a sale of some reddish grey Caraquez (Guayaquil) at 73s. I have not heard of any cocoa having changed hands. Meanwhile there is still a good demand for all descriptions, but especially for fine Ceylons, which are evidently much wanted, and the first lots to arrive should command high prices. In Trinidads low middling and middling red are at a value out of proportion to the good red, some of the two grades I expect will realise the same price this week, about 72s, same as last week. Some of the Dominicas which sold at 67s was out of approportion to the quality, but the demand for these cheaper qualities is very good. At present 4,500 bags are advertised for sale next week, but no particulars are given, though I believe about 1,400 are Grenadas, and the rest mostly Trinidads, all of which have only recently arrived.

The present stock of Ceylon is 8 010 bags against 13,420 bags last year, prices are unchanged say, dull and dark red 70s to 72s, fair 76s to 80s, good to fiue 82s 6d to 89s 6d, there is no saying what price would be paid for a really first class lot fine cinnamon break of creollo Ceylon

I see Cadbury's have only advertised 25 tons of butter next month, but at present prices have not advanced much: today it is quoted 1s 5¼d. The Dutch are expected to have up about 70 tons.

PLANTING NOTES.

MINING.—Negri Sembilan Government notifies that no new application for mining land, or for water rights for hydraulic mining will be entertained at the Seremban Land Office until further notice.—*Straits Times*, May 1.

SUGAR PLANTERS in Java are doing well, despite hindrances from the land laws which discourage the leasing of ground by Government for long terms. Figures speak eloquently of the headway made by planters under these difficulties. Ten years ago the sugar crop in that island reached 3½ millions of piculs. The yield in 1899 rose to 11 millions of piculs.—*Straits Times*, May 1.

RUBBER.—A parcel of Para rubber (341 lb.) and samples of Rambong, *Ficus elastica*, and Singret, *Willoughbia firma*, prepared at Kuala Kangsar were sent to London by Mr. Derry for sale. All the best rubber sold at the rate of 3s 10d per lb. the highest price ever heard of for Para—excepting Brazilian produced—and 6d per lb. more than realised for that sent from Kuala Kangsar two years ago.—*Perak Pioneer*, May 2.

PERFUME FARMING.—There is about to be started in Monrovia, California, the first perfume-farm and perfume-manufacturing plant operating on an extensive scale that has ever been established in the United States, some thousands of acres having been bought for the purpose in Southern California. Expert German and French chemists have already been engaged, and this spring the plant, it is said, will be in operation. Several New York and Chicago capitalists have the matter in hand, and it is intended to organise a stock-company, incorporated under the laws of Illinois. The wonder is that there is nothing of the kind in India!—*Planting Opinion*, May 5.

GOOD SHOOTING IN NEPAUL.—Sir George Luck's party has just returned from the Nepaul jungles, having had a most successful shoot. The other guns were Sir Bindon Blood, Colonel Ellis, R. E. and Captain Cook, A. D. C., while Major Pennell, A.D.C., and Captain Bald, 15th Hussars, were with the camp at different times. The spoil consisted of 14 tigers and three leopards, besides deer and good bags of quail were made at off times. Of the 14 tigers, eight were males, and the smallest measured nine feet two inches; all the tigresses too were good specimens. The arrangements were in the hands of Colonel Ellis, who was assisted by that good sportsman Khan Bahadur Bala Khan of Sherpur, Philibhit, and everything went without a hitch.—*Pioneer*.

THE GENERAL CEYLON TEA ESTATES COMPANY.—It is no doubt disappointing that the directors have been unable to recommend a dividend for the past year, but in the circumstances explained by the Chairman (Mr. Jas. Sinclair) to the meeting of shareholders which is reported in another column—there being only £4,000 of working capital left and the debenture interest amounting to £7,000—we think the most prudent course was adopted, having in view the best interests of the Company and the strengthening of the financial position of the concern. If a considerable improvement has not taken place by July, the shareholders will then be called together to consider a proposal to reduce the Company's capital, both preference and ordinary, to such an extent that an annual profit of £23,000 would cover the debenture interest, pay the preference dividend and something on the ordinary shares, and also allow of an appreciable amount being set aside annually for the redemption of debentures.

Correspondence.

To the Editor.

RUBBER YIELD IN NICARAGUA.

TO THE EDITOR OF THE "INDIA RUBBER WORLD."

Bluefields, February 9, 1900.

SIR,—I have returned to my plantation on the Bluefields river, in Nicaragua. You may be interested in the result of my experiment in bleeding one of my cultivated rubber trees (*Castilloa elastica*), at the age of five years and two months from the seed. I extracted from this tree 12 ounces of pure marketable rubber, without apparently injuring the growth of the tree. At the present price here of 60 cents per pound, the 12 ounces would be valued at 45 cents, gold, on the plantation. The yield will increase, of course, as the tree grows older.

WILLIAM S. ARMSTRONG.

COCONUT CULTIVATION.

Franklands, Veyangoda, April 11.

DEAR SIR,—Mr. Cochran's farewell gift to the Island—not final, I trust—is not the least with which his powers of observation and patient investigation, have endowed it. His researches into the constituents of the various parts of the coconut tree, of the nut and its different components, from the husk to the water, have helped to correct information previously available, and to bring within reach of the intelligent planter scientific facts of the highest value. His last letter published in your issue of the 29th ultimo has brought together a mass of information of the greatest interest, which ought to help planters to revise pre-conceived notions, and to stimulate inquiry and experiments.

In responding to your request for information from this estate, I wish it to be distinctly understood that I am myself a learner, and that what I note down, as having come under my observation and experience, are matters which may be further elucidated, and in respect of which I am open to correction. There are, however,

TWO ARTICLES OF THE AGRICULTURAL FAITH

to which I am irrevocably committed—that coconuts respond appreciably to liberal treatment, and that the proprietor who neglects to keep his plantation clean and to manure his trees in all but exceptionally rich soil, denies himself a safe and legitimate source of income. It may seem superfluous to record statements which are regarded as axiomatic by the scientific agriculturist; but I have often marvelled at the conservatism of intelligent men on the subject of manures. I mean, not as regards its uselessness or wastefulness on rich soil—of which, by the way, the Island cannot boast much—or as regards its inefficacy on stiff, hard, irresponsive soil. In dealing with average soil, they admit that manure will increase the yield; but they object that there is danger in accustoming the tree to manure, and that the effect of the stoppage of manure will be to throw the trees back dangerously. They are not clear why one should stop manuring one's trees, when an average expenditure of, say R10 an acre a year, will ensure an average increase of income of R20 per acre per annum—or, say R10 per acre net. Nor do they insist that unmanured trees will never deteriorate, or that they bear as well as manured trees on similar soil. This distrust, or suspicion, of manure is a curious fact; but it must not be supposed that it is confined to Coconut Planters, or to Ceylonese. Similar conservatism and scepticism have found expression in the Press from Tea Planters; and although more enlightened views are gaining ground, there seems to be much confusion yet, as in matters affecting the animal kingdom, so in matters relating to the vegetable kingdom, between stimulants and food; and objection is raised to substances which are intended to build up a plant, or to restore to it what is taken from it in crops, which would be applicable only to stimulating substances which may force unnatural crops and leave the tree exhausted.

I do not pretend to be a scientist; nor can I claim the wide and prolonged experience which finds expression in Mr. Jardine's interesting letter in your issue of the 6th instant, but such experience as I have had, encourages me

TO CONTINUE THE USE OF MANURE,

and to counsel its use by friends. The special manures to be used and the system of application, must depend on the varying conditions of soil and climate to be dealt with; and Mr. Cochran's letter indicates generally the direction in which information may be sought and applied. Those who have no faith in the scientist, or who distrust artificial manures, may yet be guided by observation and the experience of their neighbours, and find abundant materials on and about their estates wherewith to maintain their trees in heart and increase their crops.

Mr. Cochran's reference to some information he obtained from me on application, calls for a slight correction. He is probably under the impression that I dig in the droppings of the grazing cattle—which are tied, two and two, over night, under each tree, for a week or ten days according to circumstances—without any further application. Such is not the case. Three lbs. of bone dust are sprinkled round the stem of each tree and dug in with the droppings, and the clods are covered up with fallen branches,—ashes, if available, being previously sprinkled. Generally, the ashes are applied to the trees whenever the fallen branches, &c. are burnt under each tree. Mr. Cochran's calculations show that the droppings—one advantage of which is that but little of their ammonia is dissipated—possess sufficient manurial substance for the needs of the tree; but as the grass under coconut trees steadily grows less under the influence of the overhanging shade, it is impossible to maintain on a cultivated estate grazing cattle enough for all its manurial wants. At least one half of this estate is manured with cattle-manure from road-side sheds and chekoo yards; and although this stuff ought to be richer, from the poonac, &c. on which working cattle are fed, much of its value is lost by exposure of the heaps to sun and rain. About a cwt of this road-side manure I apply to each tree, with bones and ashes in similar quantities as before mentioned; and the results seem about equal. In a young plantation in which new trees are constantly coming into bearing, it is difficult to compare field by field with absolute accuracy; but both in the appearance of the trees and in the crops gathered from them, the results are practically the same.

About the end of 1897, Messrs. Freudenberg & Co., kindly placed at my disposal certain artifi-

cial manures—Thomas' phosphate, sulphate of ammonia, sulphate of potash, kainit—which I applied to trees, alongside others which were treated with cattle-manure and bone-dust in the manner above described, and

A SEPARATE RECORD

was kept of the crops plucked off the trees thus treated at twelve pluckings, extending over two years. My Superintendent duly sent in his Report on the experiments; but here, too, no marked difference was observable, either in the appearance of the trees or the crops gathered. Probably, more continuous experiments are necessary.

It must not be forgotten that, just as the coconut tree is much longer coming into bearing than tea or coffee, so the effects of manure must be watched for during a longer period. Speaking roughly, improved crops cannot be expected during the first year, as it takes a year for all the nuts on the tree to ripen; and it is during the second year that the benefit which a tree has derived from the application of manure will show itself in fruit. If the quantity applied is sufficiently large, the third year, too, may show results; but I prefer not to put down too much, manure at a time, and think the disturbance of the roots in alternate years is not too frequent. I share Mr. Jardine's scepticism regarding the harvesting of

90 NUTS A TREE

over any considerable undivided acreage. Not that such a return is inconceivable, or outside reasonable expectations in a good district, on estates intelligently opened up, and planted with carefully selected seed; but it is only recently that attention has been paid to good seed nuts for nurseries; and the inequality of the trees—whether through bad seed, early neglect, or a treacherous subsoil—in vigour and as crop-bearers, even on the best estates, is one of the most disturbing experiences in coconut cultivation. Then, it is one thing to put an average of 90 nuts on the trees over extensive fields, and quite another thing to keep them there during the trying droughts which denude the trees of tender nuts, twice or thrice a year in the best districts. An average of 40 nuts to the tree is not to be despised; and most people will be content if they can attain to 50 a tree, or 3,500 per acre, which systematic cultivation can secure in an average district, and which should represent a very satisfactory return on a safe investment. As to trees, of which Mr. Cochran has been informed, bearing 400 nuts for years together, they should be worth going a long way to see. I have some trees here which carry 200 to 300 nuts; and it is difficult to see where the extra nuts are to be packed and maintained. As for 900 nuts on a tree—well, they may be arecanuts!

I have not lost the faith in

SALT,

as a manure for coconuts, which I first felt, reasoning from analogy, and looking to the splendid growth of trees along the sea-borde. True, that there are trees in inland districts which look as vigorous and bear as heavily as those on the coast line; but look at the difference in soil, and it will be clear that salt plays an important part in building up and maintaining the productiveness of the tree on poor soil. As against Mr. Jardine's doubts, I may set the confidence of a Proprietor in Henaratgoda, who has used salt with the best results, which he may be induced to make public. His example would be very readily followed by many, if only the Government pursued an enlightened policy by issuing salt at cost price for agricultural purposes. And there is hope now, after Sir West Ridgeway's recognition of the need of scientific experts to help on agricultural industries. Meanwhile, in husk, the Planter has a waste product, rich in potash, which he can utilize, either by packing trenches with it, or reducing it to ashes.—Yours truly,

F. B.

WHAREHOUSE CHARGES ON TEA LONDON

London, April 12th.

SIR,—I venture to trouble you with the enclosed copy of correspondence, and if you can find room to publish it, you will, I think, confer a favour on the tea planting community, as it throws a flood of light on the reasons why the charges on tea warehoused in London are maintained at so high a level.

I must explain that when the wretched draft dispute was forced upon the trade, by the ill-advised action of the Ceylon Association in London, I, with others associated with me in adjoining offices, wrote a letter to the Association protesting against their bringing on the dispute (unfortunately without avail). We then strongly urged the Association to take up the dock charges question, as being a much more important matter.

The Secretary replied that the Committee had tried in 1893 without success, and then made the statement referred to in the enclosed correspondence, which, from the sequel, he is likely to regret.

You will now see that the dock company, who warehouse about a fourth part of the entire import of tea into London, have always been in favour of reducing charges; but they are outvoted by the other members of the "Ring," who among them, take charge of the other three-fourths.

The manager of Cutler Street tells me that one great obstacle to a reduction in rates arises from the fact that Syndicates are formed for importing tea, in which some Wharfingers take an interest, and that some of those interested in such Syndicates do not object to the very profitable nature of the business of warehousing tea, because it fosters such operations and gives commissions all round.

How the planters, who must inevitably pay these exorbitant charges, benefit by such business, I fail to see. The tea required for consumption in the United Kingdom must come here, whether on Growers' or Buyers' account. What the planter has to do is to endeavour to reduce the cost of putting his tea on the London market. The existence of this "Tea Clearing House," or "Tea Warehousing Ring," as I prefer to call it, is a deliberate tax on the grower of tea. That ring ought to be broken up, and the sooner it is done the better.—Yours faithfull,

DUNCAN W. H. SKRINE.

From Ceylon Tea Association in London, to A. Thomson, Esq.

9th April.

DEAR SIR,—In reference to correspondence with yourself and others in May last, I have the pleasure to enclose for the information of yourself and the other gentlemen associated with you, copies of letters that have passed between myself

and the Docks Joint Committee.—Yours faithfully, (Signed) WM. MARTIN LEAKE.

Tea Clearing House Committee, 21 Mincing Lane, 10th April.

W. Martin Leake, Esq., Secretary, Ceylon Association in London.

DEAR SIR,—The attention of this Committee having been drawn to recent correspondence between yourself and the representative of the London and India Docks Joint Committee, respecting the question of rates and charges on Tea, I am desired on behalf of the Tea Clearing House Committee to state that there is absolutely no foundation for the statement that the Tea Clearing House Committee are ruled by the London and India Docks Joint Committee, and that the latter have been in favour of increasing rather than of reducing the charges in connection with the warehousing of tea. At no time have they made any such suggestion, but, on the contrary, they have always advocated a reduction of rates with a view to meeting the applications made on behalf of the Importers.—I am, dear sir, yours faithfully,

(Signed) GEO. T. POOCK, Secretary.

London and India Docks Joint Committee, 109, Leadenhall Street, April 5.

Martin Leake, Esq., Secretary, Ceylon Association.

DEAR SIR,—I am informed that the following is an extract from a letter dated the 16th May 1899, and signed by you as Secretary of the Ceylon Association, and I have to ask you to be good enough to give me the authority upon which you made such unfounded statements, and which are calculated to do the Joint Committee considerable harm, when addressed, as they were in this instance, to Importers of Tea.

"In regard to the Dock and Warehouse rates, the Tea Committee did its very utmost in 1893 to move the Tea Clearing House to make a change, but that Institution has a monopoly ruled by the Joint Dock Committee, who would rather increase the rates if they possibly could."—Yours faithfully,

(Signed) J. GREENWAY, Assistant to Manager.

From W. Martin Leake to J. Greenway, Esq. April 9.

DEAR SIR,—I have your letter of the 5th inst. I must point out that my letter, from which you send me an extract, was written in reply to certain representations made by several members of my Association and is clearly of the nature of a privileged communication.

Setting that aside, I am willing to admit that the word "ruled" is somewhat too strong to be applied to the great influence undoubtedly exercised by your Committee over the proceedings of the Tea Clearing House. With that exception I merely stated facts that seem to me unquestionable.

(1) That in 1893 my Committee attempted (without success) "to move the Tea Clearing House to make a change" in its rates. (2) That the Joint Dock Committee at the date of my letter had, consistently shown a wish to increase Dock rates if they possibly could.

On the latter point it is not necessary to go beyond my own personal experience. In February 1896, I was instructed, as Secretary of my Association, to forward to your Committee a protest against their attempt "to secure a monopoly of warehousing of products by imposing a direct and unwarrantable charge upon all goods intended for delivery to craft" (see my letter to your Manager 24th February, 1896).

In 1899, at the very time when my letter, of which you make complaint, was written, I was acting in my capacity as Deputy Chairman of Cement Section of the London Chamber of Commerce on a Committee appointed to resist new charges imposed by the Joint Committee, charges which being subsequently shown to be illegal were ordered to be refunded.

Recent writings and speeches of your Directors can, of course, not be quoted in support of a letter written last May, but having read the memo issued by Mr. Sydney Holland and the recent speeches of the Dock Chairman, I have difficulty in understanding in what sense your Committee considers a statement that it would gladly increase rates if possible, to be "unfounded."—Yours faithfully,

(Signed) WILLIAM MARTIN LEAKE, Secretary,

WAREHOUSE RATES ON TEA.

27, Mincing Lane, London, 10th April.

W. Martin Leake, Esq.

DEAR SIR,—With reference to your letter to Mr. A Thomson, dated 9th April, and its enclosures, I am at a loss to understand your remarks to Mr. Greenway that your letter of 16th May last was "clearly of the nature of a privileged communication."

That letter was written in reply to one signed by several large tea importers, headed by myself, making a strong representation in favour of your Association taking up the subject of the excessive rates for working teas.

In reply you made a positive statement to the effect that the "Tea Clearing House is a monopoly ruled by the Joint Dock Committee who would rather increase rates if they possibly could."

I and the other firms sent a rejoinder on the subject, of which we did not even receive an acknowledgment.

Finding that your Association was either unwilling or unable to do anything in the matter, I and my Manager, Mr. T A Williams, have never relaxed our efforts to bring the facts home to the growers of tea (on whom more particularly the incidence of the present heavy rates mainly fall) and to do what we could here to bring pressure on the Dock Company, who we thought should have a preponderating influence in the settlement of rates to be levied.

To my surprise, I found that your statement above quoted, was contradicted point blank, by the Joint Dock Committee, and as a matter of fact it seems, that in voting at the Meetings of the Tea Clearing House, the hand held up by the Dock Representative has no more weight than the hand held up by any of the smaller members of the body.

When challenged by Mr. Greenway on the subject of your statement to me, and my co-signatories, you make what I must venture to call a very inadequate reply, and endeavour to obscure the issue by reference to the charges for the use of Dock water by barges, and to charges on cement. What there is germane to the subject of charges for warehousing tea in these questions, I fail to see.

From enquiries that I have made, I now learn that there are many of those now connected with the Ceylon Association who have made arrangements, by which they and, (or) the Firms or Companies with which they are connected, get, either directly, or indirectly advantages out of the charges levied by the members of the Tea Clearing House, which are denied to importers generally.

This being so, it is not surprising that there is not the same energy displayed in carrying on the agitation for the reduction in rates, which would otherwise be the case.

I learn that even the wholly inadequate reduction of 5 per cent. has not yet been agreed to, although strongly supported by the Joint Dock Committee.

This disposes of your reference to the "great influence undoubtedly exercised over the proceedings of the Tea Clearing House" by the Joint Dock Committee.

It would seem that the collective votes of a number of comparatively small wharves, is quite capable of rendering nugatory the efforts of the Joint Dock Committee to do, what I am assured they are wishful to do, viz: make a substantial reduction in the charges on Tea.

The Tea Clearing House is, no doubt, a very powerful body, and may consider that the Importers are at their mercy, but in the end, I believe, that they will find it politic to agree to a thorough revision of the rates; if they do not do so, I and those associated with me, who I feel sure will be supported by the Planters generally, will not rest until a strong effort is made to break up the "ring" for good and all.—Yours faithfully, (Signed) *p.p.* DUNCAN W. H. SKRINE, THORNTON A. WILLIAMS.

London and India Docks Joint Committee, Cutler Street Warehouses, 10th April.

DEAR MR. WILLIAMS,—In my letter of the 5th instant, I omitted to mention that some months since the Docks Joint Committee brought the question of Tea Warehousing Charges before the Tea Clearing House Committee, and proposed a reduction therein, which they continued steadily to press, until their efforts have now been attended with partial success.—Your faithfully,

(Signed) J. GREENWAY.

Thornton A. Williams, Esq., 27 Mincing Lane.

COCONUTS, OR COPRA?

Hanwella, April 29.

SIR,—The following figures taken from last year's records of the estate I am on, (20 miles from Colombo), may be of some use to your correspondent "Goiya."

Excepting a few thousand nuts, the whole crop was sold in copra. The average price obtained for the year was R41·13 per candy, 1,136 nuts having been required to the weight. The cost of curing the crop, including husking and burning of husks, was R1·62 per 1,000, which added to the cost of transport, gave a net proceed of R32·40 per 1,000 nuts on the estate. I may add that I have begun this year under better auspices, having obtained so far R35·28 net.

Estates where nuts are easily disposed of, enjoying competition amongst buyers, need not make copra, but others less favourably situated, will find considerable advantage in selling their produce cured.

It is time the growers should co-operate and endeavour to improve on the system, so far followed, in offering their copra to the buyers, which if organized will secure a full market value for their produce and their labour thereon. Z.

COCONUT CULTIVATION.

Hanwella, April 20.

SIR,—Coconut planters must be grateful to Mr. Cochran for his scientific observations—and having supplied these with important information, showing what their produce removes from the soil, and what some of them, (unfortunately not all) return to it in different forms and proportion of fertilizers.

Mr. Jardine contributes most useful and practical advice—which derived as it is from experience, and known success, nobody should hesitate to follow.

In the *Observer's* editorial of the 6th instant, comments have been made upon the considerable diversity in returns from manuring—and the desirability of experiments being made to see to what extent the bearing could be increased by manuring. This could be done with a small patch or particular field, but not over a large area—unless it is on an estate—properly treated from its infancy—and otherwise a model one—besides manuring.

It is beyond doubt that the coconut like almost every other product cannot be successfully cultivated without the use of fertilizers—but this is no reason why it should be considered imperative that it must be arithmetically and scientifically proportioned, to entitle us to a sure and abundant crop. The results of manuring must certainly vary with different growers—though they might follow the same prescriptions in form and quantity and this difference will be due to the composition of different soils—irrespective of fertility and moisture available. A great deal will also be due to jat and the *modus operandi* at the start, and not a little to the system followed in the application of the fertilizer.

In the case of a modern plantation—the cautious planter will have been in the first instance careful in the selection of the land, and with the nuts for planting—so that the results of his labors to follow—cannot be disappointing. It is not so with old plantations more or less neglected. Here the cultivator is supposed to vastly increase his average crop, even to the extent of making a certainty of it—by manuring. Undoubtedly this must tend to an improvement, but time must be allowed and a more liberal system of manuring followed for satisfactory results.

Mr. Jardine properly points out we must not only manure for fruit, but leaves, stem, and roots as well, and what a quantity some neglected trees will require, before they can spare any for fruit!

Very frequently on old plantations we come across some very bad patches of soil, where little or no cultivation is possible, as the growth and spreading of roots are obstructed by stone, cabook, or laterite. The trees in such soil—others of bad jat,—those with their trunks damaged, and barren ones:—on such little improvement can be effected by manuring, consequently this must tell on the average crop of the estate.

I agree with Mr. Jardine and doubt the existence of estates on which the trees yield an average of 90 nuts per tree. Should there be any, I do not believe that the owners of such estates are better off than those getting only 50 to 60, when the size of their respective nuts are considered in the out-turn of the number of nuts to the candy of copra. This is another point Mr. Cochran should consider in the making of his tables.

Now that we are supposed to know the manurial ingredients required for the coconut, it will be useful to learn the different opinions respecting the system of application to be followed. This in my point of view being the most important.

My humble opinion is that the drier the climate, the deeper into the soil should the manure be applied and the farther from the tree to encourage the growth of roots deeper from the surface, where more moisture will be available; and farther from the trees they are drawn, the larger will be the area over which the moisture is absorbed. Of course, I would not manure where there are no signs of roots, but it should be the effort of the cultivator to bring them gradually where they have not been before and encourage them to go farther if possible.

In conformity with my views and the little experience I have gained, the following is the system I would adopt and on which I should very much like to hear the opinions of Veteran Planters.

In the first year I would spread the manure, one foot clear of the trunk in a radius of 4 ft. and the soil turned if possible in lumps to a depth of about 10" this operation in a field planted say 22' apart will leave between lines—both ways,—a strip of 12' uncultivated soil. The third year one of these strips is manured uninterruptedly between each line, and the cross strip is taken in hand and dealt with similarly in the fifth year—having thus in three applications manured and tilled all the soil over the whole field and encouraged the growth of roots everywhere—and avoided disturbing them too frequently—as it would if regularly manured every third year at the foot of the tree.

Further manuring when due would take place between lines, each application made between trees every other year crossing one another.

Considering that a good tillage of the soil cannot be given without severing a large number of roots of the coconut it must follow that the farther from the tree this injury is inflicted the less it will be felt.

As with every other products, so with the coconut, cultivation must be carefully and thoroughly done and the old saying "that what is worth doing at all, is work doing well," is as true of this as any other cultivation.

C. Z.

TOMATOES AND THEIR CULTURE.

April 22.

DEAR SIR,—With reference to your remarks regarding tomatoes from Dehiwala, it is no surprise to have tomatoes produced during dry weather; in fact, I find they cannot well be grown under any other conditions, as unless sheltered from rain in wet weather they become affected by a disease. I should like to know the experience of some of your readers in growing this very useful esculent. Yours truly,

X.

PINEAPPLE CANNING.

Kandy, April 23rd.

DEAR SIR,—In one of your issues. I note that you wondered why Ceylon did not can and export pineapple like Singapore. For the best of all reasons, I fear, because the trade is overdone. The pineapple canners in Singapore have been losing money on the business and a good deal of the land formerly in pineapples, has been let slide; so I was told when at Singapore last year.—Yours truly,

PLANTER.

ARTIFICIAL MANURING.

A NEW AGRICULTURAL ANALYST.

Colombo Commercial Company, Limited,
Colombo, April 26.

DEAR SIR,—The greatly extended use of valuable concentrated fertilizers calls for exact scientific information on all points connected with the selection and preparation of manures, in order that there may be no waste and that the best economic results may be obtained. We have, therefore, deemed it advisable, as well in our own interests as estate agents and proprietors, as in the interests of our constituents, to engage a trained Agricultural Analyst. We have pleasure in informing you that we have secured the services of Mr. Robert Eadie, who has worked under Professor Aikman, of Glasgow, for twelve years, and for the last seven has acted as his Chief Assistant. Mr. Eadie, who is well acquainted with the methods adopted in modern manuring, will analyse any sample of soil submitted; and, if desired, make a manurial recommendation. Having regard, however, to Mr. Bamber's investigations and his continued residence in the planting districts, we do not anticipate that Mr. Eadie's assistance will be required so much in this direction as in preparing and analysing manures. In future we shall be able to verify all analyses furnished to us, and thus from our own knowledge guarantee the purity of each manure we sell.—I am,

Dear Sir, yours faithfully,

JOHN G. WARDROP, Manager.

IMPERIAL TEA COMPANY (CEYLON).

CORRESPONDENC RESPECTING AGENCY CHARGES, &c.

SIR,—Now that the Imperial Tea Company of Ceylon has issued its report for 1899, and now that the lucky shareholders are aware that the perennial and princely dividend (perennial it would seem) of four per cent is to accrue to them, it may interest some of them, if I give an extract from some correspondence I had with the local agents during 1898. As there has been no difference made, to my knowledge, in the charges, shareholders can draw their own inferences as to how much profit is absorbed. (*Vide* local Agent's letter.)—Yours, &c.,

ARTHUR R. WIGGIN.

Oddington, Lindula, May 1.

Extract from a letter to Messrs. Whittall & Co., Agents for the Imperial Tea Estates Company of Ceylon dated August 5th, 1898:—

I notice that *Agency Charges* in Colombo are 1 per cent on disbursements. I presume this applies to all monies paid into estate accounts, Is there no commission on drafts? I also note 1 cent per lb. is paid on all tea shipped or sold locally; is charge for shipping included in this one cent, or is this a separate charge? (Answer gives it as included.) I notice in balance-sheet for 1897, 2 per cent. is paid to the London Agents for all produce sold in Colombo. Assuming that all produce of the Company's estates was sold in, Colombo, am I right in supposing the Agency Charges would be as follows:—

Allowing the crop to be this year the same as last 565,170 lbs. and supposing it all to be sold in Colombo at, say, 40 cents; and taking all Estates expenditure to be 30 cents, including brokerage etc., profits would be, so far as ordinary charges went, R56,517·00—less Colombo charges at 1 cent per lb. R5,651·17: less London agent's commission at 2 per cent.—commission R4,531,'36, or 18 per cent. of the Ceylon profit. Please correct me if I am wrong. Add to this the Directors, and 27 per cent. is accounted for. (£350 at 1/4=R5,250) (Signed) ARTHUR R. WIGGIN.

P. S.—The answer to this I cannot be at the trouble of copying out, but it was to effect that my figures were in the main correct but misleading.

Shareholders appear to have no redress, as the Directors apparently entered into these harmless

arrangements on their behalf, and they will be in effect until the Directors renew them. It is justifiable to assume that the London Agents have an equivalent commission on tea *sold in London* to that sold locally. (Copy forwarded to local agents—reply affixed)—A. R. W.

A. R. Wiggin, Esq., Oddington, Lindula,

Dear Sir,—We return herewith the press copy enclosed in your letter without date. The following clause appears in the Directors' Report, dated April 17th 1899, of which you doubtless have a copy:—

* "The Directors are pleased to report that the Colombo Agents have voluntarily made a modification in their scale of charges, as from the commencement of the 1898 season, to the advantage of the shareholders."

It is therefore, unnecessary for us to go into the question of corrections of inaccuracies in your letter to the Press. For any further information we would refer you to the Head Office of the Company.—Yours faithfully, (Sgd.) WHITTALL & Co., Agents.

The Imperial Ceylon Tea Estates, Limited, Colombo, May 3rd, 1900.

, No mention of amount or any details given.—A. R. W.

MR. SUTTON'S SAFETY STEAM DRIER

Talawakelle, May 3.

DEAR SIR,—I am sending you a sample of cocoa dried in my Patent "Safety" steam heated dryer and shall be glad if you will kindly give me your opinion about it.

In the first place I must tell you I know nothing about cocoa, nor had I any one to assist me during the drying process, bar coolies. I carried out the instructions given me by a few kind friends to the best of my ability. Had I had some experienced person to help me the result would have been better.

The beans were fermented at Katugastota, washed and put in a bag and sent to Drayton factory to be dried, where I have been experimenting with one of my "Safety" dryers. The beans were 24 hours on the road from Katugastota to Drayton before they were put in the "Safety;" they were washed in cold water.

The boiler which supplied steam to the "Safety" was also supplying steam to an 8 HP engine driving three tea-rolling machines. The pressure of steam in the boiler was 60 lb per square inch, by means of a reducing valve, the pressure of steam in the coils of the dryer was only five lb per square inch, which gave a very even temperature of 140 degrees F during the whole time the beans were being dried, from start to finish. The beans were spread over two trays, one deep, but I think they could with ease be spread two or three deep and thus give a far larger outturn. The trays have galvanised iron wire mesh, a piece of hessian cloth was spread over the wire mesh and the beans spread on it.

The following are particulars and results of the experiment.

MONDAY.—Weight of cocoa after washing 54 lb. Spread on two trays 3' 6" by 3' 6". Time in the dryer three hours, turned over about 15 minutes. Weight of beans after three hours drying 35 lb. They were then spread out on a wooden floor and covered over with Hessian cloth and left so till next day.

TUESDAY.—Weight of beans before being put in dryer 34 lb. Kept in dryer four hours and turned over as before. Weight when taken out 27 lb. They were then spread on the floor as before and allowed to ferment till next day.

WEDNESDAY.—Weight of beans before being dried 26½ lb. Duration of time in dryer third day six hours (these could have been spread on one tray only). Weight of beans after six hours drying 23 lb. They were then spread out on the floor as before.

THURSDAY.—Weight of the beans as per sample 22 lb.

Result 54 lb. green beans, 22 lb. dry.

One 16 Tray "Safety" will dry at 12 lb. of beans per tray placed one deep on the tray, 192 lb. in 3½ hours, 3 by 192, 576 lb. per day of 10½ hours, or 1,152 lb. per day of 10½ if placed two deep, or 1,728 lb. per day of 10½ if placed three deep. It can only be found out by experience what is the correct thickness to place them in on the trays, also what is the correct temperature they ought to be subjected to during the different periods of drying.

The temperature can be regulated and evenly maintained to a degree, from that of the outside air, to anything up to 260 degrees F with fifty lb. steam pressure. The consumption of fuel was very hard to ascertain correctly, as the boiler was supplying steam to the engine as well during the first two days, but on the third day when the boiler, an eight horse power loco, was used for the dryer alone, it used one yard of moderately dry firewood to raise steam from cold water and kept up steam during the whole of the six hours. The result would have been the same had all the trays been in use as has been proved when drying green tea leaf. A greater economy in fuel would be effected if a boiler of three to four horse power were employed, which is ample to supply steam for two or three sixteen Tray "Safetys."

The "Safety" in which the experiment was made has sixteen trays 3' 6" by 3' 6", but these machines are made in larger sizes of 32 by 48 trays.

I should be very glad to receive advice on the subject, of artificial drying of cacao from cacao planters, also their opinion of my experiment.—Yours faithfully,

G. W. SUTTON.

P. S.—The dryer has been doing very fair work, drying tea, considering the low pressure of fifty-five pounds per square inch, at which it has been worked. I will send you full details as soon as I get the reports on the samples. —G. W. S.

A NEW COCOA-DRIER.—We draw attention to Mr. Sutton's interesting letter on another page, describing the working of a new cocoa drier which appears to have turned out very successful results. The tin of tried beans forwarded to us commend the merits of the drier; for the finished article is as clean and evenly fired as the most fastidious chocolate manufacturer could desire; and further, having tasted several of the beans, we can pronounce judgment that their flavour has been excellently preserved.

FUNGOID PESTS AND THEIR TREATMENT.

Trio Lodge, Jail Road, Borella, May 5th.

Dear Sir,—I have read in different Ceylon papers something about a pest which is attacking tea. By the descriptions given I believe it is to be a fungoid pest. The methods recommended for coping with this enemy are cultivation, and manuring: they no doubt are very good as an adjunct, but by themselves are inadequate.

As I have had to cope with both fungoid, and insect pests in Australia, my experience might be of some little use to the tea planters.

The advantage and profit of spraying for fungus diseases is now placed beyond doubt in Australia and America. In order to obtain the best results, good cultivation, including drainage, and judicious manuring ought to be attended to, and if this is followed up by the constant and careful use of the *spray-pump*, the end will be found to fully justify the means.

Amid the multiplicity of remedies and treatments there are three, which may safely be selected on account of their inherent value and of having stood the test of experience:—

1. The Bordeaux mixture,
2. Ammoniacal Solution of Copper Carbonate.
3. Modified Eau Celeste.

The following is the mode of preparation I adopted and which I found the easiest and best, and the formula:—

Quicklime (to be freshly slaked)	4 lb.
Molasses	4 lb.
Bluestone (sulphate of copper)	4 lb.
Water	20 gal.

Take a wooden vessel, holding at least about 18 gal. of water, and place in it 4 lb. of quicklime which has been freshly slacked, cooled, and passed through a sieve. Next pour over it the four pounds (4 lb.) of treacle, and run on a few pints of water from a tap to stir up and mix the ingredients well. Then make up to 16 or 18 gal. with water, and leave standing for a few hours, giving a good stir once in the interval. A clear treacle-coloured liquid is the result, with the unused lime at the bottom of the vessel. Next take a wooden pail, holding from two to four gallons of water, put the powdered bluestone in a coarse canvas bag and suspend it in the water until the sulphate is completely dissolved. Pour the solution of blue stone into the spraying machine, and decant or pour of the clear, treacle-coloured liquid into the same vessel without allowing the sediment to pass. This will give 20 gal of beautiful greenish liquid, ready for spraying. If the soaking of the lime, and treacle and the solution of the bluestone is allowed to go on over night, the liquid will be ready for mixing in the morning, and while it is desirable to use the material as fresh as possible, yet if rain should intervene or any interruption, the treacle and lime mixture will keep without injury for a few days.

To get the best results use fresh lime, and lime of good quality, see that the bluestone of a deep blue colour does not contain an admixture of copperas or sulphate of iron and let the water used be cold. Only 56 parts of lime are required to neutralise or destroy the acidity of 250 parts of bluestone, so that between three and four times as much lime is over to render the mixture alkaline. When sprayed upon the trees and exposed to the air, the lime present will become converted into carbonate of lime, which will form an insoluble crust, and help to retain the copper salt on the foliage, while the sulphate of lime which is also a component of the spray will be gradually be disolved away.

Spraying should be done thoroughly to be effectual and a fine mist is what is wanted, not a drenching downpour. If too coarse the fungicide is wasted, and the collecting in quantity on the leaves is more likely to do damage. A cool calm day is best for the purpose; when wind is blowing there is a waste of material, and the spray is not uniformly distributed. The strength I should recommend for use among tea is 40 to 80 gallons of water to the same quantity of material. a dilute solution being particuarly necessary for the delicate foliage of the tea. In cases where the spores of the fungus are on the under surface of the leaf, it is desirable that such portions receive the most thorough spraying.

(2) Ammoniacal solution of copper carbonate.

Copper Carbonate	..	3 oz.
Ammonia (26 per cent.)	..	1 qrt.
Water ..	..	22 gal.

In a wooden pail mix the Copper Carbonate with sufficient water to make a thick paste, and see that it is thoroughly wet; next add the ammonia water, having a strength of 26 per cent., to dissolve the paste. When all is dissolved, pour the solution into a barrel and dilute the 22 gallons of water. This is the strength we use in winter in Australia, half the strength, or twice the amount of water to the same quantity of material, is what I should recommend for the tea bushes.

(3) Modified eau celeste.

Eau Celeste, or azure-blue water, is a solution of bluestone and strong ammonia, while the modified form has the addition of washing soda.

Bluestone (Sulphate of Copper) ..	2 lb.
Washing soda (Carbonate of soda)..	2½ lb.
Ammonia (26 per cent.)	1½ pt.
Water	32 gal.

Dissolve the bluestone in a wooden pail, in say two gallons of water; treat the washing soda in the same way and pour it into the first solution, stirring them well together.

Before spraying transfer the solution to the spraying machine, add the ammonia and dilute to 32 gallons of water. This being the strength I would recommend for local use.

It is very desirable that experimental committees should be formed in the infected districts to test the efficacy of various compounds and find out the cheapest and best for combating fungus diseases. The experiments should also consist of (1) Manurial treatment alone; (2) Chemical treatment alone; (3) Manurial and chemical treatment combined.

The strength of the preparations, the best time and mode of application, the cost and the result can best be gauged by carefully conducted tests in the infected districts.

While these points are being settled for local benefit and guidance, it is not to be imagined that the application of these mixtures has not been sufficiently tested elsewhere, for in Australia we have used them successfully for years. Ceylon is just beginning to become alive to the fact that fungus diseases and insect pests threaten the tea estates. They must not be allowed to become the master, but the planters must master them, mainly on the lines of the good old principle that "prevention is than better cure."—Yours faithfully,

P. GEO. SCHRADER.

TEA: OPTIMISM AND PESSIMISM.

Upcountry, May 5.

Dear Sir,—Who is "W.E.J." that he takes so one-sided a view of the contents of your columns? He says "notes and letters" cry down tea "every day" and he cites just one miserable timorous letter as his illustration. Now for my part, I have been more struck with the *optimism* than the *pessimism* of your columns on tea. What about the series of articles on "Prosperous Tea Companies," W.E.J.? Why if a steady series of 15, culminating in an 18 per cent dividend —a second series of 15's—then 10, 8 and 7 per cent dividends all prominently dilated on editorially, don't cheer up tea men and prompt them to do likewise, what can? Then there was "Manuring" and such opti-

mistic writing that one planting authority, I think, asked you not to publish such facts and figures, lest there should be a rush to do likewise. After all this, I think we can do well with a little of the pessimistic.—Yours truly, REGULAR READER.

["Fiat Justitia," in whatever subject is handled in our columns, will always mean that we shall endeavour to show both sides of the shield. We overlooked the exaggerated tone of W.E.G.'s (not W.E.J.—as incorrectly printed) remarks; but the above rejoinder is well deserved. Pessimism attracts attention, though it be expressed but seldom; but sunny optimism is borne along on the smiling wave of public recognition (and sometimes illusion) and, by some, more speedily forgotten.—ED. *T.A.*]

PLANTING NOTES.

COCONUT FERTILISER.—Mr. Arthur Keyser, the British Consul for Borneo, writes to the *Malay Mail* that coconut trees at Sandakan in British North Borneo thrive luxuriantly from being manured with the refuse of the mangrove bark after extraction of its dyeing materials.

AUSTRALIAN PRODUCE FOR DELAGOA BAY.—The latest consular report of Lourenço Marques and district (Delagoa) states that the erection of large cold stores for frozen meat, &c., gives hope that the development of the Australian frozen meat and fish trade, begun in 1898, will assume large dimensions. The principal agricultural products of the Portuguese possession are :—Sugarcane, ground-nuts, manioc, sweet potatoes, millet, mealies, wheat. barley, oats, and potateos.—*Sydney Mail*, April 14.

SNAKE POISON INVESTIGATIONS. — Captain Elliot, I.M.S., in the "General Deductions" with which he concludes his last paper on snake poison investigations, remarks :—"It seems clear that the serum obtained from the blood of venomous snakes is, when obtained pure, antidotal in its properties. The antidotal power possessed does not, however, appear to be of a sufficiently high order to warrant the hope that [the blood of these dangerous reptiles will yield a fluid of commercial value as an antidote to snake-bite, unless means are found of separating the antidotal constituent from the serum. More than this I am not at present prepared to say."—*Madras Mail.*

CINCHONA SEED FROM JAVA.—Now that cinchona planting has recommenced in several districts in Ceylon, it is of great importance to know where good seed can be got. Java has now, undoubtedly, the richest cinchona trees in the world, and Java seed ought to do well in Ceylon. We used to consider bark analysing up to five or seven per cent as valuable ; but the advertisement from Java which we publish in our daily indicates trees with bark up to 17 per cent! The seed from such trees, if carefully plucked and transported, must be very valuable. The prices fixed are from two to five gulders (each about 2s in value, we believe,) per gram, of which about 200 go to the ounce. The seed is, therefore, priced very high, undoubtedly; but we suppose an appreciable quantity is found even in each gram, or the 200th part of an ounce. Can there be any mistake in our calculation?

SERICULTURE AT BANGALORE.—It is interesting to learn that the mulberry bushes (*Morus alba*) which were grown at the Lal Bagh, Bangalore, for the experiments in sericulture, are now more advanced and will soon assume a commercial aspect. The two Japanese experts employed by Mr. Tata are hopeful of good results from the introduction of eggs from Japan, and have been partially successful in obtaining a cross between the indigenous and foreign varities,—*Pioneer*, May 2.

MR. SUTTON'S TEA-DRIER.—Says the *Indian Planters' Gazette* (April 28th) on Mr. Sutton's tea drier. the good results of which with cocoa beans we recorded yesterday :—"Tea men in India would no doubt be better able to judge of the capabilities of the new drier if they could see it working. Mr. Sutton, we understand, intends to exploit India, but he will find it uphill work campaigning against the excellent machinery which is already so well-known and so widely popular with Indian planters. Messrs. Davidson and Messrs. Marshall Sons, Ltd., at present hold the fort, and it is not likely that they will surrender the field without a great contest. Mr. Sutton, however, is certain of a fair field and no favour."—We doubt that a machine of such excellence. as Mr. Sutton's, will find the work so very uphill as our Indian friends anticipate ; but before being able to form to a precise judgment on its excellences in dealing with tea (although, theoretically, is ease and range of regulation is just what has so long been wanted) we await further figures from Mr. Sutton, after he has analysed his first experiments with our staple.

LIFE IN FIJI appears to be popular with the Indian coolie, since, out of a total Indian population of over twelve thousand, nearly eight thousand, according to the last official Report to hand, are coolies who have stayed on after completing the five years for which they were originally shipped. Their prosperity is testified to by the fact that, during the twelve months, they were enabled to deposit £16,000 in the local bank, besides buying a good deal of property in land and houses and sending nearly £2,000 to relatives in India; while in one district alone 13,000 tons of sugarcane were grown, on their own accouut, by the time-expired coolies. These figures are the more striking as the Report states that the majority of the time-expired coolies prefer starting a homestead for themselves to continuing plantation work. The health of the community appears, on the whole, to have been good, and the birth-rate high. The principal drawback at present is a social one, and lies in the fact that the number of women imported into the Colony is disproportionately small as compared with that of the men. The last returns show just three men to every woman in the population. The result has naturally been a state of disorganisation which has upset the family life of the coolies and led to a good deal of crime, no fewer than six murders, from motives of jealousy, having taken place during the year under review. The question of remedial measures, we are told, is under consideration, and attention is drawn to the case of Trinidad, where it has been found necessary to materially increase the proportion of coolie women sent out. Some such measure will, no doubt, have to be taken in the case of Fiji.—*Indian Witness*, April 27.

ANALYSES OF CEYLON TEA.

Mr. John Hughes—the well-known veteran Analytical Chemist of Mark Lane,—deserves the thanks of all interested in the Tea Industry of Ceylon for the trouble he has taken to arrive at definite results as to the requirements of the tea plant. We append his very interesting paper and analyses, the whole being so clearly put that the youngest planter can make no mistake in following the investigation and understanding the results arrived at. These may be summed up briefly as shewing the overwhelming importance of "potash salts" in any manure for tea under ordinary circumstances. (Of course, a soil naturally rich in potash would require less and so as to the other constituents mentioned). Next to potash in importance is phosphoric acid in order to enable high-priced teas to be produced and manufactured, and just as potash and phosphoric acid come first in the mineral or inorganic portion of tea, so does nitrogen stand first in respect of the organic needs of our staple. In fact to supply nitrogen in a slowly available form, Mr. Hughes thinks, is probably the first form of manuring required by tea. But we must leave this admirably clear and concise paper to speak for itself:—

Now that the necessity of manuring tea upon certain Ceylon soils is fully recognised and careful inquiry is being directed to the selection of the most suitable, and at the same time the most economical, materials for the purpose, it is very essential to ascertain what are the special requirements of tea. Indeed, in any attempt to carry out economical manuring the requirements of the crop should receive as much attention as the ability of the soil to supply the same. It occurred to the writer that comparative analyses of similar kinds of tea grown at similar periods of the year and presumably under similar conditions of climate, but which yielded very opposite market prices, would afford some interesting, and possibly useful information. At the writer's request, Mr. H. K. Rutherford, of the Ceylon Tea Plantations Co., Ltd., very kindly supplied six samples of broken orange pekoe, the sale room prices of which varied from 1s 4¼d for No. 1 to 6½d for No. 6. The analyses occupied some time as it was desirable to determine the proportions of the four most important plant food constituents, namely nitrogen, potash, phosphoric acid and lime, the figures for which, together with other details, are contained in the following tabulated form. A careful examination of these results suggests the following remarks :—

1. The high priced samples Nos. 1, 2, and 3 yielded the most soluble hot water extract upon five minutes' infusion : this is only what would be naturally expected.

2. This extract contained, it will be seen, most of the mineral constituents and nearly the whole of the potash, but rather less than half the quantity of the total nitrogen, though the proportions soluble in hot water are, it will be noticed, much higher in the high-priced tea than in the low-priced samples.

3. A glance at the figures for total nitrogen shows the difference in a very marked manner. It is curious, however, that No. 3, which only fetched 1s 2¼d per lb., at public sale, contained 4·93 nitrogen, while No. 1, which was sold at 1s 4¼d, only contained 4·45 nitrogen, and the same amount was found in No. 2 sold at 1s 2¾d. It is possible that No. 3 represents an illustration of defective manufacture, because the figures are similar for extract in Nos. 3 and 1, namely 45·30 against 45·15 ; also the figures for soluble mineral matter and soluble potash are in each case higher than in No. 1. Possibly, therefore, the determination of the percentage of nitrogen may be useful in ascertaining whether a low market price is due to leaf naturally poor in nitrogen or to imperfect manufacture.

4. The figures for soluble mineral matter are generally higher in the high-priced tea ; but as regards the total ash constituents, the figures are higher in the low-priced tea.

5. Potash stands out very prominently as the dominant element of the mineral or ash constituents of tea, and plainly indicates how important it is that potash salts should be included in any complete manure for tea grown on soils that may be naturally deficient in this respect.

6. Phosphoric acid, though existing in the ash in much smaller proportion than potash, is evidently more abundant in the high-priced tea, the figures being ·87, ·92 and ·87 against ·66, ·71 and ·58 in the low-priced tea. As Ceylon hill soils are known to be generally poor in phosphoric acid and the better quality of tea is shown by these analyses to be much richer in phosphoric acid, it follows that every complete tea manure should contain phosphoric acid in a readly available form, and that it should only be omitted when the particular soil has been found by careful analysis to be naturally well-supplied with this constituent, which is evidently so essential to perfect production and early maturity. If the figures for soluble potash and phosphoric acid be added together the total results furnish an interesting correspondence with the market prices, if the figures for No. 1 be excepted.

Nos.	1	2	3	4	5	6
Soluble Potash	1·87	2·13	1·92	2·07	1·98	1·98
Phosphoric Acid	·87	·92	·87	·66	·71	·58
	2·74	3·05	2·79	2·73	2·69	2·56

7. Lime appears to exist in smaller proportion in the high-priced tea and in larger proportion in the low-priced samples.

8. The figures for sand suggest that the specimens of tea containing the most quartz crystals were grown on soils containing much quartz or at least were more exposed to wind.

9. Manganese was present in very marked quantity in the hot water extract, and the determination of the variation in amount of this interesting constituent suggests a subject for future investigation.

10. Finally these analyses plainly show that nitrogen is the dominant element of the organic portion of tea, just as potash is the dominant element of the inorganic or mineral portion of tea.

Further that the supply of nitrogen in a slowly available form is probably the first

kind of manuring required by tea and that the necessity for such manure can be detected either by analysing the made tea or the soil producing such tea.

JOHN HUGHES, F.I.C.
District Agricultural Analyst
for Herefordshire.

Analytical Laboratory, 79, Mark Lane, London, E.C., April 6th, 1900.

ANALYSES OF CEYLON TEA.

BROKEN ORANGE PEKOE.

Marked. Nos.	1	2	3	4	5	6
Sale Room Price per lb.	1/4½	1/2¾	1/2¼	7½	6½	6¼
By infusion for five minutes.						
I. Soluble hot-water extract per cent.	45·15	46·55	45·30	44·40	42·95	39·70
Containing:						
Nitrogen	1·72	1·88	2·16	1·57	1·66	1·35
Mineral Matters (ash)	3·75	4·45	4·25	4·35	3·70	3·65
Potash	1·87	2·13	1·92	2·07	1·98	1·98
II. Insoluble Residue per cent.	54·85	53·45	54·70	55·60	57·05	60·30
Containing:						
Nitrogen	2·73	2·57	2·77	2·37	2·34	2·44
Mineral Matters	1·47	·83	·71	1·25	1·64	1·89
Potash	·29	None	·20	·40	·14	·21
Total Nitrogen per cent.	4·45	4·45	4·93	3·94	4·00	3·89
Total Mineral Matters (or ash)	5·22	5·28	4·96	5·60	5·34	5·54
Containing:						
Potash	2·16	2·13	2·12	2·47	2·12	2·19
Phosphoric Acid	·87	·92	·87	·66	·71	·58
Lime	·49	·58	·47	·53	·58	·60
Sand & Quartz	·16	·08	·20	·32	·28	·32

JOHN HUGHES, F.I.C.,
District Agricultural Analyst for Herefordshire.

"UNDEVELOPED RESOURCES."

No man in the island by this time knows more probably of our different wild and unoccupied districts than the Conservator of Forests. This we have long seen from his valuable annual Reports and we gave a sample of out-of-the-way information received from the same source in our London Lecture. Mr. Broun has lately returned from the Hambantota district—a scene, for a great extent, of desolate chenas and hopeless scrub; but we are interested to learn that he came across cotton growing wild over considerable areas between Kirinda and Palutupane, and yet not at all on a kindly looking soil. The enterprising Parsee lessees of the Colombo Cotton Mills should send an agent to inspect these "wild" cotton fields. The Conservator has, of course, had experience of cotton in India, and he pointed out long ago a large stretch of cotton soil between Giant's Tank and Tunakkai in the Northern Province, which after proper working up, ought to grow cotton well. Unfortunately, this is by no means a very paying product at present, even under favourable circumstances; and we cannot count ourselves of those who think that the railway is to bring a rush of capitalists or settlers all at once into the country. It will be a case of *festina lente.* It was amusing to read a would-be local authority the other day saying that the Northern railway would at once lead to English investments; while on the other hand he denounced all money spent on irrigation as worse than wasted. This was the converse of the memorable scene in Mr. Chamberlain's private room when a worthy knight descanted on the grand resources to be developed by the new railway and the leader of the Deputation who had, as Governor, travelled in that region a good deal, asked if he could name one single product that could be profitably grown without water and "Goompane could make no reply." There lay the secret, we believe, of the sudden determination to include "Irrigation" so largely in the Public loan. Of course, there are extensive forest and timber resources capable of being dealt with and we still hope to see a big sugar experiment begun on the banks of the Mahaweliganga. But time and patience will be required. As to the coupling of a railway and investments, it must be remembered that our very remotest planting districts were invested in before ever there was a mile of rail in the island, and when even the nearest road was 50 to 80 miles off—so sure is a really remunerative investment to be found out!

Returning to our original topic, and the Hambantota district, it is of further interest to learn that there was discovered there a fair sprinkling of *acacia sundra.* believed to be synonymous with *A. catechu.* which, in Burma, yields a large revenue over Cutch manufacture. It has been found before in small quantities in the Puttalam district.

CEYLON TEA CROPS AND INCREASED YIELD OF TEA PER ACRE.

The question was asked some time ago as to whether the export of tea of recent years had kept up with the extension of planted and in Ceylon. One of the best answers was that afforded by Mr. G. Thornton Pett, of Pussellawa, who, taking our "Directory" as his guide, produced the following set of figures—(all but the total planted area for 1899 which we have ventured to fill in):—

Year.	Total Tea Planted acres.	Tea in bearing acres.	Yield per acre lb.	Total Exported lb.
1883	32,000	6,500	256	1,641,810
1888	183,000	77,000	309	24,381,296
1893	273,000	205,000	401	84,406,064
1898	364,000	289.000	414	119,769,071
1899	380,000	305,000	425	129,894,156

It will be seen that the yield per acre from land in bearing has steadily advanced. Of course, as Mr. Pett said, "an important factor to be taken into consideration with the increase of yield, is when the bulk of the tea in the lowcountry came into bearing, this would give the yield per acre for the whole island a perceptible rise. There is no doubt as yet that the lowcountry tea has not gone back, in spite of sporadic attacks of grey blight."

A FARMER'S EVERY DAY LIFE.

(By " Cosmopolite.")

The end of the month of March finds all agriculturists busily engaged with

SOWING OPERATIONS

and this is the time when the manure merchants use their most persuasive eloquence to induce farmers to purchase artificial manures, declaring that, without these, good crops cannot be obtained and high farming will become a lost art. Great Britain is spoken of as a country of intense agriculture, where farming is always done at high pressure, and where the greatest amount of produce is taken from the land, and this productiveness of the soil is accounted for by the skilful and thorough cultivation thereof, together with the liberal application of manures. We find a great deal of nonsense in the columns of the Agricultural Press, about the good that has been done by science in discovering various artificial manures, which have aided our farmers in attaining their present position in the fore rank of agriculture. It is not for me to set myself up as an opponent to the theories of those scientists; bnt having tried, I believe, every kind of artificial manure, I consider that I have some small right to say a word on the subject. My present farm had been badly *konnached* (to use a good Scotch word) for about 20 years, so, when I signed my lease, I knew that I had a considerable up-hill work before me; but, by an ample dressing of cattle manure, I so surprised the soil which had, for years, been accustomed to a scanty application of artificials, that it forthwith proceeded to produce excellent crops. Not only do I manufacture a large quantity of bulky manure, on the farm, but I buy much more from any of my neighbours who are willing to sell, and who prefer the cheaper style of manuring by artificials. In course of time people began to remark my fine crops and supposed that my bills for artificials was a very heavy one, to which my reply invariably was "not a penny." And now, when I see an extra good crop in any field, and am inquisitive enough to ask what it had been manured with, the answer is "cattle manure." When I see a field of turnips badly attacked by finger and toe disease and I ask what is the reason of this, I find that superphosphate has been applied. One year I spent some time at Swanley, in Kent; it had been a very dry summer, and the crops were simply ruined. I paid a visit to a gentleman who, as an agriculturist, was highly spoken of in his district, and was shewn round the farm by him. Coming to a field of potatoes, I found about

50 DRILLS A MAGNIFICENT CROP;

the remainder of the field being almost barren soil. I asked for an explanation when he told me that he had manured these fifty drills with cattle manures, and the others with artificial. He also showed me a small field of wheat—a magnificent crop—which had been similarly treated, whilst his other fields were as bare as those of his neighbours who worshipped at the shrine of artificials. He added that they never, in that district, used cattle manure, as it was too expensive and laborious a task carting it to the fields, but purchased artificials in preference, which meant a great saving in labour. Undoubtedly the master's eye and foot are the best manures for the field, for he can see what acts best on his class of soil; but, so far as my experience goes, in various parts of the world, artificials *sometimes* give a good result, if the weather is suitable, but cattle manure *never fails.* I have often heard proprietors speak grudgingly of some of their tenantry, declaring that they were growing extra heavy crops and taking too much out of the ground. Could anything be more ridiculous?

HEAVY CROPS

cannot be grown systematically without raising the condition of the land; the more produce we take off a field—not spasmodically, but year after year—the better is the condition of the soil, because such a thing could not be done without a liberal and judicious manuring being kept up, and if landlords would only have the sense to know what is good for them, they would stick to the tenants who can grow big crops and get rid of those who, by hungering the land, are thereby stopping its productiveness.

ACME TEA CHESTS.

The Company is turning out 13,000 chests a week, the factory can do no more—immediately they are in a position to supply them to Ceylon you will hear. The veneer chest is a great success, nevertheless there are still many people sticking to the original steel chest which proves that your belief in is from the beginning was quite correct. So they go manufacturing both kinds, and orders come pouring in without even being asked for.—*Glasgow Cor.*

RETURN OF A FRENCH SCIENTIST.

M. Prudhomme, director of the Department of Agriculture in Madagascar, who was in Ceylon in January last with two collaborators, M Guyon and Lucaze, returned to Ceylon per M.M. " Australien " from a three-months' trip in Sumatra and Java. His assistants in this mission of scientific and administrative enquiry left for Japan, and M. Prudhomme returned alone to spend the last available month in the East, of his year's leave from his official position, in Ceylon and India. M. Prudhomme stayed in the island for a week; proceeding to Negombo and afterwards visiting Kandy.

DESTRUCTION OF RATS.

Mr. P R Gordon, Chief Inspector of Stock, gives the following simple method which, according to American papers, has been most successful in clearing rats off premises where previously they had defied the presence of from twenty to thirty cats:—Get a few small pieces of shingles or thin boards. On each of these put a teaspoonful of molasses, and over this scrape a small amount of condensed lye, and lay the boards or shingles around the rat holes, or wherever their runs are. The molasses will draw them, and the lye will eat out the coating of their stomachs. Four days are given as the time when the rats will have been cleared out. From the fact that this mode of destruction has appeared, at intervals, in many well-conducted journals in the States for months past, Mr. Gordon is induced to think it is well worth a trial here. The recipe is simple, cheap, and easy to carry into effect.—*Queensland Agricultural Journal*, April 1.

THE GAME LAWS OF CEYLON.

(By Mr. Alfred Clark.)

Previous to the year 1872 there were no game laws and all persons without distinction were at liberty to kill deer and buffaloes in the Crown forests at any time, in any quantity, whether for food or trade.

In the year named

AN ORDINANCE (NO. 6)

was passed to prevent "the wasteful destruction of buffaloes and game, whereby the food-supply of the people is diminished." Game was defined to mean "deer and elk." Government Agents were empowered to declare close seasons for their provinces, not to exceed five months in each year, and to prohibit killing of game in any reserved forest. Battues or driving of game were prohibited. No restriction was placed on the killing of game by persons, whether Europeans or natives, within the Korales, Vidana Arachchies or Udaiyars' divisions in which they resided and they were empowered under the Village Communities Ordinance to make rules for the killing of game within their divisions. Buffaloes could not be killed anywhere without a license. Any person wishing to kill game outside his division was required to get a license from the Government Agent, which was in force to the end of the year in which it was taken out and cost R10. A license to shoot buffaloes cost R5 per month. Any person who shot game without a license or transferred it, or killed in the close season or in a reserve forest, or by battue. or driving, or was unable to account satisfactorily for meat in his possession in the close season, was liable to a fine not exceeding R50 for each offence. No imprisonment could be inflicted. An informer could be paid a moiety of any fine recovered.

This Ordinance was in force nineteen years and was then repealed, Government apparently being satisfied that it had failed in its object of preserving "the food-supply of the people."

A NEW AND VERY STRINGENT ORDINANCE.

No. 10 of 1891, was then passed—"to prevent the wanton destruction of elephants, buffaloes, and other game."

Under this Ordinance, a license which costs R100 is required to shoot an elephant. It may be obtained from the Colonial Secretary or any Government Agent, or Assistant Government Agent, who, however, may refuse to issue it or may revoke it after issue. If a license is refused or revoked, appeal may be made to the Governor, but it must be sent in within seven days of date of letter refusing or revoking the license. The shooting of tuskers is expressly prohibited and license is given only to "shoot at or kill" one elephant and the holder of the license is not at liberty to fire at and wound an unlimited number of elephants till he kills one. The officer issuing the license may insert any conditions he pleases, such as that no cow-elephants, or any bulls under a certain height are to be killed, and may restrict the district or forest and the time within which the animal may be shot at. No license can be in force more than three months. Free licenses may be issued to shoot any "troublesome or dangerous tusker or elephant, or buffalo." Elephants (also buffaloes, deer and peafowl) trespassing on cultivated land may be shot without license, but information must be given at once to the nearest headman or police-officer. Any person shooting a tusker without a license is liable to a fine of R1,000 and confiscation of the tusks, and shooting a tuskless elephant without license involves a fine of R250, with perhaps six months' rigorous imprisonment added.

To capture a tusker or other elephant, a license costing R10 is required, which will cease to be in force after three months. If the elephant caught is taken out of the Island, an export duty of R250 must be paid.

To shoot a wild buffaloe, a license which costs R20 and which will only be in force three months must be obtained from the Government Agent or Assistant Government Agent. A license to capture one only costs R2. Any person shooting or capturing a buffaloe without a license may be fined R100 and given three months' imprisonment in addition. These rates and penalties are evidently designed to preserve these creatures in the interests of native agriculture. There is no close reason for buffaloes.

As the Game Ordinances were passed ostensibly to preserve "the food-supply of the people,' it is as well to consider here how the Ord. No. 10 of 1891

AFFECTS THE NATIVES.

By it the right previously enjoyed by all persons of killing game within their headman's divisions is taken away. Game is defined to mean sambur, spotted deer, red deer, barking deer and peafowl and the penalties for breaches of the law are increased, imprisonment being added. Though the wet months of the year constitute practically a "close season" for natives as they cannot or do not stalk game in the open in European fashion, the Ordinance adds an additional close season of the five dry months, which is the native shooting season,—by moonlight at drinking places.

Any jungle villager wishing to shoot or trap game must pay R3-50 for a license from the Government Agent or Assistant Government Agent, which will be in force from date of issue till 30th day of June next following. This seems a small sum, but is really a heavy charge on a villager whose income is probably not more than R5 per month. If a European, drawing R500 a month, was charged proportionately he would have to pay R350 for his game license.

Should a villager get a license, he is prohibited from shooting during the close season which is the five dry months of the year, the only season in which he can or is accustomed to shoot; he may not shoot at night, which is practically his only method of shooting; and though his license permits him to "capture" game, he may not "spread any net or snare." If he shoots without a license he is liable to a fine of R30 for each animal killed, plus three months' imprisonment. If he shoots at night or spreads any net, or snare at any time, or transfers his license, he may be fined R100 and given three months' imprisonment. If he shoots during the close season or cannot satisfactorily account for meat in his possession during that time, he is liable to a fine of R50, plus three months' imprisonment. An informer may be paid half the fine recovered.

In addition to this stringent Ordinance, Government passed another (No. 11) in the same year, imposing

A PROHIBITIVE EXPORT DUTY

on the hides and horns of sambur and spotted deer, making it no longer worth the while of traders to employ native shikkaries to shoot for them. These two Ordinances practically put an entire stop to the shooting of game by natives, as it is evident that a license with such conditions

is of little use to a native, if an honest man, even if he can afford to pay for one.

It seems strange, under these circumstances, that Government should be so often charged by European sportsmen with not taking proper steps to protect the game of the country. It is very generally believed that in spite of these severe laws the game is being killed out. That forest districts contiguous to large centres of population are being depopulated of game and that illicit shooting to a considerable extent is going on everywhere does not admit of any doubt, nevertheless there is danger of exaggerated views being formed and statements made on the subject. When the difficulty of watching the actions of many thousands of jungle villagers scattered through some twelve thousand square miles of wild forest, is considered, it seems remarkable, that the destruction of game is not even greater than it is.

It is commonly supposed that

A VAST TRADE

in dried deer's meat is being carried on. No doubt a considerable quantity of venison, fresh and dried, is sold in towns like Puttalam, Trincomalee, Batticaloa and Hambantota, and in bazaars in planting districts which are within marketable distance of large forests; but that there is any regular or large trade throughout the country, is doubtful. The natives in the interior are well aware of the game laws and the meat of animals illicitly shot by them is mostly consumed locally.

The fact that large quantities of "cut" horns are from time to time shipped from the Island is conclusive proof that many deer are annually killed; but some of the conclusions which have been drawn by sportsmen, from the Customs House figures, as to the total annual slaughter are probably beyond the mark.

It has been asserted that many of the horns brought to market as "shed" horns are really taken from shot animals and "faked" to look like shed ones. It is, however, difficult to understand why any village hunter, or anybody else, should trouble himself to laboriously carve the hard bone base of a "cut" antler which he has a perfect right to possess and sell at any time (not being "meat") and which is of trifling value, only about 10 cents per lb. if from a sambbur and 75 cents per lb. if from a spotted deer. To "fake" a horn, so as to deceive anyone of any experience, would require considerable time and skill. A native, if asked how he came to have "cut" horns in his possession during the close season, would be sure to say that he had picked them up in the forest, they having belonged to a buck which had been killed by a leopard. The falsity of such a statement cannot easily be proved. Some allowance should in fact be made for horns picked up by natives in this way. When it is considered that scores of leopards roam the forests, killing deer all the year round, it will be seen that the number of bucks pulled down by them is not likely to be altogether inconsiderable.

It will, of course, be said that it is not so much that the law is in fault as that its provisions are not enforced with sufficient energy. Sportsmen writing to the papers usually call upon Government to

"STIR UP THE HEADMEN,"

a class of persons about whose duties and capabilities they as a rule know little. Headmen in the lowcountry are nearly always ignorant villagers who are expected to perform multifarious and onerous duties without pay or hope of promotion. They are responsible for the good behaviour of the people in their districts, for the sanitary condition of the villages, for collection of road tax and arrest of defaulters, and for registration of cattle; have to report on applications, enquire into all complaints and disputes and to attend to many other minor matters. They have their own livelihood to make. They know that if they take proceedings against game-killers, they will have to trudge to Court, perhaps 40 or 50 miles, and, it may be, three or four times owing to postponements of the case—bearing all expenses themselves. They are certain to make deadly enemies of the men prosecuted for an offence which, in their eyes, is scarcely any offence at all. Government officers, who are aware of these facts, only exercise ordinary common sense in not expecting much from headmen. An educated European, who would zealously perform a distasteful duty, practically at his own expense, under such circumstances, would be considered by most of his countrymen as almost too good for this world and would be regarded by many as a quixotic fool.

The most effective way of preserving game in the interests, both of the natives and European Sportsmen, would probably be for Government to appoint for each Province

A GAME BOARD,

consisting of the Government Agent, the Assistant Conservator of Forests, and two unofficial members, one a European who would, of course, be nearly always a local European sportsman, and the other a leading native to look after native interests. The board would confer on all matters relating to the game laws, registration of guns, &c. The Government Agent would issue licenses, proclaim sanctuaries, sanction prosecutions, fix rates and give orders generally with the approval of the Board.

Licenses on payment would be issued only to *bonafide* sportsmen, shooting for amusement.

In order that

"THE FOOD SUPPLY OF THE PEOPLE"

should be provided for, a number of free licenses would be issued annually to native hunters, say one for every five hundred inhabitants of any forest district on the following conditions:—(*a*) that the man is a permanent resident in the district in which he is allowed to shoot; (*b*) that he does not allow any other person to use his licensed gun; (*c*) that he does not shoot more than a specified limited quantity of game during the year; (*d*) that he brings to the Kachcheri the horns and hides of all deer shot, which will be sold by auction quarterly and half the proceeds paid over to him; (*e*) that he sells the meat, either fresh or dried, only to villagers for local consumption, at prices fixed by the chief headman with the approval of the Game Board; (*f*) that he does not use any irregular methods of killing game, such as pitfalls, traps, spring-guns, driving with dogs or poison and that he does not kill fawns; (*g*) that he does not shoot in "sanctuaries"; (*h*) that he furnishes within three months after issue of license, a list of all guns in his district; (*i*) that

he does his utmost to prevent killing of game by unlicensed persons; (*j*) and that his license may be cancelled at any time if not availed of or abused.

These free licenses would only be given for purely forest districts and none would ever be issued to Government officials or headmen of any rank. The licensed hunters would be allowed to shoot at any time all the year round and be entitled to a moiety of all fines recovered for offences against the game laws reported by them. If in the opinion of the Game Board game is scarce in any particular district, no free license would be issued for that district or only a very few head allowed to be killed in it.

Some of

THE ADVANTAGES OF THIS SYSTEM

would be that—(*a*) it can be adopted at once by mere order of Government without any change of the existing law; (*b*) it would relieve Government of responsibility for the preservation of game and throw it on the people themselves; (*c*) a body of unpaid game-keepers would be formed whose interest it would be to prevent illicit destruction of game; (*d*) the jungle people would be able to get meat for food of which they are practically deprived by the present Ordinance; (*e*) the useless destruction of game through wounded animals dying in the jungle would be reduced as licenses would only be issued to men known to be good shots and to possess good guns; (*f*) reliable information would be obtained as to quantity of game killed annually; (*g*) the killing in each district could be regulated to some extent, according to the head of game it carried; and (*h*) the nuisance of a close season would be abolished.

It is not claimed, of course, that this system will put an entire stop to illicit destruction of game, but it is believed that it would work a great deal better than the present one under which it is not anybody's *interest* to prevent unlicensed persons from shooting. The principal danger under the new system proposed will be that the licensed hunters will be tempted by greed to allow other men to shoot for them, also to exceed the limit allowed; but there would always be plenty of persons, jealous of their privileges, who would be ready to inform against them. The penalties threatened by the ordinance of R100 fine and three months' imprisonment with loss of a lucrative occupation, would probably induce to act fairly honestly.

The only absolutely certain way of preserving game is the establishment of

"SANCTUARIES,"

In a few years the Forest Department will have large "reserved forests," scores of square miles in extent, every river, tank, rock-pool and other drinking place in which will be known and shewn on maps and will be constantly visited by the patrolling forest watchers. Any person trespassing within the defined limits for any purposes whatever, without a pass, will be liable to arrest and punishment. When these "reserved forests" have been proclaimed, the game laws may safely be relaxed, as there will be no fear of deer being killed out when they have such extensive cover to breed in unmolested.

The preservation of game in the low country is, in fact, mainly a question of water. If plenty of drinking places are provided to which the deer can resort without fear of being fired at by native hunters, they will increase rapidly.

SPORT IN INDIA.

MR. DRUMMOND DEANE AND COUNT TELIKI'S EXPEDITION.

Mr. H Drummond Deane, formerly of Maskeliya, and Count Teliki, who was recently on a visit to Ceylon, have been (says the local "Times") having some excellent sport in Travancore. They were under canvas from the 7th to the 20th instant, camping out on the Periar dam, and spent most of the time in the jungle. They left Stagbrook estate on the 6th instant and reached Thakady, at the head of the Periar dam the following day, and steamed down to the dam itself in a launch. The dam is full of standing timber, and covers sixteen square miles of water. This quarter is

TEEMING WITH BISON,

and on the first day both sportsmen stalked a herd of fourteen, and the Count wounded a bull which escaped in thick eta jungle, it getting dark. The following day Mr. Deane started alone below the dam, down the river bed, and came suddenly on a large, solitary bull in long grass about twenty-five paces off. He shot and hit the base of the horn when the brute charged, but he was dropped at close quarters. It was a magnificent animal, measuring in height 76 inches from foot to wither in a staigrht line; having a spread of horn of 41 inches; between; tips 27 inches; girth of horn at base 22 inches neck from eighteen inches below ear 95 inches; and length from nose to rump 11 feet 7 inches. Later in the day he went after a herd of bison, but could not get in a shot. On the 9th both rowed up the right arm of the dam under the guidance of villager called "Lord George," and landing the Count wounded a bull. Mr. Deane, running some distance with his estate kangany, tried to intercept the brute, but the kangany, throwing away the rifle he carried, threw himself into the jungle to escape the bull, tearing off the lobe of his ear in so doing. The wounded animal turned back, and the Count finished him at 100 yards.

PLANTING NOTES.

CHEAP MANGOES PROMISED TO ENGLAND.—A few mangoes from the East Indies have been lately bought up readily on the London markets. There will be a good supply of these delicious fruits this year, as they are to be shipped in larger quantities than in any previous year. The mango is a high-priced fruit, but it is expected that big supplies from the East Indies will materially cheapen them in the future.—*Daily Mail*, April 24.

TEA AND GREEN FLY.—"How is it," writes a planter, "that seldom or never heavily-pruned tea escapes green fly?" Our correspondent states that he has noticed that almost invariably heavily-pruned tea in his district is covered with green fly about May. It may last a month or it may last longer, but it is generally about the month of May (or if the weather is dry a little earlier) that it makes its appearance. Pure Assam jât, he states, does not seem to attract the green fly, as hybrid does. Our friend has noticed caterpillars coming out, they seem to have just emerged from the egg, and are all together on a branch. As they get older they separate into two or three bunches, but keep to the same bush, till they have finished with it and then go off to pastures new.—*Indian Planters' Gazette*, April 21.

THE IMPERIAL TEA ESTATES CO.—A home shareholder writes in severe criticism of the management of this Company as being far from economical. He wants to know why shareholders should not have, half-yearly, an interim memorandum stating "conditions and prospects" and this ought to be the rule in all backward Companies. The idea is not a bad one and we submit it to the consideration of Directors.

THE WETTEST PLACE ON EARTH.—Cherrapunji, in Assam, north-east of Calcutta, has the reputation, says the Scientific American Supplement, of being the wettest place on the earth, the average annual rain-fall being 498.15 inches, while it has the record of one month in which 147.17 inches fell. The first half of the past year beat all previous records, 267.84 inches of rain having fallen between January and the middle of June, five months and a-half, while 73.79 inches, over 6ft of water, fell in a single week.—*Auckland paper*, April 6.

THE NEW DIMBULA CO., LIMITED.—We owe a special apology to the Directors and shareholders of this Company for a slip made some weeks ago in stating that the total dividend for 1898-99 was 16 per cent—whereas an *ad interim* dividend of 5 per cent issued March 29th, 1899 and one of 15 per cent issued October 18th, 1899 make a total of 20 per cent, about the highest dividend paid in connection with Ceylon plantation Companies, there being only one other Company, we believe, giving so good a return.

LIMES AS A GERMICIDE.—It may not be generally known that fruit acids are germicidal, but the information is of special value to planters on tea gardens. The juice of lime and lemon is as deadly to cholera germs as corrosive sublimate, or sulphur fumes, or for maldehyde, or any other disinfectant. It is so powerful a germicide that if the juice of one lime or lemon be squeezed into a glass of water, that if then left standing ten or fifteen minutes, the water will be disinfected. It makes little difference where the water has been obtained, or whether it has been boiled or filtered. This is a fact worth knowing, for anyone may at any time find himself under circumstances in which it is impossible to get either boiled or filtered water. In such a case the juice of a lime or lemon will purify the water perfectly.—*Indian Planters' Gazette.*

RUBBER CONCESSIONS IN MATIO GROSSO.—Favorable reports are made relative to the Compagnie Produits Civils, a Belgian enterprise organized in 1895, with a capital of 5,000,000 francs, to operate in the Brazilian state of Matto Grosso. Benefits have resulted from a recent reorganization of the company's staff in Matto Grosso. The extensive concession of *Hevea Brasiliensis* rubber, granted to the company during the revolutionary period in Brazil, which at one time appeared somewhat doubtful, has now been definitely confirmed. The company have asked of the government another and very important rubber concession, situated between their properties in Descalvados and the first concession, near the Bolivian border. It is stated that this claim is now on the point of settlement. The new concession will in one sense establish a unity among the different centres of operation of the company, resulting in a complete change, which, it is hoped, will increase the profits of the shareholders.—*The India Rubber World.*

ADVANCED CULTURE.—The following paragraph from the latest Nyassaland paper shews great enterprise on the part of a local proprietor. It will be interesting to know how the experiment turns out:—

We are glad to hear from Mr. Partridge of Sharrer's Estates that Mr. Shiarrer is doing something in the way of improving hs estates by the importation of large quantities of Lucerne seed, beans, lentils, and other nitrogenous plants. Most of the estates are being gradually shaded. Albizzia, Silky Oaks, and native trees are being used.

Has any one in Ceylon tried an experiment in the same direction?

SHAREHOLDERS AND AGENTS.—Discussing the affairs of the "Imperial Tea Estates Company, Ceylon" in reference to Mr. A. R. Wiggin's letter, our evening contemporary has the following remarks:—

We think with him that the shareholders of the Imperial Company have some cause for grievance. They have nothing to complain of in the now reduced shipping rate, which at half a cent per lb. admits of no margin. But the 2 per cent charged on the proceeds of the crop, which by agreement is payable to the London Agents is one-thirteenth of the whole of the profit carried to the balance sheet, and Directors' fees bring the ratio down to between one-sixth and one-seventh. Considering that there is also at this end to be paid 1 per cent on Disbursements, and 1 per cent on Receipts, with doubtless a few other items, we think the remission of half a cent shipping charge yielded in 1899 might have been supplemented by some consideration for the shareholders from London. Of course, the shareholders have themselves to thank for being saddled with this hard and fast commission by neglecting to examine the Articles of the Company, which provided for this rate of commission, before investing in it. But our experience is that intending shareholders do not examine Articles as a rule; they only rely, in the case of tea shares, on the price paid per acre, and on those who are connected with the Company as Agents and Directors. Messrs. Whittall & Co.'s name has always been associated with some of the most prosperous Companies in Ceylon, everything was known to be straight and above board, and the public willingly went in with regard to this charge of 2 per cent, we think, in comparison with the London Office work done in other cases, that it is high, and we should like to see the shareholders of the Imperial met by the Directors until, at any rate, better times would make such a change less felt. But we have no sympathy with any attempt to reduce Directors' fees. If times are bad and results are poor, all the more anxiety for the Directors and the less should their remuneration be attacked. As a rule, the Directors' fees in Ceylon Companies are anything but excessive, and the typical "guinea-pig" is few and far between. A brilliant instance of how good Directors can steer a Company with judgment and care, and gradually get it off the shoals and safely sailing in deep water is the Eastern Produce and Estates Company. And yet there was a time, doubtless, when shareholders were much inclined to begrudge the men at the helm a satisfatory remuneration for the work that was absolutely necessary, to achieve the present good position of the Company. It is not given to all to be able to take a balance-sheet to pieces, nor to criticise it, and we think Colombo or London Agents might give many more details with much advantage, laying themselves out to depart from the old set rules which provide a few, bald scanty particulars, and instead to place results before shareholders in such a fashion that all, or nearly all, could grasp fully the contents of the balance-sheet of their investment. The Indian Tea Companies do this very fully; and Ceylon, which is never behind India, might "go one better."

HELP FOR DEPRESSED INDIGO.—On the representation of the Committee of the Bengal Chamber of Commerce, the East Indian Railway authorities have made arrangements with the Bengal and North-Western Railway that freight charges on indigo shall be reduced from third-class to second-class, *viz.*, from two-thirds of a pie to half a pie per maund per mile. The intimation of this reduction in freight—which is to come into force from the 1st July next—has been received with much satisfaction by the representatives of the indigo industry in Calcutta, and also by the Behar Indigo Planters Association.—*Friend of India*, May 3.

PROGRESS IN THE WYNAAD:—TEA, COFFEE AND PEPPER.—A Wynaad correspondent sends us a letter which doesnot convey good news to Ceylon in one respect; for it speaks of a considerable extension of tea-planting as probable during the current year, the land being available and labour superabundant. But we should think proprietors, who regard "the signs of the times," would be chary of spending capital on a product which is already in danger of over-production. Very interesting is the information given of coffee and especially of the hybrid varieties which are said to resist leaf disease. But still more important to Ceylon planters is the information about pepper. It is monstrous after all these years of urging on planting attention, that more is not made of this product in some of our Ceylon districts. There is no reason why it should not do as well in Dolosbage, Yakdessa, Kelani Valley and perhaps in the Matale's, as in the Wynaad, where we are told, from R250 to R500 per acre of nett profit is made. We do not accept such estimates as practical or reasonable. But even if these figures be divided by four, the encouragement is great in these days when it is difficult to fix on any secondary product at all likely to be profitable on ordinary plantations.

THE WEST AFRICAN ROOT RUBBER.—Herr Baum, a botanist who accompanied the Kunene-Zambesi expeditition in behalf of the Colonial Agricultural Committee [of Berlin] made some inquiries in regard to root rubber. The district in which this plant (from its description probably *Carpodinus lanceolatus*) grows, is situated on the other side of the Cubango, and is so devoid of water that the natives going to the rubber root district have to carry water with them, and return when the supply is exhausted. The rubber is obtained by beating the root sticks, and it is said to be so toilsome that a negro will consume three days' time to produce a piece as large as a banana, and even then it is mixed with stand and splinters of wood. Herr von der Keller, to whom Herr Baum is indebted for this information, asserts that the root sticks, which seldom have a thickness of more than two fingers, contain at least 60 per cent. rubber; also that they cannot be broken, but can be stretched until torn asunder. In the gathering places the plants are exterminated by the negroes to such an extent, that for many years this plant is not to be seen again. The botanist Schlechter, the leader of the rubber expedition to West Africa, also reports on the root rubber at Stanley Pool [in the Congo Free State], and states that the plant grows on such sandy soil as exists nowhere in the Kameruns, and its cultivation therefore is more adapted to South-western Africa than to the Kameruns.—*Der Tropenpflanzer.*

AGRICULTURAL CHEMIST FOR BEHAR.—Professor Rawson, the able Chemist of the Behar Planters' Association, is now due in India, and will take up his quarters at Muserie Factory, where a bungalow and offices are being built for him; many concerns are going to use the learned Professor's patent oxidizing process this year.—*Indian Planters' Gazette.*

JAPANESE TEA.—The quantity of tea exported from Japan during 1899 exceeded that shipped abroad during 1898; but all the same the tea business in Japan is becoming more and more unsatisfactory each year, and for the foreign merchant at any rate, there is a little or nothing to be made out of it. In quality the tea of 1899 compared unfavourably with the crop of 1898. The practice of picking the young leaves in the early spring before they are properly matured, for the sake of obtaining exorbitant prices for small quantities is undoubtedly having a very injurious effect on the plants, and it is surprising that Japanese tea-growers do not realise this fact. Of the teas shipped from Yokohama during 1899, 31 per cent. went to New York, 26 per cent. to Chicago, 14 per cent. to San Francisco, 26per cent. to Canada and 3per cent to Europe.—*Consular Report.*

"MARAM GRASS."—An old friend sends a copy of a Jersey paper with a glowing paragraph from the Melbourne *Leader*, as to the value of this grass in Australia for its "sand-binding properties" and also that it is "a splendid fodder both for fattening and milk production." This grass (botanically *Ammophila arundinacea*) is a native of North America, and therefore, though acclimatized at Port Fairy in Victoria, it is a question if it would succeed in so warm or tropical an expanse as the saud dunes of Hambantota, for which our friend thought it adapted. It would be more likely to succeed at a high elevation in Ceylon if there were a sandy waste to cover; but we cannot understand the *Leader*'s praise of this grass for fodder; because Law, Somner & Co., the well-known Melbourne seedsmen—who should have every reason to praise where they can—while admitting its usefulness near the shore, says, "It is of no agricultural value!" We shall send the *Leader* and the seedsmen (both in Melbourne) a copy of this note to learn which is right. The seedsmen sell Maram grass seed at 1s 6d per lb., and it would be interesting and useful to make at least a trial of some of it in Ceylon. This is what the "Treasury of Botany" says regarding it:—

A genus of Grasses of the tribe *Arundineæ*, inhabiting the sandy sea-shores of the coasts of Europe and North America, and extensively cultivated in many places, as in the eastern cunties of England and in Holland, for preserving the sand-bank which prevent the inroads of the sea. In the northern parts of England, it is used for making table mats and basket work. It is the widely-creeping and matted rhizomes which serve to bind togeth er the sand-banks on which it grows. The stems grow to or three feet high, and bear long, narrow rigid involute leaves and a spiked cylindrical panicle, with laterally compressed spikelets. Theglumes are nearly equal, and lance-shaped, stiffand chaffy. The flowering glumes, or outer pales, are the shorter, with a tuft of hairs outside, but the inner pales nearly equal them in length. The genus is nearly related to *Calamagrostis*, from which the inflorescence, the stiff glumes, and the absence of an awn to the flowering glume, serve to distinguish it. The only species, *A. arundinacea*, or *Psamma arenaria*, is variously called **Maram, Marrum, Sea-reed, or Sea Matweed.**

"CASTILLOA ELASTICA:" TRANSPORTATION OF SEEDS.

BY FRANCIS CHILD NICHOLAS.

Of the many rubber producing species, the *Castilloa elastica* appeals most strongly to the interest of the intending planter, especially in the United States, on account of its rapid growth in regions comparatively accessible, and under conditions favorable for the settlement of white men. The tree is a prolific producer of seeds, but on account of their perishable nature planters have found difficulty in getting them to germinate except in the vicinity of their origin.

During the spring of 1899 the writer undertook to establish a plantation of rubber on one of the properties belonging to The South American Land and Exploration Co., Limited, on the northern coast of Colombia, within easy reach of the island of Trinidad, whence it was proposed to obtain the seeds required. Before seeding time, however, the British government decided that no further sale of rubber seeds for export should be made from the gardens in Trinidad, and it became necessary to obtain our supplies elsewhere. The next nearest point was in Costa Rica, which involved a trip of three weeks, whereas these seeds, under the most careful management, rarely have been preserved for this length of time.

My experiments with various kinds of seeds had convinced me that fermentation, mold, drying out, and germination before planting were one or all of them the cause of loss in shipping rubber seeds. Of these various causes, fermentation seemed likely to prove most disastrous, though I found later that germination before planting caused the greatest percentage of loss. As a result of my experiments I have become convinced that the seeds of *Castilloa elastica* can be transported for long distances, making it possible to plant this species successfully wherever natural conditions are favourable for its growth.

The *Castilloa elastica* is dioscious, and on the seed bearing trees a collection of compound fruits is developed rapidly in May and June. These fruits are compact together on disks formed by leaf scales, set one over another. The disks appear at the leaf joints, face downward, setting close to the under side of the small branches, many of which fall to the ground after the seeds have ripened fully. The fruits, which are of a bright orange vermilion, in sharp contrast to the velvety green of the leaves, adhere to the disk, and the group, when secured, with the ripened center of bright vermilion fruits, surrounded by a margin of lighter colored leaf scales, is suggestive of a delicate confectioner's tart. The better formed fruits contain the seeds, and a disk will bear from one to thirty or more, about the size of an orange seed with the outer skin peeled off. The veins of the cotyledons contain a small quantity of bitter fluid resembling in appearance the milk from which caoutchouc is obtained. The cotyledons are well developed and are folded together to protect the embryo and radicle, the whole being covered with a fine membranous skin. Germination is so rapid that I have often found seeds developed through their first stages, with rootlets and a pair of tiny green leaves, before the first disk had fallen to the ground.

The fruit disk falls when fully ripened, sometimes bursting and scattering the fleshy fruits for a foot or two around, but oftener the fruits do not scatter, but form a sodden little mass among the fallen leaves and mosses, where the seeds ferment and soon decay. Where the ground is favorable, and if the fruits be properly broken apart, the seeds begin to grow immediately, but more frequently, before the soil is reached through the carpet of leaves, moss, etc., the roots lose vigor, dry up, and die. This is one reason why *Castilloa elastica* trees are found in groups, occupying the more favorable spots, instead of being distributed evenly throughout the forests in which they exist. Once started, the growth of the *Castilloa* is most vigorous, but under ordinary conditions propagation is not very free, and unassisted, it is probable that rubber forests, once devastated, would never reproduce themselves.

In operating in Costa Rica, I soon decided that it was useless to try to take any but fresh seeds, secured from the trees or such as had not lain on the ground for more than a day. All the various plans for packing the seeds suggested by persons having any experience were tried. The seeds packed pulp and all in bags proved a total loss, the pulp fermenting freely and turning acid, and involving the decay of the seeds. Such seeds as were separated from the pulp and allowed to dry slowly in the shade gave somewhat better results, but mold developed in the particles of pulp that remained and spread vigorously, causing a heavy percentage of loss. Some of the seeds were packed separately in pieces of paper and then placed in boxes, but they were a total loss.

The plan that did prove a success was this: I first selected fine specimens of fresh seed—for all are not of the same size and do not produce equally vigorous plants—being careful to separate from them any that had sprouted or showed signs of decay. They were then cleaned carefully by washing away the particles of pulp in cold water. The cleaned seeds, looking like little nuggets of ivory, were spread on cloths and allowed to dry in a cool room for six hours. They were then packed in sand, just damp, but nothing more, with which had been mixed wet charcoal in the proportion of 10 or 15 parts to 100 parts of sand. The object of the latter was to check fermentation and mold. The sand, by the way, was carefully washed before use. About 1,000 seeds were packed in a tin box 4 × 3 × 2½ inches in size, but they were rather crowded; 500 seeds to the box would have been better. In packing the seeds, I first laid a piece of flannel at the bottom of the box, then spread a layer of sand and charcoal, then a layer of seeds, covering them with more sand and charcoal, being careful that none of the seeds should touch the sides of the box. I found while transporting the seeds that in boxes where the sand was over-damp heating had set in, but this was checked by making holes in the lids of the boxes to admit the air. In these cases there was some loss ultimately. My experiments in Costa Rica have proved successful on the whole, since I have tens of thousands of young rubber trees as a result of bringing seeds from Costa Rica. This brief record is offered here for the reason that the same methods may prove valuable in other cases. The principle upon which the whole is based is that the packing of the seeds for a long journey must be designed to assist nature in protecting the seeds, or perhaps to provide them with surroundings for their protection which, because of their superabundance, nature has left unprovided.

The unfavourable conditions to be overcome in handling the seeds of the rubber tree may be briefly summarized under the following heads:

I. The tendency of the fruit to ferment, involving the seeds in the decomposition.

II. The fermentation and decay of the seeds themselves, if piled together, even if freed from the pulp.

III. Premature growth. If the seed does not grow it dries up, and the planter must retard the growth while yet providing moisture enough to preserve the vitality of the seed until it can be planted.

IV. The tendency of the seed to mold. The appearance of a dead white speck at the apex of the seed, in sharp contrast with the ivory like appearance of the outer skin, is a sure sign that it is lost, though otherwise it may appear in perfect condition. One bad seed will ruin a thousand good ones brought into contact with it.

V. The liablity of the seeds to dry up, the outer skin becoming separated from the cotyledons, after which the value of the seed is doubtful.—*The India Rubber World.*

PEANUT OIL.

In reference to the question as to whether the manufacture of peanut oil is possible in the United States, Consul Skinner, of Marseilles, writes: "The belief here is that the American nut is richer in oil than the African, and this quality can be increased by careful cultivation. Little change either in method of cultivation or price average is looked for in Africa. It is true that a large part of Africa is believed to be available only for a crop of peanuts, but the native labor, though cheap, is lazy and thriftless and hard to obtain when required. The soil is readily exhausted, and nothing is done to restore its virtue. There are no means of interior transportation, and the crop must be handled laboriously several times before it is loaded for the port of destination. It will be years before notable improvement can be expected. I am disposed to believe that the trade in Marseilles will not so much speculate on the prospects of success of American enterprise in this field as it will wonder why the effort has been so long delayed." Touching the process employed in France, the Consul writes:

"Peanuts are scarcely ever ground whole. Such a process produces an inferior quality of oil and a cake of little value. In fact, many of the nuts arrive in a decorticated state, after which the inner or red skin is removed as much as possible by a system of scrapers and winnowers. Particles of the inner skin will cling to the kernel under all circumstances and can be plainly seen in the cake. The greatest pains are taken with edible oil. For this the nuts are commonly received unshelled at the mill, and there decorticated by a special apparatus in conjunction with vibrating and ventilating machinery, the process somewhat resembling the wheat-cleaning operations in flour mills.

"The husking of the peanuts is performed by a pair of grooved rollers, adjustable in order that the space between them may be increased or diminished according to the approximate average size of the nuts to be husked. The rotation of these rollers is quite rapid, and the ridges of one of the rollers fit into the center of the grooves of the other roller. In the first process the husks are completely crushed, and a good many of the kernels are also split. This broken mass of husks and kernels is then separated by means of air currents, similar to the winnowing process applied to wheat in flour mills.

"Now, if the peanuts used are of old crop the kernel is likely to be dry, and the light, inner red skin of the nut becomes detached in the first husking process. A large proportion of it is removed in the first ventilator, and nearly all of that which still adheres to the kernel is removed by the following process:

"The kernels are passed over a rapidly oscillating sieve, the coarse-wired meshes cracking this red skin, which latter is then drawn off by another ventilating machine. I cannot give the full details of the cleaning process of the mass which emerges from the grooved rollers; but my informant assures me that no specially constructed machinery is employed for this purpose, the whole work being executed by a combination of oscillating sieves and strong air currents.

"If the peanuts are of new crop it is most difficult to remove the red skin entirely, as in this case it adheres quite firmly to the kernel, and thus the kernels of new-crop nuts generally go under the presses with the greater part of the red skin still adhering to them. In order to more thoroughly cleanse the kernels before they are prepared for the presses, the new-crop nuts undergo the same process as the old crop nuts.

"When the kernels have been separated and cleaned, they are ground, preparatory to being pressed. The pressing takes place in the same manner in which other oleaginous seeds are pressed, the meal being enveloped in strong, fibrous mats and subjected to hydraulic pressure. The resulting cake is then reground the oil remaining in the meal secured as in the first instance. The oil is graded according to first, second or third extraction.

"The clarifying is done by means of filters, and the bleaching, if it may be termed thus, is done by the admixture of so-called 'terre a foulon' (fuller's earth), a highly porous mineral substance. The oil which is to be treated is poured into large vats and a certain quantity of 'terre a foulon' is added. The whole is mechanically stirred for some time, and then allowed to rest for a certain period, during which the colouring particles contained in the oil are absorbed by the pores of the mineral.

"The husks are of little or no value. When ground and mixed with cake (also ground) they form an inferior grade of cattle feed. About the only animals to which they can be fed without admixture are goats. When coal prices are very high, a number of crushers employ the husks as fuel. Crushers prefer to use new-crop nuts (despite the fact that the product is often inferior to old-crop oil), as they extract more oil from them. Decorticated nuts should average 37 per cent. of their weight in oil."—*Bradstreets.*

SISAL GRASS IN MEXICO.

Henequen; "jeniquen," Spanish; ci, Maya; "sisal grass," commercial term; *Agave sisalensis,* scientific term.

This plant has been in use among the ancient inhabitants of Yucatan from the earliest times. The writer has found it imbedded in the form of cord in the stucco figures that ornamented the facades of the mysterious ruined cities of Yucatan. There are two wild varieties of henequen, called by the natives "cahum" and "chelem." The fiber of these wild plants is used to some extent by the natives in the making of cordage for domestic use, and some claim that hammocks made from the fiber of the cahum are the best.

It is, however, the cultivated plant that furnishes commerce with the fiber known as sisal grass, Sisal being the old port from which the fiber was first exported.

Like the wild plant, the cultivated one is divided into two varieties—the "zacci," or white hemp, and the "yaxci," or green hemp. The zacci is considered the finest and best, but the yaxci is a good fiber, and by the time the henequen fiber reaches New York or Boston, it is simply as sisal grass, of a good or medium quality, as the case may be.

It has been generally supposed that sisal grass as an article of commerce has been known only within the last fifty years. This is a mistake.

Between the years 1750-1780, quite a furor was created in commercial countries of the Old World by the discovery that the fiber of a plant found in Yucatan was good for ship cordage. Spain sent over a royal commission to report upon the discovery, and in a few years many of Spain's commercial and war vessels were using cordage made from henequen. For some reason, probably because of the primitive method of preparing it, the use of the fiber gradually declined, until at the commencement of this century, the former trade had been forgotten.

In 1847, Yucatan, unil then a cattle-producing cotton-growing and logwood-exporting country, was in the throes of an Indian war. The Maya Indians had risen in rebellion and had succeded in driving the white race out of the most fertile portions of the peninsula, forcing them to rely for means of subsistence upon the products of a sterile rocky belt, too poor to sustain cattle in any numbers. Henequen was the only useful plant that would grow on such a soil. The first plantation, so far as I can learn, was planted in 1848, and the 50 acres planted were cleared by the use of the tonka, the primitive cleaner used by the native Maya. There was a good demand for the new fiber in ship rigging, and it gradually came into general use, until sisal was a well-known article of commerce. The Tonka was a piece of hard wood, shaped something like a handsaw, having the end curved in,

The leaf of the henequen was drawn through the sharp curve and the fiber was stripped of the thick, pulpy covering. The leaf was subjected to this operation two or three times, until the fiber was left clean and free. This tedious process was not long tolerated. A machine was found to increase the output, but the demand again outgrew the means of supply. Then the machine known as the "raspador," or the "solis," from its inventor, came into use and has held its own almost up to the present day. It consists of a large-toothed wheel that scrapes the pulp and leaves the fiber. Its simplicity made it peculiarly fitted for use by the native servants. Plantations came to be known as plantations of one, two, or a dozen wheels.

The constantly increasing trade necessitated still more rapid means of fiber cleaning Many new machines were produced, each of which was said by its inventor to be far better than any of the others. To-day, the following machines are in actual use in Yuoatan:

Hemp cleaning machines now in use upon the plantations of Yucatan.

Machine	Number of leaves cleaned in 10 hours	Actual horsepower	Number of men needed	Cost of Machine: Mexican*	Cost of Machine: United States	No. in use
Lanaux	130,000	35	3	$6,000 00	$2,856 00	6
Prieto ..	125,000	60	3	7,000 00	3,332 00	90
Stephens	150,000	70	3	11,000 00	5,236 00	6
Solis ..	9 000	6	2	250 00	119 00	1,200
Torroella	80,000	30	3	5,000 00	2,380 00	20
Villamor	70,000	35	3	6,000 00	2,856 00	...

NOTE.—Compiled from data given me by the inventors themselves or their authorized agents.

I give below a table showing the exportation of sisal grass from Yucatan during the ten years ended December 31st, 1898:

Year	Bales	Quantity Kilograms	Pounds
1889	243,968	40,641,521	89,598,297
1890	260,106	45,079,423	99,382,096
1891	310,090	52,065,024	114,782,552
1892	353,525	58,584,813	129,156,078
1893	355,123	58,097,925	128,082,685
1894	373,883	61,605,695	135,815,915
1895	381,504	61,729,584	136,089,041
1896	397,163	65,762,910	144,980,911
1897	419,975	70,545,153	155,523,844
1898	418,972	68,834,268	151,752,027
Total for 10 years	3,514,309	582,946,316	1,285,163,448

The Mexican Government requires all weights to be stated in the metric system.

In 1888 and 1889, the price of hemp reached 15 centavos per pound. The cost of production was then about 4 centavos per pound.

Exports of sisal grass from Yucatan during ten months of 1899.

Month	Bales	Quantity Kilograms	Pounds
January	52,128	8,735,545	19,258,383
February	21,360	3,506 832	7,731,162
March	58,069	9,621,703	21,212,006
April	43,530	7,075,447	15,598,530
May	30,869	5 015,166	11,056,435
June	31,629	1,133,882	11,318 156
July	26,937	4,296,939	9,473,032
August	26,204	4,202,208	9,264,188
September	44,973	7,456,101	16,427,725
October	35,595	5,695,200	12,555,638
Total for 10 months	371,294	63,739,323	140,519,711

* The United States Director of the Mint estimates the average value of the Mexican dollar in 899 as 47·6 cents,

Prices during these months have ranged from 15 to 18 centavos (7.1 to 8.7 cents).

It is said that the best fiber-producing plant grows on the poorest and rockiest soil; but this does not accord with experiments made by me, and to my mind is open to contradiction.

One method of planting and cultivating is as follows: The field is first cut and burned off. The burning produces a certain amount of ashes, and many planters set out seed corn at the same time they plant the henequen. The one does not interfere with the other in the least, and the corn crop helps to pay the cost of the henequen.

The henequen plant is propagated, not by seeds, but by scions, or suckers. The plant produces seeds, and in a natural state propagates itself by both seeds and scions; but the planter uses only suckers from 18 to 20 inches high. By this method, he can produce a field of henequen ready to cut within five years, whereas by seed-planting he would have to wait from eight to nine years.

Once planted and properly tended—that is, cleared of weeds twice a year and not under or over cut—a field will last twenty years, and instances are not wanting of fields that have lasted longer.

A leaf is ready to cut when it extends at right angles to the trunk of the plant. A healthy, vigorous plant in the maturity of its growth should yield from eighteen to twenty-four leaves. One thousand leaves should produce from 50 to 60 pounds of good, clean fiber. This amount is a fair average.

When the plants in an old field send up a flower stalk, it is nature's signal that the crop is finished. The old plants must then be clipped of all useful leaves and cut down, to allow the young scions (which should have been already planted between the old plants) ventilation for growth.

Bad cleaning, allowing rot to be produced by the acids nascent in the plant pulp, and dampness produce red and moldstained fiber, of less than one-half the value of the good, clean, white, fiber. This is rarely exported, but is sold at home for domestic uso.

In March of last year, the preliminary trials of the machinery in the new cordage factory La Industrial gave satisfactory results. This factory was the first of its class established in Mexico, and its progress has been closely watched.

It is, in the opinion of experts, as completely equipped as any similar enterprise in the United States, and its total cost has reached nearly $700,000. The machinery is nearly all from the United States, and is of the best and latet pattern. The factory is now working double time in order to fill several very large contracts for binder twine from United States houses.

There are in Yucatan nearly twelve hundred henequen-producing plantations of various sizes. The largest plantation, or perhaps I should say the plantation producing the largest output, is, I think, on the line of the broad-guage railway between Merida and Progreso. It is called Ticilche, and produces at the time of this report about 1,000 bales, or 375,000 pounds of cleaned fiber per month.

Prophecies are dangerous, and I venture to make one with diffidence; but I have recently been over the henequen-producing belt and have perhaps as much data as most persons. My belief is that if the maximum production of henequen in Yucatan for the next three years has not already been reached, it will not exceed this year's output by over 10 per cent. Many factors unknown in the United States are of importance here, and parties interested will do well to bear this in mind. I have no henequen interests, and my judgment may be the clearer for that fact. EDWARD H. THOMPSON,

Progreso, October 29, 1899, Consul.

FOOD PRODUCTS OF ZANZIBAR.

SWEET POTATOES.

We propose to review, shortly, the food products grown in these islands by the natives in a series of articles which will naturally extend over some time because of the difficulty of collecting reliable information and also because we are, as far as possible, endeavouring to supplement the information by experience which can only be obtained by actually growing the crops themselves. Experience should extend over many years in order that the effects of seasons and different modes, of planting may be studied. Natives are remarkably ignorant about their crops. Even the more intelligent of the overseers who have been planting sweet potatoes for 40 years are unable to inform you upon all points concerning the cultivation of the plant and sometimes cannot even identify all the varieties. Consequently many witnesses have to be examined and each and has a slightly different tale to tell. We do not, therefore, claim that these articles are by any means exhaustive.

SWEET POTATOES, *Viazi* sing. *Kiazi*, *Batata* (Arabic), *Ipomœa batatas*, belong to the natural order *Convolvulaceæ*. The "potato" is the turherous root or trubercle, sometimes also called tuber, but a tuber is, strictly speaking, a swoolen rootstock or underground stem usually beset with eyes or buds. The ordinary European potato is a tuber. The distinction is observed in the different modes of planting. The European potato is propagated by planting a whole or a portion of the tuher, sometimes called a "set" but this method would be slow and uncertain in the case of the sweet potatoe hecanse the "tuber" being a root contains, no normal buds. Hence slips or cuttings of the stem are planted.

Natives plant sweet potatoes at all times of the year when rain serves though the principal season is the *masika* or big rains in April and May. The earth is moulded up into long tortuous beds, two to three feet high and three to four feet wide and the cuttings crowded indiscriminately all over the surface. They rapidly strike and creep all over the beds, completely hiding the soil. In two to five months, according to the variety and season, the crop is ready to dig. Free sandy soils are preferred and showery weather. If very dry weather follows planting little or no crop will be produced. When digging the potatoes the natives may frequently be observed sticking in the tops again behind them for a second crop and in well made beds this process might be repeated several times. No manure is ever applied for this or any other crop as natives do not seem to understand its use, and often the same ground is planted year after year. Hence large crops of potatoes are seldom obtained, probably not more than two or three tons to the acre.

Varieties of Sweet Potatoes

Small	1.	*Viazi*	*Kirihani*	red
,,	2.	,,	*Kindolo*	*bungala*, white
Large	3.	,,	*Kindolo*,	white
	4.	,,	*Kwata*,	white
	5.	,,	*Kwata*	red.

1. VIAZI KIRIHANI. This seems to be the commonest variety. It grows in ahout 3 months, or less. The potatoes are 4 to 8 inches long 1-3 inches thick. They are not held in much culinary esteem as they cook watery but are planted because they are rapid growers and can get along with comparatively little rain. The stem is green and branching leaf; 3½ inches by 3½ inches, lobed, sinuate on the margin, base reinform as in all the varieties, apex acuminate; petiole of leaf 6-7 inches long. *Viazi Kirihani* bears many flowers which are white at the top and pink at the base.

2. VIAZI KINDOLA BUNGALA. A stouter plant than the last; leaf about the same size hut 5-7 in. lobed; nodes of the stem, upper part of petiole and ribs at the back of the leaf purple; petiole 7-8 inches long. This variety also cooks watery, but is a rapid grower with plenty of rain. The potato is white and truncate.

3. VIAZI KINDOLO. This is the slenderest plant of them all; leaf small, deeply cleft, 5 lobed, apex acute; purple coloured about the nodes, petiole and ribs, Potato grows to the size of a man's arm and cooks dry and flowery. Both this and the two following varieties take five months to mature and require more rain than *Kirihani*.

4. VIAZI KWATA LA PUNDA. White, plant in appearance, and size resembling *Bungala*. Leaf entire, not lobed, margin slightly sinuate apex acuminate; prominences coloured as before but to a slightly greater extent as for instance the whole instead of extremities of the petiole. Potato white, larger than that of any other variety, growing to the size of a man's leg. It also cooks well.

5. VIAZI KWATA LA PUNDA. Red, the largest of the plants; stems as thick as a man's little finger; petiole 8 inches long, stout; leaf 5 in. by 5 in. entire, slightly sinuate, apex acuminate; none of the parts coloured. This is the hest cooking variety and the potatoes grow to a considerable size.

Neither the varieties of *Kwata* bear many flowers while each of the other three have a good show. The *Kwata* are sometimes planted on the flat as they require a lot of moisture. Natives of Zanzibar trace their origin to the Mtoni district.

Little forethought seems to be bestowed upon the choice of varieties though a preference seems to prevail for the smaller quick growing. Sweet potatoes are displayed for sale in the markets all the year round in little heaps of one to two pounds weight, each heap selling for one or two pice, according to the supply. They occupy only a secondary place in the economy of the household ranking in this respect with the pulses and grams. Cassava and rice are much more important food staples. Sweet potatoes are boiled with salt and sometimes mixed with coconut, sugar or syrup.—*The Shamba.*

CEYLON COCONUT OIL.—The only important sale has been one hundred tons for May-July shipment at 5·45c. There is only a limited demand for spot good 5·70c to 5·75c, as to quantity and seller. —*Oil, Paint and Drug Reporter.*

THE NEW "CODE" FOR RURAL EDUCATION—We have so many times urged the importance of differentiating between town and country in matters educational, that we have every reason to be pleased at the changes that the "Code" just brought out by the Education Department renders possible. Henceforth the course of instruction to be given in all elementary schools is to be suitable to the circumstances of the children and the neighbourhood. This means, of course, that in rural districts a knowledge of Nature bearing upon the culture of plants and the raising of stock will be imparted. Except in particular cases, the teacher will not be tempted to teach those special subjects which will bring him in extra grants in the easiest way. The grant will be one technically called "a block grant," made upon the efficiency of the school generally, whatever the subjects taught. Lessons on "common things" which in the country obviously will largely be "object-lessons from Nature," are to be given in the higher and lower standards alike, and a new course of household management has been devised for girls. Among the subjects on which special grants may still be obtained are manual instruction and gardening, and the school-garden may even yet become universal, in spite of the *Schoolmaster's* sneers at the Agricultural Education Commitee, and the latter, knowing full well that all its wishes cannot be fulfilled at once, "hails with the greatest satisfaction the provisions of the new day-school Code," which we might add are due in a great measure to the energy displayed in the formation and work of that still youthful body.—*Gardeners' Chronicle.*

RUBBER CULTIVATION IN INDIA.

A GOVERNMENT PLANTATION SANCTIONED.

The Government of India, on the recommendation of Mr Ribbentrop, Inspector-General of Forests, have just taken an important step in connection with the cultivation of rubber trees. It has been fully proved by experiment that the Brazilian tree will thrive, reproduce itself, and yield rubber of the best quality when cultivated on the Tenasserim Coast. The Government have therefore sanctioned the establishment of a plantation of 10,000 acres of these trees at a cost of R2,10,000. It is expected that at the end of twelve years the plantation will have paid its cost, and will thereafter pay one lakh net annually. As the trees will be self-producing this income will be a permanent one. The calculation is based upon proved facts, the only uncertainty being the maintenance of the present high price of rubber, the demand for which is very great.—*Pioneer*, May 20.

CEYLON TEA: MONTHLY SHIPMENTS TO UNITED KINGDOM AND ESTIMATE.

Total Estimate for May 1900—10½ to 11 million lb.

Total Shipments	for	May, 1900 —	10,500,000
Do	Do	Do 1899 —	8,662,028
Do	Do	Do 1898 —	9,943,674

[Estimate for June, 1900:—11½ to 12 million lb.]

COCHIN MARKET REPORT.

COCHIN, May 26.

C. N. OIL.—With but a very moderate demand from the natives in the Bazaar for immediate requirements, prices are easier, and we quote today good white oil R84 net, and ordinary bazaar white R85 per candy.

COIR YARN.—No change to report and the common qualities of weaving yarn are easier. Shipments in completion of previous engagements are being pushed forward as fast as possible.

ROPE YARN.—The bulk of supplies now arriving as usual in this late part of the season is both coarse and poor in colour. Prices are easy.

COPRA.—Rassi R50/51 per candy.—*Cochin Argus*, May 26.

RAINFALL RETURN FOR COLOMBO.

Supplied by the Surveyor-General.)

	1895.	1896.	1897.	1898.	1899.	Av of 30yrs.	1900.
	Inch.	Inch	Inch	Inch	Inch.	Inch.	Inch.
January ..	5·00	2·92	3·81	2·32	6·98	3·22	3·72
February ..	0·81	0·35	1·68	1·98	2·78	1·93	0·63
March ..	1·84	5·64	3·66	4·21	0·88	4·78	3·71
April ..	9·34	5·93	10·97	22·81	6·66	11·31	15·12
May ..	10·09	9·31	8·30	5·80	17·73	12·09	10·63
June ..	13·99	8·37	10·14	10·94	9·23	8·37	0·69*
July	0·52	2·85	5·24	6·15	1·11	4·38	
August ..	0·92	6·35	9·09	0·97	0·62	3·67	
September	4·09	10·99	4·58	6·90	1·48	5·01	
October ..	30·36	16·78	4·71	20·60	12 99	14·52	
November..	5·83	19.81	11·66	17·38	8·58	12·66	
December..	9·44	11·76	8·89	3-05	4·44	6·39	
Total..	92·23	101·06	82·73	103·11	73·48	88·33	34·50

* From 1st to 5th June 0·69 inches, that is up to 9·30 a.m. on the 6th June.—ED, *T.A.*

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS OF APRIL, 1900.—We append the Monthly Return of rain from which it will be seen that the highest fall in April, was at Labugama in the Western Province, 28·38 inches and the lowest at Mylapitiya in the Central Province, 0·50 inches.

WESTERN PROVINCE.

- Negombo, Mr. Nathanielsz (6) ... 26 01
- Kalutara Mr. Gregson (36) ... 23·71
- Labugama, Mr. Bond (369) ... 28·38
- Henaratgoda, Mr. Silva (33) .. 11·33

CENTRAL PROVINCE.

- Katugastota, Mr. Morgan (1,500) ... 4 54
- New Valley, (Dikoya) Mr. Ward (3,700) .. 22 10
- Helboda (Pussellawa) Mr. Anderson (3,300) .. 14·23
- Yarrow Estate, Mr. Pedwick (3,400) 6·42
- Peradeniya Mr. MacMillan (1,540) ... 8·83
- Duckwari, Mr. Edwin (3,300) ... 6·20
- Caledonia, Mr. Goork (4,273) .. 12 07
- Pussellawa, Mr. Powell (3,000) .. 11·40
- Hakgala, Mr. Nock (5,581) .. 5·69
- S. Wanarajah Estate, Mr. Tatham (3,790) .. 17·58
- Padupola, Mr. Ward .. (1,636) ... 17 14
- Mylapitiya, Mr. Fletcher (1,707) ... 0·50

NORTHERN PROVINCE.

- Mullaittivu, Mr. Sanmukam (12) .. 3·19
- Jaffna Mr. Macdonnel (8) 13·77
- Mankulam, (N. Road) Mr. Walker (167) ... 7·36
- Elephant Pass, Mr. Silva (7) .. 8·12
- Vangalachettykulam, Mr. Oorloff (179) .. 2·80
- Point Pedro, Mr. Chitambalam (24) ... 6 54
- Jaffna College, Mr. Cooke (9) ... 8·24
- Kayts, Mr. Kretser .. (8) .. 7·45
- Kankesanturai, Mr. Pararachasingha (10).. 7·32
- Pallai, Mr. Silva (24) .. 4·50
- Murikandy, (North-Central Road) Mr. Silva — 1·75
- Nedunkeni, Mr. Sanmukam (122) ... 5·23
- Chavakachcheri, Mr. Silva (16) ... 12·22
- Udupiddi, Mr. Brown (35) .. 7 42
- Marichchukaddi, Mr. Thamotharampillay (14) 4·60
- Murungan, Mr. Ramalinkam (52) 4·20
- Vavuniya Mr. Walker (318) 4·79

SOUTHERN PROVINCE.

- Ella Vella Mr. Caldicott (262) 12·07
- Kekanadura, do (150) 5·96
- Denagama, do (286) 10·99
- Udukiriwlla Mr. Lourensz (235) .. 9·48
- Kirama, Not received (260) —
- Hali-ela Mr. Caldicott (200) 10·78
- Tissa Mr. Lucus (75) ... 5·25
- Matara Mr. Caldicott (15) 5·76
- Dendeniya, do (157) 10·62
- Urubokka, Mr. Caldicott (890) 28·09
- Tangalla Mr. Fox (94) .. 6·07
- Mamadola, Mr. Doole (56) .. 7·21

EASTERN PROVINCE.

- Irrakkamam, Mr. Bower (42) ... 3·07
- Devilana, Mr. Vanderstraaten (136) 4·75
- Sagamata, Mr. Bower .. (40) ... 0·97
- Ambare, do (65) 8·89
- Kanthalai, Mr. Carte (150) 1·76
- Allai, Mr. Carte (95) 4·70
- Rukam, Mr. Vanderstraaten (120) ... 5·00
- Periyakulam, Mr. Carte (20) ... 2 06
- Chadaiyantalawa, Mr. Edge (57) 6·85
- Kalmunai, do (12) 5·45
- Rotewewa, do (30) 1·53
- Lahugala, do (70) 1·50
- Naulla, do (30) 1·40
- Andankulam, Mr. Carte (41) ... 2·14
- Manalpuddy, Mr. Vanderstraaten (21) 3·45
- Maha-Oya-Tank, Mr. Vanderstraaten (190) 8·70

N.-W. PROVINCE.

- Magalawewa, Not received (176) .. —
- Maha Uswewa tank, Mr. Addams (160) ... 5·70
- Tenepitiya, Mr. Churchill (8) ... 18·15
- Batalagoda, Mr. Madahapola — 6 25

N.-C. PROVINCE.

- Kalawewa, Mr. Emerson (268) 1·86
- Maradankadawala, Mr. Emerson (443) ... 4·86
- Mihintale, Mr. MacBride (354) .. 3·62
- Horowapotana, Mr. MacBride (217) .. 4·15
- Madawachchiya, Mr. MacBride (285) .. 6·20
- Topare, Mr. Jayewardane (200) ... 4·67
- Minneriya Mr. Eves — 2·46

UVA PROVINCE.

- Bandarawela, Mr. Tocke (4,000) .. 4·51
- Haldummulla, Mr. Viramuttu (3,160) .. 24·85
- Kumbukan, Mr. Rowland (446) ... 5·62
- Koslanda, Mr. Rowland (2,258) ... 18·50
- Tanamalwila, Not received (550) .. —
- Bibile, Mr. Silva (680) 2·84
- Taldena, Mr. Fernando (1,100) .. 4·38
- Allutnuwara—Mr. Leembruggen (300) 2·91

SABARAGAMUWA.

- Ambanpitiya, Mr. Dassanayaka (729) 13·20
- Pelmadulla, Mr. Robertson (408) 20·25
- Kolonna Korale (Hulanda-oya) Mr. Dabre (203) 11·92
- Avisawella, Mr. Clarke (105) .. 21 [illegible]

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Company	paid p. sh.	Buyers.	Sellers.	Transactions
Agra Ouvah Estates Co., Ltd.	500	—	900	—
Ceylon Tea and Coconut Estates	500		500 n'l	—
Castlereagh Tea Co., Ltd.	100	90	95	—
Ceylon Hills Estates Co. Ltd.,	100	—	—	—
Ceylon Provincial Estates Co. Ltd.	500	—	500	..
Claremont Estates Co., Ltd.	100	—	—	—
Clunes Tea Co., Ltd.	100	—	—	—
Clyde Estates Co., Ltd.	100	—	40	—
Doomoo Tea Co., Ltd.	100	—	60	—
Drayton Estate Co., Ltd.	100	—	—	—
Eila Tea Co., of Ceylon, Ltd.	100	60	62½	—
Estates Co., of Uva, Ltd.	500	—	250	—
Gangawatta	500	—	—	—
Glasgow Estate Co., Ltd.	500	935	950	—
Great Western Tea Co.,	500	640	—	—
Hapugabalatde Tea Estate Co.	200	200	—	—
High Forests Estates Co., Ltd	500	512·50	525	512·50
Do part paid	350	—	400	—
Horekelly Estates Co., Ltd.	100	70	..	..
Kalutara Co., Ltd.	500	—	370	—
Kandyan Hills Co., Ltd.	100	—	67·50	—
Kanapediwatte Ltd.	100	—	90	—
Kelani Tea Garden Co., Ltd.	100	40	—	—
Kirklees Estates Co., Ltd.	100	120	—	120
Knavesmire Estates Co., Ltd.	100	—	70	70
Maha Uva Estates Co., Ltd	500	—	425	—
Mocha Tea Co., of Ceylon, Ltd.	500	600	—	—
Nahavilla Estate Co., Ltd.	500	—	450	—
Neboda Tea., Co. Ltd	500	—	500	—
Nyassaland Coffee Co. Ltd	100	—	—	—
Ottery Estate Co., Ltd.	100	—	—	—
Palmerston Tea Co., Ltd.	500	—	400	—
Penrhos Estates Co., Ltd.	100	90	95	—
Pine Hill Estate Co., Ltd.	60	—	42½	..
Pitakanda Tea Company	500	—	—	—
Putupaula Tea Co., Ltd.	100	—	120	—
Ratwatte Cocoa Co., Ltd.	500	—	—	..
Rayigam Tea Co., Ltd.	100	—	60	—
Roeberry Tea Co., Ltd.	100	42·50	45	...
Ruanwella Tea Co., Ltd.	100	40	—	—
St. Heliers Tea Co., Ltd.	500	510	—	..
Talgasweia Tea Co., Ltd.	100	35	—	—
Do 7 per cent. Prefs.	100	—	..	..
Tonacombe Estate Co., Ltd.	500	—	450	...
Udabage Estate Co., Ltd.	100	—	..	..
Udugama Tea & Timber Co., Ltd.	50	—	..	..
Union Estate Co., Ltd.	500	—	275	...
Upper Maskeliya Estate Co., Ltd.	500	—	490	...
Ovakellie Tea Co., of Ceylon, Ltd.	100	..	65	..
Vogan Tea Co., Ltd.	100	...	80	..
Wanarajah Tea Co., Ltd.	500	..	1086	..
Yataderiya Tea Co., Ltd.	100	—	395	..

CEYLON COMMERCIAL COMPANIES.

Company	paid p. sh.	Buyers.	Sellers.	Transactions
Adam's Peak Hotel Co., Ltd.	100	..	..	..
Bristol Hotel Co., Ltd.	100		90	85
Do 7 per cent Debts.	100	1 7·50	...	..
Ceylon Gen. Steam Navgtn. Co., Ltd.	100	...	215	215
Colombo Apothecaries Co., Ltd	100	137½	140	..
Colombo Assembly Rooms Co., Ltd.	20	12·50	..	..
Do prefs.	20	...	..	..
Colombo Fort Land and Building Co., Ltd.	100	...	85	85
Colombo Hotels Company	100	297·50	300	...
Galle Face Hotel Co., Ltd.	100	..	150	..
Kandy Hotels Co., Ltd.	100	..	117·50	117·50
Kandy Stations Hotels Co.	100	..	30	...
Mount Lavinia Hotels Co., Ltd.	500	150	200	..
New Colombo Ice Co., Ltd.	100	175	...	175
Nuwara Eliya Hotels Co., Ltd.	100	30	32·50	...
Do 7 per cent prefs.	100	..	—	..
Public Hall Co., Ltd.	20	15	...	:
Petroleum Storage Co.	100	..	..	..
Do 10 % prefs.	100	...	...	..

LONDON COMPANIES *

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Alliance Tea Co., of Ceylon,	10	8½	9½—10	..
Anglo Ceylon General Estates Co.	100	..	35—45	..
Associated Estates Co., of Ceylon	10	..	3—4	...
Do. 6 per cent prefs.	10	..	6½—7½	..
Ceylon Proprietary Co.	1	...	12/6—17/6	..
Ceylon Tea Plantation Co., Ltd.	10	..	26—27	..
Dimbula Valley Co., Ltd.	5	..	5½—6	..
Do. prefs.	5	..	..	..
Eastern Produce & Estates Co.	5	...	5½—5¾	...
Ederapolla Tea Co.,	10	...	8	..
Imperial Tea Estates Co., Ltd.	10	...	5—6	..
Kelani Valley Tea Asscn., Ltd.	5	..	5—6	..
Kintyre Estates Co., Ltd.	10	—	7—8	..
Lanka Plantation Co., Ltd.	10	4½	4—5	..
Nahalma Estates Co., Ltd.	1	—	¼—¾	..
New Dimbula Co., Ltd.	1	..	2¾—3	..
Nuwara Eliya Tea Estate Co., Ld.	10	...	10½	10¼
Ouvah Coffee Co., Ltd.	10	..	5—7	..
Ragalla Tea Estates Co., Ltd.	10	..	9½—10	..
Scottish Ceylon Tea Co., Ltd.	10	—	13—15	...
Spring Valley Tea Co., Ltd.	10	8	4—5	..
Standard Tea Co., Ltd.	6	..	11—12	..
The Shell Transport and Trading Company, Ltd.	100	—	...	302
Yatiyantota Ceylon Tea Co., Ltd.	10	...	8—9	—
Do. pref. 6 o/o	10	...	9¾—10¼	—

BY ORDER OF THE COMMITTEE.

Colombo, June 8th, 1900

* Latest London Prices

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, June 6th, 1900.

COFFEE:—	
Estate Parchment per bushel	None offering.
Chetty do do	None offering.
Native Coffee per cwt.	None offering.
do F. O. B per cwt.	None offering.
Liberian coffee:—per bushel	None offering.
do cleaned coffee:—per cwt	None offering.
Cocoa unpicked:—per cwt	None offering.
do cleaned do	None offering.
Cardamoms Malabar per lb	R0·90 to 1·05
do Mysore do	R1·35 to 1·75
RICE:—	
Soolai per bag of 164 lb. nett	R9·40 to 9·60
Slate or 1st quality:—per bushel	R3·45 to 3·50
Soolai 2 & 3rd. do do	R3·38 to 3·42
Coast Calunda	R3·55 to 3·60 Scarce
Coast Kara	R3·87 to 3·92 do
Kazala	R3·35 to 3·37
Muttusamba Ordinary	R4·35 to 4·62
Cinnamon per lb No 1 to 4	R00·55
do do 1 to 2	R00·64
do Chips per candy	R87·50 to 90·00
Coconuts Ordinary per thousand	R35·00 to 38·50
do Selected do	R36·00 to 39·50
Coconut Oil per cwt	R14·25 to 14·50 no business
do do F. O. B. per ton	R285·00 to 290·00 no business
POONAC:—	
Gingelly per ton	R127·50 to 130·00
Coconut Chekku do	R87·50 to 90·00
do Mill (retail) do	R85·00
Cotton Seed per ton	R80·00 to 82·50
Copra per candy	
Kalpitiya do	R44·45
Marawilla do	R43·50 to 45·00
Cart Copra do	R36·00 to 42·00
Satinwood per cubic feet.	R2·00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	R28·00 to 30·00
Palmyra do do	R6·00 to 16·00
Jaffna Black Cleaned per cwt	R16·00
do mixed do	R12·50 to 13·50
Indian do	R9·00 to 12·50
do Cleaned do	R9·00 to 13·50
Sapanwood per ton	R52·50 to 54·00
Kerosene oil American per cases	R8·25 to 8·50
do bulk Russian per tin	R3·52 to 3·60
do Russian per cases	R7·30 to 7·40
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R23·00 to 28·00
Kapok cleaned f o b per cwt	R24·00
do uncleaned do	R5·50
Plumbago per ton, according to grade: Large lumps	R400·00 to 800·00
do do	R350·00 to 700·00
Chips	R200·00 to 500·00
Dust	R50·00 to 150·00

COLOMBO PRICE CURRENT.

(*Furnished by the Chamber of Commerce.*)

EXPORTS.

Colombo, 4th June, 1900.

CARDAMOMS:—
All round parcel, well bleached per lb. R1·50
Do. dull medium do. 1·25
Special assortment, 0 and 1 only do. 1·70
Seeds do. 1·35

CINCHONA BARK:—
Per unit of Sulphate of Quinine 10c—1½ to 3 c/o

CINNAMON :—
Ordinary assortment per lb. 59c.
Nos. 1 and 2 only per lb. 64c,
Nos. 3 and 4 only per lb. 55c.

CINNAMON CHIPS :—
Per candy of 560 lb R87·50

COCOA :—
Finest estate red; unpicked per cwt 52 00
Medium do do " 49 00
Bright native, unpicked and undried " .. } none
Ordinary do do do " .. } o'ring.

COCONUTS—(husked).
Selected per thousand R46·00
Ordinary " R39·00
Smalls " R29·00

COCONUT CAKE—
Poonac in robins f. o. b. per ton R80
Do. in bags none.

COCONUT (Desiccated).
Assorted all grades per lb. 13¾c

COCONUT OIL—
Dealers' Oil per cwt. R14·50—Business done.
Coconut Oil in ordinary packages, f. o. b. per ton R322·50.—Business done.

COFFEE—
Plantation Estate Parchment on the spot per bus. R11·00.
Plantation Estate Coffee f.o.b. (ready) per cwt.—R65.00.
Native Coffee, f.o.b per cwt. R42·50.

CITRONELLA OIL—
Ready do per lb. 6 c.

COPRA—
Boat Copra per candy of 560 lb. R45·00
Calpentyn Copra do do R45·00
Cart do do do R42·00
Estate do do do R45·00

CROTON SEED per cwt R22 00

EBONY—
Sound per ton at Govt. depot R175.—As per last Government Sales, of 15th November.
Inferior R120.—As per last Government sales of 15th November.

FIBRES—

Coconut Bristle	No. 1	per cwt	R10·50
Do	" 2	"	8 00
Do mattress	" 1	"	3·50
Do	" 2	"	3 00
Coir Yarn Kogalla	" 1 to 8		18 00
Do Colombo	" 1 to 8		16 00
Kitool all sizes			38·00
Palmyrah			16·00

PEPPER—Black per lb 28c.

PLUMBAGO—

Large lumps	per ton	R800
Ordinary lumps	do	700
Chips	do	500
Dust	do	400
Do (Flying)		150

SAPANWOOD— per ton R52·50
SATINWOOD (ordinary) per cubic ft. R2·40

TEA—	High Grown Average.	Medium Average.	Low Grown Average.
Broken Pekoe and Broken	cts	cts	cts
Orange Pekoe per lb	56	41	30
Orange. Pekoe do	59	38	31
Pekoe do	44	32	28
Pekoe Souchong do	42	29	25
Pekoe Fannings do	35	29	27
Broken mixed—dust, &c. per lb	27	27	24

CEYLON EXPORTS AND DISTRIBUTION 1899-1900.

COUNTRIES	Tea. 1900 lbs.	Tea. 1899 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.
To U K. ..	48861799	39619257	1861	..	1861	12292	185140	344748	133494
" Austria ..	5652	1726	..	..	..	..	..	1500	19600
" Belgium ...	2040	8183	54	..	54	201	...	23634	44100
" France ..	72658	52491	..	...	..	59	3407	71488	10604
" Germany ..	116736	159097	..	..	..	204	56390	185600	293734
" Holland ..	2000	3500	..	..	..	...	...	..	22400
" Italy ..	4047	7789	..	..	..	...	519	39500	55216
" Russia ..	3497759	1175750	53	..	53	..	..	..	...
" Spain ..	15130	5300	..	...	..	...	..	77500	16800
" Sweden ..	36735	18698	9	..	9	--	3958	2000	..
" Turkey ..	10963	10052	..	..	..	..	1000	...	..
India ..	265551	186167	73	4	77	...	28374	..	..
" Australia ..	6787638	6069483	1595	..	1595	20	336	2700	11816
" America ..	2271228	1060398	72	..	72	361	..	169000	98000
" Africa ..	81578	112139	...	..	..	..	1120	100	2408
" China ..	516566	374771	21	...	21	82	1800	10000	...
" Singapore ..	42481	26575	..	..	..	405	..	..	..
" Mauritius ..	...	17420	..	..	..	..	...	...	..
" Malta ..	165253	98677	..	...		--	..	..	.
Total export from 1st Jan. to 4th June 1900	62755814	49007483	3738	4	3742	13624	282044	927770	708172

COUNTRIES	Coconut Oil. 1900 cwt	Coconut Oil. 1899 cwts	Copra cwts.	Desiccated Coconut lb.	Poonac cwts.	Coconuts. No.	Plumbago. 1900 cwts.	Plumbago. 1899 cwts.	Fibre.	Ebony cwts.	Sapanwood cwts.
To U K. ..	107804	41770	12228	2638661	..	5141891	39549	57791	23740	280	4238
" Austria ..	3038	851	12482	37312	...	..	.	14	...	..	1080
" Belgium ...	522	404	44242	51000	28478	...	18600	13656	4866	...	..
" France ..	...	..	13567	3602	201	..	..	609	...	220	..
" Germany ..	3634	401	30409	350144	30058	304709	26537	33769	6657	1730	2190
" Holland ..	..	..	..	69330	.	25050	912	3126	100	...	...
" Italy ..	..	205	1500	..	..	2048	...	–	..	45	...
" Russia ..	..	..	36437	..	...	1590	...	1188	...	..	..
" Spain ..	..	..	..	...	...	..	..	...	--	..	...
" Sweden ..	...	206	4403	...	..	..	105	208	...	...	...
" Turkey ..	...	..	1	...	..	2000	...	..	..	...	...
India ..	24475	20694	74	..	..	27950	163	280	12	..	23
" Australia ..	83	373	..	222470	..	..	958	749	1970	27	..
" America ..	30275	47963	..	717565	...	..	76261	127662	5442	..	..
" Africa ..	...	..	..	9835	...	700055	..	..	883	..	...
" China ..	622	2773	..	58135	...	..	41	100	...	..	...
" Singapore ..	...	17812	..	...	..	–	...	..	42	...	..
" Mauritius ..	..	..	...	...	..	...	..	...	..	..	...
" Malta ..	...	...	...	..	..	..	..	..	..	..	...
Total export from 1st Jan. to 4th June 1900	170453	133452	155343	4159054	58737	6205293	163126	239152	43692	2302	7531

MARKET RATES FOR OLD AND NEW PRODUCTS

(From Lewis & Peat's Fortnightly Prices Current, London, May 16th, 1900.)

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry	44s a 85s
Zanzibar & Hepatic „	Common to good	20s a 60s
BEES' WAX, „		
Zanzibar & Bombay { White „	Good to fine	£6 a £7 10s
{ Yellow „	Fair „	£5 15s a £7 [6d
Madagascar „	Dark to good palish	£6 12s 6d a £7 2s
CAMPHOR, China „	Fair average quality	180s
Japan „	„ „ „	190s
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 5d a 1s 7d
Ceylon.—Mysore „	Fair to fine plump	3s 5d a 4s 3d
	Seeds	1s 6d a 2s 6d
„ Tellicherry „	Good to fine	2s 11d a 3s
	Brownish	2s 6d
„ Long „	Shelly to good	2s 11d a 3s 6d
„ Mangalore „	Med brown to good bold	2s 3d a 3s 6d
CASTOR OIL, Calcutta „	1sts and 2nds	3¼d a 4¼d
Madras „		
CHILLIES, Zanzibar cwt.	Dull to fine bright	37s 6d a 47s 6d
CINCHONA BARK.—lb.	Ledgeriana Orig. Stem	3¼d a 6¾d
Ceylon	Crown, Renewed	5d a 7d
	Org. Stem	3¾d a 5½d
	Red Org. Stem	4⅜d a 5⅜d
	Renewed	5¾d a 7½d
	Root	3¾d a 4d
CINNAMON, Ceylon 1sts per lb	Ordinary to fine quill	10d a 1s 8d
2nds	„ „	9½d a 1s 5d
3rds	„ „	8½d a 1s 4d
4ths	„ „	8d a 11½d
Chips	„ „	2½d a 8d
CLOVES, Penang lb.	Dull to fine bright bold	5½d a 9d
Amboyna ..	Dull to fine	4½d a 5½d
Zanzibar and Pemba }	Good and fine bright	4¼d
	Common dull to fair	3¾d a 4d
Stems ..	Fair	1¼d
COFFEE		
Ceylon Plantation „	Bold to fine bold colory	100s a 115s
	Middling to fine mid	85s a 95s
	Low mid. and low grown	75s a 82s 6d
	Smalls	55s a 75s
Native	Good ordinary	30s a 70s
Liberian „	Small to bold	37s a 45s
COCOA, Ceylon „	Bold to fine bold	84s 6d a 95s
	Medium and fair	73s a 82s 6d
	Triage to ordinary	60s a 70s
COLOMBO ROOT „	Fair to good	12s a 27s 6d
COIR ROPE, Ceylon ton		nominal
Cochin „	Ordinary to fair	£17 a £20 10s
FIBRE, Brush „	Ord. to fine long straight	£16 a £19
Cochin „	Ordinary to good clean	£18 a £24
Stuffing „	Common to fine	£7 a £9
COIR YARN, Ceylon „	Common to superior	£15 a £33
Cochin „	„ „ very fine	£12 a £32
do. „	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	38s a 45s
CUTCH „ „	Fair to fine dry	23s a 35s
GINGER, Bengal, rough „	Fair	27s
Calicut, Cut A „	Good to fine bold	87s 6d a 92s 6d
B & C „	Small and medium	35s a 72s 6d
Cochin Rough „	Common to fine bold	25s a 34s
	Small and D's	25s a 28s
Japan „	Unsplit	21s a 24 6d
GUM AMMONIACUM „	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar „	Picked fine pale in sorts	£10 7s 6d a £20
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 2/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar „	Fair to good palish	£4 8s a £8
	„ „ red	£4 5s a £9
ARABIC E. I. & Aden „	Ordinary to good pale	35s a 60s
Turkey sorts „		67s 6d a 85s
Ghatti „	Pickings to fine pale	12s 6d a 35s
Kurrachee „	Good and fine pale	52s 6d a 55s
	Reddish to pale selected	30s a 45s
Madras „	Dark to fine pale	23s a 35s
ASSAFŒTIDA „	Clean fr. to gd. almonds	40s a 85s
	Ord. stony and blocky	8s a 25s
KINO „	Fine bright	1s a 1s 3d
MYRRH, picked „	Fair to fine pale	65s a 75s
Aden sorts „	Middling to good	33s a 55s
OLIBANUM, drop „	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings „	Low to good pale	17s a 20s
siftings „	Slightly foul to fine	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 6¼d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean	2s 3d a 3s 3d
Borneo	Common to fine	1s a 2s 4d

	QUALITY.	QUOTATIONS
INDIARUBBER, (Contd).		
Java, Sing. & Penang lb.	Foul to good clean	8d a 3s 3d
Mozambique „	Good to fine Ball	2s 8d a 3s 7d
	Ordinary to fair Ball	2s a 2s 10¾d
	Low sandy Ball	1s 3d a 1s 7d
	Sausage, fair to good	3s 2d a 3s 7d
	Liver and livery Ball	2s 4d a 3s 1½d
Madagascar „	Fr. to fine pinky & white	3s a 3s 4½d
	Fair to good black	2s a 2s 10¾d
	Niggers, low to fine	1s 1¾d a 2s 10d
INDIGO, E.I. „	Bengal—	
	Shipping mid to gd violet	3s 9d a 4s 6d
	Consuming mid. to gd.	3s 2d a 3s 8d
	Ordinary to mid.	2s 10d a 3s 1d
	Mid. to good Kurpah	2s 4d a 3s
	Low to ordinary	2s 1d a 2s 3d
	Mid. to good Madras	1s 7d a 2s 6d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 4d a 1s 11d
	Pickings	1s 4d a 1s 4½d
MYRABOLANES, Madras } cwt	Dark to fine pale UG	6s a 7s
	Fair Coast	5s 6d a 6s
Bombay „	Jubblepore	4s 3d a 7s
	Bhimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal „	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang „	110's to 65's	11½d a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 21s
NUX VOMICA, Bombay per cwt.	Ordinary to middling	4s a 5s 6d
Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	5s 9d
CASSIA „	According to analysis	3s 1d a 3s 6d
LEMONGRASS „	Good flavour & colour	2⅞d
NUTMEG „	Dingy to white	3d a 3½d
CINNAMON „	Ordinary to fair sweet	3½d a 1s 6d
CITRONELLE „	Bright & good flavour	11d a 1/0½d
ORCHELLA WEED—cwt		
Ceylon „	Mid. to fine not woody	10s a 12s 6d
Zanzibar „	Picked clean flat leaf	10s a 16s
	„ wiry Mozambique	10s a 11s
PEPPER—(Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy	6½d a 6 3-16d
Singapore	Fair	6 3-32d a 6¼d
Acheen & W. C. Penang	Dull to fine	5¼d a 5⅞d
PLUMBAGO, lump cwt.	Fair to fine bright bold	40s a 45s
	Middling to good small	30s a 37s
chips „	Dull to fine bright	17s a 20s
dust „	Ordinary to fine bright	4s a 11s
SAFFLOWER „	Good to fine pinky	65s a 75s
	Inferior and pickings	40s a 60s
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour	£20 a £50
Chips „	... ...	5s a £8
Madras, Logs „	Fair to good flavour	£20 a £50
Chips „	Inferior to fine	£4 a £8
SAPANWOOD Bombay „	Lean to good	£4 a £5
Madras „	Good average	£4 a £5 nom.
Manila „	Rough & rooty to good	£4 10s a £5 15s
Siam „	bold smooth	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	53s a 59s
SENNA, Tinnevelly lb	Good to fine bold green	5d a 8d
	Fair middling medium	4d a 5½d
	Common dark and small	1¼d a 3½d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's; D's and B's; Small	£4 a £5 12s 6d
Mergui „	Small to bold	£6 a £9 2s 6d
Mussel „	Small to bold	18s a £3
TAMARINDS, Calcutta	Mid. to fine bl'k not stony	15s a 16s
per cwt. Madras	Stony and inferior	7s 6d a 11s
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	19s a 22s 6d
TURMERIC, Bengal cwt.	Fair	30s
Madras „	Finger fair to fine bold bright	30s a 32s 6d
	Bulbs	25s
Do. Cochin „	Finger	24s
	Bulbs	8s 6d
VANILLOES— lb.		
Mauritius and Bourbon } 1sts	Gd. crysallized 3½ a 9 in	17s 6d a 27s
2nds	Foxy & reddish 4½ a 8 „	15s a 22s
Seychelles 3rds	Lean and inferior	10s a 13s 6d
VERMILION lb.	Fine, pure, bright	3s 6d
WAX, Japan, squares cwt	Good white hard	33s a 34s

THE

AGRICULTURAL MAGAZINE,

COLOMBO.

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for June:—

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THE NEW SCIENCE OF HORTICULTURE.

THE article on Seedless Plants, taken over from the *Louisiana Planter*, is an interesting contribution in many ways, but there is more than one point in it which are apt to give rise to discussion.

We note that the means by which the horticulturist creates seedless varieties of fruits are by selection, starting with *lusi naturæ* as in the case of the naval orange. This particular instance, however, presents special abnormality, which it would be a mistake to suppose is always associated with the seedless conditions as the following extract from the above article would lead one to imagine: "In the effort to produce a monstrosity the seeds were apparently neglected." Against the acceptence of this as a general condition we would submit the fact that fruit monstrosities containing an abundance of good seed are by no means uncommon, while seedless fruits occur which present no abnormal structure. The plantain and papaw are instances of the latter. Again, there is the theory advanced with regard to the first-mentioned that "the use of suckers for purposes of propagation gradually made the seeds of less and less value, and that following out the law of nature the seeds, becoming useless organs, degenerated." But what is the explanation of the seedless condition in papaws? The freak of nature which produces seedless fruit sometimes as an exception (bringal) and again as a rule (plantain) is apparently not to be so easily theorised about. One thing, however, seems to be pretty clear, and that is, that cultivation tends towards the elimination of seeds as regards their size and number, while the "wild state" tends to produce the opposite effect of seed development. The wild mango (appropriately called "eta-amba"=seed mango) is nearly all seed, while the wild orange is pretty full of seeds; on the other hand the so-called seedless papaw, which preserves this character when grown in good soil or when liberally cultivated, produces abundance of seed when allowed to run wild or grown on poor soil. It would thus seem that a special effort is put forward by plants growing under unfavourable conditions to propagate their species, and that in a wild state, in the general struggle for existence among plant life, special provision is made by nature for reproduction of the species.

We would now consider for a moment the following passage in the above-mentioned article: "That the seeds are really immaterial to the welfare of the plant is evidenced by the fact that perfect fruits are often developed whether the blossoms are fertilised or not." We take it that by fertilization is here meant the actual result of fertilization, the conversion of an ovule into a seed, *i.e.*, the formation of an embryo capable of development into a new plaut. If so, we take no exception to the sense of the passage; if not, we cannot see our way to accept the dictum.

The transformation of an ovary either alone or in conjunction with such other parts of the flower as go to form edible succulent fruits, is always associated with the development of seed as the esult of fertilization. We do not of course mean

to say that the former is a direct result of fertilization, but that the two processes are contemporaneous, and that possibly the *ante-decents* to the consumation of the fertilizing act (pollination and the subsequent growth of the pollen grains) induce the development of the ovary or other floral structures to serve as protection for the seed or to attract the fruit-eating animal. If on the other hand we are to infer from the expression "whether the blossoms are fertilised or not," that it is possible for fruit to form without any contact of pollen and stigma then it would appear that pollen is a useless element in fruit production and, in fact, if the best types of fruits, viz., seedless fruits, are to be produced, we must endeavour to eliminate the male organ of flowers. But the absence of fruit (seedless or otherwise) on pistillate dioecious trees which are beyond the influence of their stamminate, congeners goes to contradict the conclusion that pollen is immaterial to the development of fruit. We are here reminded of the advice of an authority on poultry who recommends that if poultry-farmers wish to produce the best eggs for the market they should eliminate the male from the poultry yard. The authority referred to argues that the influence of the male is not necessary for the production of eggs (no more than, according to the above article pollen is necessary for the production of fruit), but that it is necessary for the development of the embryo (in the same way that the pollen is essential for the development of an embryo in the seed). Eggs without the embryo are said to keep much better and taste better, just as fruit without seed are to be preferred to fruit with seed! So that it looks as though the male must be eliminated both in poultry farming for egg production, and also in fruit growing. We will not speculate further on the developements that these theories may lend to.

As to the explanation of the fact why pollination and possibly pollen growth (assuming they are concomitants of fruit development) do not result in the fertilization of a single ovule, as in the seedless fruits, we must confess our ignorance, and leave the matter in the hands of experts. We do know, however, that many pollen tubes never reach the ovary, and that some ovules are left unfertilized while others develope into seed.

OCCASIONAL NOTES.

The School of Agriculture has had a number of foreign visitors of late. First came M. Em. Prud'homme, the chief of the Agricultural Department of Madagascar, with a party of fellow-travellers, then Dr. K. Giesenhagen, lecturer on Botany at the University of Munich, after him M. Alexis Teysloff, a Russian gentleman interested in Ceylon bees, and the last visitor was M. Leon Pynaert, a Belgium botanist. M. Prud'homme and his friends called with a view to gain an insight into the working of the School of Agriculture. Dr. Giesenhagen, whose duties include the examination of products in order to ascertain to what extent they are adulterated, was interested in the manufacture of our edible agricultural products, tea, coffee, cocoa, and dessicated coconuts. M. Teysloff, who called with the Director of the Colombo Museum, examined the hives kept at the School, and secured some specimens of the Ceylon honey bee (*Apis indica*). M. Leon Pynaert, who is travelling in the East before settling down in the Congo with a view to establishing a Botanical Garden there, has, in addition to his continental training, been working some time at Kew Gardens, London.

The Government Dairy is fortunate in being free from rinderpest, while the plague has been prevailing in various parts of Colombo during the past few months. It is to be hoped that the valuable herd of cattle will continue to keep in good health till the disappearance of the disease.

The distribution of Dairy stock among the Government Agencies continues, and up to date the following animals have been sent out for breeding purposes in the provinces:—One stud bull to the Assistant Government Agent Matara; one stud bull, four bull calves and three cow calves to the Government Agent, Jaffna; two bull calves to the Government Agent, Kurunegala; one bull calf to the Government Agent, Anuradhapura; three bull calves to the Government Agent, Ratnapura, and three bull calves to the Assistant Government Agent, Kegalle.

We are indebted to Mr. J. P. Williams, the well-known firm of seedmen of Henaratgoda, for seeds of Kickxia Africana and Hancornia speciosa, both rubber-yieding plants, but the latter also said to produce a delicious fruit.

It is intended to establish a gymnasium on the grounds of the School of Agriculture, where it will be available to the students of all the schools located on the premises. We welcome this innovation (for this will be the first gymnasium established in connection with a Colombo College or school) as an institution which should be the means of "hardening" our students for the outdoor life which every agriculturist must be equipped for.

Bananas are again well to the front. Here is an advertisement of preserved Bananas:—"Mafuta" brand, described as a splendid substitute for figs and raisins, and unequalled for dessert. Small box (16 to 20 bananas) 6d, large box (30 to 40) 1/. In presenting these bananas to the public the manufacturers enumerate the following advantages:—

1. The fruit is picked when absolutely ripe, thus ensuring the real flavour, at present unobtainable owing to the immature condition in which it is necessary to export the fresh fruit.

2. There is no musty flavour as with a sun-dried banana, neither is the fruit parched or shrivelled.

3. The price brings the fruit within the reach of all; 1 lb. of bananas averaging 16 to 20 whole fruits.

4. There is no skin or stalk to waste; this can be eaten not only as bought, but cooked in a great variety of ways; especially during the winter months.

5. For cycling or picnic parties, tourists, travellers and others, this will be found a great convenience, a few bananas being sufficient stay and nourishment for some hours. The boxes are compact and easily cured.

Then follows a number of recipes, which we shall give for the benefit of our readers, in a future issue.

A correspondent sending us this advertisement writes: Why not in Ceylon at the Agricultural School? Why not indeed! We suppose because the Agricultural School is not given the opportunity of doing this and many other things which it might do. It has not had, as one of the speakers at the recent prize-giving ceremony put it, a "fair chance," and that explains everything.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF MAY, 1900.

1	Tuesday ..	5·28	17	Thursday ..	Nil
2	Wednesday	6·11	18	Friday ..	Nil
3	Thursday ..	·72	19	Saturday ..	Nil
4	Friday ..	·05	20	Sunday ..	2·59
5	Saturday ..	Nil	21	Monday ..	Nil
6	Sunday ..	Nil	22	Tuesday ..	·21
7	Monday ..	Nil	23	Wednesday	·30
8	Tuesday ..	Nil	24	Thursday ..	·03
9	Wednesday	Nil	25	Friday ..	Nil
10	Thursday ..	Nil	26	Saturday ..	·02
11	Friday ..	Nil	27	Sunday ..	·01
12	Saturday ..	Nil	28	Monday ..	Nil
13	Sunday ..	Nil	29	Tuesday ..	·41
14	Monday ..	Nil	30	Wednesday	·44
15	Tuesday ..	Nil	31	Thursday ..	·15
16	Wednesday	Nil	1	Friday ..	·07
				Total..	11·11
				Mean..	·35

Greatest amount of rainfall in any 24 hours on the 2nd inst. was 6·11 inches

Recorded by Mr. J. A. G. RODRIGO.

KIÜL LANDS.

DEAR SIR,—What is the correct meaning and signification of *Kiül* (කිවුල්)? It is used in reference to unproductive lands, on which nothing will grow. Clough gives the meaning as "absence of salt; insipidity." But the word *Kiül* is used with regard to water, which is brackish.

There are several patches of land in this district (Kurunegala) known as *Kiül*, which are useless and worthless. To give you a typical case. There is a patch of about 8 or 10 acres situate under and about two miles from Ma-Uswewa. The surrounding lands are under cultivation. The plot in question has been abandoned since three years ago. The whole tract, including the *Kiül* land, was asweddumised about ten years ago and gave good crops—12 fold. The portion in question began gradually to fail since then, till three years ago, when only grass (a peculiar and uncommon kind) will grow. When paddy is sown, a sickly plant comes up and withers away.

Please let me know what ails the soil. Can it be remedied, and what will you proposee?

Yours truly,
FRANK MODDER.

Kurunegala, 21st July, 1899.

[We regret to find that this letter has been mislaid for some months, and apologise to our correspondent for the delay in dealing with the points raised. Our regret is all the keener from the fact that the author of the neglected letter should be so esteemed a correspondent as Mr. Modder, whom we know to be a close observer and an ardent student of Nature, as his work in the Royal Asiatic Society amply testifies

Without a personal acquaintance with the locality in which the unproductive tract referred to by Mr. Modder occurs, or indeed any definite notion of the character of the tract itself, we can but speculate as to the cause of the barren nature of the soil from our knowledge of the infertility of soils under conditions which are suggested by the general description given us in the above communication.

At first sight it would appear that there is some confusion in the use of the word "*Kiül*," but we think this could be explained away. The general meanings given by Clough are not far from the technical signification of the expression in its agricultuaral sense, for "absence of salt" or "insipidity" clearly enough describes the impotent condition of soils which, as our correspondent states, can grow nothing. The term "brackish," given as another synonym of the word in question is, it should be noted, not always correctly used in its application to water, which is so described whether it is tainted with common salt or whether it presents the stale odour and taste derived from organic acids. It is in the latter sense, we fancy, that the word "*Kiül*" is used to denote brackishness. Indeed, we are informed on good authority that there is another and distinct expression which conveys the meaning "brackish" where the condition is due to the presence of common salt, viz., "Karijja" (කරිජ්ජ).

To our mind the word "*Kiül*" expresses as nearly as possible the condition indicated by the expression "sour" as applied to land. This condition, as Dr. Fream puts it, is generally found in soils con taining too much organic matter, as a result of th excess of organic acids which develope in the land as the vegetable matter decomposes. Land of this description is, as a rule, characterized by the presence of coarse inferior grasses such as are referred to by our correspondent.

The chief agent to be recommended in the treatment of such land is lime, which by combining with the free organic acids renders them harmless to plant life. But the adoption of this and any further treatment cannot be safely advised until after a careful inspection of the land.

PRACTICAL HINTS TO HORSE-OWNERS.

BY A. CHINNIAH, G.B.V.C.

CHAPTER II. (*contd.*)—FOOD AND FEEDING.

Oats.—Oats stand pre-eminent amongst the concentrated or artificial foods for horses. Looking at the following analysis you will notice that the nitrogenous matter and the fat stand in the pro-

portion of about two to one, and the percentage of carbo-hydrate and fibre should also be noted, for it is found by physiologists that the latter (woody fibre) plays an important part in stimulating the assimilating functions of the digestive organs. This food given alone has been found to be very well suited to horses in the western countries, but in the tropics an unbroken course of feeding on this food is not always without ill-effects. When the horse is allowed to consume too much of oats it generally suffers from chronic-congestion of the liver. In the hilly regions of the island it may be used with less harm to the horse, but in the lowlying districts if an animal is to be fed purely on oats great care ought to be exercised in regulating the food. Occasional bran mashes at least twice a week should be substituted for the oat diet. Care should also be excised that the oats are properly crushed. Oats are generally mixed with chaff in order to prevent the animal from swallowing without proper mastication. It is advisable, as a rule, that an addition of chaff should be made to any food to ensure proper mastication. The following is an analysis of oats :—

Water.	Nitrogenous Substances.	Fat.	Soluble Carbo-Hydrtaes.	Fibre.	Ash.	Albuminous.
13·0	12·9	6·0	55·4	10·0	2·7	11·9

Bran.—Bran by itself does not rank high as a food for horses. It is used by horse owners as an occasional laxative food. Its action as a laxative is more or less of a mechanical nature, and if it has got any stimulating effect on the liver it is an indirect one. The use of it lessens the tendency to sluggish action of the organ,—a condition generally noticeable in the hot weather. This want of proper action and the consequent diminution of the bile secretion may easily be detected by the disagreeable smell of the dung; and successive bran mashes instead of ordinary diet will correct this evil. Indian bran is more nutritious, owing to its containing a considerable quantity of flour. Bran mash forms an excellent low diet for sick horses. To make a good bran mash, put the quantity of bran into a bucket, throw into it a handful of salt, pour in boiling water just enough to wet it, taking care not to make it too sloppy, stir with a rod and then cover it with brown paper or a piece of gunny bag, and leave it for a couple of minutes. The following is an analysis of bran :—

Water.	Nitrogenous Substances.	Fat.	Soluble Carbo-Hydrates.	Fibre.	Ash.	Albuminous.
14·0	14·5	4·0	51·3	10·1	6·1	11·7

Bran mashes should be given when slightly warm. When bran is treated like this it becomes very palatable and most horses really relish it.

Gram.—Gram is a very commonly used food in India and Ceylon, and is undoubtedly a very rich food, for it belongs to that important natural order of plants, the Leguminosae, and most of the edible varieties that belongs to this group are so ver rich in nitrogen, that they have been used fo centuries by the non-meat-eating people of India as a proper substitute for animal food. Good gram weighs from 45 to 55 pounds per bushel.

When a handful of good gram is thrown into water it will fall to the bottom quickly. Immature gram is of a greenish colour, with a bitter taste and does not readily swell like good gram. Gram is very subject to the attack of insects, and such damaged gram is very injurious to the digestive organs. Very fresh gram is on the other hand not considered wholesome, and a few months should be allowed to elapse after the harvest and before it is used as food, but of course the gram must not be allowed to become damaged in any way by mould or insects.

The following is Prof. Church's analysis of the common gram fed to horses (*Cicer arietinum*) also called chick pea, which should be distinguished from what is known in India as horse gram or kollu (*Dolichos biflorus*) :—Water 11·2, albuminoids 19·5, starch 53·8, oil 4·6, fibre 7·8, ash 3·1.

(*To be continued.*)

BEE-KEEPING IN CEYLON.

The experiment in bee-keeping at the School of Agriculture is still in progress, in spite of the many difficulties that have been encountered. A Colombo resident who has had considerable experience in apiculture in England was good enough to volunteer his help, and paid a number of visits to the school with the object of suggesting improvements; but we regret to say that he was not sufficiently encouragad (by the bees) in his endeavours to make them adapt themselves to modern civilized methods of treatment. The original swarm introduced into the school was one brought from Kurunegala by Mr. Chas. Andree, whose name is always associated with bees, and who, it will be remembered, gave most interesting demonstrations in bee-keeping at the Fruit and Flower Show of 1898, and the Agri-Horticultural Exhibition in 1899. We are unfortunate in not having easy access to Mr. Andree, who, had he been at hand, would, we doubt not, have been able to help us to overcome all our difficulties, from his intimate experience of Ceylon bees and their habits, of which he has made so special and successful a study.

Two other swarms were subsequently brought over from Cotta through the kindness of Mr. H. D. Wijesinghe, a student of the School of Agriculture, and installed in box-hives in the school apiary. These are of the same species as those which Mr. Andree had brought, viz., *Apis indica*, the common honey bee of the Island; but it is notable that the bees of these latter swarms are slightly larger in size than the Kurunegala bees, while they are of a characteristic rugose hue. There is also the important circumstance that they are decidedly savage compared with Mr. Andree's educated swarm. With such a wealth of floriferous vegetation as the school grounds possess, it is but to be expected that the honey produced in these hives is of exceptionally good flavour, and we were pleased to find that H.E. the Lieut.-Governor and the acting Director of Public Instruction at the time

were particularly pleased with the quality of the honey in the samples of comb we sent for their inspection.

Mr. Alexis Teysloff, a Russian gentleman, who lately called here with the Director of the Colombo Museum, was particularly interested in our experiment, and carried away specimens of the typical inhabitants of the hive which were asphixiated of means of the "Cyanide bottle." We have forwarded to Mr. Teysloff the papers on bee-culture, together with desciiptions of the different types of Ceylon bees, which have appeared in this Magazine.

Our latest venture in apiculture is of a novel character, viz., an attempt to domesticate *Apis florea* (the native *Danduwel*). This bee is described by the late Mudaliyar Jayatilleke (who may be considered the pioneer in Ceylon apiculture) in a paper read before the Royal Asiatic Society as an unprofitable bee, producing very little honey, though the honey is much esteemed by the natives as being cooling and delicious in flavour. Mr. Jayatilleke thus did not consider the bee adopted for rearing purposes.

Another authority, however (Mr. Benton, an American apiarist, who visited Ceylon and studied our native bees in 1881), gave it as his opinion that it should be possible under favourable circumstances to induce *Apis florea* to build parallel combs.

Observing a swarm of these little bees on the branch of a cacao tree near our office, and remindful of Mr. Benton's authoritative opinion as regards the possibility of domesticating them, we lost no time in securing the lot with the help of Mr. J. A. Rodrigo, Manager of the Government Dairy (who, by the way, is getting quite *au fait* in the handling of bees) and inserting them in a box hive. At present the little bees are still under imprisonment, being artificially fed, and we shall look forward with interest to the result of our attempt to domesticate them. So far as we are aware this is the first attempt to rear *Apis florea* under modern conditions. Mr. Benton, himself, is said to have carried some of these bees as far as Cyprus, but as he reports "an accident happened soon after to the queen of my little bees, and now they are no more." Let us hope our experiment will be attended with less disappointing results.

SEEDLESS PLANTS.

Much interest has always attached to the fact that sugar cane is practically a seedless plant. Notwithstanding the fact that it arrows in the tropics, throwing up a long tassel or panicle, bearing seeds, these as a rule are imperfect and will not reproduce the cane plant. The rare exceptions that are now engaging scientific attention in some quarters of the tropical world are matters of great interest, but do not materially affect our main proposition. We are led to these remarks from the fact that the U.S. Department of Agriculture has been making some experiments with seedless plants, and below we give the following remarks thereon of the *New York Sun*, which bring out very clearly these singular qualities in some of our well-known plants. A careful reading of the same will be of value to those interested in the sugar industry, giving them a better comprehension of the whole subject matter :—

"Under modern methods of cultivation the seeds of our best varieties of fruits can easily be dispensed with, as they are of little practical value. Seedling stock, raised from the wild or common varieties, answer the purpose as well as the rare or choice trees, and their usual combinations of hardiness and virility influences the budded scions for good. Nature has already anticipated horticulturists in dispensing with the seeds and depending upon other methods of propagation. The banana, for instance, is a seedless fruit which Nature has apparently changed through some peculiar process. Rudimentary seeds are to be found in the fruit to-day. By slitting the banana down lengthwise rows of the rudimentary seeds will be exposed to view. Undoubtedly at one time, in its primitive wild state, the banana propagated itself by means of seeds, but the use of suckers for this purpose gradually made the seeds of less and less value. Following out the law of Nature, the seeds, becoming useless organs, degenerated. Occasionally a banana is found that does propagate itself by means of its seeds, or at least perfect seeds are produced in the fruit which can germinate. If for any reason the suckers of this plant should fail to do the work intrusted to them, it is not unlikely that Nature would reinstate the seed organs and develope them gradually to their really responsible position.

"The pineapple and cauliflower are two other common illustrations of how Nature occasionally dispenses with seeds. The pineapple is almost seedless, and, like the banana, its propagation is entirely by suckers. The seeds are in a low, rudimentary condition, but at one time they must have had their function to perform in life, and they are capable, under stress of circumstances, to renew their vitality. The type would not be exterminated if the suckers should fail to perpetuate the plants. All the resources of the plants would go to the assistance of the seeds to develop and vitalize them once more. This has been found possible by experiment. By selecting the pineapple with the most promising seeds, and propagating them by the usual process the seed organs have gradually been developed until they are able to reproduce their kind.

"The egg-plant is more interesting than either the banana or pineapple. There we have a fruit which is only occasionally seedless. That the seeds are really immaterial to the welfare of the plant is evidenced by the fact that perfect fruits are often developed whether the blossoms are fertilized or not. In the hands of the horticulturists it would be an easy matter to produce egg-plants that would have only the slightest trace of rudimentary seed organs, or *vice versa*, it would be impossible to develop a class of fruits that would be supplied with an abundance of large full-grown seeds.

"Nature's hints, thus supplied in a few isolated cases, have been the opportunities of man to raise a class of seedless fruits. Sometimes it is merely a freak of nature that happens only once or twice in a generation, and if the opportunity is missed the loss is great. To this origin we owe our fine California navel orange (Bahia) which is generally

a seedless fruit, although occasionally a few small seeds are to be found in it. The navel orange was an effort of nature to produce twins, but one of the twins aborted, merely surviving as a protuberance in the blossom end of the orange, a little kernel enveloped in the skin, which closely resembles the human navel in appearance. In the effort to produce a monstrosity the seeds were apparently neglected. By taking the scions of this fruit tree and grafting them on seedling stock we have practically established a seedless orange. It is, furthermore, remarkable because of its excellent quality and size. Usually the freaks of nature produce fruits that are not very good. Thus quite a number of apple tree have been produced, the fruit which is nearly or quite seedless. Their origin has been largely the same as that of the navel orange. They are generally abnormalities, and they are often called 'bloomless,' because the blossoms have no petals and sometimes lack stamens. Their appearance and quality are not such as to recommend them to the general consumer. The core is small and insignificant, but the shape is peculiar and the flavour poor.

"But seedless apples and pears of good quality may yet be propagated, and gardeners are working toward this end. Recent new varieties show great improvements over those first produced, and in the course of time careful culture and selection may bring about the desired results. How much the culture, selection and environment have to do with the proper development of the fruits is apparent in the case of seedless currants of Corinth or the Sultana grapes of southern Europe. These were supposed to have been as full of seeds as any other fruits far back in history, but successive years of culture and selection eliminated the seeds and improved the quality of the fruits. How the culturists first got their hint of seedless fruits is not known, but it is reasonable to believe that they took advantage of a freak of nature which produced a vine with fruits that had very few or no seeds.

"Experiments are now being made in California with the famous Muscat grape of Alexandria (Hanepoot). This famous raisin grape would be greatly enhanced in value if the seeds could all be eliminated. Considerable progress has been made in this direction by selecting cuttings from vines which produce grapes with less than the normal number of seeds. Several smaller varieties of seedless grapes have been in existence for many years, but most of them are inferior in some way to the best raisin grapes raised for market. Seedless fruits will be a success only when, in addition to maturing without seeds, the size and quality of the fruits will be equal or superior to the best varieties in the country. That is the essential reason why the navel orange is the greatest success of modern horticulture."—*Louisiana Planter.*

SOME BIBLE PLANTS OF CEYLON.

I.—CAMPHIRE.

The Hebrew word copher or kopher occurs in the Song of Solomon, and has been translated Camphire. Thus the King says: "My beloved is unto me as a cluster of camphire in the vineyards of En-gedi;" and again, "Thy plants are an orchard of pomegranates, with pleasant fruits; camphire, with spikenard. The Hebrew word, (says Balfour) resembles the Greek Kapros or Cypros, which is applied by Dioscorides and Pliny to a plant known to botanists by the name of *Lawsonia inermis*, and belonging to the order Lythraceae or loosestrife family. The common names by which it is known are *Henna* and *Marathondi.* Its fragrant flowers grow in clusters and are used to dye the hair, the nails, the palms of the hands and the soles of the feet, of an iron-rust colour. Henna powder is procured from the leaves and stem of the plant. This is put into hot water, stirred and boiled well, and then left on the fire for two hours until the mass becomes a paste. It is then applied to the hair and the skin which it tinges an orange colour. The plant is also used for dyeing Morocco leather. The custom of dyeing the nails was an ancient one in Egypt, and it is said that the nails of mummies (particularly females) sometimes show traces of it. Some think that there is an allusion made to the practice in Deut. xxi. 12, where, in place of "pare her nails, "the phrase might be rendered" adorn her nails."

Henna is also known as the Cyprus shrub or the Egyptian privet. Dr. Watt mentions that the selling price of the leaves in the Punjab averages R1 for 12 seers, which makes the value of the crop per acre about R66.

A decoction of the leaves is used for dyeing cloth, the colour produced being a shade of yellowish or reddish brown known as *Malagiri.* It is also used in combination with other dyes for dyeing handkerchiefs an almond colour. The plant is also much used medicinally for numerous complaints, while the sweet odour of the flowers makes it a great favourite in tropical gardens where it has earned the name of "tree mignonette." The perfume has always been in great repute, and both an otto and fragrant water was (and in some places still is) in use among the Jews, Egyptians and Mohammedans.

CLASSIFICATION OF FIBRES.

The uses of fibres or fibrous substances in the coarse weaving or plaiting of basketry is an industry that belongs to all civilized countries and that is practised by the native tribes of the world, but a catalogue of the varied forms would be too long for enumeration in these pages. By reason of the similarity of construction and materials used, we must also include in this class a considerable number of articles that resemble baskets, known as willow ware, such as hampers and infants' carriages, and even chairs that are produced from willow withes, and chair bottoms are also included. While the commercial basket material is confined chiefly to osiers, or willows, to certain forms of wood splints, and to a few species of rushes and grain straws, the native and Indian basket fibres are legion, for they include a range of vegetable substances from the stipes of delicate ferns and the smaller grasses, through the sedges, reeds, the bamboos, the palms and liliaceous plants, to the stems and

twigs of shrubs, and even the splints from the wood of trees, or their subdivided woody roots. A few examples of this class of manufactures are the sweet-scented grass baskets made by the New England Indians from the holly grass; the delicate fern baskets of the Sandwich Islanders, the Yucca oil baskets, and others by the Hopi Indians of Arizona, the sumac and yellow trays, and the spruce root baskets of northern fibres, palm leaf baskets, and those from bamboos, sedges and reeds. Among commercial forms are the Italian straw-plait baskets, the Buscola baskets from certain sedges, the osier manufactures from Italy, and the ash and white-oak splint baskets made in our own country, together with chair bottoms plaited in rattan or rushes.

A sixth form of utility is the employment of fibres or fibrous substances as filling material for stuffing pillows, cushions, mattresses, furniture, &c., or as packing substances. The surface fibres for the most part compose this class, as the bast fibres are too valuable, while the structural fibres are too stiff for such purposes, exceptions being the shredded leaves of palms, the commercially prepared Spanish moss (*Tillandsia usneoides*) known as vegetable hair, and the familiar corn "shucks." The pseudo-fibres embraced in group 5 are also largely used as packing material, though a notable exception should be made of certain leaves, as well as species of fungi and Alaskan sea-weed, the last being twisted into fish lines, the fungus used for making caps, table mats, &c. or employed as tinder. Mycelium has also been employed as a substitute for fabric.

A seventh and most important use is the manufacture of paper.

With this brief enumeration of some of the ways in which fibres are employed by man, the following economic classification, relating to the utility of fibre and fibrous substances is presented:—

A. SPINNING FIBRES.

1. *Fabric Fibres.*

a. Fibres of the first rank for spinning and weaving into fine and coarse textures for wearing apparel, domestic use, or house furnishing and decoration, and for awnings, sails, &c. (The commercial forms are cotton, flax, ramie, hemp, pineapple, and New Zealand flax.)

b. Fibres of the second rank, used for burlap or gunny, cotton bagging, woven mattings and floor coverings and other coarse uses. (Commercial samples are jute and coir.

2. *Netting Fibres.*

a. Lace fibres, which are cotton, flax, ramie, agave, &c.

b. Coarse netting fibres, for all sorts of nets and for hammocks. (Commercial forms: Cotton, flax, ramie, New Zealand flax, agave, &c.) The native netting fibres are legion, and include the fibres derived from tree basts, palms, &c.

3. *Cordage Fibres.*

a. Fine spun thread and yarns other than for weaving; cords, lines and twines (all of the commercial fabric fibres sunn, Mauritius, and bowstring hemps, New Zealand flax, and the so-called commercial hard fibres, coir, manilla, and sisal hemps and other forms); the fish lines made from seaweed.

b. Ropes and cables (chiefly common hemp, sisal and manilla hemps, when produced commercially. In native manufactures made from palm fibre, yuccas, and many other plants).

B. TIE MATERIALS (ROUGH TWISTED).

Very coarse materials, such as stripped palm leaves, the peeled bark of trees and other coarse growths used without preparation, and employed in the construction of huts, fences, as emergency cordage, and sometimes as cables for "rope bridges" with other native uses too numerous to mention.

C. NATURAL TEXTURES.

1. *Tree basts, with tough interlacing Fibres.*

a. Substitutes for cloth prepared by simple stripping and pounding. (Examples: The Tappa or Kapa cloth of the Pacific Islands; the *Damajuhato* of South American tribes.)

b. Lace Barks. (The best example is the bast from *Lagetta Lintearia* of Jamaica, which has been used for cravats, frills, ruffles, &c., and likewise as thongs and whips.)

2. The Ribbon or larger basts extracted in thin, smooth-surfaced, flexible strips or sheets. (Examples: The Cuba bast that is employed commercially as a millinery material, plain and dyed in colours; cigarette basts for wrappers.

3. *Interlacing Structural Fibre or Sheaths.*

a. Pertaining to leaves and leaf stems of palms, such as the fibrous sheaths found at the base of the leave stalks of the coconut.

b. Pertaining to flower-buds. The natural caps or hats derived from several species of palms.

Note.—The separated filaments of these cloth substitutes, sheet or ribbon basts, &c., are also employed, by twisting, as cordage.

(*To be concluded.*)

SELECTION AND ITS EFFECTS ON CULTIVATED PLANTS.

From a paper by the late Monsieur Henry L. de Vilmorin in the *Experiment Station Record*, vol. xi. No. 1. U.S. Department of Agriculture

The word *selection*, taken in its general sense, means *choice*. In natural history, when applied to plants or animals which man raises under domestication, it assumes a more restricted meaning, and is applied only to the choice of individuals considered as agents of reproduction. It is in this sense alone that the word *selection* is used in this article.

The purpose of this paper is to indicate the reasons for making a certain choice, the results it may produce, the precautions that should accompany it, the practical methods of applying it, and the difficulties that may be met and may defeat the purposes in view.

Evidently the process is quite different from natural selection. The latter proceeds independently of man by the simple interplay of natural forces, while artificial selection is an act performed by man for the purpose of satisfying his needs and tastes. Nature modifies plants in *their* interest; man modifies them in *his*; but in the one case, as in the other, there is an acquirement of characters and a transmission of the characters acquired.

This article is not the proper place to discuss selection and its relation to evolution, of which the creation of varieties by selection is only one phase; nor is it the place to discuss the relative permanence of existing species. The task of the improver of cultivated plants is not to create new species, but to establish and fix in known species well-defined and constant races possessing distinct characters which may render them useful or agreeable to man.

The practice of selection is almost or quite as old as the practice of cultivation itself. It is certain that from the most remote beginnings of pastoral life primitive man has preferred the finest and best-shaped animals for breeding purposes. In the same way, when the culture of certain useful plants had succeeded to a more primitive form of pastoral agriculture, or had become associated with it, the domesticated races of plants were gradually ameliorated by the diligence of some men who were more observant and interested than others; and the improved races were diseminated from place to place.

THE EFFECTS OF CULTIVATION ON PLANTS.

Much has been said of cultivation as a means of improving plants. The writer believes, however, that the selection of the individual intended to reproduce a sort has done infinitely more in this direction than cultivation properly so called. Without doubt, the larger amounts of plant food, air, and room that are provided for the plant under careful cultivation, as compared with wild conditions are the means by which some given plants attain to a greater individual development; but cultivation in general advances improvement principally because it gives to man an opportunity to observe the plant closely, to notice even the slightest variation in the characters of the different individuals, to note at the time of their occurrence all the variations which appear useful to him, and to fix them by sowing the seed from all the individuals that have shown these variations. Superabundance of food supply undoubtedly favours the appearance, in cultivated plants, of variations which consist of multiplications of parts of a plant or the excessive development of certain parts among them; but heredity interferes to fix these characters, so that they are seen to persist in individuals escaped from cultivation and are perpetuated for a long time even after the causes that brought them into existence have ceased to act. We possess few records bearing on the history of the improvement by selection of the various useful or ornamental plants in ancient times; yet the figures which have been left to us in paintings, mosaics, and sculptures indicate a notable improvement of the species cultivated by the Egyptians, the ancient Greeks, and the Romans over the wild types of the same plants found in those regions at the present day. The leeks of Egypt, to the fame of which the sacred writings bear witness, are represented on the bas-reliefs and paintings of Egyptian tombs as of a size far superior to that of the wild leeks of the mountains of Central Asia, which, without doubt, represent the primitive type of the species. The Romans cultivated several varieties of *Brassica oleracea* that represented an immense advance over the wild type found on the coast regions of Europe. The flowers and fruits, figures of which are found frequently in Roman works of art, resemble more the varieties of the present day than the primitive types from which they were developed.

In passing it may be remarked, in refereuce to those fruits and flowers that are propagated by grafts and not by seed, that selection is not entirely unconcerned in their culture, but even in such cases is found to exert its influence in various ways. A new variety generally originates from a seed which may have been accidentally planted, the resulting plant being reproduced and multiplied by grafting, or from seed planted by man, the various young plants being carefully observed from day to day and compared with each other, and meritorious novelties, if such appear, selected and propagated. In grafting, few things must be taken into consideration. In the first place, only those stocks should be used that are healthy, vigorous, as far as possible from defects and diseases, and well provided with roots; and in the second place, the grafts should be taken from the youngest and healthiest shoots of the plant that is to be propagated, and always from those that represent most faithfully the characters it is desired to reproduce. Sometimes variations are produced in plants by dimorphism, as by variation in the form or colour of the foliage or in the shape or hue of the flowers, as often occurs in the chrysanthemum. There is then opportunity for the selection of the modified branch, which is propagated by cuttings or any other method. The question of the permanence or running out of varieties of fruit trees, which is so often and so contradictorily discussed in the horticultural press of all countries, is intimately connected with this question of selection. There is no reason why a given type should run out if only proper stocks and healthy grafts are used in propagation, but the variety will certainly disappear if it is attacked by parasites to the extent that it is no longer possible to find a graft that does not carry with it its enemy.

To return to the history of selection of cultivated vegetables and flowers propagated by seeds. Italy, Provence, Flanders, and the neighbourhood of Paris were, at about the beginning of modern times, the principal centres of the improvement of common plants. Seeds grown in these places bore a high reputation throughout Europe, and the popularity that they enjoyed shows that the characteristics developed in the different varieties of plants by these skilful and careful gardeners were well fixed, else they could not have reproduced themselves faithfully when cultivated under very different conditions of soil and climate. Vegetable gardeners have been for the most part the creators of European varieties of vegetables (and at the same time of many varieties of flowers, for the two occupations of vegetable gardener and florist were very often followed by the same individual, as is frequently the case at the present day), and the uniformity, the constancy, and the cooking qualities of the varieties of vegetables originating in Naples, Milan, Lyons, Paris, and the Low Countries bore witness to the skill, fine observation, and judgment in the application of selection which our predecessors possessed.

It is only since the latter half of the seventeenth century that the seed business has begun to be separated, little by little, from that of general gardening, and, as division of labour always results in an improved product, the establishments that have devoted themselves exclusively to the growing of seed have come to do it better and more economically than the common gardeners, whose time and effort were divided among various lines of production. In one respect, however, the competition of the market gardeners, as well as that of the florists properly so called, is still very useful to the careful seedsman in that it helps to keep him always in the front line of progress. To a less extent than the market gardener and florist the seedsman is brought in immediate contact with the consumer, whose needs are the source of progress and new acquisitions. The former sometimes supply these needs, but often they turn to the seedsman and point out to him the prospect of increased profits as the reward for the creation of new and desirable varieties.

At the present day species that have been cultivated for many years have become, so to say, like wax in the hands of special growers, who mould them and fashion them to their taste, obtaining the various modifications of shape, size, flower, &c. demanded by the preferences of their patrons and the caprices of fashion.

(*To be continued.*)

GENERAL ITEMS.

We cull the following from an article on Indian agricultural affairs, appearing in the *Indian Agriculturist*:—We all know that in private and semi-public life the helping hand is a great saviour to vast numbers. And that self-same helping hand embodied in an energetic, practical and scientific, and really working Agricultural Department, would assuredly do great things for India. It must create more wealth and therefore more revenue, more stability for the country, more ability to bear a famine among the people themselves, when it comes. It is gratifying to note from the Hon. Mr. Ibbetson's reply to the Maharaja of Darbhanga that the Secretary of State has sanctioned a Director-General of Indian Agriculture, but the right man for that post has not yet turned up. It may be safely observed that very much indeed depends on the right man for this post; he should, I venture to think, have full authority to pull down and build up: much wants absolutely destroying root and branch. Hand in hand with a great advance in railways there should surely go a great advance in agriculture, to say nothing of the great amplification Indian agriculture is open to. If a tropical country suffers from many disadvantages, it at the same time has many advantages too, and can grow many valuable products not possible in temperate climes. Undeniably able and brilliant as is the record of the Indian Civil Service, since neither practical or scientific agriculture forms a part of their training, it is most unfair they should be called upon to conduct an Agricultural Department at all, and it is still more unfair to agriculture, with its multifarious details and routine, that it should be saddled with a body of distinguished men who know nothing of its technique. It is no wonder, seeing this is so, the Department resolves itself into a mere statistical recording body, and that so much of its practical agriculture as does exist is perfunctory, and utterly inadequate to the needs of the country.

We find that through an oversight the rainfall for November 1899 and January 1900 were not given in the pages of the Magazine. In order to maintain the record of the rainfall as taken at the School of Agriculture and for purposes of comparison with the Fort readings we give them now. In November 1 99 rain fell on the following dates:—3rd, ·77; 4th, ·02; 14th, ·60; 16th, 2·25; 24th, ·11; 26th 2·2; 28th, ·20; 30th, ·74. The total for the month was thus 6·89 in. with a mean daily rainfall of ·22 in. In the month of January rain fell on the following dates:—10th, ·16; 13th, 1·31; 19th, 1·43; 25th, ·41; 26th, ·02; 27th, ·69; 29th, ·02; 31st, ·19. The total rainfall for the month was thus 4·38 in. with a mean daily rainfall of ·14 in.

The following is a complete chemical analysis of an average sample of cow's milk, as made by Prof. Brunnich, Agricultural Chemist of the Queensland Agricultural College:—

Specific Gravity	1·0311
Water [86·75—86·79—86·70]	86·752
Casein	3·174
Albumin	·322
Butter fat [4·23—4·26]	4·245
Milk sugar (lactose)	4·850
Ash	·724
Total solids [13·29—13·21]..	13·25
(Total solids calculated from fat and specific gravity	13·13)

Analysis of milk ash:—

Sulphuric acid	SO_3 ..	·285 per cent.	=	·002
Carbonic acid	CO_2 ..	·390 per cent.	=	·003
Phosphoric acid	P_2O_5 ..	29·430 per cent.	=	·213
Chlorine	Cl ..	13·343 per cent.	=	·097
Lime	CaO ..	22·520 per cent.	=	·163
Potash	K_2O ..	22·310 per cent.	=	·161
Soda	Na_2O ..	9·940 per cent.	=	·072
Magnesia	MgO ..	1·440 per cent.	=	·010
Iron	Fe_2O_3 ..	·040 per cent.	=	trace
Undetermined, Loss, &c..		·302 per cent.	=	·003
		100·000	=	·724

The following references to two well-known Ceylon trees occurs in the report of the Queensland Agricultural Department:—

PAWPAW.—The continued heavy rains in March had disastrous effects on our Pawpaw trees, killing many off by rotting the roots. Some would have recovered had not the wind blown them down before new roots could be made. Several good trees were lost, including the branching variety. There are several varieties not in the nursery, however. Three distinct varieties are known in Southern India, besides a Chinese variety, apart from the branching variety here. The Singapore Pawpaw is not especially large, but turns a golden yellow when ripe, and has a fine flavour. The Chinese is a long pointed fruit, and is a dark-green colour when ripe. This would probably travel better than most. The male tree is not a necessity in a garden, though there is nothing lost by retaining one should a number come up from the seed. The *Papaya carica* may be diœcious, monœcious, and even hermaphrodite. I hope to be able to deal with this interesting fruit tree later on by itself.

JACK FRUIT (*Artocarpus integrifolia*).—The only tree of this useful fruit in the Nursery shows signs of a past crop, but none of a further crop this year. The tree is rather slow-growing, but the

timber is hard and good. It is of a dark yellow, and is useful in making furniture. The tree is prolific. I have had over seventy fruit on one tree, averaging 35 to 40 lb. each, some fruit being 65 to 70 lb. each The fruit has a strong but not unpleasant smell, though many object to it. Once the taste is acquired, the fruit becomes very popular. The seeds make an excellent vegetable, and are a good substitute for potatoes when boiled. When dried and ground the seeds or nuts give a wholesome meal. The nuts roasted are not unlike English chestnuts. The fruit, seeds, pulp, skin, and all except the rough outer covering are readily eaten by cattle, and pigs are specially fond of them and fatten on them.

The *Farm and Dairy* in referring to the proposal made by the Principal of Hawkesbury College N.S.W. to grow maccaroni wheat along the costal districts of the Colony and the subsequent establishment of maccaroni works, quotes the following Despatch received from Her Majesty's Consul at Naples, giving an account of maccaroni manufacture in that part of Italy:—Maccaroni is made of hard red wheat from the Black Sea, mixed with Italian wheat, grown mainly in the plains around Foggia. This is ground into semolina (not flour), the bran and husks are removed, and the semolina kneaded in hot water till it has the appearance and consistency of dough. The dough is then placed in a vertical brass cylinder, about eight or nine inches in diameter, the bottom of which is a plate like the rose of a watering pot, which is fine or thick, according to the maccaroni required. Thus for making vermicelli and all kinds of solid maccaroni the holes are very small, while for making tube maccaroni the holes are much larger. In the latter case also a conical blade is fixed in the middle of the hole to form a tube. The dough being placed at the top of the cylinder, it is driven down by hydraulic pressure through the perforated plate and cut off by hand in lengths of about three feet. It is then hung on canes in the sun to dry. In the case of the solid maccaroni there is no difficulty in grasping the process. In the case of the tubular maccaroni the conical blade and its attachment cut through the dough and the maccaroni issues with a slit all along it. This, however, shrinks together at once and forms a perfect tube, the join being practically invisible. No maccaroni is now made by the laborious hand process. There was for a long time a prejudice against machinery, but this has been overcome. The best maccaroni is made at Gragnamo and Torredell' Annunziate. A little also of the best quality is made at Amalfi, Alfonso Garofalo, of Gragnamo, being the most important manufacturers. About a million boxes are sent annually to the United States, and about 10,000 to London. The remainder is sold in Italy.

The following represents the amount of money that the New South Wales Government spent during the last financial year, ended 30th June 1899, on agriculture:—

	£
Department of Agriculture	29,218
Live Stock—	
Registration of Brands	563
Imported and Introduced Stock	11,008
Pastures and Stock Protection Act ...	3,790
Management of Pounds and Commons ...	440
Control, Marking, Fencing, and Improving Travelling Stock and Camping Reserves &c.	464
Special Prizes to be devoted to the Improvement of Agriculture	824
Distribution of Seed Wheat to Distressed Farmers	97
Vine Diseases Act—Expenses in connection with the Eradication of Phylloxera, and the Administration of the Act	2,499
Agricultural, Horticultural, and Pastoral Societies—	
Subsidy not exceeding 10s. on every £ awarded in Prizes for Agricultural, &c., objects	9,598
Special Grant to Agricultural Societies ...	3,975
Subsidy to Horticultural Societies ...	250
Cooma Pastoral and Agricultural Association, revote of 1895	100
Broken Hill Pastoral and Agricultural Association, Special Grant	300
Clarence Pastoral and Agricultural Society, Special Grant	200
Board of Export	2,095
Total	£65,421

LITERARY REGISTER SUPPLEMENT:

AND CEYLON

"NOTES AND QUERIES."

[Under this heading, in future, we mean to give a four or eight page "Supplement" with our *Tropical Agriculturist*, from quarter to quarter, according as there is matter of sufficient value, so to be preserved.]

NOVEMBER, 1899.

GEOLOGICAL SURVEY FOR CEYLON.

MEMORANDUM ON THE SCOPE, ORGANIZATION, AND FUNCTIONS OF A GEOLOGICAL SURVEY FOR CEYLON: BY MR. R. D. OLDHAM, OF THE GEOLOGICAL SURVEY OF INDIA.

Accepting as a fundamental principle that a geological examination of Ceylon is desirable, the first point to be considered is whether this can be carried out in a sufficiently satisfactory manner by the temporary employment of persons possessing the requisite knowledge, or whether it is desirable to establish a Geological Survey as a permanent Department of Government.

TEMPORARY EMPLOYMENT OF EXPERTS NOT DESIRABLE.

The temporary employment of individuals to make special examinations of selected tracts would be the cheapest as regards actual expenditure of money, as no liability would be incurred beyond the stipulated remuneration, and there would be neither permanent office expenditure nor any non-effective pay to be provided for. This, however, is all that can be said in favour of such a mode of procuring a geological examination, even if it were confined to part only of the Island; judged by the standard of results the economy is more than doubtful. Being employed only for a limited period the expert would be exposed to a temptation, greater than human nature can be expected wholly to resist, to take an optimistic view of the facts, and especially such a view as would lead to renewed employment. His conclusions would consequently be lacking in the judicial quality, which may more reasonably be expected in those of an individual of equal attainments who had no pecuniary interest to influence his conclusions, while it would be almost certain that his attention would be devoted mainly or solely to the points likely to make the best show of results in the shortest time, to the neglect of those which, if apparently less striking at the time, or requiring greater patience to work out, may ultimately be the most important.

An even greater evil would be the want of continuity in the work; each man coming fresh to the Colony would have to start afresh; he would find no laboratory, library, or other requisites for thorough and systematic work, and would have either to neglect the proper working out of his field observations or to take his collections to Europe, where they would be lost to the Colony and inaccessible to his successors.

ADVANTAGES OF A PERMANENT SURVEY.

A permanent Geological Survey, properly equipped, would not only make a complete examination of the whole of the Island, both of those parts which appear to be of immediate economic importance and of those whose importance is yet to come, or in which there are no minerals of economic value; the results would be worked out and the records be preserved locally, and in course of time the headquarters office of the Department would become an Intelligence Bureau for the Island, so far as its geology is concerned. In this way the information accumulated will, in many cases, prevent the useless expenditure of money consequent on mistaken identifications, or, on the other hand, it will be possible to reply, immediately and without the undertaking of special investigations, to inquiries regarding the presence, distribution, and abundance of minerals in the island.

TIME REQUIRED FOR COMPLETION OF FIRST SURVEY.

The only doubt that might be entertained as to the desirability of maintaining a permanent Geological Survey is whether there would be sufficient work to keep it permanently employed; this I do not think need be seriously questioned. The Island has an area of over 25,000 square miles: of this about 10,000 probably consists of alluvium and recent deposits which can be fairly rapidly surveyed; the other 15,000 square miles is more rocky and cannot be surveyed so rapidly. I do not think that, allowing for leave, sickness, and casualties, an average of more than 1,000 square miles per annum in the one case and 500 in the other can be reckoned on. There are consequently about 40 years' work to complete a thorough survey of the whole Island, or if three men are employed a period of 13 years

should see the first complete survey of the Island, a period which may be shortened or lengthened according to the staff employed. This period would be further lengthened if, as I think would be desirable, part of the energies of the Department were, for the first few years, devoted to a general and purely preliminary examination of the Island as a whole, apart from the more detailed survey contemplated in the estimate above. The time required for the completion of the first survey would therefore be about 15 years if a staff of three men, the minimum number with which continuous work could be maintained, were employed.

MAINTENANCE NECESSARY AFTER COMPLETION OF FIRST SURVEY.

The work would not be finished at the end of this period, as the most thorough survey can never be perfect, and it is certain that during the progress of the survey many new facts will crop up, consequent on the extension of mining operations and of discoveries which must always be made by persons independent of the professional survey. The local resident has many opportunities which the geological surveyor, in his passage through the country, has not, and in this way new discoveries will be made which will necessitate revision or re-survey. Consequently, it will be desirable, even after the first survey is complete, to maintain a staff, which need not necessarily be of the full strength maintained during the survey, for purposes of revision.

NECESSITY OF CONTINUITY IN THE SURVEY.

From this it will be seen that the amount of work to be done is quite sufficient to justify the establishment of a permanent Geological survey, but all the advantages will be lost unless it is conducted as a systematic survey and not as a Department for reporting on real or imaginary mineral deposits. Unless it is understood that the work of the survey is to be systematic and its object a complete examination of the island, it would be better not to establish a Geological Survey at all. This principle being accepted, all diversions of members of the survey to visit or examine isolated mines or sites of proposed mines is most strongly to be deprecated, as the interruption to the progress of the survey is serious and the advantage to be gained as a rule but small. Such diversions are especially to be deprecated in the case of lands in the position of, or proposed to be leased to mining syndicates or companies; whatever disclaimers may be made by the Government, the fact of such special examination is sure to be represented, formally or informally, as an implied Government guarantee, and in the case of failure of the venture the Government, though not liable, will be exposed to unnecessary obloquy.

SURVEY SHOULD BE BY AREAS, NOT MINERALS.

Equally to be deprecated are special investigations of particular minerals, *e.g.*, plumbago or mica. Such limitation of the scope of the survey is most apt to result in bad or imperfect work. By this I must not be understood to imply that no regard is to be paid to the economic applications or probable economic result of the survey. In arranging the programme of work from year to year the known or suspected economic resources of the district whose examination is decided on will naturally be taken into consideration and, among the tracts whose investigation will be taken up, precedence will naturally be given to those in which plumbago is known to be abundant and which are most accessible to the outlets of trade. These investigations should, however, be by areas and not by minerals; that is to say, the instructions should be to survey a certain definite area, in which minerals of economic value are or are not known to exist, but not to examine or search for occurrences of a specified mineral, such as plumbago, in that area. Attention would, of course, be paid to the economic resources, and the instructions might inculcate a special attention to plumbago; but there should be nothing which could be interpreted as an order or justification for neglect of other parts of the area than those in which it was found.

This procedure is advisable even on purely pecuniary grounds, for not only might the neglected portions of the area contain other unnoticed minerals of value, but it may well be that in them the key to the mode of occurrence of the plumbago may be found, which will lead to an extension of the area over which the mineral is worked. From the point of view of the general progress of the survey this procedure is even more desirable, as a partial examination of an area only means that, when the survey comes to be completed, much work will have to be done again, and, when made in instalments in this manner, imperfections and discrepancies in the final survey are almost inevitable.

NECESSITY OF TOPOGRAPHICAL SURVEY.

It must also be borne in mind that a Geological Survey is very much hampered by the absence of a trustworthy topographical map. For this reason the geological survey should, as a rule, and in the absence of any special reasons to the contrary, be confined to those regions of which good maps are available; in making a departure from this rule it must be remembered that any examinations of areas of which there is no proper map can only be regarded as preliminary, and that they will certainly have to be re-surveyed as soon as proper maps are available. Precedence should consequently be given, in conducting the topographical survey, to those areas of which geological surveys are most urgently required, and it would be desirable that the Geological Survey should be consulted when the programme or work for the Topographical Survey is annually arranged.

ADVISABILITY OF COMBINING OTHER FUNCTIONS WITH THE GEOLOGICAL SURVEY:

(i.) MINERAL STATISTICS.

Though there is, as I have indicated, sufficient justification for the establishment of a Geological Survey on the customary lines in Ceylon, the Department would be a small one, and it might with advantage be required to take up duties which in larger and more specialised Administrations are usually separated from it. Foremost among these are those connected with the collection and publication of mineral statistics, a work which can only be carried out by the assistance of the officers in charge of the revenue and administration of the Colony, as far as the collection of the facts of production, and inception or abandonment of individual undertakings, are concerned. The collation of these statistics and the publication of an annual Review of the mineral production of the Colony might with advantage be allotted to the Geological Survey.

(ii.) MUSEUM.

Closely connected with this is the establishmen of a Geological Museum more especially of th

economic geology of Ceylon, which should serve as an index to the known geology of the Island, and a place where visitors and inquirers could see at a glance what was known of the geology, and what were the mineral productions, of the Island. Such a Museum would not only serve for the instruction and information of the general public, but would be the greatest service to the Geological Survey itself, as an index to the work done up to date in the Island. In some form or other a collection would have to be established, and at a very slight increase of labour this might be made available to the public.

This Museum need not be a large one; 2,000 ft. of floor space would be ample, and for a while less would be sufficient, but the museum should be directly under the charge of the Geological Survey, and not made a department of the existing Museum in Colombo.

(iii.) PUBLIC LABORATORY.

If doubts may be entertained regarding the necessity of a public museum, none can be felt as to the desirability of a public laboratory. A laboratory of some sort, properly equipped for analysis of rocks and minerals, will be required in any case and, by a small extra cost for accommodation and establishment, its services could be made available to the general public, as a place where specimens collected by them could be identified and, if desired, analysed. This would not only be desirable on public grounds, but would be an advantage to the Survey, as among the samples sent in a certain number would be of interest and would afford information, which the Survey unaided would be unable to acquire. The services of the laboratory should be free of charge so far as the determination of specimens goes, but to prevent the time of the laboratory being uselessly taken up in compliance with frivolous demands a moderate charge should be made for analyses or assays.

AGRONOMIC SURVEY.

A somewhat distinct branch, which I consider would with advantage be combined with the geological survey, is an agronomic survey of the Island. In view of the great importance of the planting and agricultural interests of the Island, this ought not to be neglected, and as a laboratory will in any case have to be provided a slight extension of this and a small increase of the staff will enable an agronomic to be carried on in conjunction with the geological survey.

The work of the agronomist is, I may explain, somewhat akin to, though distinct from, that of an agricultural chemist The latter is principally concerned with soils as altered by culture, with their chemical composition, and with advising on the particular manures that the chemical composition indicates as desirable for specified crops. The agronomist is, on the other hand, more concerned with the original characters of the soil and subsoil, with their relations to the underlying rocks, and with the physical constitution of soils, on which their adaptability to cultivation depends to a larger extent than on their chemical composition. The work of the two is consequently distinct, though overlapping, and the fact of an agronomic survey being in progress, or completed would not preclude the employment of an agricultural chemist proper, should that ever seem desirable, while the existence of an equipped laboratory would lessen the expense.

INDEPENDENCE OF THE DEPARTMENT RECOMMENDED.

These additional branches of the Survey are not essential, but it is essential that the Geological Survey should be treated as a distinct Department of Government. The officer in charge of it should have the power of communicating directly with the Government, and not be put under the Public Works or any other of the existing Departments of Government, and this being so, the administration of the Department under him would make calls on his time which would prevent him from taking a large part in the actual execution of the survey. These interruptions would be practically the same if the additional branches of work were transferred to or taken up in addition to the geological survey proper. Consequently it is desirable to group the functions enumerated and to form a Department of Geology, Mines and Agronomy under the charge of a single head, who should be directly responsible to the Government, and who would find, in the administration of the Department, a task commensurate with the interruption to the actual execution of survey work in the field, which is inevitable if he is burdened with the administration of even the smallest Department.

LOCATION OF HEADQUARTERS.

An important point to be considered is the location of the headquarters of the Department. Practically there are only three places to be considered, as it is undesirable that its headquarters should be established at a place where they would not come annually under the ken of heads of the Administration. These places are Colombo, Kandy, or Nuwara Eliya. Of these, Colombo has the advantage of being the site of the headquarters of the Administration and the principal commercial town of the Island. On the other hand, its climate is relaxing to a degree, and seeing that the officers of the Survey will be exposed for six months in each year to hard work and exposure in a trying climate, often in malarious districts, it is eminently desirable that they should be placed, during the recess and when engaged in working up the results of their field season—that is, for from five to six months in each year—in a climate which would enable them to recruit their health and acquire fresh energy for the next season's work.

COLOMBO INADMISSIBLE.

This argument alone should be sufficient to prevent Colombo being selected as the headquarters of a new Department, though it may not be considered sufficient to necessitate the transfer of offices already established in Colombo. Apart from it, however, there are certain laboratory processes which cannot be carried on at the high temperature which prevails at Colombo; this is so much felt in the case of the Indian Geological Survey, where headquarters were established in Calcutta at a time when no other place was accessible, that the question of transferring the headquarters to a better climate is being considered, and I would most strongly deprecate the Ceylon Government committing itself to a mistake for which there is no reasonable justification.

KANDY ADMISSIBLE BUT UNDESIRABLE.

Kandy, centrally situated, is practically as accessible as Colombo; the distance between the two is no bar to personal communication between the officer in charge of the Geological Survey and the heads of

the Administration whenever desirable. If a Geological Museum is established, it would not be beyond the reach of any one who really wished to derive any information from it, while it would gain by being attached to the officers of the Geological Survey, both in the greater attention which could be paid to it and in the greater facility with which visitors, desiring more information than was obtainable from the show cases, could consult the unexhibited collections of the survey.

On the other hand, the climate of Kandy though preferable to Colombo is still far from perfect; the temperature is somewhat high for the work of the laboratory, which is best carried on at a temperature of about 60 degrees F., and for this reason I cannot recommend the adoption of Kandy as a site for the headquarters, though it would be preferable to Colombo. Its selection can only be justified if considered imperative on the score of its central position.

As a minor objection to Kandy I may urge the lack of facilities for social intercourse, exercise, and relaxation. When men have been out in the districts for months, and for the greater part of that time leading a solitary life without companionship, it is undersirable to bring them into a place where, after their day's office work is over, there are practically no means of throwing off for a while all thought of the subjects they have been dealing with during the day, and finding in some active form of relaxation that change and rest to the brain which is to be desired, if only on the purely mercenary grounds of enabling them to turn out a larger and better daily task of work. This consideration is not, of course, to be given a foremost rank, but where there are no stronger grounds for giving preference, to one place over another, it should be allowed to turn the scale.

NUWARA ELIYA RECOMMENDED.

Nuwara Eliya has not only the advantages referred to in the last paragraph, but is in every other way preferable to Kandy or Colombo, so far as considerations confined to the place itself are concerned. Not only is the climate the best adapted, of the three possible places, to recruit the health of the officers after their field season and to give them vigour for the next, but the temperature is just that at which the work of the laboratory can be best carried on. Against this is only to be placed the greater distance from Colombo, in consequence of which it would obviously be useless to attach a museum to the offices of the Geological Survey. It would, however, be possible to have the museum in Colombo, where it might be attached to the existing Museum, the staff of cleaners and caretakers being placed under the Director of that institution, and the exhibited specimens periodically arranged and new ones added by an officer of the Geological Survey.

So far as the Survey itself is concerned, the disadvantages of this separation of the museum from its offices would be outweighed by the advantages of having the headquarters in Nuwara Eliya; for it is not the specimens exhibited to the public that will be most used by the Survey for reference, but the much more numerous, though less showy, specimens which are kept stored away in drawers. So far as the general public are concerned, the place where the headquarters of the Survey are situated is of little importance, as nearly all references made to it will be by letter; and so far as personal references are concerned, it is open to question whether Kandy would be more convenient than Nuwara Eliya. I fancy that a larger proportion, of those who would wish to consult the Department personally, come to Nuwara Eliya than to Kandy, when they find it desirable to escape from the climate of the lowlands of Ceylon.

To sum up, the permanent headquarters of the Department should be established either at Nuwara Eliya or Kandy and not at Colombo; of these two I would recommend the former rather than the latter, if there are not good administrative reasons against it. If it is decided to form a local Museum of Mineralogy and Geology under the charge of the Geological Survey, this should be attached to, and in the same building as, the headquarters office and laboratory, f these are established at Kandy; but if they are established in Nuwara Eliya, then the museum should be in Colombo and in the same grounds as, if not built on to, the existing Museum.

SPECIAL LEGISLATION.

There remains but the question of special legislation to be considered. This, I understand, will not be necessary, but as the matter is one which should be referred to a legal expert I may indicate the powers which it will be necessary to give to the officers of the Geological Survey, if they are not provided for in existing Laws and Ordinances. They are, power to enter on private lands for the purpose of survey and examination, to clear paths where necessary through jungle, to enter and examine every part of any mine, to call for information regarding the extent and produce and inspect the plans and records—not the accounts—of any mine or quarry. If special legislation is required to confer these powers, it would be well to include in the Ordinance clauses covering the provisions of headings 1, 2, and 3 of the annexed draft abstract of Regulations for the Geological Survey, of which the clause relating to official secrecy is most important. The lines of the Act of Parliament establishing the Geological Survey of Great Britain might with advantage be followed, with such modifications as may be necessary to fit it to local conditions.

II.—ORGANIZATION.

STAFF REQUIRED

For the working of such a Department a minimum of three officers would be required, who would have to be engaged in England; except for clerical and menial positions it will be impossible to employ either native or locally trained assistance at first, though when the Survey is established it may be possible to employ locally recruited assistants in subordinate positions, as collectors or for prospecting. If an agronomic survey is combined with the geological, four men would be required, but it is undesirable to go beyond this strength, both because a stronger establishment will be unnecessary and because it would be difficult to recruit even that number of competent men at once. At the same time it would be undesirable to contemplate the employment of a smaller number, as with less than three it would be impossible to maintain continuity of the work.

DIRECTOR.

Of the men engaged, one should be placed in charge of the administration of the Department, who should be responsible for its conduct, and through whom all orders from or communications to the Government should pass. On the choice of this man, who might be called the

Director, will depend largely the subsequent success of the survey. He will necessarily be a geologist of standing and acknowledged reputation, as without this it would be impossible for him to retain the respect or to command the obedience of his assistants, but it is equally important that he should not be a merely academic geologist. Besides his scientific attainments, he should be acquainted, and in sympathy with the economic applications of his science, and must, moreover, have some experience of, and known capacity for, administration. He must, in fact, be a man possessing business capacity; by which I do not mean that he must be acquainted with the art of buying and selling, but that he must be capable of organising the Department, of arranging the programme of work so that time will not be wasted, of prescribing a system of office routine at once adapted to the requirements of his Department and in conformity with the methods of the Ceylon Administration, and more especially of sufficient strength of character to enforce a strict adherence to the routine adopted, while at the same time of sufficient adaptability to readily adopt any modifications or improvements which prove desirable, without forgetting the paramount importance of continuity.

These qualifications, combined with the experience which will render them available and direct them in the right channels, are not to be looked for in a man whose experience has been purely academic or tuitional. They may be looked for in an officer of an established Geological Survey, though I would deprecate the employment of one who had acquired no experience outside the Geological Survey of Great Britain, as the methods of that Survey are not such as would lead to the development of the characteristics necessary for the conduct of a Geological Survey in Ceylon.

ASSISTANTS.

The appointment of the Director should be the first step taken, and his evidence should be considered, if not taken, in the selection of the other officers appointed. These will necessarily have to be appointed by selection, as there is no known method of competitive examination which will ensure the selection of suitable candidates. Besides their academic qualifications, of which their diplomas will be sufficient guarantee, they must be sound in body, hardy, of an active disposition, and, as they will have to carry on their work alone in the districts where they will be brought into personal contact with natives and residents, it is important that they should be gentlemen in habits and character. If three of these are appointed, one should be graded as a senior and the other two as junior assistants, whatever the actual titles selected may be, and it is desirable that the senior should have had some practical experience of administration and office routine, so that he may be able to take the place of the Director in case of casualty or absence.

MODE OF APPOINTMENT.

Candidates for these posts should be advertised for in the "Times," "Nature," and "Geological Magazine." The advertisements should state briefly the terms of service offered, and specify that candidates must be specially qualified in mineralogy, petrology, and inorganic chemistry, and in making the final selection from among the candidates one at least should be selected specially on account of his mineralogical and chemical attainments. The appointment of a man who has devoted his attention purely to stratigraphical geology would be practically useless. Should the addition of an agronomic survey be decided on, the advertisement should state that one at least of the candidates must be qualified to undertake agronomic research, and in this case the advertisement should be inserted in two or three of the leading American Journals, as greater attention has been paid to the study of soils in that country than in England.

REMUNERATION.

As regards remuneration the salary offered to the Director should not be less than R12,000 to 15,000 per annum, and as he will necessarily be a man of some age, a certain number of years' service towards pension, depending on the age of the selected candidate, should be given to him. The senior assistant should have from R8,000 to 10,000 salary and the juniors from R5,000 to 7,000. In the first instance it may be desirable to appoint candidates to a salary above the minimum of their grade, and the succession to the post of Director, though it would ordinarily go in the Department, should not be exclusively restricted to it.

TERMS OF SERVICE.

At the commencement of the survey, and in my opinion in the case of subsequent appointments also, it would not be desirable to make permanent appointments and, as appointments on probation are but a delusive protection since, except in the case of most flagrant misbehaviour, it is practically impossible to discharge a man once appointed, I would recommend that appointments be made on a five-year agreement, at the end of which the officer would be allowed to go with a bonus of, say, five months' pay, or if both parties desired it should be re-engaged for permanent service, forfeiting the bonus, but counting his previous service towards leave and pension. I am convinced that terms such as these will prove more attractive than an offer of permanent service and lifelong expatriation; at the same time it is improbable that any candidate possessing the zeal and knowledge which would render him an useful officer will desire to take the bonus at the end of five years and terminate his service. On the other hand, the Government will be in a better position five years hence to know exactly what staff it will require and if necessary to reduce it, and will be able to get rid, without even the semblance of hardship, of members whose services are not satisfactory.

HORSE ALLOWANCE.

In addition to his salary each member of the Survey should be given an allowance for the keep of one horse at least. In most part of the Island it will be necessary for him to keep at least one horse, and in some it would doubtless be to the benefit of the public service for him to keep two.

TRAVELLING ALLOWANCE.

As regards travelling allowances the rules applied to the Survey Department might be adopted, the Director counting, like the Surveyor-General, as an inspecting officer, and the other members as Superintendents of Survey. The rule under which halting allowance is reduced after a three days' halt should however be cancelled as tending to bad work. In many cases, transport being permanently retained, halting is as expensive as marching, and the object of the rule can only be to prevent waste of time by unnecessarily long halts at places where there is no real reason for them. In the conduct of the

Geological Survey it will not infrequently be necessary to stay more than three days at a place to work it out thoroughly, and in such case a hard and fast rule would be a strong inducement to leave work unfinished. The rule might, however, be allowed to stand, provided that power be given to the Director to certify for the whole or a portion of the halting allowance where he is satisfied that the extended halt was in the interests of the public service and that, on account of the maintenance of permanent transport or other reason, the officer was put to such special expense as would justify the certificate. The limit of time beyond which such certificate is necessary would with advantage be extended to seven days.

CONTROL OF EXPENDITURE.

In this connection I may urge that the control of the expenditure on travelling as also on contingencies should be vested solely in the Director of the Survey. The accounts will of course be submitted to the usual audit, but this should be confined to matters of account, and the Director having, by his countersignature to the bill, certified that it was for the benefit of the public service that the journey should be performed in the manner and by the route employed no question of time occupied or route followed should be raised by the Accounts Department. So, too, the Director should be the judge of whether contingent expenditure on coolies for jungle clearing or excavation, or other charges incurred by officers in the field, was necessary and incurred in the public service or not. An officer fit to be entrusted with the charge of the Survey may be trusted to attend to the interests of Government in these matters, and the power of control advocated will save him from much unnecessary correspondence of a petty and particularly irritating nature, and will prevent the waste of time which he could otherwise employ in a manner which would give scope to his special qualifications.

A Department a superior staff organised as suggested above would however be useless, if not properly equipped and provided with a subordinate and menial establishment. The equipment required consists of a laboratory, a library, and a suitable building for their accommodation and that of the officers, office staff and records of the Department.

LABORATORY.

For the laboratory with a floor space of some 1,200 square feet should be provided, if solely devoted to geological work, and about half as much again if agronomic work be added. This space would be divided into five rooms; the laboratory proper, or principal room, attached to which there should be a room for the assistant in charge of the laboratory, a balance room, a rough preparation and rock-slicing room, and a dark room for photographic work. The laboratory would have to be fitted with sinks, draught cupboard, workbenches, etc., and a Mansfield gas installation with a producer of (say) 500 cubic feet capacity should be provided for. It should be equipped with the necessary microscopes, balances, and other instruments and reagents, which would have to be procured from home, and a sufficient grant for its maintenance.

LIBRARY.

Besides a laboratory a working library would have to be provided and an annual grant provided for its maintenance as it would be of very small utility unless kept up to date.

ACCOMMODATION REQUIRED.

Sooner or later a special and properly designed building should be built for the accommodation of the Department, and, though at first it would doubtless be housed in a hired building adapted to the purpose, the sooner a special building is constructed the better. It is consequently desirable to indicate approximately the floor space necessary :—

Laboratory :	Square feet.	Square feet.
Principal room	750	
Assistant's room	250	
Balance room	200	
Rough preparation room ..	300	
Photo dark room	200	
		1,700
Library	—	700
Director's	—	400
Working rooms, preferably separate, say 3 at 300... ..	—	900
Clerical and record office ...	—	300
Godown..	—	400
Total ...	—	4,400

This estimate allows for the permanent needs of the Department. In the early days, while in hired premises, less will be necessary, and a material reduction can be made if agronomic work is not combined with geological. If the headquarters are placed at Nuwara Eliya, as I recommend, instead of Kandy, the floor space could be reduced by about one-third, and if it is decided to place them at Kandy and add a Museum, an additional 2,000 square ft. of floor space should be provided for.

CLERICAL AND MENIAL STAFF.

The clerical and menial staff required would not be large. A head clerk, who would also act as librarian would be required, he should be acquainted with official routine and, as with so small a superior staff, it may not be possible to arrange that one of them shall always be at headquarters, he should be fit to be trusted with the routine of the office, the drafting of routine letters, and the forwarding of such as require the personal attention of the Director. I understand that such a man could be got for a salary of from R1,000 to R1,500. An additional clerk on say R400, a bookbinder, office servants, and a couple of peons would complete the office establishment required.

For the laboratory it would be well to engage an assistant with some knowledge of chemistry, who would act as storekeeper and could be placed in charge of some of the simpler operations and analyses in the laboratory. I do not know whether it would be possible to obtain this assistant locally, but if not, one could be engaged in Madras or Calcutta. He should be paid about R600 to begin with, rising to not less than 2,000 as he becomes more proficient in the work. Two laboratory servants would be required for cleaning apparatus and preparing rock sections.

For the officers in the field a certain establishment of peons would be required. They might be provided for by an allowance paid to the officers but would preferably be entertained and paid for by the Survey. Four men permanently employed would, I think, be sufficient, the additional assistance required being entertained temporarily as, and to the extent, required.

IV.—COST.

I come now to the consideration of the cost, which may be considered under the heads of initial and recurrent expenditure. In the initial expendi-

ture may be included the cost of a suitable building, though this expenditure would probably be postponed. I have indicated the requirements; but leave the estimate of cost to those who are better qualified to give an opinion on this matter. The buildings should be substantial, airy, and well-lighted, with north or south lights, and in such a position that no light is reflected from any building into the principal working rooms, as this interferes with the proper use of the microscope.

LABORATORY.

Apart from the buildings the principal expense incurred will be on the fitting up and equipment of the laboratory. For the provision of proper sinks, draught cupboards, working tables, cases for reagents, and instruments, &c., a sum of about R2,000 will be required. If a Mansfield gas installation is added, which is so desirable as to be almost essential, a further sum of about R5,000 will be required, while the instruments (microscopes, balances, &c.) apparatus, and reagents may be estimated to cost from £300 to £400.

LIBRARY AND OFFICE.

In the office and library, bookcases will have to be provided, and as they should be well made and dust-tight a sum of R2,500 should be allowed for eight cases to commence with, further additions being made out of the grant for maintenance. A further sum of say R1,500 would be required for office furniture and fittings. The initial cost, "exclusive of the cost of building or of alterations to the building temporarily hired," would be approximately :—

III. EQUIPMENT.

Laboratory fittings	2 000
Gas Installation	5,000
Instruments, etc., £400	6,000
Library, say, £500	7,500
Bookcases and office furniture, etc. ...	4,000
	24,500

It is however improbable, in view of delays which will be inevitable in the inception of the survey, that all this will be spent during the first financial year. It should be treated as a lump sum, of which say R15,000 might be put on the estimates of the first year of the Survey, the unexpended balance being re-granted in the following year.

It must be understood that these estimates are necessarily only approximate, and it is not suggested that expenditure should be sanctioned on them and before the submission of detailed estimates, which will have to be prepared by the officer actually appointed to the direction of the Survey. The sums mentioned are liberal, and should provide for a well-equipped service, but are not excessive. I do not think that without unduly cramping the Survey they can be materially reduced.

ANNUAL COST.

The annual cost of a Department organized as described, would be, for salaries and wages, approximately as follows :—

	Minimum.	Maximum.
	R	R
1 Director ...	12,000	15,000
1 Senior Assistant..	8,000	10,000
2 Junior Assistants..	10,000	14,000
1 Head Clerk ...	1,000	1,500
1 Assistant Clerk ...	400	500
Bookbinder at R30, Label Writer at R30, 2 Peons at R15 each, per month ...	1,080	1,080
Servants, say R25 per month ..	300	300
1 Laboratory Assistant	600	2,000
2 Laboratory servants at R15 ..	360	360
4 Permanent Peons at R15 ..	720	720
	34,460	45,460

Beside this there would be required for contingencies and allowances approximately—

	R	R
Library ..	1,500	
Laboratory ..	1,500	
Office contingencies ..	2,000	
		5,000
Horse allowance ..	1,440	
Travelling allowance, say	8,000	
Field contingencies ..	4,000	
		13,440
		18,440

Of these, the allowance for maintenance of library and laboratory would be fully required for some years, after which they might doubtless be reduced. The sum allowed for "field contingencies" is supposed to cover the cost of additional peons, of guides, jungle clearers where necessary, of carriage and purchase of specimens, and other kindred expenses contingent on the carrying out of Survey in the field. It is necessarily a guess, as the actual amount of expenses so incurred can only be learnt by experience. I have put it at a liberal figure, which is not likely to be materially exceeded, but the actual expenses incurred may well vary considerably from the sum stated in one way or the other.

From this it will be seen that a fully-equipped Department on the lines laid down could be provided for at a cost which may be put down, in round figures, at R60,000 per annum. For this a complete and careful Survey of the whole of the island should be made in fifteen years at the outside, after which expenses might be reduced by maintaining only a revising staff, the headquarters office as a bureau of information, and the laboratory for the determination and analysis of specimens. A staff of two superior officers would be sufficient for this, while there would be a considerable reduction of the charges for travelling and field contingencies. The subordinate staff would have to be maintained, if not increased and the permanent expenditure on the reduced scale would be about R30,000 per annum.

ALTERNATIVE PROPOSAL OF LIMITED SCOPE.

I have sketched out a scheme and given an estimate of cost of a Survey which would be of permanent value to the Colony. If the cost should be considered too great, I have no doubt some benefit would be attained by the employment of a competent geologist at a salary of say £800 (R12,000) a year. He would have to be provided with a laboratory and library at a cost of not less than R6,000, and for the purchase of books and instruments, of travelling allowance, and for contingencies at least R5,000 would be required, making with his salary R17,000 per annum, exclusive of the rent of the building, which would have to be provided for the accommodation of the laboratory and working rooms at his permanent headquarters.

I do not consider it desirable to attempt anything on a scale intermediate between this and the fully-equipped Geological and Agronomical

Department, for which a scheme has been sketched out, and the advantages of the fully equipped Department are so much the greater that they more than justify the additional cost.

30th August, 1889. R. D. OLDHAM.

DRAFT ABSTRACT OF REGULATIONS FOR THE CONDUCT OF THE GEOLOGICAL SURVEY OF CEYLON.

[This draft is not intended to be issued verbally as it stands, but to indicate the scope of a Code of Regulations which should be drawn up and issued. They will require to be completed in accordance with the routine of work and record finally adopted, and will require, in addition to the subjects referred to in this draft, a definition of the procedure to be adopted in entering on private lands. They need not be embodied in legislation nor be issued as orders of Government; it will be sufficient for them to be issued on the authority and as the orders of the Director. If special legislation is necessary to establish the Survey and give powers to enter on private lands for the purpose of examination, the subjects dealt with 1, 2 and 3, might be embodied in such legislation.]

The whole time of officers of the Geological Survey being retained for Government work, they should be prohibited from taking up other employment, from examining and reporting on lands or mines for private persons, and from giving any opinion or report, verbal or written, to private persons or commercial companies, except through and by the express permission of the Director of the Survey.

All information gained in the course of examination of any mine must be treated as strictly confidential; it should be communicated directly to the Director and put on record when of sufficient importance, but must not be divulged to other persons nor published without the permission of the owners of the mine.

All observations and collections made in the course of the survey should be treated as the property of Government and handed in to the Director. No publication of results or observations made in the course of the survey nor the retention of field note-books or specimens should be permitted without sanction.

Officers should keep a diary, an abstract of which should be submitted monthly on a form prescribed for the purpose. At the end of each field season a full report of the work done should be drawn up. Where possible this should be in the form of a final report for publication or submission to Government, but where, owing to the work being unfinished, this is impossible, a full progress report should be prepared and submitted, for record and incorporation in the final report. On account of the risks of interruption, owing to sickness, casualties, or the exigencies of the public service, which may necessitate an officer being temporarily or permanently diverted from the particular task on which he is engaged, every member of the Survey should strive to leave the work done by him on record in such form as shall allow of its being taken up by another person with the least possible waste of time.

Specimens of rocks met with in the course of the survey should be freely collected. So far as possible rock specimens should be trimmed to a rectangular shape, about 5 in. by 4 in. and as thin as possible, and with each specimen there should be one or more chips from which microscope slides can be prepared without injuring the principal specimen. At the end of each field season the rock specimens collected should be opened out; and, after rejection of those specimens which it is not necessary to preserve, should be numbered, entered in the register, and stored away for future reference.

Officers of the Geological Survey should be made directly responsible to the Director, and should not correspond with other Departments or officers of Government, or private individuals or firms, on matters connected with the work of the Survey, unless and only so far as they are put in communication with such Departments, officers, or other persons by the Director.

R. D. OLDHAM.

LITERARY REGISTER SUPPLEMENT:

AND CEYLON

"NOTES AND QUERIES."

[Under this heading, in future, we mean to give a four or eight page "Supplement" with our *Tropical Agriculturist*, from quarter to quarter, according as there is matter of sufficient value, so to be preserved.]

APRIL, 1900.

ROYAL ASIATIC SOCIETY: CEYLON BRANCH.

ANNUAL GENERAL MEETING.

The annual general meeting of the Ceylon Branch, Royal Asiatic Society, was held in the Museum, Cinnamon Gardens, on Feb. 13. The Bishop of Colombo presided, the others present being the Rev. F H de Winton and Messrs. Philip Freudenberg, J Ferguson, Milligan (New Zealand), Miss Ferguson, P Morgappah and J Harward and G A Joseph (Hon. Secretaries.)

THE REPORT.

Mr. HARWARD read the minutes of the last general meeting held on the 29th July, 1899, which were confirmed. The Report was taken as read, save a portion in manuscript from Mr. Bell on his archæological work, which was read Mr. Harward:—

ANNUAL REPORT FOR 1899.

The Council of the Ceylon Branch of the Royal Asiatic Society have the honour to submit the following Report for the year 1899:—

MEETINGS.—Three general meetings of the Society were held during the year, of which the following papers were read and discussed, viz:—

(1) "Correspondence relating to the Antiquarian Discovery under the site of the old Breakwater Office, Colombo," by Mr. G. A. Joseph.
(2) "A Letter from the King of Portugal to Raja Sinha II., 1652," by Mr. D. W. Ferguson.
(3) "Expedition in 1765 against the Prince of Kandy, Lubbert Jan Baron van Eck, Governor of Ceylon (1763-65)," by Mr. A. E. Buultjens, B.A. Cantab.
(4) "The Portuguese Inscribed Mural Stone in the Maha Saman Dewale at Ratnapura," by Mr. D. W. Ferguson.
(5) "Alagiyayanna Mohottala, the Author of Kusajataka Kavyaya," by Mr. D. W. Ferguson.

Interesting discussions followed the reading of the papers (1) and (3).

The following papers, which were not read at a meeting, have been printed, and will form part of the Journal for 1899, viz.:—

(*a*) "Christianity in Ceylon in 1630," by Mr. D. W. Ferguson.
(*b*) "Contribution to Ceylon Malacology: (3) The Terrestrial Mollusca of Ambagamuwa (Part II.)," by Mr. O. Collett, F.R.M.S,
(*c*) "Joao Rodriguez de Sa e Menezes," by Mr. D. W. Ferguson.
(*d*) "Polyandry in Ceylon," by Mr. R. W. Ievers, C.C.S.

The original manuscript of the capitulation of Trincomalee, 1795 (presented by Mr. G. A. Joseph to the Colombo Museum Library), has been lithographed and will appear in the journal for 1899.

MEMBERS.—During the past year six new members were elected, viz.:—Messrs. K S Bath, B.A.; R H Ferguson, B.A. (Life Member); H T Gardiner, F.R.H.S.; D B Jayatilaka, B.A.; A G Tambi-Nayagam Pillai, Pleader-at-Criminal-Law, &c.; P E Pieris, C.C.S.

Five members resigned, viz.:—Dr. P S Brito, Messrs. F Macindoe, Alfred A Clark, W C Macready. Two other members, Mr. H Wace (resident), Sir John J Grinlinton (non-resident), qualified as Life Members.

The Society now has on its roll 191 members, including 20 Life members and 10 Honorary members.

The Council record with regret the death of Mr. G C Trask and the Hon. Mr. L F Lee, C.C.S. Mr. Lee was for many years a member of the Society. He contributed to the Society's journal the following papers:—

(1) "A Prose Translation of the Introductory Stanzas of the Kusajataka,"
(2) "Notes on Sannas."
(3) "The Romanized Text of the First Five Chapters of the Balavatara." (Journal No. 16, Vol. V., 1870).

LIBRARY.—The additions to the Library during the year numbered 329 volumes. The acquisitions are chiefly exchanges from Societies. The Library is indebted for donations to the following;—The Trustees of the Indian Museum; the Government of Bengal; the Government of India; the Government of Mysore; the Government of Madras; Cape of Good Hope Geological Commission; Australian Association for the Advancement of Science; Australian Anthropological Society; the Director of Public Instruction of Ceylon; H Sastri; J Harward, M.A.; T B P Kehelpennalla; H

C P Bell, C.C.S.; P Arunachalam, C.C.S.; O Collett; W H Furness, M.D.; and the Colombo Museum Library.

Besides those already on the exchange list, Council have decided to exchange with the Director, Mission Archeologique d'Indo-China, Saigon.

The Council still constantly receives applications from Societies and Institutions for exchanges of our Journal. The Council regrets having had to refuse some exchanges during the year owing to the large number of Societies already on the exchange list.

The Council regrets that the amount inserted in the draft estimates for 1900 for the Museum extension was not passed. Confident hope was entertained that the Museum extension would have been started in 1900, and that the congested state of the Library of the Society would shortly have been relieved.

The affording of relief for the overcrowded collections of books has been a crying want for a lengthy period. The Council have repeatedly in their reports and letters called the attention of Government to the difficulty of finding room for current accessions and for the books already in the Library. The Library of the Society and that of the Museum have outgrown the space available in the existing rooms, and it is necessary that there should be more accommodation for both. The Libraries need rooms large enough to allow for expansion, and at the same time to permit of a rational classification of the books on the shelves. Temporary measures have been adopted for some years to enable the Society to house the books in the room allowed to the Society. But the only real remedy for the present overflowing state of the Library is an extension of the building.

JOURNALS.—Vol. XV.. No. 49, 1898, was issued during the year. It contains, in addition to the Proceedings of the Council and General Meetings, the following Papers:—

(i.) "Contributions to Ceylon Malacology: (2) Description of a new Helicoid Land Shell from the Southern Province," by Mr. O Collett, F.R.M.S.

(ii.) "Aids to the Identification of Ceylon Birds: Part I.—Introduction and Key to the *Passeres*" by Mr. A Haly.

(iii.) "A Pertinent Account and Detailed Description of the Character, Nature, Coitus, and Production of Elephants in the Great Island of Ceylon," translated from the Dutch by F H de Vos.

(iv.) "Don Jeronimo de Azevedo, Governor of Ceylon from 1594 to 1611 A.D.," by Mr. A E Buultjens, B.A. Cantab.

(v.) "Monumental Remains of the Dutch East India Company of Ceylon," by Mr. F H de Vos.

The printing of the Journal for 1899, No. 50, is in hand and will be issued to Members shortly.

ARCHÆOLOGY.—The Council regret that in 1899 the Archæological Commissioner was not able to furnish any report on his operations at Sigiriya, which have formed so interesting a feature in the recent numbers of the Journal. A concluding report on this subject will probably be submitted to a General Meeting early in the present year. The Archæological Commissioner has favoured the Council with the following synopsis of work done by the Archæological Survey during 1899:—

REORGANISATION OF THE ARCHÆOLOGICAL SURVEY.

As the result of the recommendations of the Commission appointed by H.E. the Governor to report on the more efficient prosecution of the Survey, the Archæological Commissioner's hands were strengthened from January 1899, by the:—

(*a*) increase of the vote for Archæological purposes to R40,000.

(*b*) appointment of a Labour Assistant to the Archæological Commissioner.

(*c*) attaching to the Department two native Epigraphists (Messrs. D M de Z Wickramasinghe and B Gunasekara, Mudaliyar.)

With this aid, proportionate progress has been made. For the first time excavations have been carried on simultaneously at two centres (Anuradhapura and Sigiriya); whilst preliminary work has been started in connection with the systematic and scientific publication of ancient inscription of the island (*Eprigraphia Zeylanica*).

EXCAVATIONS, &c.

ANURADHAPURA.—At Anuradhapura half the labour force was continuously employed under Mr. Dashwood, Labour Assistant. Most of the year was spent in pushing excavations *southwards from Thuparama Dagoba towards Ruwanveli* Dagoba. In this long stretch of picturesque park little of the ancient ruins remains untampered with, ill-considered later day reconstruction from older buildings has transformed the site generally into a irregular congeries of insignificant and uninteresting monk's dwellings, with attendant out-houses innumerable. Amidst the mediocre medley of ruins, one or two stand out markedly *e.g.* the beautiful pair of shrines, miscalled "Pavilions,' square columned with spreading dwarf-band capitals.

In the dry weather work was temporarily resumed at "*Elala Sohona.*" Here the summit of the flat-topped mound has been thoroughly dug revealing walls, cross walls, tee of the superstructure of a dâgoba, traditionally fixed as the tomb of the Tamil King, Elâla.

Towards the close of the year the whole force of coolies was concentrated at *Buliyankulam*, 2½ miles from the town with the object of finally completing the excavation of this extensive Buddhist monastery; between 30 and 40 pirivenas and lying regularly round and outside the main temenos, containing the dâgoba and three Viharas, have been laid bare; and at the magnificent pilimagé the re-setting of the fallen slabs of the stylobate revetment was nearly completed.

SIGIRIYA.—The A C spent a final season at Sigiriya in rounding off the field-work of the Archæological Survey at *Sigiri-nuwara*. The excavation of the summit and terraces at the base of the Rock was finished in 1898. The past year was devoted to the digging out of the numerous caves beneath boulders dotted below the rock to the west besides sporadic excavations at other promising sites (*e g.* three or four moated islands) within the *vil bemma*, or outermost ramp of the ancient city. In restoration steady progress was made in the heavy task of re-building on the old lines the southern approach to the gallery, as well as the wrecked portion of the gallery itself at the north end. The laying of a concrete bed for the foundations of the wall involved constant risk to life and great labour, but was safely accomplished by the end of the season. The preservation of the frescoes, as far as practicable, was commenced.

POLONNARUWA.—The lines for the occupation of the A. S. force are under construction at Topavewa. In 1900, after two months given to the necessary annual clearing of the ruins at Sigiriya, the A. C. will move on to Polonnaruwa, and break ground at that ancient capital.

AWARD OF A GOLD MEDAL AS AN ENCOURAGEMENT TO ORIENTAL LEARNING.—In 1897 the Council of the Royal Asiatic Society established a Gold Medal to be awarded every third year as an encouragement to Oriental learning amongst English-speaking people. To meet the expenses incurred in preparing a design, engraving dies, and finding an amount to produce an income sufficient to defray the requisite charges, a

snm of abont £400 will be necessary. Subscriptions, with interest, of £300 have already been received, and a balance of about £100 is therefore still needed. Donations should be sent to the Chairman of the Medal Committee, Royal Asiatic Society, 22, Albermarle street, London.

INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.—The Royal Society have undertaken to prepare and conduct a catalogue of all scientific literature published throughout the world. In pursuance of the scheme the Asiatic Society of Bengal has, at the reqnest of the Royal Society, undertaken the formation and conduct of a Regional Bureau for India and Ceylon. This Society has been invited to co-operate in the work, and the Council take this opportunity of directing the attention of the authors of Scientific Papers to the Circular on this subject, which is published as an appendix to this report. The slips there applied for may be forwarded to the Honorary Secretary of this Society.

COUNCIL.—F M Mackwood was elected a Vice-President in place of Mr. Staniforth Green. The Council regret Mr. Green's departure from the Island. He was connected for many years with the Society, being a Member from 1866, and afterwards a Member of Council and Vice-President. Mr. Green always took an active interest in the Society's affairs, and his scientific attainments and general knowledge made him a most valuable Member of the Council. Two Members of the Council of 1898, viz., Messrs. O Collett, F.R.M.S., and P Ramanathan, C.M.G., having been, by virtue of Rule 16, deemed to have retired by least attandence, the vacancies caused by their retirement were filled by the appointment of Messrs. J P Lewis and H White.

FINANCES.—The total income for the year, exclusive of the balance in hand of R1,418·14, was R2,024·17, and the expenditure amounted to R1,839·29, the sum in hand at the close of the year being R1,603·02. Considerable difficulty is still experienced in getting in outstanding subscriptions.

ADOPTION OF THE REPORT.

The CHAIRMAN observed that the next business was the adoption of the Report.

Mr. J FERGUSON said that he had pleasure in proposing that the Report be adopted.

Mr. FREUDENBERG seconded.—Carried.

His Lordship the BISHOP then vacated the chair and on the proposition of Mr. Harward, the Rev. F H de Winton was elected Chairman *pro tem.*

ELECTION OF OFFICE-BEARERS.

The Rev. F H DE WINTON proposed the election of the following office-bearers for the ensuing year, observing that as at present there was no name available as Treasurer, the election of that officer be deferred.

President :—The Bishop of Colombo.

Vice-Presidents :—The Hon. Mr. Justice Lawrie, Mr. F M Mackwood.

Council :—Messrs. C M Fernando, A Haly, P Freudenberg, J Ferguson, P Coomaraswamy, F H Modder, Dr. W G VanDort, Messrs. W P Ranasinhe, H White, S M Burrows, E E Green, and E Booth.

Hony. Treasurer (vacant).

Hony. Secretaries :—Messrs. H C P Bell, J Harward, and Gerard A Joseph.

Mr. P MORGAPPAH seconded.—Carried.

The BISHOP then resumed the chair. In doing so he said he had much pleasure in returning thanks on behalf of himself and of the office-bearers for the expression of confidence reposed in them. The business before them was of a formal character, and he would not, therefore, trouble them with any remarks, beyond saying that he could assure them that the office-bearers would do their best towards one another and for the members of the Society. (Laughter and Applause).

Mr. FREUDENBERG proposed a vote of thanks to His Lordship for presiding.—Carried by acclamation.

His LORDSHIP said he returned thanks on behalf of himself and the Rev. F H de Winton, who had taken an important part in that laborious function. (Laughter).

BUDDHIST RELICS.

(From the Ceylon Secretariat.)

The following communication has been received from the Secretary to the Government of India with regard to the distribution by His Majesty the King of Siam of certain Buddhist Relics discovered in India to Buddhist Deputations from Burma and Ceylon:—

From J. P. Hewett, Esq., C.S.I., C.I.E., Secretary to the Government of India.

To the Hon. the Colonial Secretary, Ceylon, Colombo.

Calcutta, the 24th Feb., 1900.

SIR,—Adverting to the correspondence ending with the telegram from this Office, No. 2967, dated the 20th December 1899, upon the subject of the distribution of the sacred Buddhist relics by His Majesty the King of Siam, I am directed to forward, for the information of His Excellency the Governor, a copy of a communication from Her Britannic Majesty's Minister Resident and Consul-General in Siam dated Bangkok, the 16th January, 1900, and enclosure, showing that the relics were distributed to the deputations sent from Burma and Ceylon on the 9th Idem. A copy of the acknowledgment of the appreciation of the Government of India in reply is also enclosed. I have, &c., (Signed) J. P. HEWETT, Secretary to the Government of India.

Dated, the 16th January, 1900.

From C E W Stringer, Esq., Her Britannic Majesty's Charge d'Affaires and Acting Consul-General, Bangkak.

To the Secretary of the Government of India, Home Department.

With reference to your telegram of the 20th ultimo, stating that the deputations to receive the Buddhist relics from the King of Siam had left Colombo and Rangoon, I have the honour to forward herewith, for the information of the Government of India, copy of a letter from the Siamese Foreign Minister stating that the relics were handed over on the 9th instant, and expressing a hope that what the King has done in the matter of their distribution will meet with the approval of the Indian Government The deputations are now leaving Bangkok on their return journey.

Dated the 14th January, 1900.

From Devwongse, Siamese Minister for Foreign Affairs, Bangkok.

To C E W Stringer, Esq., Her Britannic Majesty's Charged Affair's and Acting Consul-General.

With reference to my note of October in regard to the distribution of the Buddhist relics to the deputations from Burma and Ceylon, I have by His Majesty's command, the honour to state for the information of the Government of India, that the ceremony of delivering over the relics has taken place on the 9th instant, and that the object of His Majesty in the distribution was that as the Buddhist relics are the most sacred to, and most sought after by, all Buddhist public, His Majesty therefore desires that some portion of them should be kept at some important city or towns frequented by Buddhist philgrims so that all of them may have equal benefits of worshipping it. Besides His Majesty thinks that the apportioning to any individual sect or community would create disaffection, because by doing so it would be making only certain sect or community of the owner of the relics.

2. For this reason, therefore, His Majesty has assigned one portion to Mandalay and another to Rangoon in Upper and Lower Burma respectively.

As to the three towns in Ceylon to which His Majesty has assigned one portion to each are:—

1. Anuradhapnra, the ancient capital, which contains an important Pagoda.

2. Kandy, the present capital possessing the sacred tooth.

3. Colombo, on account of its being a large town of the present day.

3. Among the memhers of the deputations who have come to receive the relics, Burma has sent one to receive the two portions, one for Rangoon and one for Mandalay according to arrangements, bnt those sent by Ceylon representing various communities far more exceed the three portions which His Majesty has assigned to that Island, viz., Annradhapura sent one, Kandy sent two and Colomho sent three. As there was only one deputation from Annradhapnra, therefore there was no difficulty with regard to that town, but tbere were two from Kandy, one of Malwatta and another of Asgiriya-wihares. each desired that the portion of the relics allotted to that town shonld be handed over to them.

Without recognizing into whose care it shonld be entrusted it was therefore, by His Majesty's command, handed over to both of them conjointly to be determined by common agreement as to the place in which it should be kept. But in case of disagreement and should they seek His Majesty's advice, the decision would be in favonr of the Malwatta, for the reason of its possessing the sacred tooth.

4. Again there were three different sects from Colombo, one of Upaliwongse or Siamese sect, one of Maramawongse or Burmese sect, and one of Ramanawongse or Pegan sect, and each likewise desired to receive the relics, but His Majesty commanded that the one portion allotted to that town be formally handed over to the three sects in the same manner as the one for Kandy with the condition of mutual agreement as to the place of deposit. But if such agreement cannot be arrived at and should they likewise seek advice, His Majesty would give his decision for the one that possesses the largest temple in Colombo viz: the Syama Nikaya or the Siamese sect.

But in both cases His Majesty expresses the hope of, however, seeing the matter settled amicably between the different sects themselves.

5. Such as the handing over of the sacred relics is so far accomplished, His Majesty trusts that the Indian Government will consider the task of the King, my August Master, as ended and that it will meet with their approbation.

6. I avail myself of this occasion to express to you, Monsieur le Charge d'Affaires, the assurance of my high consideration.

From J P Hewett, Esq., C.S.I., C.I.E., Secretary to the Government of India.

To Her Britannic Majesty's Minister Resident and Consul-General in Siam, Bangkok.

Calcutta, Fehrnary 24th, 1900.

SIR,—I am directed to acknowledge the receipt of yonr letter dated the 16th January, 1900, with which yon forward a letter dated the 14th idem from the Siamese Minister for Foreign Affairs, stating that the Buddhist relics were handed over on the 9th idem to the deputations sent from Burma and Ceylon to receive them.

2. I am to say that the Government of India have learnt with mnch satisfaction that the sacred relics have been distributed by His Majesty the King of Siam in the manner stated in Prince Devawongse's letter. I am to request that it may be made known to His Majesty that the Government of India approve of the manner in which distribntion was made and are obliged to His Majesty for the care and tronble undertaken in effecting it.—I have, &c.,

(Signed) J. P. HEWETT,

Seoretary to the Government of India.

THE "TIMES" ENCYCLOPÆDIA BRITANNICA IN CEYLON AND INDIA.

The mission of Mr. K W Johnson, the Agent for the sale in India and Ceylon of the now celebrated reprint of the "Encyclopædia Britannica," is practically ended and he left by the ss. "Rewa" on March 24th, for Madras and Calcutta. It is interesting to note that he has been the means of introducing to the island of Ceylon very many copies of a work in twenty volumes, which is aptly described as the most complete and perfect work of reference in the world. Previous to Mr. Johnson's visit there were only a very few sets (perhaps two) of the work (purchased at the original price, £37) in Ceylon and amongst these was the one included in the *Observer* library.

During the last year over 2,000 sets have been sold in India, and of these nearly one-half were taken by native residents, distributed over a very wide area and including several libraries and colleges, where they will be accessible to students and others.

The offer of the London *Times* was extended to residents in Ceylon on Feb. 3rd last and closed on March 15th. The number of the last order registered in the Colombo office is 168. Of these about 15 per cent are Sinhalese, about 10 per cent Burghers, and the remainder are Europeans. A few of he more prominent names are appended :—

Planters' Association of Ceylon.
Colombo Club.
Chamber of Commerce, Colombo.
Hill Club, Nuwara Eliya.
Post and Telegraph Library.
The Hon. W. T. Taylor.
The Hon. J N Campbell.
Mr. Chas. B Brodie.
Messrs. H. Don Carolis & Son.
Mr. H S Perera.
The Rev. W F P Waltham.
The Rev. Fr. D E Requis, O.S.B.
Mr. E W Glanville.
Mr. S F Tokmakoff.
Mr. J. Schrader.

Although the first offer to residents in Ceylon has been withdrawn it is still possible to obtain the work, at slightly increased prices, upon application to the head office of *The Times* Reprint of the Encyclopædia Britannica at 5a, Dalhousie Square, Calcutta.

FUEL FOR TEA MANUFACTURE, &c.

PRACTICAL INFORMATION FROM PRACTICAL MEN.

THERE has been a good deal of discussion of late in reference to the cost of oil, or rather of the working of oil engines, and some exceedingly satisfactory results have been reported respecting more than one well-known engine, while a new favourite is now coming to the front. But our purpose is not to discuss oil engines, but "fuel" at this time; for, some months ago, before we had heard much about oil, we issued—at the instance of a planting friend—the following "Circular" with questions to be answered:—

FUEL FOR TEA MANUFACTURE.

Questions.

1. Which fuel do you consider to be best for Tea Manufacture:—Wood, Coal or Coke?
2. What is the relative cost, and is it capable of begin reduced?
3. With regard to Wood fuel, is the supply equal to the demand?
4. Is the supply dependent on Government, or is it in private hands?
5. Is the planting up of Fuel trees receiving attention?
6. Do you consider that it would be any economy to have Fuel plantations?
7. If so what kind or kinds would you recommend?
8. Apart from Fuel, would you plant Timber trees, *i.e.*, for Building and Tea Chests?

In response we got some fifty replies from responsible Managers in different districts of the country, and these we will now proceed to lay before our readers, according to the several divisions from which they are dated. But before doing so, we have two more elaborate replies to our enquiries, which deserve precedence. One is from a well-known Visiting Agent of wide experience and runs as follows:—

"I have not had very much experience of coal in connection with tea factories, but even on estates close to the railway, with cheap freights and other transport facilities, wood fuel will require to be *very* scarce and expensive before coal can with advantage be substituted. The latter must always be costly, and if one had to pay as much as R2 per yard for *good* wood fuel, it would probably pay better to do this than to get up coal from Colombo. The *best* fuel is that which is obtained from well-grown forest. Grevilleas, even when fully matured, burn quickly, and it is, therefore, better to use them in conjunction with forest fuel if it can be so arranged. Gums burn well, and grow again freely after being coppiced; but the odour they emit is considered an objection by some.

"Speaking in a *general* way, the supply of fuel in private hands is, I should say, sufficient for present needs, and should continue so for many years to come if the planting of trees is kept up as it should be. Personally I know of very few estates which get their supplies regularly from the Government depôts.

"To shew what can be accomplished on a carefully-managed concern, I may mention that on an estate of about *280* acres in one of the young districts, where there is absolutely *no fuel whatever* beyond what is provided by gums and grevilleas, &c., growing in the ravines and amongst the tea, the Superintendent manages to keep his factory going, there being two driers to feed besides an engine. This estate, which is situated at an elevation of about *4,000* feet, gives an average of *600* lb. of made tea per acre, shewing that well-regulated shade need not necessarily affect the productiveness of the bushes, and there is, moreover, nothing much to complain of in the quality of the teas. Besides the coppices most of which survive, there is always a succession of young trees coming on, so there really is no reason why the supply of fuel should fail.

"Where there is a reserve of forest, planters will find it better, instead of felling trees indiscriminately, to make a clean sweep of a few acres at a time, stack the firewood, and replant the land with useful trees.

"Perhaps I cannot see far enough ahead, but I am no believer in planting trees for tea-boxes. I think we may safely look to the outside world to supply us with all we want under this head.—X.Y.Z."

The useful information and practical hints here imparted will, we feel sure, be valued by many proprietors and superintendents.

The next communication has been kindly sent us by a gentleman connected with the Forest Department to whom we sent a Circular and who responded as follows :—

"I will take your own headings in accordance with the numbers:—

1. This would depend on the drying machinery. For example, if you used Davidson's, Jackson's or Brown's, the fuel would vary. For the two first, small branch wood will get up a sufficient heat, while the latter is all the better for larger timber. Coal is, I think, likely to develop too great a heat, and is not necessary for the purpose. I would certainly advocate coke or wood.

2. I have not sufficient data to go on; as the price of imported fuel would be certain to fluctuate, and in a measure be affected by the state of exchange. The price of firewood is directly proportional—in the case of estates—to the length of transport and its means. The difference in the quality, or hardness of the wood does not, to any great extent, affect its cost of cutting, but it acts directly on its cost of removal. I would not lay down a hard and fast line therefore, and say the price per lb. of firewood should be so much, when, perhaps, certain local circumstances would completely alter the factors of calculation.

3. This is very difficult to answer. In districts where the white ant does not eat up the wood as fast as it is felled, a smaller quantity will last longer, but in lowcountry districts, especially where the rainfall is high, I feel sure many estates will be very seriously inconvenienced, if they are not in difficulties already.

4. For lowcountry places, both Government and private owners could help the planter. The former could supply most, but transport is the great difficulty.

5. In my humble opinion, I should say not sufficiently, generally speaking. The planter must not forget that it is not only his factory that wants firewood, but his coolies do too, to cook their food, and this should be provided for.

6. Yes, I certainly do, but if the plantation is to be on land that is too wretched and had to produce tea, it is not good enough for fuel, and it would be very false economy to plant such places with anything but grass.

7. This depends on altitude, soil, aspect and rainfall, and, if the land to be planted is fresh or worn out. I can lay down no very general rule with such combinations as the above conditions would bring about. I would advocate for low places, Casurina "Wa" *(Cassia Siamea)* "Madatiya" *(Adervanthera pavonina)*, "Gedumba" *(Trema orientalis)* and a few rubiaceous plants, such as "Rawana Idella" and "Unkunda," all of which are good fuel. Above 3,000 feet I don't think one can do better than to plant gums and grevillea, but they should be worked in a proper system, and upon a rotation that would be greatly indicated by the growth of the tree itself.

8. It will always be worthwhile for lowcountry places to plant jakwood for building wood, but I do not think it will pay to grow tea-box woods for individual estates. If the wood is very soft it is liable destruction by wind; if hard, the proprietor won't wait long enough, so long as a quicker substitute can be found."

At a time when planters are anxious to know how they can supplement tea, or economise in their outlay, the hints thus given should be welcome. It may be considered very slow work to plant jâk trees in lowcountry reserves, not suited for rubber or coconuts—but it should be remembered that if selling at any time, the full value of the jâk clearing would be taken into account.

Here then is the comparatively full response from a planter in North-East Matale :—

1.—No experience of coal or coke in tea manufacture. 2—Don't know. 3—Yes, here, from forest reserve; grevillea fields and grevilleas planted throughout the tea. 4 and 5—Depends on the estate proprietor. The Manager can easily keep up the supply by the judicious planting of grevilleas throughout the estate. So far as I know this is being done pretty well all over the Matale district. 6—Yes, if not too far from the estate, or favourably situated for the fuel being transported by wireshoot. 7—For this district *Grevillea*, Pehimbiya, Dawata, Rose-apple. These all do well, planted amongst the tea, without doing damage to the tea, unless when planted too close. 8—Timber for building purposes take so many years to get to maturity that it would be hardly worth my while to spend money on growing such trees. For boxes the new Acme chests will, I trust, in time take the place of the wooden chests.

While on the subject of tree planting, I certainly advocate the planting of fruit trees of all kinds. If more of this had been done by the pioneer planters, *most*, instead of the *few*, of the old estate Superintendents would have had a plentiful supply of fruit for their own use and to spare for their Colombo and other friends who were less fortunate. Even the present generation of planters, I believe, are doing more in that way than our pioneers did. Yet more might be done, and if every planter. *P.D.* and *S.D.* were to do a little, a few years hence Ceylon might become as famous for its fruit as it is for its tea. I think more might be done for Ceylon residents by the Government Gardens, by advertising in the local papers monthly the fruit tree plants and seeds they have for sale, and stating the elevation or districts the various plants are known to do well. I know that plums, which are grown in Haputale without any trouble, grow, but do not yield any crop here, Pear trees the same, Peaches, I have not seen a ripe one in Matale. I have no doubt that the Government Gardens could supply fruit trees suitable to the planting districts were they to act on the suggestion. The railway ought to carry all plants from the Government Gardens free to encourage fruit culture.

This was written before Mr. Macmillan's useful "Circular" on fruit trees suitable for the lowcountry appeared. It should now be supplemented by similar advice regarding the country from Peradeniya upwards. Two other Matale residents favour us with their opinions, and first we have a well-known proprietary Visiting Agent who goes into figures to some purpose :—

1 Wood for driers—oil where an engine is necessary and where ample water power is not available.

2 The cost of wood fuel for driers is about ·35 per lb. of tea and oil about ·55 per lb. Where water is not available there is little or no scope for reduction.

3 Quite equal to the demand from trees planted from 10 to 13 years ago in many instances.

4 In private hands entirely.

5 All estates in this neighbourhood have planted largely, with the result that there will never likely be a fuel difficulty.

6 The planting of fuel trees on most old estates where there is no reserve jungle is necessary and economical.

7 Grevillea, Cedrella Toona and Albizzia stipulata amongst the tea and thornless dadap, not for fuel but for light shade and to aid in improving poor patches of tea.

8 No, though in due course Grevilleas and Cedrella Toonas grown amongst the tea will supply all that is necessary for estates in the way of ordinary rafters, reepers, &c., for lines.

Next a resident Manager on a well-known Matale property tells us :—

1 I have only had experience of wood.

2 I have no experience.

3 I think so at present. Oil engines appear to coming more into favour.
4 Private hands.
5 Not much I think at present, although a good deal has been planted in the past.
6 I do. Firewood will be wanted in future, but trees for timber purposes and fuel should be combined.
7 Trees suitable for fuel as well as building purposes, such as Satin, Jak as well as Grevilleas.
8 Certainly. Timber for building purposes is very scarce indeed. For tea chests I hardly know what to suggest. Lunumidella grows very well in this district, and is a useful timber. Would it do for tea chests? Imbul are used by some.

We are inclined to think that there is no need to plant trees for tea boxes, considering not simply the large foreign supply, but the several substitutes in Acmes, Colindas, Venestas, &c., &c., which are pushing their way and which are bound to be improved and cheapened as time rolls on.

One of the oldest residents tells us:—

1 I only use wood, and have no experience of coal or coke.
2 I pay 25 cents per cubic yard, when cut and piled on estate.
3 In Rangala, Medamahanuwara and the Nitre Cave districts, the supply is plentiful: only a few estates buy firewood. Mr. Spence of Duckwari is the only one who uses coal or coke.
4 All in private hands. No Government wood sold here. Not required.
5 Any number of grevilleas all over the estates, more for shelter and shade than fuel; but they will come in handy for fuel if required.
6 Not about here: the supply is plentiful. If necessary grow grevilleas.
7 Nothing grows so well as grevilleas. Indigenous kinds take too long to grow.
8 No, life is not long enough. Would anything be worth using for timber under 20 years? Some of the softer woods might make tea boxes in that time. As a speculation or for one's children all waste land (poor) might be planted with grevilleas, albizzias, jak, &c., &c.

The Scottish Laird's advice to his son should not be forgotten:—"Aye be stickin' in a tree Jock; it will be growing when you are sleeping." Besides the intrinsic value of property is increased by all judicious planting of useful trees. A well-known Manager comes next, and here again it will be seen that "grevilleas" are the favourite tree to plant, as both fast growing and suiting the tea:—

1 Wood—being the cheapest, English coal costing about R60 per ton on estate.
2 From 1 to $1\frac{3}{4}$ cent per lb. cured tea. Yes, it may be considerably reduced when the timber trees now planted on many estates come to maturity.
3 Yes, to most places in this district.
4 In private hands for the most part.
5 Yes, on large places such as this.
6 Great economy would be effected by early planting up of fuel trees.
7 Grevilleas for this district. They are fast growing and can be planted with advantage throughout the tea.
8 Yes, timber is always in requisition on tea gardens for buildings and factory requirements.

Very interesting information respecting grevilleas do we get from our next Rangala correspondent, and his experience is sure to be of use to planters in other districts who have not thought of grevillea shingles:—

1 I have only had experience with wood which is good if you have enough of it.
2 As time goes on the last will increase. At present we are under half cent per lb. of tea made.
3 Quite equal to the demand. Grevillea trees have been planted regularly every monsoon for years.
4 I would not like to have to depend on Government for fuel, and I hope I never shall.
5 Yes, and I do not think I shall ever have to apply to Government for fuel or other timber.
6 Certainly, rather grow your own timber than buy it.
7 Grevillea and Sapu for buildings.
8 Yes, for both purposes. It might interest some of your readers to know that grevillea makes good shingles. I send you by this post a piece of a shingle that has been on a set of lines for six years, and you will see that the wood, although rather weather-beaten on the surface, is quite good and fresh inside. This shingle was from a tree not over eight inches in diameter. I put on a patch of grevillea shingles when building a new set of lines, and the result was so good (as you will see from the piece I send you) that I have roofed a building with the same wood, but sawn in place of being split. Grevillea is not good as posts put into the ground, but is good for rafters, wall plates or reepers

The shingle sample sent us is all that our correspondent describes: from no other district do we learn of the tree being turned to this use.

Then we have from the Gampola-side of the district:—

1 I only use wood and charcoal here and have no experience in coal or coke.
3 In some cases it is not; and wood fuel has to be bought at high rates.
4 In this district it is in private hands.
5 Yes, most of the estates have planted grevilleas for fuel purposes.
6 Planting timber trees for fuel purposes is absolutely necessary on a good many plantations until a new and cheaper fuel is found out.
7 Grevilleas. They thrive well and grow rapidly.
8 To do so is advisable.

Next we cross over to the West, including Kelani Valley, and we have an old planter writing:—

1 As the heat is drawn through iron, the tea is not affected by the fuel material. Wood is best because cheapest.
2 Wood only is used in these parts (West of Kegalla and West Dolosbage) and is not likely to be reduced.
3 Yes, and will be for some time, but not for long unless trees are planted.
4 In private hands mostly.
5 Not sufficiently so, especially since most of the estates were transferred to Companies.
6 Certainly, every nook and corner should be planted with all kinds of suitable timber.
7 All the indigenous hard timber, also grevilleas.
8 Yes, dambu, keena, del, lunumidella, sapu, suriya, teak, gums, &c.

Next we have a Visiting Agent as well as Manager who gives his opinion in a very straightforward, practical way:—

1 Have only used wood.
2 No experience.
3 On most estates where an engine is the motor, supply of wood is inadequate and cost serious. Where water is obtainable, oil engines will be the future motor.
4 In the higher districts supply is generally dependent on Government; in the medium and lower districts it is more in private hands.
5 Yes, wherever fuel trees will grow they are being planted.
6 Too costly for private individuals to be successful: the work has to be done just as carefully and is as costly as the planting of tea.
7 Lunumidella, grevillea, gums.

8 No, would only plant a few lunumidella where elevation is suitable and gums higher up on the edges of ravines and on waste patches near swamps at wide distances apart. This would give shade in the present and timber for odd jobs in the future.

A Manager bordering on Yakdessa tells us :—

1 I have never used coal or coke for tea manufacture: most estates on this side of the district have large reserves of forest and chena. Firewood costing from 60 to 70 cents a yard delivered at factory.
2 The timber is not very good, mostly from quick-growing trees (a yard of well-seasoned Doon would be equal to about three yards). Cost per lb. made tea one cent where an engine is the motive power.
3 On some estates the supply of fuel is ample; towards the Gampola end of the district fuel is scarce.
4 Mostly in private hands.
5 Yes, very largely.
6 Yes.
7 Grevillea and iron bark gum grow best.
8 It takes too long for any suitable (building timber) tree to grow. Momi chests are so much better than the native-made ones, and in the end cheaper, that I don't think it is worth while paying any attention to growing timber for chests.

And then here is what a Manager in Allagalla or Kadugannawa North has to say:—

1 Wood is the cheapest if you have it good. Steam is more easily kept up with coal. I have not tried coke.
2 Coal costs about 1¾ to 2 cents per lb. tea, wood about 1⅝ cent, wood and coal together about 1½ cent per lb. made tea. I have worked a Crossley's "Otto" oil engine and found the cost of made tea was under one cent per lb. and have been told the "Campbell"'s is about 1¼ cent. This is cheaper than coal or wood.
3 At present there is plenty of firewood to be had from private hands.
4 In this district I think it is dependent on private hands.
5 Very little is being done in this line, and I think it should receive more attention.
6 It is very doubtful as long as firewood is available from private sources at a reasonable rate, there would be no economy in planting fuel trees, but we should look to the future.
7 Grevillea is a fast growing and useful tree and makes splendid firewood.
8 Certainly, plant timber trees for building: a small clearing of say jak, sapu, grevillea and lunumidella will be found most useful in the future.

From Lower Hantane a well-known Manager reports :—

1 Wood for driers, wood and coal for engine.
2 About one cent per lb. made tea. No; more likely to increase
3 Demand rapidly overtaking supply in this district.
4 No, Government forest in this district—most of the fuel bought from villages.
5 Yes.
6 When the cost of planting, upkeep, &c., is taken into consideration the saving is very little or nothing.
7 If timber is planted I prefer grevillea, jak, sapu and A. decurrens.
8 Yes, for building, no island timber equal to momi or deal for tea chests; would recommend jak and sapu for building.

From Hewaheta Upper we have a series of thoughtful, suggestive replies :—

1 Whichever fuel is cheapest. In this district wood. Personally I think charcoal in chulas, the very best way of drying tea, but too long and too expensive a process in the present day. We never heard complaints against the quality and keeping properties of Ceylon tea in the old chula days.
2 Never had occasion here to try coal. Wood is cut and delivered at factory for about 50 cents per cubic yard. Weight from 500 to 800 lb. per yard. I am using old "doon" trees which have been dead 40 years according to local tradition, some standing, some lying down. Most of it sound, but too worm-eaten for timber.
3 Yes.
4 In private hands.
5 Yes, nearly all the estates have grevilleas or "Eucalyptus robusta" planted along the roads and across the tea, more, possibly, as wind belts than fuel.
6 No need at present, but doubtless very useful in certain districts.
7 In this district grevillea and eucalyptus robusta: grevilleas up to 4.800 or 5,000 feet, eucalyptus robusta and melanoxylon from 5,000 feet up.
8 I fear the idea of planting timber for building and tea chests is utopian and apparently grevillea and gums not very suitable unless thoroughly seasoned. All the estates in Upper Hewaheta are fairly well off for fuel though "building" trees are getting very scarce. Rutland estate is using fuel from fuel plantations planted some ten years ago.

Crossing over to Pussellawa we have the following report from a Manager :—

1 Wood alone I consider the best fuel, but in this district I use coal and coke, the latter in conjunction with the wood or coal.
2 Coal is ·95 cents per lb. tea. Wood is ·79 cents per lb. tea. I am of opinion that the cost is not capable of being reduced.
3 No. In this district, taking it as a whole, in a few years wood will be very scarce.
4 In private hands.
5 On many estates fuel reserves are largely being planted.
6 Having no Government reserves, this is resorted to.
7 Grevillea seems to be a fairly quick growing tree and is hard; being, as far as I have seen at this elevation, the best for fuel.
8 I am not in favour of planting timber trees in this district under this heading as I consider the soil is not good enough to make it a success.

From Lower Pussellawa, towards Gampola, we have this return :—

1 Never having used, coal or coke, I cannot express an opinion.
2 With regard to wood-fuel I consider that the minimum cost per lb. made tea has practically been reached and that an increase in price is more than probable.
3 The supply is not equal to the demand, except in a few favoured cases, where the adjoining villages owning small pieces of forest, find it impossible to sell their fuel (owing to transport) exce to the adjoining estate.
4 Exclusively in private hands.
5 Not the attention it should receive considering the importance of the matter.
6 Most certainly about 5 per cent of the acreage of estate should be exclusively for fuel.
7 If not in immediate want of fuel, grevillea robusta, but if a quick-growing fuel tree is required, I recommend albizzia moluccana to be planted. I have found albizzia moluccana planted through the tea at this elevation (? 2,500 ft.) not only useful and quick-growing, but beneficial to tea.
8 No. As regards building timber, although the first outlay is slightly heavier, my experience is that imported timber is the more economical in the end. The same with tea chests.

A Pundaluoya Manager suggests grevillea and toona as the trees to plant and that they should also be useful for building purposes.

The Manager of a large Tea Factory writes :—

1 Wood fuel is the best, cleanest and safest.
2 Quarter to one cent per lb. of tea.
3 Quite equal.
4 Some estates are dependent on Government.
5 Yes, any estate can supply its own fuel by opening fuel clearings.
6 Yes, one estate I visit is entirely dependent upon its fuel plantations which we have planted up.
7 Gum, grevilleas and acacias.
8 No; iron buildings will suit: what little timber is required could be imported.

A resident Manager tells us :—

1 Have no experience of any, except wood which is very efficient.
2 The cost varies on every estate in Ceylon from 25 cents to R2 per cubic yard. All depends upon situation and forest available.
3 The supply is barely equal to the demand at present, especially in Dikoya and Dimbula.
4 Almost entirely in private hands.
5 Yes, very extensive areas of tea are now being shaded with fuel trees.
6 Probably it is more profitable to grow fuel as shade on land already under other products.
7 Grevillea appears to be the best tree for tea; its leaves also make good cattle bedding.
8 Not in Ambagamuwa, where the railway renders it unnecessary.

Next we have a Dikoya Manager with varied xperience :—

1 Forest wood preferable to quick-grown, planted timber. No experience in the use or cost of coal or coke.
2 Reliable figures will be highly interesting.
3 Supply available is being reckoned in mouths on some estates. It would be difficult to ascertain the proportionate acreage of such estates. Growing, planted, timber is being reserved as long as wood can be purchased frcm neighbouring estates. Supply in private hands is being limited.
4 A large supply *of dead wood only* is available from Goverument, by out-lying estates next Crown jungle. Transport cost on wood, either privateor Gov-ernmeut, to long distances would be prohibitive.
5 Most certainly. The amount of timber planted on many estates is very considerable. With careful coppicing it may be ample for such estates' future requirements.
6 The relative cost per lb. made tea, of even expensive fuel, is comparatively small and should be easily covered by the profit obtained from good tea land. It would not be economy to convert such land into plantations for fuel or for timber for buildings. Given waste land, unsuitable for tea, but suitable to timber, the economy of fuel for timber plantations is apparent.
7 Iron bark gum and various species of eucalyptus; acacia, various; red toona; grevillea; albizzia, varieus; sau, ficus, various; casuarinas and others according to soil and elevation.
8 No. 6 answers this as to "buildings." For tea chests, certainly not.

We now cross over to Maskeliya, and first we have a Visiting Agent as well as Manager reporting :—

1 Old dun timber of which there is still a large supply in this neighbourhood.
2 For the above 1-8th to 1·5th (·12 to ·20) of a cent lb. made tea
3 In this neighbourhood it is and always will be. In the centre of the district, on estates where all forest has been cleared, fuel is scarce; but requirements are being met in most cases by the fuel trees planted in the last ten and 12 years.
4 None supplied by Government that I know of.
5 Yes, very largely; grevilleas chiefly.
6 No, unless on individual estates.
8 Yes, but for building purposes only.

A resident Manager :—

1 Wood; have no experience of others.
2 Wood costs from 1-10th to one cent per lb. made tea according to driving power and machinery used. Cost will increase.
3 Yes, at present; but in a year or two there will be a scarcity until fuel trees grow up a bit.
4 Government.
5 Yes.
6 Yes, for those with steam power. Most people have planted up poor patches which, with the trees througbout the tea, ought to be sufficient for the others.
7 Gums and grevilleas as being quickest growers.
8 No.

And finally we have a proprietary Manager reporting :—

1 Have only used wood, but coal or coke should be equally as good.
2 Have unlimited quantities on my estates.
3 I believe it is getting scarce and the price rising.
4 Government, so far in Maskeliya, have sold very little, but they have large reserves of forest available near cart road, not yet touched.
5 Yes.
6 As the jungle is cleared by Government it should be re-planted.
7 Blue gum and grevilleas.
8 Yes, grevilleas.

A well-known Manager of prolonged experience in this division—almost enough to make him the senior of the district—reports :—

1 Having abundance of wood myself, I have no experience of coal or coke.
2 The cost of wood fuel varies very considerably owing to facilites of transport or otherwise.
3 Yes, in Bogawantalawa.
4 In private hands.
5 Yes, considerable attention.
6 No, belts can be made and ravines planted, besides Government forests are all round us, and it would pay better to plant tea and buy fuel of Government.
7 Eucalyptus of all kinds and grevilleas, also red toona.
8 No, for reasons given above (No. 6) I would not.

Next, two proprietary planters give rather contradictory advice,—thus one :

1 Wood is the best at present in this district.
2 By far, the cheapest is wood, as most estates have a good supply.
3 Yes, and we are close to Government forests.
4 Most estates have some jungle and timber trees in belts and ravines.
5 To some extent, yes.
6 Not in this district.
8 No, it is better to purchase from Government forest.

And the other :—

1 Timber fuel alone is used in Balangoda district and I have no experience of any other.
3 Yes, on most estates.
4 On land in private hands entirely.
5 None that I have heard of.
6 I should hardly think so in this district at present.
7 Grevilleas appear to grow best.
8 Timber for tea chests might be grown to advantage in the lower portion of the district.

But from another proprietary Manager, we have, a very interesting experience recorded :—

1 No experience except wood.
2 Do.

3 I consider supply quite equal to demand now, timber trees have so generally been planted.
4 No. 3 answers this.
5 On most estates in this neighbourhood fuel and timber trees have been planted in large numbers.
6 I have just taken in over 1,000 yards of firewood from iron-bark trees, planted in a few ravines some six years ago, which speaks for itself.
7 Grevillea and iron-bark.
8 For timber, yes.

Iron-bark trees yielding so much firewood in six years shows what can be done, and we are told that the ravines so utilised were quite small, while the immediate cause of coppicing was that the shade was interfering with the flush on the neighbouring tea. But the iron-bark trees so coppiced have thrown up much healthy shoots, that it is quite expected four years more will give another similar crop of firewood!

And first we take the full report of a Manager in the Agras, who, it will be observed, expresses a decided objection to the use of coal in tea factories; and who also regards iron-bark as inferior as a fuel :—

1 Wood is preferable to coal, as the latter is too dirty for tea-making, the dust penetrating everywhere; and it also wastes very much. Coke is cleaner than both, and gives out great heat; but looking at the question from every point, wood is the most suitable fuel.
2 The facilites for getting firewood vary so much for different estates, according to their situation, that it is difficult to make comparison of cost. In my case, coal or coke would add over two cents per lb. to the cost of the tea.
3 The supply is equal to the demand at present; and with the large Crown forest acreage in and near the district, I think there is little chance of any other fuel taking the place of wood.
4 At present, the supply is mostly in private hands, and comparatively little is required from Government.
5 Most estates are planting fuel trees, and have been doing so for some years.
6 Fuel plantations have not been found a great success, though I think this is a good deal owing to the way they are worked, and, with a better knowledge of forestry, considerable improvements on the present system might be made.
7 For rapid growth there is nothing to equal gums; but I think it is a great mistake to plant iron-bark alone, which, though quick-growing, gives a much poorer fuel than blue gum and some other kinds. Grevilleas do not grow very quickly here, and would be a long time in giving any fuel, and then it would be of poor quality.
8 I do not think it would pay to plant trees for building and tea chest timber, as for both purposes it will always be got more cheaply, in sufficient quantities, and of better quality from the lowcountry and from abroad.

From Lindula comes a brief reply as follows :—

Coal or coke—as far as I can judge in going about as I do a good deal. Everyone is planting fuel trees and grevilleas are the best, for they do not injure the tea and they make excellent firewood and there seems plenty of it everywhere. The Government fuel or forest planting is a failure: they do not attend to the young plants same as a planter does.

From Kotagala, we have two answers from experienced Managers :—

1 Well-seasoned wood is preferable to coal for driers. I have not tried coke.
2 Wood is cheapest and best, when grown on estate. Where it has to be bought, the difference in cost between wood and coal is very little, for using in engine.
3 The supply is quite equal to the demand, taking the district as a whole.
4 In private hands.
5 Yes, to a certain extent, but not as much as it might.
6 Very little, excepting on land that will not grow tea; most of the land hereabouts can grow both, and usually better than it grows one.
8 I would plant for building purposes, but not for chests.

And, again, we have a specially good word for grevilleas for building purposes :—

1 Wood for drying purposes: it is clean and free from smell. Oil is most convenient for engines.
3 Grevilleas and gums grow very readily, and everyone upcountry can grow their own firewood.
4 A certain amount is dependent on Government; the greater portion is in private hands.
5 Has received and is receiving attention.
6 In waste land, gums and grevilleas can be grown very well together.
7 A mixture of iron-bark gums and grevilleas: they seem to live on different food, and about as many of each kind can be grown together as of one kind singly.
8 For building purposes, old grevilleas make a very good timber.

But our most interesting reply is from a Talawakele Manager who supplements his answers with a letter on the general subject of fuel supply :—

1 I have had no experience of coal or coke.
2 I understand that coal costs double as much as firewood per lb. of tea. Firewood costs from ½ to 1 cent per lb. of tea. Everything depends on whether a steam engine is used or not. If a steam engine is always used, fuel costs about 1 to 1½ ct. when available on that particular estate.
3 Apparently so on most estates. There are, however, about fifteen estates to my knowedge that have no fuel.
4 Partly in Government, but in most cases in private hands. There is a fuel depôt at Talawakele.
5 Yes: most estates are planted up with grevilleas round road edges, and on poor or steep patches, *e.g.*, those not capable of growing tea.
6 Yes: when poor land is available, but not on land capable of growing tea to yield over 150 lb. per acre.
7 Grevillea and iron-bark gum and acacia decurrens.
8 No: cost of sawing, transport, upkeep, etc., would only show a small profit as native low-grown timber, *e.g.*, sapu, jak, dawatas, etc., can be purchased at from R12 to R14 per 1 0 feet, delivered at the railway stations. Excellent Japan chests, etc., can now be purchased. No economy in planting timber suitable for chests.

On the question, as a whole, our correspondent makes the following interesting deliverance :—

With regard to the whole question of fuel, it has many times occurred to me that in those districts and on those estates which have facilities for transport, such as the Dimbula and Dikoya districts, the fuel question is not one of very grave importance as allowing that there is only a limited supply of firewood available, the extra cost of coal or coke over firewood would probably mean about ¾ to 1 cent per lb. of tea; and although even this saving is important, an estate that cannot afford this small extra cost must necessarily be in a precarious condition.

Outlying districts, as a rule, have facilities for getting firewood from jungle reserves, villagers and waste land, with the exception of the Pussellawa district, which, I believe, has for a long time found the fuel question, one of great importance.

Again, those estates that are now experiencing difficulties, *e.g.*, the Kelani Valley, are erecting oil engines, and the improved dryers that are now on the market only use a small quantity of fuel per lb. of tea.

The cost of fuel per pound of tea on all those estates that I am interested in, is not more than 1 ct. per lb. of tea, and some of these estates purchase half of their supplies from villagers.

One of the great difficulties is not the cost so much as to transport, which unsettles labour, as coolies hate the constant hard work inseparable, where long transport is experienced, and especially in hot climates.

There is a great deal of truth in this: any extra work for coolies should be made as easy as possible.

Our first answer is from a proprietary resident planter:—

1 Hard wood is the best I know. Have no experience of coal or coke.
2 Good hard wood costs here 95 cents per cubic yard, and will go higher in price.
3 At present yes, in the future no.
4 Both.
5 Not that I heard of.
6 Yes, if we could at a quick-growing hard wood.
7 Don't know a quick-growing hard wood.
8 Lunumidella for tea-chests; don't know any quick-growing building timber. Tried Hal ten years ago: some are now six feet high.

Next follows that by a Manager in the middle of the district:—

1 Wood, unless coal or coke can be procured cheap.
2 From half-cent to one cent per lb. in the low-country.
3 Yes, although of course some estates have to buy firewood.
4 Mostly in private hands. I know of no estate buyi g from Government
5 Not so much as might be done in the Kelani Valley. Albizzia moluccana is a fast-growing tree and makes a fine firewood.
6 Yes; I think all estates should plant up more trees than they do.
7 Albizzia and Ingasaman grow the quickest.
8 They might be planted, I believe, in planting trees about the estate in the lowcountry; but any tree for building purposes would be too long growing.

This is a mistake: the property is improved in value by useful trees being put out in judicious utilisation of reserve or waste land.

The Morawak Korale is well off for timber to judge by the following reply thence:—

1 Wood; coal is unsuited for many of the firing machines. The smoke and fumes from it and coke make their use objectionable, where steam is the motive power: 0·50 cents to 0·80 cents per lb. made tea; without steam 0·20 cents approximately.
3 Yes.
4 In private hands.
5 No.
6 Not here.
8 No; supply is ample for long to come.

Next, we give the views of the veteran coconut planter who watches the widespread cutting of fuel for railway purposes near the railway:—

1 I know nothing of tea, so cannot give my opinion.
3 I fear before long wood will be very scarce, as Government use all they can get for the railway.
4 All depends on Government: we pay for supports 3 feet long at R3 per 1,000, the cost to cut 1,000 supports is R5, and removing the same from jungle R1·50 per 1,000, and pay Government for a permit each time 25 cents.
5 Government has planted some acres with Domba.
6 I would certainly plant any land I have lying waste with trees for fuel had I it.
7 Keena, Domba, Lunumidella, Ketakela and any other fast-growing trees.
8 Certainly, Lunumidella, Katu Imbul, Hal, Keena, Sapu, wild mango, Bombu, Hulanhik.

And he adds:—

My opinion is that in course of time, the natives will have nothing in the shape of timber to sell. Even now they are cutting their Jak, Kaju and other trees and selling them to Government in order to get a little money for the time being. My belief is that by and bye the natives will not be able to provide any timber for the railway; and unless Government used coal or other fuel, it will be the ruination of the country. Government have planted a little Domba, but it is not suited for fuel. If I had 150 acres I would plant them for fuel.

It is certainly a question whether land suitable for growing casuarinas in the low-country would not prove a good investment for fuel purposes, if at all near the railway line or the city of Colombo. For year by year, no doubt, the available supply will become less, and year by year the fuel clearing would become more valuable.

A Visiting Agent reports:—

1 Experience only with wood.
2 Where procured from Government, capable of reduction, if estates' requirements received more favourable consideration.
3 & 4 A rather heavy acreage dependent upon Government for the supply of fuel.
5 Receiving attention and being energetically proceeded with.
6 Under certain circumstances, an undoubted economy ultimately. Patana land in this district should grow timber.
7 Robusta gum, toona, acacia decurrens.
8 Not quite necessary, perhaps, as a speciality in either case, especially as the amount of uncultivated land other than Government or military is limited.

Mr. Nock favours us with the following:—

1 Wood, in this locality, as the transport of coal or coke would be a heavy item.
2 Cannot say.
3 Yes, and likely to be for many years.
4 Altogether in private hands.
5 Yes, but to nothing like the extent I think advisable.
6 Most decidedly.
7 Acacia decurrens, acacia melanoxylon, acacia dealbata, eucalyptus robusta, frenella rhomboidea, and grevillea robusta (the first five above 4,000 and the last up to 5,000 feet elevation.)
8 Yes, certainly; and cupressus macrocarpa and cupressus knightiana come first for elevation above 3,500 ft.; they yield excellent timber for tea chests, and for all general building purposes. Pinus chinensis and pinus massonia are also well worth planting for this purpose: and for general timber acacia melanoxylon, eucalyptus robusta, grevillea robusta cupressus toulosa and sapu.

The following return shows the growth of some of the trees recommended, at the Hakgalla Gardens :—

GIRTH.

(From ground.)

	at 1ft.	at 5ft.	at 12ft.	at 20ft.
	ft. in.	ft. in.	ft. in.	ft. in.
Cupressus macrocarpa (age about 35 years—height 89 ft.)..	11 0	9 0	7 8	6 7
Cupressus, species, Knightiana? (age about 35 years—height 63 feet)	12 0	9 8	7 5	5 10
Acacia dealbata (age 17 years, for seed—height 77 feet) ..	10 9	8 0	8 0	6 6
Cryptomeria japonica (age about 30 years—height 54 feet) ..	7 8	5 8	4 9	3 8
Pinus montezumae (age about 30 years—height 56 feet) ..	9 0	7 0	6 8	6 0
Cupressus torulosa (age about 30 years—height 56 feet)	9 10	6 0	5 0	4 [illegible]

[Two trees of C. torulosa on Naseby, about 14 years of age, are between 40 and 50 feet high, and are 5 feet in girth at stoutest, tapering equally to summit.] There is surely encouragement here to go in for timber-tree growing to some extent in most high estates.

Finally, we have a very useful report from a well-known New Galway planter, who has always taken an interest in arboriculture :—

1 No experience except with wood-fuel.
2 At present, the cost of wood-fuel is ·75 cents per lb. of made tea, and is not capable of being reduced.
3 At present, yes; and there are several thousand acres of Government forest-land in the vicinity.
4 No fuel is at present procured from Government, as estates, without a forest reserve, have their own private plantations coming on.
5 On most estates here, tree plants have been put out, but more for shelter than timber and fuel.
6 Most decidedly, as the day must come when private indigenous supplies will become exhausted; all inferior land should be reforested with quick-growing trees.
7 For medium to high elevation, say 4,000 feet and upwards, there is nothing so far to beat acacia decurreus, either for rapidity of growth or quality of fuel; but a good ravine should separate any plantation of acacias from one of another product as, though unlike many of the same family, it does not throw up suckers: it has very searching roots.
8 Building timber is always likely to be in demand and should receive general attention for high elevation. Acacia melanoxylon and some of the best encalypti should be planted for timber, each species by itself. Cupressus macrocarpa grows to a fine tree and might be useful for tea chests, also albizzia moluccana.

Our next instalment, from Haputale, Badulla and Madulsima, will close the series.

Our first is from an Estate Manager in higher Haputale :—

1 Have only had experience of wood.
2 Cannot answer this, for above reason.
3 I have sufficient for many years to come.
4 Private.
5 A few acres planted up every year. Also grevilleas planted along roads.
6 An absolute necessity, unless you have large reserves of forest.
7 Eucalyptus robusta grows in any soil; but roots, if allowed to spread into tea, are injurious. Grevillea robusta is of slow growth at this elevation and in patana soil suffers.
8 Timber trees always useful for repairs of buildings. Would not pay at this elevation to grow trees yielding timber for chests.

From Badulla division we have two very practical reports from well-known Managers. First :—

1 I have had no experience of coal or coke, and can, therefore, express no opinion as to their relative merits.
2 Do. do. do.
3 In this district the supply of wood fuel is on most estates fairly good. In this town of Badulla, however, the supply is barely equal to the demand and the price tends to increase.
4 Government has discontinued the sale of firewood in Badulla and supplies are now obtained from private sources. The area of forest land, belonging to the Crown, is very small.
5 Yes; a very considerable area (376 acres) has been planted up on the Company's estates besides numerous wind belts and roadside trees.
6 Certainly. I consider much more should have been done by most estates in this direction,
7 Grevilleas, iron-bark, etc.
8 Cedrella toona is a most suitable tree for ceiling work and grows freely. I do think we could grow timber suitable for chests on hills in Ceylon. Besides there is now an endless variety of tea chests on the market.

The second is not so full :—

1 I have experience of wood fuel only, and do not think any other kind has been used in this district.
3 Most estates have sufficient firewood. I know of only two factories that buy firewood.
4 Firewood is purchased from Government and from private people too.
5 Yes.
6 Yes; fuel must be planted for the future.
7 Iron-barks, I consider the most suitable for this district.
8 Not in this district.

Namunukula division sends us a full and suggestive statement as follows :—

1 I have only had experience of wood as fuel for tea manufacture.
2 Cannot tell, having had no experience of coal and coke.
3 On estates, where fuel has been freely planted, there is an ample supply.
4 Government supplies very little fuel to estates in this district.
5 On most estates it is; but on some estates where it has not been planted freely, the supply is short.
6 Certainly. Where the tea is all good on an estate I would plant fuel clearings. but on most estates there are hard exposed ridges, which should be planted up with fuel through the tea at sufficient distances apart.
7 Grevillea in tea, iron-bark and wattles in clearings, and also toonas; the growth of grevilleas in this district is marvellous, and it makes excellent fuel.
8 Where there is no forest reserve, this should be done. Cedrella toona has been planted in this district with excellent results. The growth is good and so is the timber. I do not know of anyone who has planted timber for tea chests.

And next we have from Passara :—

1 I have had only experience of wood fuel.
3 Yes, there is a large supply generally and fully equal to the demand.
4 There is a good supply both in private and Government hands.

5 Yes, most estates in this district have fair acreages of fuel and shade trees planted.

6 Speaking generally of the strictly Passara estates, there is not much present necessity for fuel plantations, there being large supplies available.

8 It would be wise in my opinion were estates to plant suitable timber for building purposes, but not for tea chests.

Finally, we have the views of a Madulsima proprietary planter, who writes as follows :—

1 I have no experience of any fuel, but wood.

3 I think most estates in this neighbourhood have a fair supply of fuel, but one or two may have to start oil-engines before long.

4 The available fuel is almost entirely in private hands, but estates along the Lunugala cart road can easily obtain supplies from Government reserves.

5 Grevilleas have been freely planted everywhere and in a few years time, if not too soon, will add, very largely to the available fuel supplies.

6 I would not go to the expense of clearing up fresh land for fuel plantations, but parts of our old coffee land, which are too precipitous or of too poor soil for tea, might well be put into fuel.

7 Grevilleas and iron-bark gums seem to do best in this climate.

8 No! it would take far too many years for the trees to attain a sufficient size for sawing.

Believing that many planters will like to have the whole series of replies, suggestions and experiences—from Matale in the North to Morawak Korale and from Kelani Valley to Madulsima in the Far East—in a collected form, we shall put the whole together in a pamphlet form, uniform with the issue in respect of Manuring; Plucking, Pruning and Preparation; and Labour Supply—so as to be convenient for reference.

ROYAL BOTANIC GARDENS.

EXTRACTS FROM THE REPORT OF THE DIRECTOR FOR 1899.

1.—Changes and Movements in the Staff.

The Director was on leave from June 11 to November 10, inclusive ; the bulk of this time wa spent in England, especially at Kew, in botanical work of different kinds. A careful study wa made of the Ceylon and Indian *Podostemaceæ* in the herbaria and museums of Kew, Paris, &c. numbers of specimens of economic products were taken home for report and comparison ; and every opportunity of obtaining information of value in the conduct of the work done at Peradeniya wa taken. Mr. Nock, Superintendent of Hakgala, acted as Director during the five months, and carried on the work of the Department with efficiency, his work at Hakgala being performed during the las two months by Mr. Macmillan, Curator of Peradeniya Garden. Mr. E. E. Green, hitherto Honorary Entomologist, was appointed to a permanent post as Entomologist during the year, and assumed dut on October 6. Mr. Parkin left for England in April, after the completion of his investigations int indiarubber.

The conductor of the Badulla Garden, Mr. D. A. Gunaratna, retired at the end of January, an his post was filled by the promotion of Mr. D. D. Fernando, first upper gardener. Mr. M. G. Perera clerk and foreman of Hakgala, retired in July ; and Mr. A. Perera, foreman of the Experimenta Grounds, Peradeniya, was appointed in his stead. The latter foremanship was filled by the appointment on probation of Mr. J. M. Alwis, second upper gardener. The vacancies in the upper gardenership were filled by the appointment of Messrs. T. Young and W. de Alwis.

2.—General.

The general condition of the two principal gardens has been much improved during the year and there has also been an improvement in the branch garden at Badulla. The extension of th scientific side of the Department has also progressed steadily during the year. A new laboratory, in which there will be room for the proper carrying out of researches into the physiology and patholog of plants and the investigation of their properties and uses on a small scale, has been constructed by the Department of Public Works, and should be ready for occupation early in 1900. In it there i also sufficient room for a few workers from abroad, whom it is hoped to attract to Ceylon in increasing numbers. The scientific staff has been strengthened by the appointment of an Entomologist. Mr Parkin left after carrying out some very useful investigations into the chemistry, &c., of rubber which are described elsewhere.

Much attention has been given to the thorough reorganization and equipment of the Department, and in a couple of years more this will, it is hoped, be fairly complete. The Library, tha most essential part of such an establishment, has been overhauled, catalogued, and re-arranged, an some of the most serious gaps in the literature filled ; a large number of periodicals dealing with agriculture and botany are now received, and the Library will in a few years become a very good one It may be well in this place to call the attention of the general public to the fact that this Library exists, and that reading permits may be obtained on application. The publication of circulars ha been continued, and seems to be appreciated by those for whose use they are designed. With th increase of the staff these publications will be more frequently issued. A considerable number o experiments with economic plants have been carried on, but we are much handicapped by want o space for larger experiments, which would be better carried on in a special experimental garden.

3.—Peradeniya Garden.

This has been much improved during the year. From the Curator's report I make th following extracts :—

General.—The process of rendering useful and attractive as far as possible every portion of the extensiv grounds has been vigorously carried on. Special attention has been given to the old arboretum which was hithert more or less beyond our means, and much useless and superfluous growth removed in favour of young and mor

important trees and shrubs. The landscape effect of the river has been greatly enhanced by isolating into large clumps the hitherto continuous fringe of bamboos on the river bank which concealed from view a great part of the superb beauty of the river round the gardens. This was a very laborious task as the roots of the bamboos had formed huge masses very difficult to disintegrate, but which if left in the ground would quickly grow afresh and spread with renewed vigour.

Cultivation.—The propagation of all kinds of plants of economic value which are generally, or likely to be asked for by planters and others has been steadily carried on. Fruit trees especially have been considered, and of these there are at present in stock in moderate quantities about 68 kinds, most of which are included in a circular of fruit trees issued by us during the year. Ornamental aquatic plants are now becoming a feature of the gardens. The *Victoria regia* (giant water-lily) is now represented in the lake by several plants which at present (December) are flowering freely; and for the first time the supply of seed from our own plants has been more than sufficient for local and foreign demand. The effective Papyrus (*Cyperus Papyrus*) of the Nile has also become quite established and is much admired. The effect of the treatment we have lately been able to afford was to induce an unusually large number of trees to bear flowers and seeds for the first time here. Among these the following may be mentioned:—*Achmea mexicana*, *Acacia Hindsii*, *Albuca Nelsonii*, *Amphicarpœa Edgeworthii*, *Andira inermis*, *Cassipourea* sp., *Cyperus Papyrus*, *Dendrobium atroviolaceum*, *Eleocarpus granitas*, *Gasteria verrucosa*, *Gynura sarmentosa*, *Heteropteris purpurea*, *Pimenta* sp., *Randia mussaenda*, *Stereospermum glandulosum*, *Passiflora violacea*.

Experimental Plots.—The total of these now represent about thirty different tropical products. The situation formerly occupied by the different kinds of coffee close to the nursery having proved unsatisfactory, owing to its rather swampy condition, the rarer kinds of coffee were transferred to a selected plot in the experimental grounds, where they are thriving; although some of these were 10 to 12 feet high at the time, and the weather proved deceptive as to rain, not a single death resulted from their removal. Five varieties of Arabian coffee, received last year from the Botanic Gardens, Java, as mentioned in last year's report, and 24 plants of the Liberian-Arabian hybrid coffee, were also planted here in well-prepared ground.

Tobacco seed of eighteen varieties was received towards the end of the year from the Jamaica Botanic Gardens, portions of which were distributed to all the Government Agents for trial in the different Provinces. The seedlings from that which was kept and sown at Peradeniya are now being tended in the nursery, and separate plots have been prepared for their reception in different parts of the gardens.

Visitors.—The number of signatures in the book of visitors from abroad was 2,778, the largest number on record. Among these may be mentioned H. R. and I. H. Princess Henry of Prussia, who planted a Flamboyante tree (*Poinciana regia*) on the north-east side of the Circle; Lord and Lady Elgin; Director, Botanic Gardens, Calcutta; Director, Botanic Gardens, Trivandrum; Director, Botanic Gardens, Upper Congo, Africa.

4.—Hakgala Garden.

This has been kept in excellent order. The following extracts from the Superintendent's report show the chief work of the year:—

Perhaps the greatest improvement during the year has been in the laying out of the grounds near the new picnic arbour, and bringing it into a state more in keeping with the rest of the garden and the requirements of the increased number of visitors. A large quantity of rocks were blasted out, and a strong retaining wall 150 feet long, with an average height of 8 feet, was built at a distance of 33 feet from and in a line with the front of the arbour. The space between the two has been filled in level and turfed, and now forms a nice green lawn, from which can be seen one of the finest views in Ceylon. The slope to the south has been planted with shrubs. The scrub at the back has been grubbed up, the ground made even and turfed, and the paths remade.

Hares and mousedeer were, if anything, more destructive than usual, and it was disheartening to see the damage they caused. Frequently, during a single night, many of the specimens of annuals and others, that had been carefully raised in pots and planted out, were totally destroyed. I am, therefore, very pleased to be able to report that 200 yards of one-inch mesh wire netting have been granted, and this was fitted up all round this garden in December. The posts to support this wire are of sawn timber, and it is hoped this will serve its purpose effectively, and will also be useful for training creeping plants on.

Rose Garden.—Nothing besides the usual pruning, manuring, and general upkeep was done in the rose garden. Although there was occassionally a very good show of blossoms, the plants generally have not done well. They have made but little growth and have an "unkind" look. The excessive rains followed by severe drought partially account for this.

Flower Garden.—Owing to the dull wet weather in December, 1898, and January this year, with hardly any sunlight, there being no less than 31·42 inches of rain on 43 days during the two months, and a bad attack of "black grub," bedding out plants had a very bad time of it. Large numbers of supplies had to be put out every day for some time. However, towards the end of February most things were established and flowered freely all through March, April, and May, and again in August and September, the pelargoniums and geraniums especially flowering well all through May. Cypripediums in pots also flowered well this month, and one plant that we have under the name *C. Stoneii* bore flowers that measured 8¾ inches from tip to tip of the tail-like sepals.

Camphor.—The growth of the young camphor trees has been very vigorous. The trees are 12 feet apart and although now only a little over four years old, some of them are touching. We now have ample material for making experiments of the extraction of camphor from the leaves and young shoots. The highest tree is now 18 feet with a spread of branches of 12 feet, and the stem is 20 inches in circumference at the base. Apart from its economic value of this tree, it is very ornamental and will grow in almost any climate.

Oxalis.—With an inadequate supply of labour, it is impossible to keep this obnoxious weed from spreading in all parts of the garden, but 35½ bushels have been carefully weeded out during the year from the borders and beds and from the herbaceous, flower, and rose gardens, &c.

Foot-and-mouth Disease.—This disease broke out among the cattle in the middle of July, and continued to be very bad for about a month. Nearly every one of the cattle was affected with it, some very badly, and one old cow died. The others soon recovered after treatment with Jeye's disinfectant.

Water Supply.—The want of a constant supply of water was again very much felt during February and March, also in July and August. At times during these droughty months nearly all the labour was engaged in carrying water and watering, and even then many plants were lost. I am glad to report that a trace has been surveyed by the Public Works Department, but, so far as I am aware, nothing else has been done. It is greatly desired that a vote for conveying a constant supply of water to the gardens should be sanctioned with as little delay as possible.

Survey.—I am very pleased to be able to report that a survey of the garden has been sanctioned, and I trust that this necessary work will receive early attention.

Porcupines.—These destructive animals made a raid on the gardens in June, and again in November and December. In the former month they destroyed a large quantity of arum and lily bulbs, and during the two latte: months they pretty well cleared the garden of *Morea Robinsoniana* and terrestrial orchids and arum lilies in th fernery. I offered Rs. 2·50 for every one killed in and around the garden, but none have been caught so far.

Rats.—Large quantities of rats suddenly appeared in May and June, and committed great damage to the newly-sown seeds and young plants. In June no less than 145 were trapped. In 1887 we had a similar invasion, though not in such great numbers as this year.

Elephants.—A small herd of elephants passed through the upper part of the gardens, within 50 yards of the Superintendent's bungalow, in the early part of June, but I am glad to report they did no damage to cultivated parts.

Visitors.—The number of visitors recorded during the year was 1,805. This, however, does not include all, as during several months of the year only those who signed the book have been taken into account. The largest number in any one month was 424 in April, against 297 in the same month last year. The smallest was in October, when only 19 persons signed the book. The lowest number in any month last year was 74 in August.

5.—Henaratgoda Garden.

The garden has been kept in fair order during the year. Owing to my absence in England he general overhaul of its contents has been postponed to 1900.

Visitors.—The total number during the year was 517, against 222 last year.

6.—Anuradhapura Garden.

The available labour was largly taken up in watering the plants during the long and severe rought.

7.—Badulla Garden.

The former conductor having retired on January 31, his place was filled by the appointment Mr. D. D. Fernando, under whose charge the garden has been improved considerably during the ear, and is more efficiently worked.

The general condition of the garden has been much improved this year, and the supplies of ants for sale have been increased. A considerably larger sum has been received during the year om sales of plants than in previous years.

10.—Notes on Economic and Ornamental Plants.

Tea.—The total export is by far the largest on record, being 129,894,156 lb., against 119,769,071 last year. Exchange has been practically steady at about 1*s.* 4*d.*, and prices have been rather tter than last year, especially for lower grade teas.

The export to Russia shows the very satisfactory result of a further increase to 3,949,740 lb. m 2,714,003 lb. in 1898 ; to America there is also an increase from 2,180,188 to 3,080,002 lb. ; the port to the United Kingdom, however, has risen almost 8 million pounds.

The extension of cultivation has nowpractically ceased, and attention is being devoted more improvement of methods of cultivation and manufacture, and to prevention and extermination of ease. Mr. M. Kelway Bamber has been in the Island the whole year engaged in investigations o methods of manufacture, &c. Insect diseases have given trouble in many places, as described in . Green's report. The spread of certain fungus blights, more especially of the "grey blight" ntioned in last year's report, having given rise to some alarm, it was deemed advisable to lay the ct state of affairs before the public by means of a circular on Tea Blights, which was issued in y, and in which the grey blight (*Pestalozzia Guepini*), the brown blight (new to science, and now

named *Cryptosporium Camelliæ*), and others were described, and the method of treatment and prevention indicated. The publication of this circular, and of many more or less alarmist letters in the newspapers, attracted universal attention to these blights, and the planting community is now well acquainted with their appearance and with the ways of treating them. There is thus every ground for hope that the industry will never suffer from blight in the way that coffee did, as the danger is much more likely to be recognized and taken in time by preventive measures. A "scientific" era is now beginning for this industry, and success will be to those who most intelligently apply to practice the improved methods of cultivation, manufacture, prevention of disease, &c., just as is the case with other long-established cultivation industries.

Coffee.—The export shows a large increase over 1898, being 18,542 cwt., against 13,313 cwt. The whole of this is plantation coffee, no native coffee having been exported.

Many varieties of coffee are on trial in the Peradeniya Gardens, but are still too young to bear. Experiments in grafting the various varieties on the hardiest stocks are in progress.

Cacao.—The absolute increase in the export is the largest since 1895, being 5,763 cwt. The total is 42,745 cwt., against 36,982 cwt. last year. The canker has given a good deal of trouble during the year, but on the whole planters seem now to be able to keep it in hand, and with a fungus pest this is, as a rule, the best that can be hoped for.

The new varieties of cacaos that were introduced into Peradeniya some years ago are doing fairly well, but have not fruited yet. Experiments in grafting on hardy stocks are being tried here but it is too early yet to publish any results.

Coca, Kola, &c.—There has been no demand for coca seeds or plants during the year. The kola trees in the south garden at Peradeniya bore fruit for the first time.

Cardamoms.—The export fell from 531,473 lb. last year to 499,959 lb. in 1899. A considerable area has been planted of late in the northern and some other districts.

Other Spices.—The export of cinnamon has again increased, that of chips from 1,414,165 lb. to 1,829,127 lb., though there is a slight fall in the export of bales, from 2,534,056 lb. last year to 2,515,03 lb. in 1899, and of oil from 183,312 to 118,778 oz. The export tables also show for the first time heading "Wild Cinnamon," of which 195,008 lb. bales and 628,418 lb. chips were exported. Th consisted largely of the bark of *Litsea zeylanica*, *Aporosa Lindleyana*, and other trees mixed wit real cinnamon. The fraud has now been exposed, and it may be hoped that this will also be the la time this heading will appear in the exports.

Vanilla continues to be planted, though not so much as in recent years. Experiments a being tried at Peradeniya on the suitability of various different trees and shrubs as supports. Th young trees of scented allspice, received in 1890 from Dominica, flowered for the first time, but d not set fruit.

Cocoanuts.—The cultivation of this palm is still extending, and appears to be a profitab undertaking. Attention may be called to the fact that its cultivation is now being undertaken in Cu and the other new American tropical colonies, and may in time become very important there. Th nearness of Cuba to the United States gives it one great advantage over Ceylon for that market. Th export of desiccated cocoanut has increased during the year, but that of all the other products h fallen off. The actual figures are for oil 400,979 cwt. against 435,933, for copra 325,401 cwt. again 506,277, for desiccated cocoanut 13,571,084 lb. against 13,040,534, for poonac 174,786 cwt. again 216,620, for nuts 11,723,392 against 12,027,714, for coir rope 12,090 cwt., yarn 75,525 cwt., fibre 91,5 cwt., against 12,333, 75,819, and 95,779 cwt., respectively.

Other Palms.—The export of palmyra fibre has fallen very much, and is barely larger than i 1897, being 16,838 cwt. against 41,522 last year and 16,793 in 1897. Kitul fibre has been exported the extent of 2,030 cwt. against 3,794 last year. An interesting pamphlet on the Kitul and its Uses Mr. T. B. Pohath-Kehelpannala was published early in the year by the Government Printing Offic.

Indiarubber.—This product has attracted considerable attention during the year, and has bee a good deal planted in the Colony, though not so much as in districts further East, where the s seems more suitable. The auction sale of seeds was well attended, and the seed sold at a rate of abo Rs. 15 per 1,000, a good price though little more than half of what was obtained last year.

A circular was published in April, dealing with Panama rubber (Castilloa), and pointing o the good qualities of this species, of which there is unfortunately but little in the Island. This w followed in June by a large circular, chiefly containing a paper by Mr. Parkin on Indiarubber in general, but with special reference to the species grown in Ceylon, and dealing with the new ad improved methods of tapping and preparation for market. This is one of the most important paps on rubber which has been published in recent years. It will probably be supplemented during 190 by a further circular dealing with the results of the analysis and valuation of the numerous samps that have been prepared by the various methods tried in the Colony.

The present position, with regard to rubber cultivation, may perhaps be summed up as follows. For those who have rubber plantations in bearing or of fair age the prospect is good, owing to the high price of rubber; this same factor of price, however, has induced a great deal of attention to the production of substitutes for indiarubber, and though at present none of these are so good as the natural rubber for most purposes, they are always being improved, and it is extremely probable that in a few years they may be largely used instead of rubber, and cause a drop of the price. It is therefore by no means so certain that rubber plantations now being laid out will prove so remunerative as is often supposed. It is essential to their future success that only good land be chosen, and that the best kind of rubber be planted, and the best methods of cultivation and preparation employed. It seems pretty certain, from Mr. Parkin's observations, that the young twigs or seedlings cannot be used as a source of rubber of good quality; they merely yield a glutinous substance, isomeric perhaps with caoutchouc, but without its elasticity and tenacity. It therefore appears almost certain that rubber planters will have to wait until the trees are six or more years old at any rate, and hence should give close attention to anything that is being done in the introduction of substitutes for rubber. The two species which appear on all counts to be the best suited for cultivation are the Para rubber and the Panama rubber (Hevea and Castilloa). Of these, the one which is better suited to the use of machine methods of preparation of rubber, and which also seems to give the larger yield, is the Castilloa, but there is every prospect that the Hevea will also prove successful, especially in swampy alluvial soil, the Castilloa needing better-drained, sloping ground. In view of the remarks made above, it would be unwise to recommend either species as an exclusive cultivation, but both may be recommended as adjuncts to tea or cacao, for which they appear to do pretty well as shade.

With regard to methods of preparation, it seems probable that it will be necessary, if good prices are to be obtained, to use the machines that are now being perfected, or the chemical methods as elaborated by Mr. Parkin; the latter are very suitable for Hevea, the former for Castilloa.*

Guttapercha.—There is nothing of special interest to record with regard to this. None has been planted, so far as known, in the Island during 1899.

Rhea and other Fibres.—There has been no demand for rhea this year, and unless some improvement in machinery, or some competition between the manufacturers, causes a better price to be offered for the ribbons, there seems but little likelihood of the cultivation being taken up here. A recent number of the *Indian Agricultural Ledger* calls attention to the excellent fibre afforded by the "wild or ban rhea" of Assam, *Villebrunea integrifolia.* The fibre has been reported upon very favourably in England; it resembles rhea (to which this plant is closely related), but is devoid of the gum, and is hence much more easy to prepare. This species grows wild in Ceylon (see Trimen's Flora, IV., p. 118), in Hantane, Alagalla, Nitre Cave, Haputale, and other places from 2,000 to 5,000 ft. elevation, and is worth the attention of tea planters as a possible source of revenue. Being a tree of 20 ft. high, it is perhaps scarcely to be recommended for actual planting without further demonstration of the good quality of the product, but those who have it wild upon their estates should preserve it, and if possible prepare specimens of the fibre and send them in for report.

Kitul and palmyra fibres have been dealt with above, also coir. There has been some inquiry during the year for *Agave sisalana*, *Furcraea*, and other similar plants.

Cinchona.—The export has again decreased, being 618,921 lb., against 975,784 last year. A very small quantity of this plant appears to have been planted during the year, and it is possible that the cultivation may still continue as an adjunct to tea, though not likely to be much extended. The demand for the alkaloids other than quinine (cinchonidine, &c.) may render the cultivation of *Cinchona succirubra*, *Ledgeriana*, and some of the hybrids again profitable.

Camphor.—The plants at Hakgala have done well this year. There has been but little inquiry for them. A fungus disease appeared on camphor in some districts during the year, and did some damage.

Tobacco.—Owing to the over-production of this product and the defective methods of curing in use locally, and other causes, the cultivation in the north of the Island has proved less remunerative, and with the view of extending, if possible, the demand from abroad for our product, experiments upon a comparatively large scale have been started during the year. Large quantities of the best kinds of seeds have been got from Cuba, the United States, Italy, and other countries, and have been distributed to those who have been willing to help in the trial by cultivating and curing these tobaccos in different parts of the Island. The tobaccos are as yet too young for curing, but seem to grow well in many parts of the Colony, and during the approaching curing season it is intended to try various methods of treatment, and to prepare a large number of good samples for further report

* Attention may be called here to an unfortunate misprint in Mr. Parkin's paper: On p. 148, last paragraph, the figures should be 0·9, 3·9, 0·25, and 8·0, respectively; and on p. 152, paragraph 2, line 11, for 8·3 per cent. mercuric chloride read 0·83 per cent.

and analysis in Europe. There seems no reason to suppose that Ceylon is incapable of growing a good quality of smoking tobacco, though it may not be able to compete with the best kinds grown in Cuba and other places. The cultivation is one which is likely to be of importance along the line of the new railway to the North.

Oils.—Cocoanut and cinnamon oils have been mentioned above. The export of citronella oil has again increased, from 1,365,917 lb. in 1898 to 1,478,756 lb. in 1899. Olive plants are being tried in some of the up-country districts, but it is too early yet to see any result.

Tanning Plants.—The Crawford Cutch Co., established in 1895 (see report) to extract cutch from mangrove bark at Trincomalee, &c., has ceased operations this year. *Acacia decurrens* has proved a valuable tan bark for high levels and has been a good deal planted.

Fruit.—The supply of fruit plants has been increased so far as our resources will allow, and we have now a small supply of most tropical fruits available for sale at any time. The Curator of Peradeniya prepared a very useful guide to the cultivation and uses of the fruits suitable for moderate elevations, which was published as a circular.

Fodder Plants.—Trifolium Johnsonii, which has been recommended as probably suitable for up-country patanas, has been on trial at Hakgala. Six small beds were planted out in August on a piece of ordinary patana land. The ground was thoroughly broken up, made even, and the plants put out at distances of one foot apart ; three beds were liberally supplied with manure, the others not. The plants in the manured beds grew well, and at the end of November had completely covered the beds with foliage and flowers 4 to 6 in. high. The unmanured plants hardly grew at all, and most of them died. It seems unlikely that this plant will grow on patana land without manure. The plants when in full flower were attacked by hares and eaten down ; we have therefore no seed, but can supply a few dozen shoots to those who may care to give this plant a trial. Lucerne at Hakgala, though the plants are now over eight years old, has continued to crop well during the year.

Trees.—The cork oak at Hakgala, which has been hanging back for some years, has at least made a start, and has grown well during the last six months. *Casuarina montana*, a Java species, which seems likely to suit the barren Uva patanas, is on trial at Hakgala and other places. The drought told severely on the plantations of oaks and pines at Hakgala. Those, however, that have taken hold of the soil look very well.

Ornamental Plants.—The new varieties of Cannas at Peradeniya have been added to during the year, and have been a great success and in much demand for private gardens. The private nursery gardens in the Island have been improving considerably of late, and there is less need for the Government gardens to supply any ornamental plants other than the very newest sorts and rare species.

11.—Report of the Entomologist.

Mr. Green was absent in England from April 8 to October 6. He has done much work since his return.

Morowak Korale Tea Pest.—During my absence from Ceylon numerous letters appeared in the local press describing a caterpillar plague in the Morowak korale district. Alarming reports were published of the rapid spread of the pest, and the occurrence appears to have caused a considerable scare. No specimens of the insect seem to have been preserved, and its identity can therefore be conjectured only. From the somewhat vague descriptions received it is evident that the caterpillar belonged to the *Limacodid* family, and to the section bearing urticating spines. They may have been any of three species, *Thosea recta*, *Thosea cana*, or *Natada nararia*, three species that have on several occasions come into temporary prominence as tea pests. Several correspondents presumed the caterpillar to be that described in my early work on "Insect Pests of the Tea Plant" under the name of the "blue-striped nettle-grub" (*Parasa lepida*). But that is a considerably larger insect, and one of which I have never experienced any serious outbreak.*

The caterpillar in question made its appearance in the latter half of July, and seems to have been extraordinarily abundant. It is reported to have completely defoliated ten acres of tea in as many days, and to have also stripped any cinchona trees that were growing in the affected area. The superintendent of the estate on which it appeared made careful observations at the time, and has supplied me with the following particulars of the invasion.

The caterpillars were first noticed on the 15th July on a patch of about half an acre. Two days later 3 acres were affected, after which the pest extended its area at the rate of 5 acres a day, until 25 acres were attacked. Broad belts were cut round the affected area and all the included tea pruned. The prunings and sweepings were burnt. The pest disappeared completely for the time. Afterwards young caterpillars were observed on the new flush. The flush was therefore stripped for four successive rounds, resulting in the final extermination of the brood, and no further damage was incurred.

The point that attracted most attention, and was the chief cause of alarm, was the remarkable rapidity with which the plague is said to have spread. This must be accounted for, not by the caterpillars having actually travelled

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* Since writing the above, Mr. F. M. Mackwood informs me that he raised moths from some of these caterpillars, and that they proved to be *Thosea recta*, Hmpsn.

at that rate—(they are a slow moving species, belonging to the family *Limacodidae* (slug-like), and could not individually travel any great distance)—but from the eggs of an earlier brood having been deposited on successive days, starting from the original centre and extending outwards as the moths became dispersed.

The second (or more properly the third) brood of very young caterpillars observed on the new flush no doubt resulted from eggs laid by moths from the survivors of the principal brood.

The superintendent reports that caterpillars were seen to emerge from some of the cocoons. I can only account for this by suggesting that some of the caterpillars may have temporarily sheltered themselves in empty cocoons; or possibly the cocoons may have been accidentally broken open, revealing the caterpillar reduced in size, as it always becomes just before pupating. The usual transformations must have been passed through: from egg to caterpillar, caterpillar to chrysalis (enclosed in its cocoon), chrysalis to moth; then another batch of eggs and a repetition of the cycle.

Caterpillar pests (of indigenous species), though temporarily very severe, are seldom of such serious importance as many less sensational pests. Their period of activity is usually short, and the attack is not often repeated on the same spot in the following season. Most of such outbreaks might be prevented if the earlier and smaller broods of the insects had been noticed and destroyed.

Tea Tortrix.—An exception to the usual rule (as regards repeated attacks) must be made in the case of the Tortrix caterpillar, which has recently been very destructive in the Dikoya and Hatton Districts. I have well-authenticated reports of successive attacks in October, November, and December. It is said to come on when the tea is in full flush, from four to six months after pruning, and results in a very serious loss of leaf. This pest is now being studied, and will form the subject for one of the Botanic Gardens Circulars.

Beneficial Insects.—The little colony of ladybirds (*Exochomus nigromaculatus*) from the Cape, the arrival of which was recorded in my report for 1898, at first throve very well. During my absence in England it was well looked after by Mr. J. F. Jowitt, of Craig, Bandarawela, who, after liberating 70 beetles on bug-infested coffee in Haputale, returned to me 184 insects in various stages, making a total of 250 from the original 5 survivors of the consignment received just twelve months before. They continued to breed freely until about the middle of November, during which time 30 more beetles were liberated on an Araucaria tree infested with *Eriococcus araucariæ*, and 32 were despatched to the Government Entomologist in Java for experimental work there. Since the middle of November no more eggs have been deposited. The adult insects have been gradually dying off, and there are no young ones to take their place. It is evident that this is the season at which the beetles naturally cease breeding. The same circumstances were noticed last year. I hope to be able to retain a sufficient stock till breeding recommences, about March, to further increase the colony, and to liberate larger numbers with a view to their becoming naturalized in the Island.

Though I am not very sanguine that these particular beetles will ever prove an efficient check to the ravages of "green-bug" (*Lecanium viride*), I am still of opinion that their introduction will be distinctly beneficial. They feed readily upon many different scale-insects, and may possibly prove more useful against other species than the coffee-bug. With regard to its work upon *Lec. viride*, it does not make a sufficiently clean sweep of the scale-bugs. It picks and choses individuals, leaving others untouched. It is however more efficient than appears on the surface. It singles out gravid females and eats out the egg-containing parts. Many of the scales also, that at first sight appear to be untouched, have really been punctured and the fluid contents imbibed.

Disease of Annatto (*Bixa orellana*).—Early in October specimens of a common cattle fly (*Haematopota*, sp.) were sent into the office, with the report that they were causing serious injury to annatto plants in the Matale District. As the flies of this family are known to be blood-sucking insects, it was thought extremely improbable that they could be the real cause of the injury. An official visit was made to the estate for the purpose of investigating the matter. It was found, as expected, that the flies, though present in large numbers, had no connection with the disease. It was a significant fact that the flies were thickest in the neighbourhood of a cattle-shed. The injury to the annatto shoots was referable to a canker disease, aggravated in some cases by *Helopeltis*, the eggs of which insect were occasionally found embedded in the diseased tissues.

Diseased cabbage plants were received from Nuwara Eliya in October. The roots were badly affected by the "finger and toe disease" (*Plasmodiophora brassicæ*), while the leaves were completely riddled by caterpillars of the almost cosmopolitan "diamond-back moth" (*Plutella cruciferarum*).

Tea-mites.—The annual loss inflicted by "red spider" and other tea-mites is engaging the attention of the office. Experiments are being started, designed to mark the effect of pruning in different months with regard to the prevalence or otherwise of tea-mites. A circular on the subject is being prepared, and it is hoped that ready assistance will be given in conducting the very simple experiments required and sending in the equally simple reports. It is only by the recording of abundant data, and its collation, that it will be possible to obtain reliable results.

Weevils on Tea.—In November a rather serious plague of weevils on young tea was reported from the Bogawantalawa District. The beetles appeared in young clearings at an elevation of about 5,000 feet, and caused serious injury by eating off all the new shoots springing from stumped plants. Specimens were sent to England for identification and proved to be *Brachyaspistes tibialis*, Jekel, MSS., a species hitherto represented in the British Museum collection by a single example only. Live beetles were kept under observation. They fed freely on young tea leaves and remained alive for more than two months. Small batches of eggs were laid by the beetles just below the surface of the ground, which hatched out as minute yellowish grubs, but did not thrive under the artificial conditions of a breeding cage, and soon died. It is probable that in nature the grubs feed upon the rootlets of plants, either of the tea itself or of some weed.

Quarantine experiments, in the form of fumigation of plants received in Wardian cases, have been attended with most satisfactory results. The hydrocyanic acid gas treatment has been employed. It has been ascertained that subjecting the plants to a high density of the gas for a comparatively short period is more effective than using a lower strength of gas for a longer period. For an ordinary Wardian case, with cubic contents (above soil level) of about 10 feet, gas was generated from $\frac{1}{8}$ oz. cyanide, $\frac{1}{8}$ oz. sulphuric acid, and $\frac{1}{4}$ oz. water, and the plants kept under

treatment for half an hour only, at the end of which time the case was thrown open. As a check on the experiments sprays of plants with living *Orthezia* insects (lantana-bug) were included. In each case the result was most satisfactory. Every insect was killed and not even the most delicate plant was appreciably injured. *It is important that the treatment should be conducted after sunset:* 5.30 to 6 P.M. is the best time. On subsequently examining the plants treated (which had just arrived from England) two notable scale-insects—not yet established in Ceylon—were found, viz., *Lecanium hesperidum* (the scale of the orange tree), and *Pulvinaria floccifera* (an enemy of Camellia plants). Both these insects would probably flourish in this country, the former on Citrus trees of all sorts, the latter on tea (a close ally of the Camellia). Fortunately the insects had been killed by the treatment. The plants have since been under observation, but no fresh attack has occurred.

Xyleborus fornicatus, the "shot-hole borer," still attracts attention and has been recorded from several fresh localities. Where attention is paid to the destruction (by burning) of prunings in affected fields, the pest can be kept within bounds, though it is practically impossible to exterminate it.

Orthezia insignis (lantana-bug) is still rampant. It has firmly established itself as a garden pest, where its presence causes the disfigurement of some of our most ornamental shrubs. Cases of its sudden appearance on small plots of tea have been reported; but prompt measures (pruning and burning) have been successful in eradicating it in such situations. No natural enemies have been observed. Nothing seems to relish the *Orthezia*.

The damage caused by *White Ants* (termites) in Ceylon and the cost of preventive measures to safeguard timber is recognized to be enormous. From its subterranean habit it is difficult to fight against this destructive pest. But this very habit would lend itself to the bisulphide of carbon treatment. The fumes from the bisulphide are heavier than air and sink to the bottom of any receptacle or hole. It is a well-known means of destroying wasps in their nests; it is the most effective way of reaching weevils and other insects in large masses of grains; and it is coming largely into use in parts of the United States to destroy rats and ground-squirrels in their holes. For white ants all that would be necessary would be to soak pieces of tow in the liquid and place them in the principal entrances of the ant-hills or burrows, block up all the holes, and leave the fumes to do their deadly work. Unfortunately carbon bisulphide is not obtainable in Ceylon. Owing to the inflammable nature of the fumes the Shipping Companies will not accept the risk for the sake of the small quantities required. I have been unable even to obtain a sample for experimental purposes. If it could be shown to be a certain means of exterminating white ants, large quantities of the chemical might be employed, and it might be possible to obtain supplies by some of the coasting steamers that now carry other explosives, paraffin oil, &c.

Many scale-insects in Ceylon are subject to various *Epidemic Fungal Diseases* which serve to keep them in check. With the assistance of Mr. John Parkin, of Cambridge, the different species of these entomophagous fungi are being studied, and cultures are being propagated with a view to their possible use against other scale pests.

Collections of *Coccidæ* have been sent in for determination from India, Mauritius, Java, and Australia. Various other insect pests have been received from the planting districts of South India for examination and report.

In conclusion, I must earnestly ask for the assistance of planters and all agriculturists in the collection of specimens, observations, and all data connected with insect pests. Without such assistance it it impossible to efficiently carry on the work of the Department. I am frequently informed that such and such a product has been attacked by some insect; but that specimens were not sent in, as it was probably one that I knew all about, and that I must be overwhelmed with such letters and material. I would therefore impress upon planters that reports of each attack of even the commonest insect pest should be sent in to the Department, accompanied, whenever possible, by specimens. Such reports are filed and the specimens preserved and registered for future reference. This material will be of the greatest value in determining the times and seasons and the distribution of the various injurious insects.

12.—Laboratory and Herbarium.

The present laboratory has been occupied during the year by the following workers:—Mr. Parkin, from January 1 to April 14; Mr. A. K. Coomaraswamy, at intervals from January 1 to March 5; Professor K. Goebel, of the University of Munich, from January 22 to February 9; Mr. E. S. Goodrich, of Oxford University, from July 14 to July 18; Mr. E. M. Wilcox, of Harvard University, from September 19 to November 1; Mr. E. E. Green, from October 7 to December 31; Dr. A. Preyer, of Berlin, from November 24 to December 31. Mr. Parkin was chiefly engaged in investigations in the methods of coagulation of indiarubber milks, the preliminary results of which have already been published in the circulars. Mr. Coomaraswamy was chiefly engaged in the collection of material for teaching purposes; Professor Goebel collected a considerable amount of material of various kinds for further study in Europe; Mr. Goodrich was occupied in zoological study, Mr. Wilcox and Dr. Preyer in investigations of various points in economic botany. The Director was engaged in many economic studies, and in completing the monograph of the *Podostemaceæ;* these studies were continued during the summer in Kew and Paris.

JOHN C. WILLIS,
Director.

Peradeniya, January 30, 1900.

(From the Chamber of Commerce Price Current.)

Exports of Ceylon Produce from Colombo and Galle during the Past Ten Years.

COMPILED AS FROM 1st JANUARY TO 31st DECEMBER IN EACH YEAR.

	Coffee, Cwt.			Cinchona.				Cinnamon.		Wild Cinnamon.								Coir Cwt.									
	Plantation.	Native.	Total.	Branch & Trunk. lb.	Tea. lb.	Cocoa. Cwt.	Cardamoms. lb.	Bales lb.	Chips lb.	Bales. lb.	Chips. lb.	Coconut Oil Cwt.	Copra. Cwt.	Desiccated Coconut. lb.	Coconut Poonac. Cwt.	Coconuts.	Plumbago. Cwt.	Rope.	Yarn.	Fibre.	Ebony. Cwt.	Deer Horns Cwt.	Sapanwood. Cwt.	Palmyra Fibre. Cwt.	Kitul Fibre. Cwt.	Citronella Oil. lb.	Cinnamon Oil. oz.
Total Exports from 1st Jan. to 31st Dec., 1899	18,542	..	18,542	618,921	129,894,156	42,745	499,959	2,515,031	1,829,127	105,008	628,418	400,079	325,401	13,571,084	174,786	11,723,392	616,385	12,090	75,525	91,588	11,688	..	5,560	16,838	2,030	1,478,756	118,778
Do. do. do. 1898	13,173	140	13,313	975,784	119,769,071	36,952	531,473	2,531,056	1,414,165	..	...	435,933	506,277	13,040,534	210,620	12,027,714	473,075	12,333	75,819	95,779	3,875	..	5,258	41,522	3,704	1,365,917	183,312
Do. do. do. 1897	19,012	371	19,383	653,346	116,054,567	31,503	532,830	2,574,537	1,067,051	..	..	400,600	106,601	12,054,452	192,479	13,610,508	357,257	11,732	91,460	74,470	3,380	...	5,742	10,793	1,984	1,182,867	181,536
Do. do. do. 1896	21,882	865	22,747	1 309,560	108,141,412	31,360	452,595	2,223,865	808,502	..	...	343,797	50,049	10,603,598	138,358	13,858,881	340,491	10,143	68,326	56,516	6,664	...	9,560	18,757	2,071	1,132,141	132,057
Do. do. do. 1895	60,029	3,991	63,920	921,085	97,939,871	27,420	374,635	2,169,527	920,136	..	...	384,140	30,765	8,551,073	174, 175	10,800,712	334,921	12,082	90,112	77,226	7,240	..	8,327	26,565	3,530	1,182,255	78,587
Do. do. do. 1894	31,553	652	32,205	2,497,616	84,591,714	21,110	306,317	1,969,905	657,726	..	...	487,571	30,642	5,722,202	165,156	8,292,699	339,521	14,416	91,746	67,738	8,393	457	5,191	22,257	2,277	938,471	88,150
Do. do. do. 1893	52,539	2,651	55,190	3,571,325	84,406,064	30,658	428,210	1,995,257	667,115	..	...	389,712	44,923	6,414,908	188,588	11,079,028	337,605	7,819	81,831	56,404	6,381	349	6,678	35,004	2,417	668,530	140,334
Do. do. do. 1892	40,604	2,539	43,143	6,793,320	71,153,657	17,327	372,510	1,947,538	615,125	..	...	550,977	134,590	3,849,724	204,166	9,717,886	426,761	7,895	101,375	43,445	5,934	720	10,704	†	2,491	844 502	106,303
Do. do. do. 1891	81,225	5,467	86,692	5,679,339	68,274,420	20,532	422,109	2,309,774	588,264	..	...	409,521	45,660	1,416,330	192,210	6,699,403	409,268	10,576	90,699	37,897	3,539	1,735	2,577	...	1,899	703,974	122,835
Do. do. do. 1890	82,005	4,004	86,009	8,728,836	46,901,554	15,981	387,940	1,894,514	441,447	..	...	362,690	129,502	*	145,088	11,907,969	385,754	9,379	75,030	35,967	9,373	2,288	1,259	...	2,397	909,942	108,787

* No records previous to 1891. † No records previous to 1892.

DISTRIBUTION FOR 1898 AND 1899.

Countries.	Coffee: Cwt.			Cinchona.		Tea		Cocoa.	Cardamoms.	Cinnamon.*		Coconut Oil.		Copra.	Desiccated Coconut	Poonac.	Coconuts	Plumbago.		Coir: Cwt.			Ebony.	Sapanwood.	P'myra Fibre.	Kitul Fibre.	Citronella Oil.	Cinnamon Oil
	Plantation	Native.	Total.	1899 Branch & Trunk lb.	1898 Branch & Trunk lb.	1899 lb.	1898 lb.	Cwt.	lb.	Bales. lb.	Chips. lb.	1899 Cwt.	1898 Cwt.	Cwt.	lb.	Cwt.	No.	1899 Cwt.	1898 Cwt.	Rope	Yarn.	Fibre.	Cwt.	Cwt.	Cwt.	Cwt.	lb.	Oz.
To U.K. ...	14293	..	14293	486704	712468	103948124	96133833	40739	363232	112112	680038	185205	123316	37106	9466691	15453	10208961	185935	160500	...	65347	48247	6423	3203	1373	2020	766594	24318
,, Austria...	1	..	1	...	...	8231	14873	..	...	..	106030	6173	11282	25986	218698	11	...	14	201	...	..	3	...	1466	...	...	..	..
,, Belgium	111	..	111	..	4421	14424	13590	640	654	83960	112560	2287	903	76634	140623	86075	50550	39582	52749	...	..	10555	..	...	764	...	...	...
,, France ...	165	...	165	33	28228	98952	100001	34	..	83254	2870	..	4209	44232	1680	...	500	1014	612	2	192	602	623	203	..	...	1467	2792
,, Germany	125	..	125	1630	..	346959	352252	216	58133	639039	650637	9248	9003	26454	1402540	72554	652480	76152	64142	....	281	10580	4635	688	1933	..	1335	87080
,, Holland	..	...	..	...	..	30211	26351	...	...	...	...	...	...	401	157700	600	...	9192	4400	...	...	100	...	...	211	...	...	...
,, Italy ...	..	...	...	...	21035	13521	6730	..	20	117200	144220	404	608	...	...	...	1610	15	..	...	246	210	...	...	...	...	...	...
,, Russia ...	44	..	44	...	..	3949740	2714003	...	1323	...	...	..	5	104968	...	...	56651	1188	994	...	...	..	...	...	...	...	...	...
,, Spain ...	..	...	...	...	...	18700	44650	..	..	262100	65900	..	...	..	..	...	...	...	...	...	...	...	...	...	...	...	..	...
,, Sweden...	...	...	..	...	...	78088	42471	...	4036	5500	...	206	...	8833	6460	...	...	409	200	...	...	200	7	...	..	...	...	...
,, Turkey ...	1	...	1	...	..	18733	73974	..	636	...	...	...	...	..	...	...	...	..	...	...	..	..	..	...	...	...	...	..
,, India ...	149	...	149	...	...	567616	1091559	1	54848	2500	...	66728	125687	787	14382	...	57593	499	523	196	3438	313	...	...	...	10	7537	3246
,, Australia	3043	...	3043	...	..	15606833	15126891	266	...	8350	37632	742	531	...	814266	93	...	1599	976	60	2111	10072	...	...	132	..	25865	1342
,, America	442	..	442	94005	186819	3080002	2180188	549	6240	146600	28000	102767	65800	...	1303842	...	1062	300552	187719	..	3054	8985	...	...	...	..	667332	...
,, Africa ..	9	..	9	..	724	288239	372242	...	2206	400	1240	...	10	...	21862	...	693385	...	..	10	...	462	...	...	...	..	...	..
,, China ...	79	..	79	36549	22089	1384490	1185445	...	7751	45000	...	3883	2691	...	22340	...	600	234	28	1503	627	...	...	...	62	...	8410	...
,, Sin'pore	80	..	80	...	...	83813	59867	300	880	...	...	23336	91893	...	...	..	..	..	20	10319	229	1259	...	...	...	...	216	...
,, Mauritius	..	..	..	...	..	100248	33299	...	..	...	..	..	...	...	..	...	...	...	...	..	...	...	...	...	...	...	..	...
,, Malta ...	..	...	..	...	...	257232	196852	...	...	...	...	...	...	...	..	...	...	...	11	...	...	...	...	...	...	...	..	...
Total Exports from 1st Jan to 31st Dec. 1899.	18542	...	18542	618921	975784	129894156	119769071	42745	499950	2515031	1829127	400979	435933	325401	13571084	174786	11723392	616385	473075	12090	75525	91588	11688	5560	16838	2030	1478756	118778

* Also Wild Cinnamon in 1899—189,108 lb. bales and 592,279 lb. chips.

Monthly Shipment of Ceylon Tea to All Ports—1898 and 1899.

	United Kingdom.		Australia.		America.		Monthly Total for All Ports.	
	1898. lb.	1899. lb.	1898 lb.	1899 lb.	1898 lb.	1899 lb.	1898. lb.	1899. lb.
January	8152769	6860166	1290955	825457	140265	139232	10111251	8116146
February	6726001	7816449	1031972	1758979	101216	365431	8210418	10479566
March ...	9518775	8589706	1153867	923463	186893	108736	11131202	10010691
April	6941316	8284687	1175597	1316928	136001	252539	8647156	10175261
May	9943674	8662028	1832109	1244661	227464	206990	12840550	10913290
June	9733910	13595938	1561280	1421146	396661	368272	12160995	16415216
July	10215743	8598703	1129211	1586503	196815	156591	12152764	10885026
August	6397823	6255363	1179516	1647043	354220	597686	8608170	9348112
September	7317074	8693857	904218	1497831	130250	148994	8885712	10925675
October	6229336	8812133	1768911	1355C97	38185	486257	8513733	10964434
November	6401214	6602252	931436	983365	139836	190584	7686675	8696819
December	8556198	11076842	1167819	1046365	132102	58690	10820446	12963920
Total ...	96,133,833	103,948,124	15,126,891	15,606,833	2,180,188	3,080,002	119,769,071	129,894,156

Supplement to the "Tropical Agriculturist."

COFFEE AND PEPPER EXPORTS FROM SOUTHERN INDIA, 1898-99.

To the Editor "Ceylon Observer," Colombo.

Tellicherry, 3rd October, 1899.

DEAR SIR,—I have the pleasure to furnish you with my Annual Statement of Exports of Coffee and Pepper for the year ending 30th June, 1899, the total figures of which approximately represent what the crops of these products in India for the year in question amounted to. As usual, I further show the distribution of shipments to various ports, and have added the figures relating to exports for the three previous years for the purpose of comparison.

COFFEE.—As I anticipated when I last wrote, the crop for the past year shows a vast improvement in regard to quantity over the previous one, being no less than 93 % greater. Of the quantity shipped cwt. 2,40,432 may be regarded as Plantation, and the balance cwt. 1,53,659 as Native Coffee, showing an actual increase in Plantation Coffee, as compared to the previous year of cwts. 1,18,915, and in Native Coffee of cwts. 72,001. Unfortunately the beneficial result of a bigger crop has to a great extent been nullified by the great fall in the price of the product and I find it impossible to give my usual figures as to the average value of the Coffee exported; there being such a wide difference between the prices obtained by desirable crops and parcels, as compared to inferior; in fact a quantity of the latter were unsold at 30th June.

In regard to the coming crop, it is evident that nothing like last year's quantity will be secured, but for the sake of all concerned, it is hoped that it will exceed that of 1897-98, and that there may be an improvement in the London and continental markets for same.

PEPPER.—The total exports of this spice amounted to cwt. 2,37,041, or some 89 per cent more than was shipped last year, the value of which at an average of R32-8 per cwt. amounts to R77,03,832-8-0. The price of Pepper averaged R8-8 per cwt. over that of the previous year; and although Tellicherry still continues to be the Chief port of export for this spice the large and increasing quantity shipped from the ports of Cochin and Alleppy is remarkable.

I am, dear sir, yours faithfully,

RALPH TATHAM, Agent to Arbuthnot & Co.

MESSRS. ARBUTHNOT & COMPANY'S ANNUAL STATEMENT OF EXPORTS OF COFFEE AND PEPPER FROM SOUTHERN INDIA DURING THE SEASON ENDING 30TH JUNE 1899.

From:	Mangalore.				Cannanore.		Tellicherry.				Badagara.	
	Coffee.			Pepper.	Coffee	Pepper	Coffee.			Pepper.	Coffee	Pepper.
To	Plant.	Nat.	Total				Plant.	Nat.	Total.			
London Cwt.	78,818	..	78,818	165	...	...	36,532	617	37,149	14,870	..	..
Glasgow ,,	100	...	100	...	...	...	...	...	...	..	..	..
Marseilles ,,	...	16,850	16,850	...	..	...	518	4,156	4,674	700	..	..
Havre ,,	...	35,526	35,526	...	...	...	9,559	31,118	40,677	5,695	...	..
Amsterdam ,,	...	...	...	..	...	...	...	..	...	...	...	..
Trieste ,,	...	1,316	1,316	..	...	..	3,304	7	3,311	6,710	...	..
Genoa ,,	...	...	..	..	...	...	...	...	..	5,464	..	...
Leghorn ,,	..	...	...	..		...	...	...	...	1,375	..	..
Ancona ,,	...	...	...	...	...	...	..	..	...	1,045	..	..
New York ,,	...	...	...	..	...	..	...	..	...	700	...	...
Naples ,,	...	...	...	...	..	..	...	...	...	1,351	...	..
Venice ,,	...	100	100	...	..	...	...	302	302	502	..	..
Hamburg ,,	498	289	787	...	...	..	1,491	..	1,491	12,759	..	...
Antwerp ,,	...	1,803	1,803	..	...	..	53	3,338	3,391	..	...	..
Adelaide ,,	...	...	...	...	...	...	...	...	...	..	...	..
Sydney ,,	...	...	...	...	...	...	280	..	280	...	...	...
Melbourne ,,	...	...	...	...	..	...	1,120	..	1,120	..	...	...
Auckland ,,	..	...	...	...	...	...	...	...	..	..	..	...
Natal ,,	...	...	...	...	...	...	...	...	..	..	..	..
Hong Kong ,,	...	...	...	...	...	...	...	..	..	..	..	...
Rangoon ,,	...	...	...	...	...	...	...	...	..	94	..	..
Suez ,,	..	..	..	..	...	...	..	..	..	..	..	...
Turkish, African, Arabn. and Persian Gulf Ports ,,	...	1,373	1,373	269	...	550	..	...	...	1,440	..	..
Bombay & other Indian Ports ,,	...	11,036	11,036	1348	..	[illegible]	215	1,531	1,746	38,030	..	5,571
Ceylon	...	...	...	..	..		..	413	413	..	...	...
Cwt.	79,416	68,292	147,708	1776	...	31,006	53,072	41,482	94,554	90,761	..	6,571
Less Imports	..	..	..	...	...	..	30,681	15,419	46,100	23,615	..	...
1898-99	79,416	68,292	147,708	1776	...	31,006	22,391	26,063	48,454	67,149	..	5,571
1897-98	32,926	46,759	79,685	2807	..	27,222	14,072	20,705	34,777	41,632	..	6,355
1896-97	28,939	56,411	83,350	2287	3	52,178	13,795	24,140	37,944	69,518	..	20,623
1895-96	47,206	81,169	128,375	2671	...	26,366	23,424	33,656	57,080	52,623	...	7,919

From:	Calicut.				Beypore.				Cochin.			
	Coffee.			Pepper.	Coffee.			Pepper.	Coffee.			Pepper.
To	Plant.	Nat.	Total		Plan.	Nat.	Total		Plan.	Nat.	Total	
London Cwt.	20,100	7,8 25	33,025	...	14,820	22,296	37,116	...	421	274	695	8,568
Glasgow ,,	..	..	..	..	...	...	...	...	...	...	...	...
Marseilles ,,	326	3,078	3,404	10	...	...	...	...	..	...	...	249
Havre ,,	3,684	4,761	8,445	819	..	...	...	...	...	...	...	1,705
Amsterdam ,,	..	..	..	...	...	...	...	...	101	...	101	500
Trieste ,,	1,394	516	1,910	3,233	3,280	180	3,460	...	...	...	...	600
Genoa ,,	..	..	..	1,975	..	...	...	...	...	...	..	1,318
Leghorn ,,	..	..	...	200	...	...	...	...	...	...	..	...
Ancona ,,	..	...	...	100	..	...	...	...	...	..	..	200
New York ,,	200	..	200	3,450	..	...	...	...	...	...	..	7,098
Naples ,,	..	...	..	200	..	...	..	..	...	..	..	..
Venice ,,	...	...	..	225	..	...	..	..	...	...	..	..
Hamburg ,,	1,862	2	1,864	2,676	529	845	1,374	..	...	...	...	5,051
Antwerp ,,	...	..	..	...	101	33	134	..	...	..	...	..
Adelaide ,,	160	...	160	...	...	...	...	..	...	..	..	..
Sydney ,,	200	..	200	..	..	..	..	..	...	..	..	..
Melbourne ,,	760	400	1,160	..	..	..	..	..	...	..	..	..
Auckland ,,	25	..	25	..	..	...	..	..		..	..	..
Natal ,,	...	..	..	..	..	..	..	..	..	..	..	..
Hong Kong ,,	...	..	..	..	..	..	..	..	...	..	..	311
Rangoon ,,	...	..	..	...	...	...	...	...	..	8	.. 8	1,082
Suez ,,	..	...	..	124	...	...	...	...	...	..	...	802
Turkish, African, Arabn. and Persian Gulf Ports ,,	1,933	2,960	4,893	968	...	..	...	..	...	101	119	14,290
Bombay & other Indian Ports ,,	50,952	3,043	53,995	9 700	5,308	3,163	8,471	34	13	...	...	...
Ceylon	1,050	1,151	2,281	105	..	...	.	..	..	..	..	...
Cwt.	88,646	23,736	112382	23,778	24,038	26,517	50,555	34	543	383	926	43,664
Less Imports	369	..	359	615	..	...	...	34	..	..	..	...
1898-99	88,287	23,736	112023	23,133	24,038	26,517	50,556	..	543	383	926	43,664
1897-98	33,641	7,612	41,253	13,844	24,181	860	25,041	..	780	43	823	8,469
1896-97	31,648	4,851	36,494	10,926	25,644	1,095	27,549	20	708	266	974	22,715
1895-96	39,663	9,595	49,258	18,696	22,332	516	22,828	5	756	158	914	12,970

From:	Alleppey.		Quilon.		Colachel.		Tuticorin.		Madras.		TOTALS.	
To	Coffee	Pepper.	Coffee	Pepper.	Coffee	Pepper.	Coffee	Pepper	Coffee	Pepper.	Coffee	Pepper.
London Cwt.	60	847	...	...	...	...	939	..	24,758	..	213,463	24,459
Glasgow ,,	..	...	...	...	...	...	...	...	..	..	100	...
Marseilles ,,	...	...	...	...	...	...	..	...	110	..	25,038	959
Havre ,,	...	...	.	...	..	..	..	..	82	..	84'7 0	8,302
Amsterdam ,,	...	...	..	...	..	...	..	...	..	..	101	509
Trieste ,,	...	...	..	...	..	..	..	...	...	..	9,996	10,543
Genoa ,,	...	...	..	...	...	...	..	..	...	...	...	8,757
Leghorn ,,	...	...	..	...	..	...	..	...	...	...	...	1,575
Ancona ,,	...	..	..	...	...	..	..	...	..	...	...	1,345
New York ,,	...	1,962	..	...	...	...	..	..	..	...	200	13,210
Naples ,,	...	...	..	...	...	...	..	..	..	...	..	1,551
Venice ,,	...	...	..	...	..	...	..	...	..	..	402	727
Hamburg ,,	...	...	..	...	..	...	..	...	..	...	5,51[illegible]	21,386
Antwerp ,,	..	..	...	...	...	...	..	..	..	...	5,328	..
Adelaide ,,	..	..	..	.	...	..	..	..	...	...	160	...
Sydney ,,	..	..	..	...	..	..	..	...	...	..	480	...
Melbourne ,,	..	..	..	..	..	...	..	...	3	...	2,283	..
Auckland ,,	..	..	..	..	...	...	..	...	..	..	25	..
Natal ,,	..	..	..	..	...	..	..	...	6	69	6	69
Hong Kong ,,	..	...	...	..	...	...	..	...	...	...	...	311
Rangoon ,,	...	45	...	...	..	..	..	...	...	..	8	2,121
Suez ,,	...	..	...	..	..	...	...	...	...	8	..	934
Turkish, African, Arabn. and Persian Gulf Ports ,,	...	128	217	...	..	..	8,282	63	...	..	6,266	3,358
Bombay & other Indian Ports ,,	25	60,586	...	..	..	...	..	...	...	..	7[illegible],891	1 0,089
Ceylon	..	207	..	33	.	50	4,930	744	13	..	7,557	1,139
Cwt.	85	63,775	217	33	...	50	9,151	807	24,072	77	440,550	201,335
Less Imports	...	..	...	..	..	...	..	...	..	..	46,459	24,294
1898-99	85	63,775	217	33	..	50	9,151	807	24,972	77	394,091	237,04
1897-98	..	21,571	93	232	...	..	4,807	843	16,696	455	203,175	125,231
1896-97	62	38,580	45	104	..	..	6,456	255	18,883	47	211,760	222,383
1895-96	105	35,750	930	580	...	62	10,004	207	37,743	62	307,417	157,911

WILSON, SMITHETT & CO.'S TEA REPORT FOR 1899.

CEYLON TEA IN 1899.

MESSRS. WILSON SMITHETT & CO.'S MEMORANDA.

The two features which must stand out most prominently in a record of the tea market during 1899 are unquestionably the strong position maintained by common tea during the first six months, and in a minor degree in the closing months of the year, and the dispute which arose between sellers and buyers on what is known as the "one pound draft question."

Throughout the autumn of 1898 tea for "price," owing to the heavy supplies of INDIAN, had ruled at a quotation so low as to ensure its going rapidly into consumption. Consequently before the year under review was many weeks old it was discovered that the stocks had become much depleted, and with the likelihood of moderate supplies of all growths in the near future, the trade, accustomed since the development of the CEYLON industry to a liberal supply from one quarter or the other during the greater part of the year, found itself suddenly confronted with the danger attendant on the pursuit of a hand-to-mouth policy. Early in February, therefore, a rush to provide against possible contingencies ensued, and Souchongs for "price" rapidly advanced to a quotation which had not been reached for some years. After Easter heavier shipments than anticipated from CEYLON made it appear likely that the moderate estimate of the island's crop available for this country would be considerably exceeded, and a much quieter tone supervened, which, however, chiefly affected the grades above common, the latter remaining at a comparatively high quotation until the end of June, when unusually heavy shipments from CEYLON and the advice of a substantial increase in the approaching supplies from CHINA, as well as the early advent of the INDIAN crop, removed all apprehensions as to a shortage, and the trade at once transferred its attentions from common to the long neglected, and at that time scarce, fine quality teas. In July business was suddenly brought to a standstill in a somewhat unexpected manner. For some time past the attention of INDIAN and CEYLON growers had been occupied by the necessity for adopting every possible means to cheapen the cost of production, and after instituting all possible economic reforms in field and factory, they felt compelled to turn their attention to what was considered an unjust burden on their produce at home. The system adopted by the Customs in weighing was thought to press unduly on the growers and importers, and they now sought to obtain compensation for the loss thus incurred by proposing to abolish the 1 lb. draft allowance which they regarded as a concession not unjustified in the present days of reduced and continually diminishing values. The proposal, however, met with strong opposition, the most radical of reformers in the methods of distribution uniting with the most conservative of dealers in defence of long established custom, and after a month spent in conference between sellers and buyers, during which time Public Sales were practically suspended, a modus vivendi was adopted, whereby the draft allowance was maintained and relief sought in a modification of the system of weighing. At the beginning of August the laws of supply and demand were again in operation and public sales were resumed. Common tea, being again in liberal supply, gradually receded in a value till for a short time it could be quoted at 5½d and even 5¼d per lb., and all good quality teas commanded a wider area of competition and a higher range of prices than for many months past. Throughout the autumn and practically to the end of the year the best teas commanded a firm market, and common, although never attaining to the high level of the spring quotation, gradually advanced 1d per lb., from the lowest point touched at the beginning of Sept. The not unnatural result of the attention alternately claimed by low grade tea for "price" and the finest descriptions for quality, was a decidedly lower market throughout the greater part of the year for medium descriptions and useful Broken Pekoes with plenty of tip and of good colour in the cup which sold at considerably cheaper rates than during the previous year, when common tea was obtainable throughout at a much lower range of price.

The Average Price for all Ceylon Tea sold on Garden Account in 1899 was 8d, against 7·78d per lb. in 1898, and 7·83d in 1897.

HOME CONSUMPTION of CEYLON tea during 1899 showed an increase of nearly 3,000,000 lb. over that of the previous year, but this was scarcely commensurate with the unexpected increase in the IMPORTS, and may be attributed to the competition of the greater weight of CHINA and JAPAN growths attracted by the higher rates ruling for common tea.

FOREIGN TRADE also showed a continued steady development, the re-exports of CEYLON leaf during the past year contributing 37·67 per cent. of the total export trade from the country, against 23·96 per cent. of INDIAN, and 38·37 per cent. of CHINA; the satisfactory nature of this expansion is best appreciated when it is noticed that five years ago, the re-exports of CEYLON tea formed 16·20 per cent. of the total, against 11·13 per cent. of INDIA, and 72·67 per cent. of CHINA. The direct shipments from COLOMBO to countries other than the UNITED KINGDOM were also highly satisfactory, although they did not show the same remarkable expansion as in 1898; the high price of common tea had for a time a prejudicial effect on the AUSTRALIAN demand, but on the decline of this class to a more normal level, the decrease was almost entirely recovered.

The effect of the sustained demand for low priced tea during 1899 is very apparent in comparing the results obtained by the various CEYLON TEA ESTATES, which we have tabulated as usual, with the returns of the previous year. Many of the high-elevation estates, especially those remarkable for rather light liquoring teas of delicate flavour, failed to realise such good prices as in 1898; on the other hand the low-lying gardens shew a highly satisfactory increase in the returns. This distinguishing feature of the results of last year's working is more readily noticeable on reference to the table of DISTRICTS, which shows that the fine teas of NUWARA ELIYA and its neighbourhood averaged 1d per lb. less than in 1898, whereas the districts of SABARAGAMUWA, KALUTARA, KELANI VALLEY and DOLOSBAGE each averaged ¾d per lb. more than in the previous year.

Last year we ventured to think the bed-rock of value had at length been struck, and when we consider that the increased supplies 1899 realised a fractionally higher average than the output of 1898, there seems to be every justification for hope that the anticipation may not be disappointed; at the same time it may be useful to point out that we are once more in some danger of over-production. Until quite lately it was more or less assumed that the future increase in the output from CEYLON would be very slight, and that the limit of production was almost reached. The estimate originally made of the 1899 crop and its eventual out-turn, as well as the estimated increase of 9,000,000 lb. in the crop of the current year, tend to show that the determination to cultivate more highly, by a systematic increase of the areas subjected to manuring, is likely to upset the calculations formed in this connection, and it would seem as if great care in plucking will be more necessary than ever.

The estimate originally made of the 1899 crop was 125,000,000 lb., of which only 93,000,000 lb were expected to be available for this country, it being calculated that the direct shipments from COLOMBO to other markets would absorb 32,000,000 lb. but as events turned out, 103,700,000 lb. were shipped to the UNITED KINGDOM and 25,500,000 lb. to other countries, making a total of 129,200,000 lb. The high rates current at home for common tea and the unwillingness of the AUSTRALIAN market to pay the enhanced values were doubtless partly responsible for the heavy shipments to this country from May to Nov. The out-put for the current year is calculated at 138,000,000 lb. of which it is estimated that 108,000,000 lb. will be shipped to the UNITED KINGDOM and that 30,000,000 lb. will be required to satisfy the demands of other markets. Though the increase in the TEA DUTY is not likely to seriously reduce the actual consumption of tea, it may induce greater caution in the use of the leaf, and if the INDIAN crop shews any increase commensurate with last year's, the disposal of the supplies at last year's average price may well become a matter of some difficulty. The lower quotations for common tea so far this year are, however, likely to discourage the importation of CHINA and JAVA growths, which in 1899 shewed an increase of about 9,000,000 lb. over that of 1898.

SMALL BREAKS.—The limits remain the same as during last year viz. :—18 CHESTS, 24 HALF-CHESTS, and 40 BOXES. We may, however, point out that with the exception of finest teas the Breaks likely to attract the most attention are those ranging from say 20 to 60 chests and half-chests, and 60 to 150 boxes.

WEEKLY PUBLIC AUCTIONS OF CEYLON TEA DURING 1899 WITH AVERAGE PRICE REALISED:—

Week ending		Number of Pkgs. offered in auction.	Av. price per lb.	Av. price per lb. for corresponding week 1898.
January	7th	19,882	8¾d	8
"	14th	27,801	8½d	
"	21st	16,669	8½d	8½d
"	28th	21,468	8½d	8¼d
February	4th	27,180	8½d	7¾d
"	11th	24,309	8¾d	7¾d
"	18th	16,927	8¾d	7¾d
"	25th	16,497	8¾d	7¾d
March	4th	20,949	8¾d	7¾d
"	11th	27,714	8¾d	7½d
"	18th	25,709	9¼d	7½d
"	25th	21,242	9¼d	7¼d
April	1st	19,189	9¼d	7¼d
"	8th	no sales	—	7¼d
"	15th	20,266	9d	—
"	22nd	27,209	8¾d	7¼d
"	29th	17,696	8¾d	7¼d
May	6th	21,085	8¾d	7¼d
"	13th	22,286	8½d	7¼d
"	20th	20,748	8d	7¼d
"	27th	no sales	—	7¼d
June	3rd	25,158	8d	—
"	10th	26,180	7¾d	7¼d
"	17th	26,181	7¾d	7¼d
"	24th	19,376	7	7¼d
July	1st	26,364	7¼d	7¼d
"	8th	23,359	*	7¼d
"	15th	no sales	—	7¼d
"	22nd	15,873	7¼d	7¼d
"	29th	7,600	7¼d	7¼d
August	5th	12,476	7¼d	—
"	12th	17,261	7¼d	7¼d
"	19th	43,194	7¼d	7¼d
"	26th	41,311	7d	7¼d
Sept.	2nd	35,707	7d	7¼d
"	9th	31,365	7¾d	7¼d
"	16th	29,243	7¾d	8¼d
"	23rd	27,802	8¼d	8¼d
"	30th	27,680	8¼d	8¼d
October	7th	30,637	8¼d	8¼d
"	14th	29,619	8d	8¼d
"	21st	25,368	8d	8¼d
"	28th	21,922	8d	8¼d
November	4th	22,511	8¼d	8¼d
"	11th	27,886	8¼d	8¼d
"	18th	23,417	8¼d	8¼d
"	25th	25,750	8d	8¼d
December	2nd	20,206	7¾d	8¼d
"	9th	23,465	7¾d	8¼d
"	16th	21,561	7¾d	8¼d
"	23rd	12,324	7¾d	8d

* Withdrawn.

SUMMARY OF CEYLON TEA SOLD AT PUBLIC AUCTION IN LONDON.

Between January 1st and December 31st, 1899, estimated quantity in lbs. and average prices realised:—

Average Price for the year was 8d, per lb., against 7·78d in 1898, and 7·83 in 1897.

The initial letters following the estate names refer to the mean elevation as follows:—

L (low) sea level up to 1,000 feet; M (medium) 1,000 to 2,500 feet; HM (high medium) 2,500 to 3,500 feet; H (high) 3,500 to 5,000 feet; HH (highest) above 5,000 feet.

		1899. About lbs.	1899. Av. price per lb. d.	1898. About lbs.	1898. Av. price per lb. d.
Over 500,000 lbs.					
Diyagama	H	973000	9¼	1119500	9½
Galaha	M	587500	7½	873500	7
Hauteville	H	556000	9¼	592000	10
K.A.W.	HM	509000	7½	530500	7
[illegible]					
St. Leys	H	44000	8	62000	7¾
St. Vigean's	H	49500	8¾	64500	8½
Stubton	M	37500	6¾	57500	5¾
Tobuana	..	42500	6¾	—	—
Torrington	H	32000	7	—	—
Tunisgalla	H	24000	7¼	—	—
Vathalana	HM	25500	7	87000	6½
Wattagalla	M	28000	7¼	148500	6½
Warriapola	M	29000	7½	58500	6¾
Westward Ho	HH	46500	8	—	—
Weyweltalawa	M	41500	7¾	—	—
Wellington	H	49000	8¾	49500	9¼
Weddemulle	H	49000	8¼	58000	8
Walhandua	..	33500	6¾	—	—
Weymouth	L	23500	6¾	—	—
Yellatenne	M	20000	7¾	20000	8

N.B.—Owing to the suspension of the Public Sales in July, a certain amount of tea was disposed of privately which has not been taken into account in the foregoing results. 6,700,000 lbs. averaging 7¼d. per lb. sold on purchase account are not included in the above returns.

ESTIMATED RELATIVE YIELD AND AVERAGE PRICE.

Realised for the different CEYLON TEA DISTRICTS, compiled from the Public Auctions held in London between January 1st and December 31st, 1899:—

	lb. about	Av. Price per lb. 1899. about	Av. Price per lb. 1898. about
Nuwara Eliya Maturata & Uda Pussellawa	4,000,000	9¼d	10¼d
Dimbula	17,000,000	9d	9d
Bogawantalawa	3,000,000	8¾d	8¾d
Dikoya	6,000,000	8¾d	8½d
Haputale	2,500,000	8¼d	8¼d
Maskeliya	3,500,000	8¾d	7¾d
Pussellawa, Kotmale, Pundaluoya & Ramboda	8,000,000	7¾d	7¼d
Hewaheta	2,000,000	7¾d	7¼d
Nilambe and Hantane	3,500,000	7¼d	7¾d
Sabaragamuwa	2,000,000	7½d	7d
Ambagamuwa and Lower Dikoya	3,000,000	7½d	7½
Matale and Hunasgeriya	5,000,000	7¾d	7d
Kadugannawa and Alagalla	2,000,000	7¾d	6¾d
Kalutara	3,000,000	7¾d	6¾d
Knuckles Kellebokka, Rangala &c.	4,000,000	7¼d	7d
Dolosbage and Yakdessa	5,500,000	7¼d	6¾d
Uva	5,000,000	7¾d	8d
Kelani Valley	8,000,000	7d	6¾d

DISTRIBUTION OF CEYLON TEA.—The total Exports from COLOMBO in 1899 amounted to 129,147,894 lb against 120,969,000 lb. in 1898; of this total 103,699,248 lb. were shipped to the UNITED KINGDOM against almost 96,399,343 lb. in 1898. The following table, taken from Messrs. Forbes and Walker's compilations, shews the distribution from COLOMBO for the past three years.

Year.	United Kingdom. lb.	Russia. lb.	Other Countries in Europe. lb.	America & Canada. lb.
1899	103,699,248	3,349,740	855,051	3,080,092
1898	96,399,343	2,714,003	871,744	2,180,168
1897	98,998,454	439,350	594,422	830,373

Year.	Africa & Mauritius. lb.	Australia. lb.	India. lb.	China & Singapore. lb.
1899	388,487	15,109,447	567,616	1,468,303
1898	405,541	16,421,	1,091,559	1,245,312
1897	277,270	13,232,747	986,765	690,162

DISTRIBUTION of British Imports of Ceylon Tea during the past three years taken from the BOARD OF TRADE RETURNS:—

Year	Home Consumption lb.	To countries in Europe (chiefly Russia) lb.	To U. S. of America lb.	To British N. America lb.	To other countries lb.
1899	85,137,945	7,265,268	1,391,931	2,084,865	1,402,361
1898	82,471,745	6,673,087	1,299,716	2,065,850	1,484,558
1897	85,493,552	6,272,596	1,624,774	1,561,894	1,224,621

HOME CONSUMPTION of Indian and Ceylon Tea compared with that of China, and other countries last year, five years and ten years previously taken from the BOARD OF TRADE RETURNS:—

	1899 lb.	Per centage of total.	1894 lb.	Per centage of total.	1889 lb.	Per centage of total
Indian.	134,000,000	55·25	118,500,000	54·86	124,500,000 (Indian and Ceylon)	67.
Ceylon.	85,000,000	35·06	71,500,000	33·11		
China, &c.	23,500,000	9·69	26,000,000	12·03	61,000,000	33.
	242,500,000 lb.		216,000,000 lb.		185,500,000 lb.	

RE-EXPORTS of Indian and Ceylon Tea compared with that of China and other countries last year, five years and nine years ago taken from the BOARD OF TRADE RETURNS:—

	1899. lb.	Per centage of total.	1894. lb.	Per centage of total.	1890. lb.	Per centage of total
Indian.	7,723,875	23·96	2,551,282	11·13	2,624,000	7·18
Ceylon.	12,144,423	37·67	5,166,020	16·20	1,422,000	3·84
China, &c.	12,370,779	38·37	23,176,869	72·67	32,910,000	89·04
	32,239,077 lb.		21,894,171 lb.		36,956,000 lb.	

N.B.—We have given the figures for nine years ago (instead of Ten), as in 1889 the Board of Trade returns were not classified under the growths of India, Ceylon, China, &c.

BOARD OF TRADE RETURNS.

IMPORTS of Tea during the past four years —

From	1899. lb.	1898. lb.	1897. lb.	1896. lb.
India	145,632,117	139,596,278	134,734,297	127,721,885
Ceylon	102,178,697	97,613,977	96,325,578	94,859,965
China	33,820,258	27,077,759	28,760,297	35,299,730
Other Countries	9,206,029	7,305,674	6,980,239	7,512,542
Total for twelve months	290,837,101	271,593,683	266,800,411	265,394,122

HOME CONSUMPTION of Tea during the past four years:—

	1899. lb.	1898. lb.	1897. lb.	1896. lb.
India	134,018,920	133,430,850	124,534,194	122,941,096
Ceylon	85,137,945	82,471,745	85,493,552	80,294,475
China	16,677,835	14,695,336	17,242,246	19,831,678
Other Countries	6,726,114	4,816,673	4,129,782	4,718,251
Total for twelve months	242,560,814	235,414,104	231,399,774	227,785,500

EXPORTS of Tea during the past four years:—

	1899. lb.	1898. lb.	1897. lb	1896. lb.
India	7,723,875	7,846,500	5,711,240	4,399,640
Ceylon	12,144,423	11,623,186	10,683,885	8,496,663
China	11,658,988	15,786,027	19,992,024	20,073,418
Other Countries	711,791	1,179,189	967,574	1,058,590
Total for twelve months	32,239,077	36,334,902	37,354,723	34,028,308

STOCK of all Tea in Bonded Warehouses (in U.K.) at the close of the past four years:—

	1899. lb.	1898. lb.	1897. lb.	1896. lb.
All sorts	113,010,000	99,476,000	100,957,000	103,709,000

MONTHLY IMPORTS OF CEYLON TEA INTO LONDON during the past five years:—

	1899. lb.	1898. lb.	1897. lb.	1896. lb.	1895. lb.
Jan.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Feb.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
March	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
April	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
May	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
June	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
July	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
August	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sept.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oct.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nov.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dec.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Year's Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Monthly DELIVERIES of Ceylon Tea from London Warehouses during the past five years:—

	1899. lb.	1898. lb.	1897. lb.	1896. lb.	1895. lb.
Jan.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Feb.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
March	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
April	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
May	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
June	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
July	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sept.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oct.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nov.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dec.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Year's Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

STOCK of Ceylon Tea in London Bonded Warehouses at the close of each month:—

[illegible]

The question of the preparation of the rubber from the milk is then taken up. The faults of the rough method hitherto in use in Ceylon are pointed out; putrefaction, mould, and want of thorough drying are the chief. Two methods of preparing Hevea milk are described, that by means of acetic acid and that by means of mercuric chloride. Both of these yield very good rubber indeed; the objection to the latter is that some of the mercuric salt is left in the rubber, which may interfere with its market value. Castilloa milk is then dealt with. At present the number of trees in Ceylon is too small to make it worth while to use the centrifugal machine, and creaming is recommended, this gives most excellent rubber at small cost. A modification of the ordinary cylinder glass churn, provided with a tap at the bottom, will probably serve the purpose excellently.

Mould and putrefaction are guarded against by the use of antiseptics, such as creosote and mercuric chloride, and by the rapid drying of the rubber on porous surfaces.

Many points still remain for investigation, and the experiments initiated by Mr. Parkin are being continued at the Peradeniya and Henaratgoda gardens. Their further results, and the reports of experts upon the samples of rubber now in hand, will form a subsequent Circular.

The introduction of these scientific methods of dealing with rubber milk has very much altered the whole question of what tree to plant, whether to plant as a chief or a minor product, and so on. This has been considered in the preceding Circular (No. 11).

LITERATURE.

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JOHN C. WILLIS,
Director, Royal Botanic Gardens.

Peradeniya, May 25, 1899.

GEO. WHITE & CO.'S TEA REPORT FOR 1899.

TEA IN CEYLON AND JAVA.

GEO. WHITE & CO.'S ANNUAL INDIA, CEYLON AND JAVA TEA REPORT,
LONDON, 31, FENCHURCH STREET, E.C.
23rd March, 1900.

At the date of our last review the chief feature of the Market was the high price ruling for the lower grades, and it is hardly surprising if this led to coarser plucking, which will partly account for the augmented yield from all parts and consequently the fuller supplies of common and mediocre Tea which have had to be dealt with during the current season.

INDIA.

In contradistinction to the first estimate given in 1898 by the Indian Tea Association of Calcutta when it was taken too full, that published in 1899, although not issued until the 12th September, was placed at 135 million lbs. available for Great Britain, whereas we shall probably receive about 149 million lbs. against 135½ million lbs. actually shipped to this country from Calcutta in 1898—1899. This addition is, no doubt, due in a great measure to the reason stated above and also to the more favourable weather which prevailed in most districts, especially in Cachar and Sylhet, both of which in 1898 suffered severely from drought.

On the whole the crop has proved to be of a useful description, but the proportion of fine invoices has been less than usual. Darjeeling, with few exceptions, were disappointing. Assams, as a rule, were of a normal character, though choice tippy consignments were rather scarce. Docars, for the most part were of a saleable style, yet in many instances lacked the rich colory infusions which are looked for from this quarter. Cachars and Sylhets showed improvement in quality, and benefited to a considerable extent by the comparatively advanced range established for common to fair kinds. A few of the Kangras were up to standard, while the bulk marked a falling off. Shipments from South India were liked on account of the fulness in cup often possessed by those from Travancore, and for the delicate flavour of the best from the Neilgherries and Wynaad.

The demand from both home and export buyers for Pekoe Souchongs and Pekoes "for price," fostered by the low rates of 1898, was very noticeable, so that by April 1899, when there was some apprehension that supplies would be insufficient little of the first-named was to be had under 8d. per lb. During July and August, however, heavy arrivals of undesirable New Season's were received, and the enquiry slackened, inferior leaf dropping to 5½d. per lb. Subsequently, with more attractive Teas to deal with, there was increased general buying, and the quotation rose to 6½d. per lb. in the middle of November, keeping fairly steady with some fluctuations until the end of January, when it stood at 6¼d. per lb., afterwards receding to 6d. per lb. While the relatively favourable situation of Common doubtless assisted many concerns it was to the detriment of others, as Medium Pekoes and Broken Pekoes were not so much wanted, and were often worth only fractionally more than the former. Fine and finest not being over plentiful nearly always commanded enhanced figures. Deliveries from the London Bonded Warehouses for the six months ending 31st December last were a little under those of the same period of the year before; but since that, owing to the Duty scare, they have risen abnormally being for the eight months from 1st July, 1899 to the 28th ult. 104,206,000 lbs. versus 96,365,000 lbs., while the stock at the latter date was 58,672,000 lbs., against 59,460,000 lbs. in 1898. The real statistical condition is not therefore, apparent in consequence of the heavy clearances in anticipation of the declaration of the Budget, and this will be still more patent at the end of the present month.

From 1st July, 1899, to the close of of February, the average for 1,057,000 packages sold in London under the hammer on garden account was 8½d. per lb., contrasted with 8¾d. per lb. for 948,000 packages and 8¾d. per lb. for 927,000 packages in the corresponding intervals of 1898-9 and 1897-8.

CEYLON.

The produce of this island about maintained its place both as regards leaf and liquor. Climatic influences were occasionally suitable to the production of fine flavour, which was duly appreciated by Dealers. It would appear that on many estates it has been the practice to go in for quantity, encouraged thereto by the rates obtainable for common sorts in the spring, the market for which followed very closely that of Indian growths. The supply of medium at times was in excess of requirements, and there was frequently very little difference in the prices they brought as against those realised for the grades below them.

Although deliveries for the whole of 1899, viz., 94,226,000 lbs. were slightly above those of 1898, which reached to 93,489,000 lbs., they were nearly two million lbs. under the imports.

In January, 1899, the portion of the crop estimated for shipment to the United Kingdom was 93 million lbs., but the amount dispatched turned out to be over 103 million lbs. The entire output was 129 million lbs. as against 120¼ million lbs. in 1898, and 116 million lbs. in 1897.

For the twelve months the following passed through the London Auction Room:—

1899—1,138,100 pkgs. (Average 8d per lb.)
1898—1,108,800 pkgs. (Average 7⅞d per lb.)
1897—1,138,000 pkgs. (Average nearly 8d per lb.)

The totals for the three years, therefore, were approximately, while the result did not differ very materially.

Since 1st January arrivals have been on an extended scale, being for the first two months of the year 19,673,000 lbs., while in 1899 they were 13,468,000 lbs.

JAVA.

The strong position of ordinary Leafy Teas here at the beginning of 1899 very likely attracted more than hitherto, as the Public Sales from 1st July to the 28th ult. included 38,300 packages, averaging 7d per lb., whereas in the two prior seasons they comprised 30,200 packages bringing 7d per lb., and 24,900 packages 6¾d. per lb, respectively.

The introduction of India and Ceylon seed has caused the yield of the younger gardens to assume the characteristics of those Teas. They are freely taken up by the Blenders, who find them very suitable for their purposes, so that notwithstanding the shrinkage in the exports from this country the volume of trade has swollen.

EXPORTS FROM THE UNITED KINGDOM

The totals of all Tea exported from the United Kingdom during the past eight months, as compared with the two previous years, are as follows:—

July 1st 1899 to end of February 1900:—
July 1st 1898 to end of February 1899:—
July 1st 1897 to end of February 1898:—

	India.	Ceylon.	Total British Grown.	China.	Java.
	lb.	lb.	lb.	lb.	lb.
1899-00	6,014,000	8,664,000	14,678,000	8,348,000	529,000
1898-99	6,006,000	7,458,000	13,461,000	9,966,000	652,000
1897-98	3,872,000	6,555,000	10,427,000	13,234,000	604,000

and the distribution for three complete years, as furnished by H.M. Customs was as under.

	Continent of Europe	United States	Canada.	Other Countries	Total.
1899.	lb.	lb.	lb.	lb.	lb.
India	4,108,000	631,000	1,721,000	1,371,000	7,724,000
Ceylon	7,265,000	1,292,000	1,538,000	1,650,000	12,144,000
Java, &c	449,000	24,000	48,000	198,000	71?,000
China	5,984,000	503,000	546,000	4,516,000	11,659,000
Totals	17,80?,000	2,543,000	4,153,000	7,743,000	32,279,000
1898.					
India	4,441,000	766,000	1,598,000	1,200,000	7,866,000
Ceylon	6,673,000	1,300,000	2,083,000	1,496,000	11,52?,000
Java, &c	650,000	163,000	123,000	243,000	1,179,000
China	9,124,000	1,021,000	1,127,000	4,521,000	15,757,000
Totals	20,890,000	3,190,000	4,814,000	7,450,000	36,344,000
1897.					
India	2,966,000	628,000	1,033,000	916,000	5,508,000
Ceylon	6,274,000	1,625,000	1,296,000	1,310,000	10,504,000
Java, &c	721,000	56,000	11,000	170,000	968,000
China	12,130,000	2,020,000	1,768,000	4,048,000	19,966,000
Totals	22,090,000	4,329,000	3,708,000	6,443,000	36,546,000

The following is a Comparative Table, showing QUINQUENNIAL IMPORTS of TEA into the Port of London from 1875 to 1895 and for each Season subsequently:—

	India.	Ceylon.	Total Brit.-grown.
	lb.	lb.	lb.
Season 1875-76	25,500,000	200	25,500,200
" 1880-81	45,250,000	278,000	45,528,000
" 1885-86	67,250,000	5,361,000	72,611,000
" 1890-91	100,984,000	50,191,000	151,175,000
" 1895-96	118,182,000	83,206,000	201,388,000
" 1896-97	131,665,000	92,623,000	224,288,000
" 1897-98	134,635,000	92,648,000	227,283,000
" 1898-99	138,230,000	91,284,000	229,514,000
" 1899-00 Partly Estimated	149,000,000	106,000,000	255,000,000

Imports into London:

	China.	Total British grown & China Imports.
Season 1875-76	149,000,000	174,500,200
" 1880-81	164,500,000	210,028,000
" 1885-86	143,000,000	215,611,000
" 1890-91	69,742,000	220,917,000
" 1895-96	40,859,000	242,247,000
" 1896-97	33,333,000	257,621,000
" 1897-98	32,366,000	259,649,000
" 1898-99	27,903,000	257,417,000
" 1899-00 Partly Estimated	32,000,000	287,000,000

Duty, until 30th April, 1890, 6d. per lb., after that to 5th March 1900, 4d. per lb., when it was again raised to 6d. per lb.

N.B.—"Overside" transhipments for the Continent, America, Canada, &c., via London, and direct shipments to other ports of the United Kingdom, are not included in the above. Prior to 1885-1886 the Ceylon figures represent *total exports* from Colombo, the proportion sent from there to foreign ports before that date being unimportant. Arrivals from Java are omitted, as they vary in different years, being regulated according to the state of the markets which take them.

Undermentioned are the Exports to other Countries than Great Britain, from Calcutta and Colombo, the development of which, although not so pronounced as in the year before, is having the salutary effect of checking over supplies to this centre, thus tending to support prices at a higher level than would otherwise be the case, to the benefit of the producer.

	Australasia.	Asia.	America.	Continent of Europe.	Total.
Shipments from Calcutta Season:—	lb.	lb.	lb.	lb.	lb.
1899-0	5,124,000	5,182,000	5,850,000	1,372,000	20,53[illegible]
1898-9	6,107,000	6,793,000	3,274,000	1,147,000	17,3[illegible]
1897-8	6,788,000	3,395,000	9,016,000	797,000	19,9[illegible]
Shipments from Colombo 12 months:—					
1899	15,1?9,000	2,424,000	3,080,000	4,825,000	25,448,0[illegible]
1898	15,421,000	2,682,000	2,180,000	3,586,000	23,869,[illegible]
1897	13,233,000	1,724,000	831,000	938,000	16,726,[illegible]

The Board of Trade returns (which embrace all the Bonded Warehouses in the United Kingdom) for the past three calendar years were:—

	Home Consumption	Export.	Total Deliveries.	Bonded Stock Dec. 31.
	lb.	lb.	lb.	lb.
1899	242,561,000	32,239,000	274,800,000	113,010,000
1898	235,414,000	36,343,000	271,757,000	101,838,000
1897	231,400,000	36,546,000	267,946,000	101,870,000

These denote a satisfactory extension in the use of the article at home, and notwithstanding that the China exports from here have again diminished to the extent of 4 million lb., those of British growth mark an increase.

When writing at this time in 1899 we estimated supplies from all sources would reach 275 million lb. Our actual requirements as shown above were 274,800,000 lb., but as the total imports, owing to the favourable weather previously mentioned, will in all probability be 287 million lb., the statistical position seems hardly likely to be so good on 30th June next as it was in 1899, although at present it is somewhat unreliable owing to the recent Duty scare.

From the several producing countries the following quantities should be ample to meet our wants during the coming season:—

	lb.
India (including the Madras Presidency)	153,000,000
Ceylon	108,000,000
Java	3,000,000
Leaving China to furnish	20,000,000
	284,000,000

PROSPECTS.

Although receipts both from India and Ceylon during the past eight months have been considerably more than was anticipated, yet owing to the vitality of the industry both at home and abroad it is probable that the surplus will be to a great degree worked off before the new crop arrives from Calcutta in any quantity. Throughout the period under review business has at times suffered from many disturbing causes, among which were the 1 lb. draft dispute, dearness of money coupled with the unsettlement of affairs brought about by the war in South Africa, and by the disorganisation existing prior to the declaration of the Budget. It is to be hoped that none of these untoward influences will be experienced in the near future to upset the calculations of all concerned. What effect the advance in the Duty from 4d. to 6d. per lb. may ultimately have it is difficult to foresee; but should it lead, as its anticipated by some people, to the extended use of medium and fine, the former of which have been unduly depressed for months past, it will be a boon to many, especially to those whose interests lie in Assam, Darjeeling and the higher parts of Ceylon. Russia and other countries have for several years past taken a fair proportion of fine Pekoes and Orange Pekoes, and thus supported these grades, while they have recently also bought appreciable quantities of Ordinary Leafy Kinds. On the whole therefore, prospects seem favourable to expansion in the sale of good liquoring descriptions, while that for very common may be partially abandoned, and the prevailing lowest retail price be 1s. 4d. per lb. If the purveyors to the public can induce their customers to purchase a slightly better blend than they have lately perhaps been accustomed to, they would not only benefit themselves but also help to raise the whole Trade to a higher level than it has been on for some time.

MANUFACTURE.

Under the circumstances already alluded to, and taking into consideration the larger area coming into bearing in some districts, it would seem policy to avoid very coarse plucking and the manufacture of undesirable sorts which foster a low quotation here and tend to glut the market.

Where briskness, pungency, or full-bodied liquor are attainable, every effort should be put forth to secure these characteristics. Plain featureless Teas are more or less neglected, especially in the very busy months, and good appearance without sterling cup no longer satisfies even the Continental buyers who use to take that style of China Congou.

Comparatively fewer "cheesy" lots have come to hand this season than in 1898-9, presumably attributable to the greater care used, during the process of firing in the "driers," so that little trouble has been experienced in regard to this. The weather appears to have been fairly propitious in most parts although a smaller number of "autumn flavoured" invoices than usual have reached here. These, when not too brown in leaf, found much favour with buyers, and if by any means, chemical or otherwise, more of them could be produced, they would meet a ready sale. It is reported that a scientific expert has been engaged to visit the different gardens throughout India, and such matters as well as fermentation and other stages through which the leaf is passed will no doubt, receive his attention.

SIZE OF BREAKS.

No alteration has been made in the limits for large breaks since last year, which stand as under viz.:—

India—20 Chests, 30 Half-Chests, 50 Boxes,
Ceylon—18 Chests, 24 Half-Chests, 40 Boxes.

Lots of lesser size are sold separately at the close of the auctions.

ASSORTMENT.

It is not well to allow Tea to accumulate at the factory, as if kept for any length of time it is liable to lose its freshness, nor to send too many grades. Indeed, under present conditions when so small a difference often exists between the value of Ordinary Orange Pekoes, Pekoes and Pekoe Souchongs, it becomes a question as to the advisability of shipping them home in one line. This might at all events be tried on small Estates where the crop is limited. The following continues to be a saleable assortment; say:—A Broken Pekoe of 30 to 50 chests; a good Pekoe of 50 to 80 chests; a Pekoe Souchong of 70 to 100 chests, with an occasional break of Broken Tea or Pekoe Fannings. Parcels containing dust are not readily marketable and therefore this should be sifted out and packed by itself, for which purpose some of the patent packages now in vogue might be utilized so as to avoid leakage on the voyage resulting in loss of weight which often occurs with country made chests. The exception to the foregoing is when a tippy Broken Orange Pekoe or Orange Pekoe can be made, as these when really fine generally command high figures, whether from India or Ceylon. Should the quantity of leaf available for this not suffice for a full-sized break of 20 Chests it might be packed in 30 Half-Chests.

N. B.—In view of the necessity of economical handling of Teas we have compiled a few hints as to packages, bulking, &c., warehouse charges, and weighing, and these matters are dealt with in our "Notes for the Tea Factory," published separately, copies of which we shall be happy to furnish to those concerned in the cultivation of the article.

MONTHLY AVERAGES OBTAINED IN LONDON FOR GARDEN INVOICES, FROM THE DIFFERENT DISTRICTS OF INDIA, ALSO FOR CEYLONS AND JAVAS, FROM 1ST JULY TO END OF FEBRUARY, FOR SEASONS 1899-00, 1898-99 AND 1897-98.

	Season	July Pkgs.	July Av.	August Pkgs.	August Av.	September Pkgs.	September Av.	October Pkgs.	October Av.	November Pkgs.	November Av.	December Pkgs.	December Av.	January Pkgs.	January Av.	February Pkgs.	February Av.	Total London Averages for 8 Months Pkgs.	Av.
Assam	1899-1900	102	0/7½	4746	0/9½	59866	0/10¼	79083	0/10	73213	0/9¾	51087	0/9½	105113	0/8¾	61385	0/9½	477610	0/9¾
	1898-99	9559	0/9¼	4860	0/10½	74402	0/10½	88077	0/9½	75115	0/9¼	42067	0/9½	87410	0/10½	55640	0/10½	480877	0/10
	1897-98	10666	0/10½	3615	1/0½	64638	0/10¾	65050	0/10¾	81040	0/9¾	52108	0/9½	87685	0/9¾	48711	0/10	446952	0/10½
Cachar and Sylhet	1899-1900	—	—	2779	0/6⅞	40810	0/7½	57550	0/7¼	49507	0/7⅞	36029	0/7½	56817	0/7	49599	0/6¾	327114	0/7½
	1898-99	1955	0/6	1519	0/5½	20659	0/6	38277	0/6¾	34397	0/6¾	26742	0/6¼	44363	0/7	10817	0/7⅜	222406	0/6¾
	1897-98	10980	0/6½	1346	0/7	37843	0/6½	36667	0/7¼	41465	0/7⅜	27581	0/7¼	49592	0/7	30242	0/6¾	247840	0/7
Darjeeling	1899-1900	375	0/9	1334	0/9¼	13930	0/11¾	13601	0/11	11000	0/9½	5140	0/9¾	10122	0/9½	7295	0/10¾	75811	0/10¾
	1898-99	5671	0/8½	1025	0/11½	14595	1/0¼	14212	0/10½	12755	0/9¾	5175	0/9	9102	0/10¾	7542	0/11¾	79311	0/10¼
	1897-98	6136	0/9½	828	0/11	16395	0/10½	12285	0/10¼	11489	0/10¼	6017	0/10	11829	0/10½	6080	0/10	80517	0/10¾
Docars	1899-1900	—	—	1374	0/7½	20021	0/7½	21823	0/7⅜	17194	0/7½	14122	0/7½	27489	0/7½	17182	0/7	131571	0/7½
	1898-99	5231	0/7	1295	0/7¼	18457	0/7¾	19235	0/7¼	18692	0/7¼	9489	0/7½	23227	0/7⅝	21281	0/8¼	126571	0/7⅝
	1897-98	4912	0/7¼	890	0/7½	20233	0/7½	17112	0/7¾	11509	0/8	13501	0/7⅞	22969	0/7⅞	16907	0/7½	116052	0/7⅞
Kangra Valley	1899-1900	—	—	160	0/6¾	996	0/7½	958	0/6¾	1267	0/7¼	388	0/7½	892	0/6¾	131	0/6⅝	6239	0/7
	1898-99	531	0/6½	702	0/6¾	1031	0/7¼	1196	0/6¾	427	0/7¾	243	0/7½	279	0/7¼	363	0/6¼	4772	0/7
	1897-98	367	0/6¾	1135	0/7⅜	1018	0/8½	1580	0/7½	449	0/7½	155	0/6½	1546	0/6½	529	0/6½	6779	0/7½
Travancore & S. India	1899-1900	853	0/7	6540	0/6½	5480	0/7	4815	0/7¼	4998	0/7½	2982	0/7	7415	0/7¼	5558	0/7	38649	0/7
	1898-99	3597	0/6	3664	0/6	3349	0/6½	5767	0/6¼	4602	0/6⅝	3456	0/6½	5574	0/7	4010	0/7⅜	34019	0/6½
	1897-98	5310	0/6½	5131	0/6½	1601	0/6½	3010	0/7	3452	0/6¾	3005	0/6½	5648	0/6¾	1554	0/6½	28711	0/6¾
Total India	1899-1900	1330	0/7½	111497	0/8¼	150112	0/8¾	177830	0/8¾	157179	0/8½	109748	0/8¼	208148	0/8¼	148150	0/8½	1056994	0/8½
	1898-99	24544	0/8	91387	0/9¾	132493	0/9¼	166764	0/8¾	145988	0/8¾	87172	0/8½	169955	0/9¼	129653	0/9¼	947956	0/8¾
	1897-98	38371	0/8½	73080	0/10¼	147738	0/9¼	135704	0/9¼	150304	0/8¾	104367	0/8¾	179269	0/8¾	104023	0/8½	927211	0/8¾
Total Ceylon	1899-1900	20300	0/7¼	147600	0/7½	114800	0/7¾	129100	0/8¼	96100	0/8	56200	0/7¾	137800	0/7¾	101000	0/7¾	802400	0/7¾
	1898-99	106100	0/7¾	128800	0/7¼	86500	0/8¼	75500	0/8¾	73000	0/8¼	51500	0/8¾	110000	0/8¾	73300	0/8½	704700	0/8¼
	1897-98	120900	0/7½	130600	0/7⅞	89600	0/8	75000	0/8¾	82900	0/8¾	55600	0/8¾	90400	0/8¼	100100	0/7½	745100	0/8
Total Java	1899-1900	4200	0/7½	7500	0/6¾	3700	0/7	5500	0/7¼	4800	0/7¼	2000	0/6¾	7700	0/6½	2900	0/6½	38300	0/7
	1898-99	2500	0/7½	2400	0/7	5700	0/6¾	4100	0/7	2200	0/7½	3300	0/6¾	3900	0/6¾	6100	0/7¼	30200	0/7
	1897-98	4600	0/6½	3600	0/7	2700	0/7½	2100	0/7¼	3000	0/7½	3500	0/7	2600	0/6½	2800	0/6¼	24900	0/6¾

MONTHLY AVERAGES OBTAINED IN LONDON FOR TEAS FROM DIFFERENT DISTRICTS IN CEYLON DURING 1899.

Districts.	January d	February d	March d	April d	May d	June d	July d	August d	September d	October d	November d	December d	Total pkgs.	Average for 12 months
1—Uda Pussellawa, Nuwara Eliya, New Galway, Dimbula and Lindula	9¼	9¼	9¾	9¼	8¾	8¼	8¾	8¼	9¼	9¾	9⅜	9	231,711	9½
2—Maskeliya, Dikoya and Bogawantalawa	8¾	8⅝	9½	9½	8¼	7¾	8	7⅞	8¼	8¼	8⅜	8¼	161,398	8½
3—Lower Dikoya, Ambagamuwa, Kotmale, Yakdessa and Doloshage	7⅞	7⅝	8¼	8½	7⅞	7½	7	6¾	7	7⅞	7¼	7½	110,897	7⅞
4—Pussellawa, Ramboda, Pundaluoya & Kadaganawa	7¾	8	8½	8½	8	7½	7¼	6¾	7½	7¾	7⅝	7½	92,857	7⅝
5—Hantane, Nilambe, Hewaheta (U. & L.) Matarata, Dumbara, Rangala, Nitre Cave, and Medamahanuwara	7⅞	8	8¾	8⅜	7¾	7½	7⅜	6¾	7⅝	7¾	7⅝	7½	81,204	7⅝
6—Kellebokka, Knuckles, Hunasgeria & Panwila	7⅞	7¾	8¼	8¼	7⅞	7½	7	6¾	6¾	7¼	7½	6¾	48,305	7⅜
7—Matale East and West	7	7½	8½	8¼	7⅞	7	6½	6½	6¾	6¾	7⅜	6¾	46,834	7¼
8—Kurunegala, Polgahawela, Kegalla & Henaratgoda	6¾	7	7¾	7⅞	7½	7	—	6½	7¼	6¾	6¼	6¾	2,358	6¾
9—Kelani Valley, Avissawella, Yatiyantota Kitulgalla and Lower Dolosbage	7	7⅞	8	8½	7½	7	6½	6¼	6⅝	6¾	7½	6¾	81,560	7
10—Kuruwita, Ratnapura, Rakwana, Balangoda and Kukulu Korale	7	7½	8	8¼	7¾	7½	6⅝	6¾	7½	7½	7½	7½	15,561	7⅞
11—Kalutara and Bentota	7½	7½	8¼	8¼	7⅞	7½	6¾	6½	6⅝	7	7½	6¾	28,364	7½
12—Udagama, Morawak Korale	7½	8½	8¼	8⅜	7⅞	7¾	6¼	6¾	8	7½	7¼	—	7,558	7⅝
13—Haputale, Badulla, Madulsima & Passara	8½	8⅝	9	8¾	8	7½	7½	7½	8⅜	9	8⅝	8½	88,499	8½
General Average of all Districts	8½	8½	8¾	8¾	8¼	7¾	7½	7½	7½	8¼	8	7¾	1,138,100	8

COMPARATIVE TABLE SHEWING THE CALCUTTA, COLOMBO AND LONDON, MONTHLY PUBLIC SALES FOR 1899-1900 AND 1898-99.

Month.	Calcutta and Colombo Public Sales 1899-1900 Calcutta.	1899-1900 Colombo.	1898-99 Calcutta.	1898-99 Colombo.	London Public Sales (On Importers' account.) 1899-1900 India.	1899-1900 Ceylon.	1899-1900 Java.	1898-99 India.	1898-99 Ceylon.	1898-99 Java.
	Pkgs.	Pkgs.	Pkgs.	Pkgs.	Pkgs.	Pkgs.	Pkgs.	Pkgs.	Pkgs.	Pkgs.
May ...	17248	64399	7084	45555	39367 old season's, 281 new season's	97628	5389	83003	92348	3791
June ...	52853	37301	32306	56184	34963 old season's, 12730 new season's, 23879	105638	4605	28169 old season's, 3846 new season's, 4124 old season's, 33622	99587	3353
July ...	95515	48636	63217	47384	Chiefly New Season's	20287	4156		106100	2548
Aug. ...	93593	50351	87987	45019	129824	147602	7455	121911	128827	2444
Sept. ...	100356	42060	88837	36427	175811	114253	3074	169814	86530	5657
Oct. ...	66862	43480	60939	35516	230225	129142	5509	238311	75516	4099
Nov. ...	87754	51141	93462	41521	205732	96101	4812	196693	73014	2213
Dec. ...	61054	41871	55822	35159	124333	56197	2049	108782	51483	3273
Jan. ...	51798	73396	53780	46256	244062	137787	7706	221114	110637	3914
Feb. ...	9000	47000	17842	30685	168088	101256	2889	169275	73347	6086
					1388795	1005891	48244	1383614	897389	37375
March ...	Market closed.	90000 Estimated	5500	49627				127476	92889	3891
April ...			Market closed.	38442				61193	74407	3996
Totals	645933 Pkgs.	589635 Pkgs.	566836 Pkgs.	507775 Pkgs.	Pkgs.	Pkgs.	Pkgs.	1572283 Pkgs.	1064685 Pkgs.	48242 Pkgs.

COMPARATIVE TABLE OF MOVEMENTS OF TEA FOR THE PAST THREE SEASONS.

India.

	Imports 1900.	Imports 1899.	Imports 1898.	Imports 1897.	Deliveries 1900.	Deliveries 1899.	Deliveries 1898.	Deliveries 1897.	Stock at end of each month 1900.	1899.	1898.	1897.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
July		8,750,000	6,147,000	5,815,000		9,620,000	9,967,000	9,491,000		25,017,000	25,233,000	21,634,000
Aug.		13,473,000	13,251,000	12,180,000		10,015,000	10,378,000	8,312,000		28,474,000	28,266,000	25,802,000
Sept.		19,369,000	19,208,000	21,135,000		12,299,000	11,354,000	10,161,000		35,544,000	36,059,000	36,776,000
Oct.		[illegible]	[illegible]	[illegible]		13,669,000	13,185,000	11,543,000		46,393,000	44,947,000	45,123,000
Nov.		20,471,000	22,797,000	19,174,000		13,629,000	13,8?6,000	12,325,000		52,985,000	53,884,000	51,972,000
Dec.		19,810,000	20,214,000	21,061,000		11,311,000	12,778,000	11,369,000		61,484,000	61,319,000	61,678,000
Six Months		106,201,000	103,784,000	99,545,000		70,603,000	71,518,000	63,181,000		—	—	—
	1901.	1900.	1899.	1898.	1901.	1900.	1899.	1898.	1901.	1900.	1899.	1898.
Jan.		18,635,000	13,264,000	15,391,000		17,490,000	12,917,000	11,593,000		62,629,000	61,667,000	65,471,000
Feb.		12,156,000	9,724,000	9,672,000		16,113,000	11,931,000	11,063,000		58,672,000	59,460,000	64,080,000
Mar.			6,089,000	6,688,000			13,149,000	11,717,000			52,400,000	59,051,000
April			1,161,000	1,561,000			12,793,000	11,155,000			40,768,000	49,458,000
May			700,000	427,000			9,966,000	11,671,000			31,502,000	38,218,000
June			3,508,000	1,351,000			9,123,000	10,372,000			25,886,000	29,134,000
Six Months			34,446,000	35,090,000			69,878,000	67,571,000	—	—	—	—
Twelve Months			138,220,000	134,635,000			141,396,000	130,752,000	—	—	—	—

China (*including* Japan.)

	Imports 1900.	Imports 1899.	Imports 1898.	Imports 1897.	Deliveries 1900.	Deliveries 1899.	Deliveries 1898.	Deliveries 1897.	Stock at end of each month 1900.	1899.	1898.	1897.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
July		10,172,000	5,724,000	6,851,000		2,586,000	2,556,000	2,671,000		16,131,000	13,279,000	14,887,000
Aug.		4,326,000	5,062,000	5,559,000		2,913,000	2,934,000	3,016,000		17,545,000	15,407,000	17,400,000
Sept.		2,330,000	3,650,000	2,195,000		2,567,000	2,536,000	2,683,000		17,307,000	16,527,000	16,912,000
Oct.		1,584,000	3,105,000	3,663,000		2,302,000	2,741,000	2,869,000		16,390,000	16,891,000	17,706,000
Nov.		3,802,000	2,412,000	4,169,000		2,494,000	2,615,000	2,845,000		17,698,000	16,669,000	19,030,000
Dec.		3,638,000	3,018,000	2,762,000		2,178,000	2,223,000	2,597,000		19,157,000	17,483,000	19,196,000
Six Months		25,852,000	22,977,000	25,199,000		15,240,000	15,605,000	16,711,000		—	—	—
	1901.	1900.	1899.	1898.	1901.	1900.	1899.	1898.	1901.	1900.	1899.	1898.
Jan.		3,355,000	2,408,000	3,634,000		2,895,000	2,324,000	3,080,000		19,617,000	17,568,000	19,751,000
Feb.		1,252,000	346,000	1,327,000		2,507,000	2,354,000	2,907,000		18,362,000	15,560,000	18,171,000
Mar.			590,000	1,284,000			2,558,000	2,701,000			15,593,000	16,754,000
April			789,000	202,000			2,449,000	2,670,000			11,932,000	14,285,000
May			224,000	191,000			2,091,000	2,352,000			10,065,000	12,124,000
June			568,000	529,000			2,087,000	2,269,000			8,545,000	10,384,000
Six Months			4,925,000	7,167,000			13,863,000	15,979,000	—	—	—	—
Twelve Months			27,902,000	32,366,000			29,403,000	32,690,000	—	—	—	—

Ceylon.

	Imports 1900.	Imports 1899.	Imports 1898.	Imports 1897.	Deliveries 1900.	Deliveries 1899.	Deliveries 1898.	Deliveries 1897.	Stock at end of each month 1900.	1899.	1898.	1897.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
July		11,615,000	9,425,000	10,381,000		7,908,000	7,980,000	8,963,000		23,592,000	20,616,000	24,212,000
Aug.		9,414,000	9,592,000	8,854,000		8,633,000	8,386,000	8,350,000		24,373,000	21,532,000	24,716,000
Sept.		7,415,000	6,640,000	6,867,000		9,690,000	8,469,000	8,937,000		22,090,000	19,703,000	22,646,000
Oct.		8,366,000	6,951,000	5,920,000		9,379,000	8,432,000	8,518,000		21,076,000	18,222,000	19,649,000
Nov.		7,854,000	6,609,000	5,691,000		8,671,000	7,779,000	8,270,000		20,259,000	17,052,000	16,979,000
Dec.		6,071,000	6,904,000	5,937,000		7,144,000	6,732,000	7,287,000		19,187,000	17,224,000	16,629,000
Six months		50,735,000	45,851,000	44,160,000		51,434,000	47,778,000	50,325,000	—	—	—	—
	1901.	1900.	1899.	1898.	1901.	1900.	1899.	1898.	1901.	1900.	1899.	1898.
Jan.		10,837,000	7,850,000	8,189,000		9,020,000	6,734,000	7,501,000		21,004,000	17,840,000	17,318,000
Feb.		8,835,000	6,115,000	7,859,000		8,915,000	6,731,000	6,872,000		20,924,000	17,226,000	18,296,000
Mar.			8,190,000	7,875,000			7,311,000	8,096,000			18,108,000	18,074,000
April			8,853,000	8,990,000			6,806,000	7,603,000			17,658,000	18,762,000
May			9,327,000	6,507,000			7,190,000	8,038,000			19,790,000	17,231,000
June			8,115,000	9,777,000			8,019,000	7,599,000			19,885,000	19,408,000
Six months			45,459,000	48,488,000			42,791,000	45,709,000	—	—	—	—
Twelve months			91,284,000	92,648,000			90,569,000	96,034,000	—	—	—	—

Java.

	Imports 1900.	Imports 1899.	Imports 1898.	Imports 1897.	Deliveries 1900.	Deliveries 1899.	Deliveries 1898.	Deliveries 1897.	Stock at end of each month 1900.	1899.	1898.	1897.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
July		220,000	286,000	293,000		356,000	239,000	382,000		550,000	672,000	783,000
Aug.		501,000	760,000	277,000		502,000	261,000	361,000		549,000	671,000	699,000
Sept.		304,000	420,000	325,000		358,000	389,000	372,000		495,000	702,000	652,000
Oct.		313,000	100,000	122,000		337,000	299,000	288,000		471,000	593,000	486,000
Nov.		403,000	263,000	339,000		337,000	273,000	228,000		537,000	584,000	597,000
Dec.		198,000	187,000	235,000		253,000	235,000	234,000		482,000	536,000	598,000
Six Months		1,945,000	1,606,000	1,591,000		2,143,000	1,696,000	1,865,000	—	—	—	—
	1901.	1900.	1899.	1898.	1901.	1900.	1899.	1898.	1901.	1900.	1899.	1898.
Jan.		466,000	381,000	248,000		316,000	253,000	249,000		632,000	663,000	594,000
Feb.		329,000	333,000	151,000		360,000	277,000	240,000		595,000	718,000	530,000
Mar.			304,000	464,000			352,000	293,000			671,000	701,000
April			458,000	339,000			352,000	293,000			777,000	747,000
May			338,000	287,000			400,000	338,000			715,000	697,000
June			357,000	249,000			392,000	280,000			680,000	662,000
Six Months			2,171,000	1,765,000			2,026,000	1,697,000	—	—	—	—
Twelve Months			3,777,000	3,350,000			3,792,000	3,562,000	—	—	—	—

Total deliveries of India from 1st January, to 31st December, 1899, were 140,481,000 lb., or at the rate of 11,707,000 lb. per month (including Exports 7,724,000 lb.)
" " (" " 7,866,000 lb.) " " 1898 " 139,089,000 " " " 11,591,000 " "
" " (" " 5,497,000 lb.) " " 1897 " 127,356,000 " " " 10,613,000 " "

Total deliveries of Ceylon from 1st January to 31st December, 1899, were 94,225,000 lb., or at the rate of 7,852,000 lb. per month (including Exports 12,144,000 lb.)
" " (" " 11,522,000 lb.) " " 1898 " 93,487,000 " " " 7,791,000 " "
" " (" " 10,502,000 lb.) " " 1897 " 95,173,000 " " " 7,931,000 " "

Total deliveries of China and Japan from 1st January to 31st December, 1899, were 29,103,000 lb., or at the rate of 2,425,000 lb. per month (including Exports 11,659,000 lb.)
" " (" " 15,760,000 lb.) " " 1898 " 31,584,000 " " 2,632,000 " "
" " (" " 19,592,000 lb.) " " 1897 " 35,356,000 " " 2,946,000 " "

HOME CONSUMPTION.

	From 1st January to 31st December, 1899.	From 1st January to 31st December, 1898.
Total deliveries of India for Home Consumption	132,757,000 lb., or at the rate of 11,063,000 lb. per month.	131,233,000 lb., or at the rate of 10,936,000 lb. per month.
Total deliveries of Ceylon for Home Consumption	82,081,000 " " " 6,840,000 " "	81,965,000 " " 6,831,000 " "
Total deliveries of British-Grown Tea for Home Consumption	214,838,000 " " " 17,903,000 " "	213,198,000 " " 17,767,000 " "

N.B. The above figures do not apply to the whole of the United Kingdom, but to the London bonded warehouses only.

HOME CONSUMPTION.

	From 1st January to 31st December, 1899.	From 1st January to 31st December, 1898.
Total deliveries of China and Japan Tea for Home Consumption	17,444,000 lb., or at the rate of 1,454,000 lb. per month.	15,709,000 lb., or at the rate of 1,310,000 lb. per month.

GEO. WHITE & CO., Tea Brokers,
31, Fenchurch Street, E.C.

Printed and published by A. M. & J. Ferguson.

The total quantity of latex from these 42 fresh incisions was 59·5 c.c. There seems to have been a slight response to the wounding after two days. The weather was extremely dry at this period and the soil parched. After the lapse of six days since the first tapping a fresh series of incisions was made about two inches below the first made ones. The total quantity of latex yielded came to 115 c.c., a great increase, nearly three times that given at the first tapping. A week seems, then, a suitable interval between successive tappings.

Additional Experiment as a course of performance at Peradeniya.

Four Hevea trees have been tapped in the following fashion and with the following results:—

First tapping, A.M. March 25, 1899. On each tree a horizontal row of 5 V-shaped incisions was made at the very base of the tree around half the circumference of the trunk, and a second row of 5 similar incisions at a height of six feet covered the opposite half of the trunk, the V's in each case being about six inches apart.

The 20 incisions 6 feet up yielded	24·5 c.c. latex	
The 20 ,, at the base ,,	36·5 c.c. ,,	
Total	61·0 c.c.	

Second tapping, A.M. March 30, 1899, five day's interval. A similar number of V-shaped incisions was made. The ones at the base were put four to six inches above the old ones in such a fashion as to alternate with them, and the upper ones four to six inches below the old ones in a similar manner.

The 20 upper incisions yielded	51·0 c.c. latex
The 20 lower ,,	54·5 c.c. ,,
Total	105·5 c.c.

—a considerable increase, approaching double that of the first tapping.

Third tapping, A.M. April 6, 1899, an interval of a week. Incisions continued in the same way, the upper V's four to six inches below and the lower ones four to six inches above the ones at the second tapping.

The 20 upper incisions yielded	103 c.c. latex
The 20 lower ,,	117 c.c. ,,
Total	220 c.c.

—a great increase, more than double that of the second tapping and nearly four times that of the first tapping.

Fourth tapping, A.M. April 12, 1899. Six days' interval, conducted similarly to third tapping, except that single oblique incisions were made instead of V's.

The 20 upper incisions yielded	90·5 c.c. latex
The 20 lower ,,	118·0 c.c. ,,
Total	208·5 c.c.

—almost equal to the quantity of latex obtained at the third tapping; thus it looks as if single oblique incisions would give almost as much as V-incisions, at any rate when the milk runs freely and in fair quantity.

Fifth tapping, A.M. April 15, 1899. Three days' interval, single oblique incisions.

20 upper incisions yielded	125·5 c.c. latex
20 lower ,,	130·0 c.c. ,,
Total	255·5 c.c.

Sixth tapping, A.M. April 20, 1899. Five days, single incisions.

20 upper incisions yielded	137·5 c.c.
20 lower ,,	162·5 c.c.
Total	300·0

Seventh tapping, A.M. April 25, 1899. Five days, single incisions.

20 upper incisions yielded	152·5 c.c.
20 lower ,,	124·0 c.c.
Total	276·5 c.c.

Eighth tapping, A.M. May 1, 1899. Six days, single incisions.

20 upper incisions yielded	142·0 c.c.
20 lower ,,	111·0 c.c.
Total	253·0 c.c.

The tappings started at the base reached those started from above this day, but are still [illegible].

Ninth tapping, A.M. May 6, 1899. Five days, single incisions.

20 upper incisions yielded	130·5 c.c.
20 lower ,,	134·0 c.c.
Total	264·5 c.c.

Tenth tapping, A.M. May 13, 1899. Seven days, single incisions.

20 upper incisions yielded	133·0 c.c.
20 lower ,,	142·0 c.c.
Total	275·0 c.c.

Eleventh tapping, A.M. May 20, 1899. Seven days, single incisions.

20 upper incisions yielded	141·0 c.c.
20 lower ,,	114·0 c.c.
Total	255·0 c.c.

Twelfth tapping, A.M. May 26, 1899. Six days, single incisions.

20 upper incisions yielded	153·0 c.c.
20 lower ,,	109·0 c.c.
Total	262·0

Thirteenth tapping, A.M. June 1st, 1899. Six days, single incisions.

20 upper incisions yielded	222·0 c.c.
20 lower ,,	106·0 c.c.
Total	328·0 c.c.

Fourteenth tapping, A.M. June 6th, 1899. Five days, single incisions.

20 upper incisions yielded	342·0 c.c.
20 lower ,,	107·0 c.c.
Total	449·0 c.c.

Thus 280 incisions altogether were made, working from above downwards (uppers), and the same from below upwards (lowers); the respective total yields were:—

Uppers	1,995·5 c.c.
Lowers	1,547·5 c.c.
Total	3,593·0 c.c.

This experiment shows very clearly the effect of wounding on the flow of latex: the total rose from 61 c.c. at the first tapping to a maximum of 300 c.c. at the sixth, and then slowly fell off until the two series of wounds met and crossed at the eighth tapping; after this the yield slowly increased [illegible]

[illegible]

C.—THE PREPARATION OF COMMERCIAL RUBBER FROM THE EXTRACTED LATEX.

HEVEA BRASILIENSIS.—In experiments previously performed at the Gardens the latex was merely allowed to dry to form rubber. That which dried on the trunk was pulled off in strings and wound into balls; [illegible]

[illegible]

CENTRIFUGALIZATION OF LATEX.—[illegible]

[illegible]

COAGULATION BY ACETIC ACID.—The Para rubber of the Amazon Valley has always obtained the best price in the market, and this no doubt is largely due to the way it is manufactured. Descriptions of this are to be found in Seeligmann's "Le Caoutchouc et la Gutta-percha," p. 63, and in the "Cantor Lectures" for 1898 by Dr. Morris, p. 15, and need not be repeated here. However, the theory of it has been investigated by Mr. Biffen (*Annals of Botany*, June, 1898, p. 116), and the method shown to be an empirical one, based on sound principles. The smoke given off from the burning palm nuts contains acetic acid and creosote. The former coagulates the latex and the latter acts as a preservative, preventing the growth of moulds, &c. A practical method based on the above has been elaborated at Peradeniya, giving good results.

The latex of *Hevea brasiliensis* is usually of a white colour; sometimes it is cream-coloured, when it dries to a light amber-tinted rubber. The yellowish latex is constant for certain trees. Of the 32 trees at Peradeniya, 9 have a decidedly cream-coloured latex.

The latex has no very pronounced odour or taste. Sometimes it may be slightly sweet.

It is said to be slightly alkaline, although as far as my experience goes its alkalinity is not recognizable by ordinary red litmus paper.

It mixes in all proportions with water and shows no tendency to cream. This is in opposition to what Seeligmann asserts in his work before mentioned, p. 102. In order to prepare commercially pure caoutchouc of Hevea he says that the latex should be diluted four times with water and left for 24 hours in a very cold place, when the caoutchouc floats to the top in the form of a cream. I have never seen the least tendency of the Hevea latex to cream. Some latex diluted four times was kept in an ice chamber for six days without showing any signs of separation; in this case a little ammonia was added to prevent coagulation by putrefaction. In a previous experiment the diluted latex without any ammonia showed no change after 24 hours; after 48 hours coagulation had taken place to a considerable extent, but no creaming. This coagulation was without doubt due to the growth of bacteria, because a slight putrid smell was observable.

The effect of freezing the latex was tried to see whether in thawing the caoutchouc particles would segregate and form a cream or clot. The diluted latex was frozen solid by means of a mixture of ice and common salt. It melted to practically the same condition as it was in before and showed no signs of separation.

Now, Castilloa latex creams readily; its rubber globules are comparatively large, whereas those of Hevea are almost immeasurable. Seeligmann (*loc cit.*, p. 91) puts the globules of caoutchouc of Hevea of a mean diameter of 3·51 μ*; this is about that of Castilloa; possibly he has confused the two, and his remarks on creaming, although stated for Hevea, really refer to Castilloa.

Since the latex of Castilloa contains much larger globules than that of Hevea, it is not surprising that it readily creams, while the other does not.

Further, the diluted latex of Hevea is unaffected by boiling. In experiments with the latex it is nearly always necessary to dilute it, as it is so thick when pure; thus, if the pure latex be heated, water is driven off to some extent and it is liable to thicken so as to be charred. Hence the effect of boiling can hardly be determined without previously diluting the latex with water. The latex of *Manihot Glaziovii* differs from Hevea in being coagulated by boiling, so that the rubber can be removed by this means.

The phenomena of the coagulation of latices by boiling or by the addition of chemical re-agents, &c., are due to the presence of albuminous (proteid) matter. Biffen has investigated this, and produces several interesting facts connected with it in his paper in the *Annals of Botany* referred to previously.

Coagulation is distinct from the mere separation of the caoutchouc particles in the form of a cream. In the former case a mass of rubber is obtained, which cannot be again mixed up with water; in the latter case the particles have not been fused together, but still preserve their individuality, and the cream they form can be again mixed up with water to produce as it were latex again.

Coagulation is brought about by the separating out of the proteid matter from solution, which entangles in its meshes the rubber particles so as to form a clot. Proteids differ from one another as regards their solubility in water, saline solutions, acids, alkalies, and may or may not be coagulated by boiling their solutions.

In the latex of the Ceara rubber tree the proteid is of such a kind as to be coagulated when heated; hence the rubber particles are brought together in the form of a clot.

With the latex of Hevea this is not the case; when heated no change takes place, hence the proteid is not coagulable by boiling.

The following analysis of the latex *Hevea brasiliensis* is given by Seeligmann (*loc. cit.* p. 94):—

Caoutchouc	32 per cent.	in solution.
Nitrogenous matter (proteid)	2·3 ,,	in solution.
Salts	0·2 ,,	in solution.
Resinous matter	traces	
Water, slightly alkaline	55 to 56 per cent.	

The following estimations were made on a sample of latex collected from one Hevea tree at Peradeniya on November 11, 1898:—

Water	55·148 per cent.
Ash	0·405 ,,
Sugar (calculated as cane)	0·36 ,,
Proteid as calculated from the amount of nitrogen	2·8 ,,
	58·713 ,,
Caoutchouc, &c., by difference	41·287 ,,
	100·0

We desire to express our thanks to Mr. Kelway Bamber for kindly making this estimation of nitrogen as well as some others. From the above analysis we see we have to deal with a considerable quantity of proteid.

Faraday analysed many years ago a sample of latex imported from Brazil and presumably that of *Hevea brasiliensis*. He termed the proteid matter albumin, and Biffen quotes him as the authority for considering the proteid of this type. Typical albumin is that which largely composes the white of egg and is readily coagulated by heat. From experiments I am inclined to consider the proteid of Para latex, at any rate as far as Ceylon is concerned, not to be albumin, but rather an albuminate, resembling casein, the special proteid of milk. Its reactions and behaviour towards saline solutions and acids resemble that of an alkaline albumin.

Acids have been employed for the extraction of rubber from the milk. In Madagascar citric and sulphuric acids are used to coagulate the latex of *Landolphia madagascariensis* (*Vahea funifera*), Seeligmann p. 66. Dr. Morisse, when in the rubber-producing regions of South America, tried the coagulating power of a number of chemical re-agents on the Para latex. His results are quoted in Seeligmann's book, p. 67. He finally employed a mixture of sulphuric acid and phenol (carbolic acid); the one the coagulating, and the other the preserving agent. From the numbers given I calculate that 4·2 grain sulphuric acid is required to coagulate 100 c. c. of latex.

Dr. Heller has also employed acetic acid to coagulate the latex of *Artocarpus chaplasha* (Watt's Dictionary of Economical Products of India, Vol. IV., p. 343.)

The coagulating power of various acids has been tried here on the latex of *Hevea brasiliensis*, viz., hydrochloric, sulphuric, nitric, acetic, oxalic, tartaric, and citric acids, and we have come to the conclusion that on the whole acetic is the best acid to employ.

All the acids bring about the coagulation in the cold, but much quicker when warmed. The amount required is extremely small, and varies somewhat for the different acids. If excess be added, then coagulation ceases to be complete.

The quantity depends on the quantity of pure latex and is independent of its dilution; or in other words, doubling the dilution halves the acid for a given volume. A certain weight of acid is required for 100 c. c. of latex, no matter whether this be diluted with water to 500 c. c. or 1,000 c. c.

The figures to be given are approximate only. 100 c. c. of pure latex are completely coagulated, *i.e.*, the liquid part is left quite clear, by—

0·1 gram	Sulphuric acid
0·1 ,,	Hydrochloric acid
0·3 ,,	Nitric acid
0·05 ,,	Acetic acid
0·2 ,,	Oxalic acid
0·25 ,,	Tartaric acid
0·5 ,,	Citric acid

From the above it is seen that much more acetic acid is required than sulphuric acid. [illegible] we employ the latter as being cheaper? The reason is that with all the acids except acetic, the range for complete or nearly complete coagulation is extremely small. As regards sulphuric acid, coagulation was not complete with 0·05 per cent. of acid, about complete between 0·1 and 0·2 per cent., not complete with 0·3 per cent. or 0·25 per cent., far from complete with 0·6 per cent. Thus, unless the percentage for the pure latex can in practice be brought between 0·1 and 0·2, all the rubber particles are not extracted from the diluted latex.

With acetic acid, however, the range is much greater. Coagulation is complete between 0·19 and 0·39 per cent. and almost complete between 0·025 per cent. and 0·8 per cent.—a very considerable range, which can fairly readily be reached in practice. Thus, with acetic, the acid may be added either in quantities four times below the proper amount or nine times above it, with very little waste of rubber; whereas with the other acids such would mean a very incomplete coagulation. It is for this reason that acetic acid is advised in place of the others.

In my experiments the latex was usually diluted ten times; but, no matter what the dilution may be, the caoutchouc particles are capable of being collected together into a clot by the necessary amount of acid. This was even done for latex diluted 2,000 times. One c.c. of latex diluted to 2,000 c.c. requires, of course, just the same quantity of acid as if it was diluted only to 5 c.c. The common B.P. acetic acid was used, in the proportion of 3 c.c. of acid to 100 c.c. of pure latex.

The following reason is given for this behaviour of Para latex towards acids. The latex is slightly alkaline. The proteid is of such a nature as to be insoluble in neutral solution, but soluble in alkaline or acid media. A small quantity of acid is necessary to neutralize the alkalinity, and this precipitates the proteid in a flocculent manner, collecting together the caoutchouc particles. If too much acid is added, then the proteid remains still in solution, being now in an acid medium. When the latex is diluted with water, the extra bulk of fluid requires just the same quantity of acid, because the alkalinity in amount remains the same. Acetic is a weaker acid than the others, and so does not bring about the changes so rapidly.

The following is the application of this method of preparing rubber from the latex by means of acid. If possible the volume of pure latex should be known, and then the required amount of acid can easily be calculated. Otherwise the times of dilution of the latex should be known approximately, and then the acid calculated for the whole bulk of fluid.

In our experiments a known quantity of water was added to each collecting tin, about 5 c.c. Since the latex of Hevea is so thick, a little fluid previously put into the tins is necessary to prevent the latex from drying. The whole of the collecting tins are emptied into a measuring cylinder and the amount of latex ascertained by deducing the quantity of water added. The washings of the tins, &c., are all added to the diluted latex, and the whole passed through a sieve made of coarse cloth, which removes particles of bark and other impurities. A second filtering is desirable. The latex now diluted, perhaps 20 times, is heated to nearly boiling point over a fire; any scum that may rise is removed, as it contains any remaining dirt which has passed through the cloth. If ammonia has been added to the water put in the tins to prevent spontaneous coagulation, the heating is continued for ten minutes or so to drive it off, else it will interfere with the coagulation. The milk should be continually stirred. The requisite amount of acetic acid is now added and the whole briskly stirred, when in a few seconds the caoutchouc separates out in clots. The boiling vessel is then removed from the fire and copious cold water added. The rubber clots are opaque and white in appearance; the liquid part should be quite clear or show only a slight turbidity. If quite clear, it shows that the whole of the rubber particles have been collected together into the clots; otherwise there is a little caoutchouc still in suspension: the greater the turbidity, the more caoutchouc globules remain in the liquid. The coagulum of rubber is quite soft and spongy and ought to be pressed out into thin sheets—the thinner the better—in order to allow the rubber to dry quickly. If pressed into pieces of the thickness of ⅛ in. (3 m.m.) or even less, the rubber soon dries provided the atmosphere is not very damp. The whitish opaque appearance gradually disappears and the rubber becomes translucent and of about the colour of gelatine.

Such rubber, if it does not dry quickly—and it is sometimes difficult to get it to do so on account of rubber districts being damp places—is apt to putrefy or at least mould. To prevent this it is advisable to add along with the acid a little creosote in alcoholic solution, about 0·5 per cent. of the total bulk of fluid. This will hinder growths of mould, &c., during the time the rubber is drying. Creosote has been found more effectual than phenol (carbolic acid), as it does not evaporate so quickly.

We have not tried any artificial means of hastening the drying of rubber. It should on no account be placed in the sun. The intensity of a tropical sun quickly gives to the surface a stickiness which is permanent and cannot be readily removed, and which renders the rubber less valuable in the market.

To dry rubber by heat does not seem advisable. If any artificial means are to be used, they should be more in the direction of hygroscopic re-agents, such as quick lime or calcium chloride placed in the drying chamber. But if the rubber be rolled into very thin sheets it soon dries of itself in good weather.

It was stated before that the acids coagulated the diluted latex in the cold. With acetic this takes place after a few hours. The whole of the caoutchouc globules are gradually gathered together into a very loose clot, which can readily be removed from the clear liquid and pressed into a sheet of rubber.

This method may ultimately prove better for use on the large scale than the "hot" method, but it is difficult to use creosote in the cold as it will not then mix with the milk.

The rubber prepared by this acetic acid process, of course, contains about all the proteid present in the latex. Mr. Bamber kindly estimated the amount of nitrogen in a sample of this rubber and found 0·592 per cent.; this corresponds to 3·7 per cent. proteid, supposing the proteid in question to contain 16 per cent. of nitrogen, which is the average amount.

3·7 per cent. proteid in the dry rubber corresponds to about 1·5 per cent. in the latex. Hence it seems that not all the proteid of the latex finds itself in the rubber. This is borne out by the fact that the clear liquid remaining after coagulation with acetic acid often gives re-actions with the tests for proteid.

Experiments estimating the weight of rubber obtained from a given volume of latex by the acetic acid method have been tried. The rubber was dried in a desiccator till constant in weight.

The numbers vary from about 45 to 50 grams per 100 c.c. of latex. A c.c. of latex weighs nearly 1 gram, so that 45 to 50 per cent. of crude rubber are obtained; deducting 4 per cent. of proteid, this leaves 41 to 46 per cent., which must consist almost wholly of caoutchouc. Seeligmann mentions 31 as the percentage of caoutchouc in Hevea latex, Biffen only 28 per cent. to 30 per cent. The latex from the trees in Ceylon is evidently thicker with a larger percentage of caoutchouc. This, however, is not an advantage, on the whole, for the flow is much less and is not nearly compensated for by the extra percentage of caoutchouc in the latex. We shall see that the percentage of caoutchouc likewise varies for Castilloa latex.

EXTRACTION OF CAOUTCHOUC BY MEANS OF MERCURIC CHLORIDE (CORROSIVE SUBLIMATE).—The coagulating power on the latex of Hevea of several salts has been tested, viz., sodium chloride (common salt), alum, ammonium sulphate, magnesium sulphate, and mercuric chloride. Stating the results as for the acids, 100 c.c. of latex is completely or nearly coagulated in the cold or boiling by—

7·5 to 12·5 per cent. sodium chloride (coagulation very partial, fluid left milky in all cases). 30 per cent. alum (40 per cent. and 25 per cent., not complete). 40 to 50 per cent. ammonium sulphate. 2·5 to 10 per cent. magnesium sulphate. 8·3 per cent. mercuric chloride.

Mercuric chloride (corrosive sublimate) is the only one which has a strong and complete coagulating power on the latex. From 0·3 per cent. upwards all the caoutchouc is separated from the diluted latex, leaving the liquid part quite clear. It can thus be used for preparation of rubber from the milk.

It acts better in the cold than when heated. Boiling the milk with it is apt to make the coagulation incomplete, the liquid part being left turbid.

The calculated amount of an aqueous solution* of mercuric chloride is added to the latex, diluted some ten times and then vigorously stirred. In a few minutes a separation of the caoutchouc in small flocculent portions is observed; these gradually rise to the top, being lighter than the water, and after the lapse of an hour the caoutchouc is in the form of a lumpy cream on the surface. If allowed to remain longer, say twelve hours, the cream becomes a clot, and can be lifted out and pressed on to a sheet of rubber. It is perhaps better to remove the rubber in the cream form by running off the liquid below, either by a syphon or, better, by means of a tap at the bottom of the vessel; the cream can then be poured out in a thin layer into a porous surface and so speedily dried.

The advantage of this method over the acetic acid one is two-fold. Firstly the rubber is perfectly aseptic and cannot putrefy or mould. Secondly, the creaming allows the rubber to be dried quickly. The objections are the very poisonous character of the reagent and the presence of mercury in the rubber, although this is extremely small, about 0·75 per cent. of the salt in the dried rubber.

With this reagent any mineral matter in the water used for dilution will be apt to have an effect and prevent the separation of the caoutchouc. The mercuric chloride added will have to first satisfy such salts in the water as carbonates, before it will be free to act on the proteid; consequently it is not advisable to dilute the latex too much. If, after adding the calculated amount the separation show itself not complete after a few minutes, more of the reagent can be added till the liquid part of the separated latex is quite or very nearly clear. This perhaps is a third advantage over the acetic acid method. If in the latter case too little acid has been added so as to effect only a partial coagulation, it is not easy to extract the remainder of the caoutchouc globules by further addition of acid.

CASTILLOA.—Mention has been made before-hand of the case with which this latex creams. The comparatively large caoutchouc globules in the diluted latex float to the top to form a thick layer on the surface of the liquid below. This permits of a simple means of preparing good rubber from the latex.

Before proceeding to the discussion of this method a few points connected with the chemistry of this latex are worthy of mention.

The latex as it first trickles out of a wound is quite white like that of Hevea or Manihot, but it rapidly darkens in colour and at the same time a separation occurs; the caoutchouc globules collect together in white flakes or masses from the rapidly darkening fluid part of the latex.

The darkening is due to the production of a deep brown soluble colouring matter, and is dependent on the oxygen of the air and on a special ferment, an oxydase, occurring in the latex. The ferment acts as an oxygen carrier between the air and the colour producing body of the latex. Boiling the freshly-drawn latex prevents the formation of the colouring matter, since it destroys the ferment. Tannin occurs in considerable quantity and renders the latex bitter to the taste. An alkaloid too is present. In fact, the liquid part of this latex is of a more complex nature than that of Hevea.

The proteid of the latex of *Castilloa elastica* has been investigated to some extent by Mr. Biffen (*loc. cit.*, p. 167). He finds the latex of acid re-action, which on the addition of a little alkali is coagulated. This he finds to be due to the nature of the proteid, which exists as acid albumin in the latex; on neutralisation it comes out of solution and gathers together the caoutchouc particles in a clot.

Now, the latex of the Castilloa growing in Ceylon does not seem to behave like this. On the very gradual addition of alkali to the latex or to the filtrate of the latex no coagulation or precipitation occurs. Alcohol causes a coagulation of the latex and a copious precipitate in the filtrate, which is quite soluble in water again. We have reason to consider the Castilloas introduced into Ceylon to be not the species *Castilloa elastica*, but another one, *Castilloa Markhamiana*; consequently the properties of its latex may very easily differ from those of *Castilloa elastica*.

The latex left to itself dries to a deep brown rubber of good quality, but with a large percentage of impurity. By creaming the rubber can be obtained translucent and colourless, and consists almost wholly of caoutchouc, whereas the former contains dried in it all the soluble constituents of the latex.

The proteid, as estimated from a nitrogen determination kindly made by Mr. Bamber, comes to 9·187 per cent. in the dried latex, *i.e.*, about 4 per cent. in the ordinary latex. A similar analysis made of the rubber prepared by creaming showed just a trace of nitrogen.

When the latex of Castilloa is mixed with water and allowed to stand, in the course of an hour or two the caoutchouc particles have all floated to the top to form a thick cream over the brown beer-like liquid below. This liquid can be syphoned off, or, better, removed from the vessel by a tap at the bottom. The cream can then be mixed up with water again and left to stand, and when the caoutchouc has again risen to the top the liquid can be run off a second time. After a third washing most of the soluble matter of the original latex will have been removed. The thick cream is now ready to be dried in thin layers either by mere exposure to the air or on a porous surface.

A few points of considerable practical importance connected with this creaming have been noticed. The first creaming is always the quickest, *i.e.*, the caoutchouc globules rise to the surface in the shortest time; succeeding creamings take gradually longer times. Why this should be is not quite clear. One reason to be put forward is, that the difference in density between the liquid and the caoutchouc is greatest at the first creaming owing to the soluble matter in the original latex, and as this latter is gradually removed the density of the water approaches nearer that of the lighter caoutchouc, and hence the globules have not the same tendency to rise. Perhaps another reason which partially accounts for it is that in the collected latex the caoutchouc globules are coherent in little masses, and naturally in this form rise quicker. Further washings are apt to separate the caoutchouc into the individual globules, and hence the rising of the rubber is retarded. From various experiments it is found that the latex diluted about five times with water creams fairly well three times; at the fourth time the creaming is not complete, the liquid to be run off remains somewhat milky. However, three times creaming at about the fifth dilution washes the caoutchouc well, giving almost colourless rubber. Washing at this dilution only once affords good rubber, which, provided the drying surface is very porous, is very slightly coloured owing to the brownish liquid in the cream being absorbed.

It seems, although the experiments as yet are incomplete, that churning facilitates the creaming. Perhaps a cylindrical churn rotating round its short axis with a tap in the bottom would be a suitable machine for the purpose.

Through the kindness of Mr. Drieberg we tried the diluted latex in a small glass churn and found that when brought to rest it creamed readily (see figure at end).

The caoutchouc cream, as it may be termed, consists of the globules which have not fused with one another, and of water. It is a thickened latex without the soluble matters in the aqueous part. To make rubber from it the water has to be removed.

The cream may be poured out on a clean surface in thin layers and the water allowed to evaporate, when the individual globules of caoutchouc fuse together to form a sheet of rubber. Mere atmospheric evaporation is slow. The drying is done much more speedily by pouring the cream on to a porous surface made of some fine earth. When dry, the rubber is so transparent as to be almost invisible. It is then stripped off and is ready for market. Two objections or drawbacks to a porous surface are to be mentioned. In peeling of the sheet of rubber particles of the surface are liable to be detached and rolled up with the rubber; this can be largely prevented by having the porous surface smooth and unfriable. The absorbing power of a porous material diminishes with use, especially if the watery part of the rubber-cream contains much soluble matter, because then the pores are apt to be clogged. What may be the best porous material is still a matter of consideration.

Rubber prepared carefully by the above method should contain very little impurity and command a good price. It should, in fact, be as good as that obtained by means of the centrifugal machine, although this latter allows of a much speedier preparation of rubber from the milk.

The rubber thus obtained is so dry that it is practically unnecessary to use any antiseptic or preservative such as creosote; but of course it should be packed carefully and exported as soon as possible, as rubber soon spoils in a tropical climate.

MANIHOT GLAZIOVII (Ceara Rubber Tree).—This latex has been shown by Biffen to be also capable of yielding its rubber by centrifugalization as well as by churning.

Experiments with this latex have not been very extensive.

Two chief points connected with its chemistry are that the proteid is of such a nature as to be coagulated by heat—hence boiling the latex clots it—and that a little alkali added in the cold brings about a separation, not in clots, due, I believe, to a precipitate of calcium hydrate (lime), which collects together the caoutchouc particles in a flocculent manner.

Ceara latex is very prone to putrefaction, which brings about spontaneous clotting. After a few hours standing it becomes malodorous.

Boiling the diluted latex and treating it the same way as Para milk might be suggested as a practical method of preparing the rubber. This would of course contain the proteid, and if not quickly dried would putrify, unless some preventative had been added.

From a nitrogen determination kindly made by Mr. Bamber, the rubber obtained by boiling the latex contains about 5 per cent. of proteid.

D.—YIELD.

The subject of yield is, of course, one of the most important practical points to be dealt with in this paper.

From our experiments it would seem that the amount of latex or rubber extractable from the trees introduced into Ceylon is much less than that from the same trees in their native homes, or even, so far as the few available results indicate, in other Eastern countries. This is distinctly discouraging for rubber cultivation in Ceylon. In this connection it is worthy of special remark that Ceylon contains no indigenous rubber-producing trees, which [illegible] value, and that the milk of Jak, Breadfruit, and other introduced trees, which elsewhere is said to contain caoutchouc, here appears to contain none.

HEVEA BRASILIENSIS.—From Seeligmann's "Le Caoutchouc et la Gutta-percha," p. 45, are gathered the details of the flow of latex from the Heveas in the Amazon Valley. From each simple oblique incision about 30 c.c. of milk are obtained, flowing slowly for one to three hours. Nothing like this quantity has been obtained from the trees at Peradeniya or Henaratgoda. The average for a simple incision is not beyond 2 or 3 c. c.; it might possibly be raised to 10 or 12 c. c. by paying careful attention to the wound response and to the time of year.

The most that has been collected from one V-shaped incision was 20 c. c., flowing for two hours from a tree at Peradeniya, October 18, 1898. Usually the exudation stops in about a quarter of an hour, yielding 1 to 4 c. c. of latex.

There is a great individual difference in the trees in the yield per incision. Out of the 32 trees at Peradeniya, 2 flow much better than any of the rest, without any apparent reason. The same is observable at Henaratgoda. One tree there of large size barely exudes any latex when wounded; at most a few drops trickle into the collecting vessel. This inherent individual difference in yield may be due to a difference in the number of laticiferous tubes, or to a more or a less complete communication between the separate tubes. It suggests propagation, if possible, from the best flowing trees.

There is considerable variation in yield of latex per incision, according to the time of year, or perhaps rather to the state of the weather. From observations, necessarily very incomplete as extending over only a single year, I have largely come to the conclusion that moisture is the great requirement for flow of latex; that at the wet seasons of the year the latex flows more freely, at the same time being thinner, and that therefore tapping should be done just after a spell of wet weather. To my mind the laticiferous tubes act as water-storers; when there is plenty of moisture in the soil, more water is drawn up by the roots than is needed at once, and finds its way into the laticiferous ducts, to be drawn upon when required. The latex is thus slightly diluted and the vessels rendered more turgid, so that the extra pressure raised in them, as well as the thinner nature of the milk, causes a greater flow from a wound. Again, moisture may facilitate growth in thickness, and so the producing of new laticiferous elements. Nevertheless I am under the impression that in a given tube the latex may become more copious by the infiltration of water during wet weather, and that therefore the increased flow is not alone due to the formation of new laticiferous tubes.

Another point of importance is the nature of the soil as regards its retentiveness of moisture. From analysis of three soils taken from rubber plantations in Ceylon it is shown that the sample from Henaratgoda is very deficient in this water-holding property. This, no doubt, has something to do with the poor yield of milk from the Hevea trees there.

In the Circular on "Rubber Cultivation" the drier parts of the two monsoons—*i. e.*, from January to April and in August and September—are considered the most satisfactory times of the year for tapping. Rainy weather is, of course, inconvenient. All the same, the tapping should be done just after a spell of wet weather, when the laticiferous system is most turgid and full of latex.

Early morning, just after daybreak, is recommended as a convenient and also favourable time for tapping. Sunshine on the incisions is to be avoided, as the heat dries the latex on the wound, and is thus apt to check the flow by clogging the wound.

In the Government plantations of Heveas Mr. Lewis has noticed that the border trees, which receive most sunshine on their trunks, appear to exude latex more freely than the others, and has suggested the possibility of the sun's rays shining on the bark in the early morning exercising a stimulating effect on the flow of latex from a wound.

Sometimes we have thought to have observed the same, but when submitted to a test experiment no difference was observable between the illuminated side and the shaded side of the trunk. It is conceivable that the warmth of the early sun on the bark might stimulate the circulation of the latex if it exists, and so cause a greater flow of latex from a wound in such an area. As the morning advance this supposed increase would be marked by the the latex quickly drying over the wound and hindering further flow. The effect, if it occurs, would then be only very temporary.

The experiments at Henaratgoda on March 8, 1899, was conducted in this wise. Trees were chosen which in the early morning received the sun on one side of the trunk, eight in all. Two pairs of tins were fixed at corresponding levels on each tree, *i.e.*, on each tree two tins were placed on the sunny side and two on the shady side. After the sun had shone on the bark for about a quarter of an hour the incisions were made and the latex collected and measured:—

Sun-side	16 incisions yielded	24·5 c. c.
Shade side	do	29·0 c. c.

The shade-side has given more, which from the external effect of the sun on the latex is to be expected. The internal effect of the sun's rays on the latex is not supported.

CASTILLOA.—It has been mentioned that the flow of latex from an incisions is much greater than in Hevea. The largest amount obtained from a single incision has been 120 c. c. from a tree at Henaratgoda, *i.e.*, six times the largest amount obtained from a Hevea. It is quite possible, however, that the total quantity of rubber extractable from a Hevea tree at one time might equal that from a corresponding Castilloa, but the labour necessary would be much greater for the first.

The Castilloa latex as a rule contains only about half the percentage of caoutchouc that that of Hevea does. Experiments have shown for the trees at Henaratgoda the following percentage of rubber in the latex extractable by creaming: 17·6, 25·5, 21·1, 21. The greater the flow is, the less the percentage of caoutchouc, but not proportionally. The flow is increased much more than the percentage of caoutchouc is diminished, and *vice versâ*. Some results from tapping Castilloas growing in the Matale District exemplify this point. The quantity of latex collected per incision was very meagre and averaged 7 c.c. It was very thick and had 37 per cent. of extractable caoutchouc.

The following are the results obtained as regards yield of rubber from Castilloa trees growing at Henaratgoda, tapped at the beginning of March, 1899:—

Tree 1: girth 4 ft. from ground, 3 ft. 2 in.
Tapped the trunk up to 6 ft. with only 4 cuts.
Weight of dry clean rubber obtained 70 grams (2½ oz.).

Tree 2: girth 3 ft. 2 in.
Tapped the trunk up to 12 ft. with 58 incisions.
Weight of rubber 282 grams (10 oz.).

Tree 3: girth 3 ft. 5 in.
Tapped to height of 9½ ft. by 8 incisions.
Weight of rubber 84 grams (3 oz.).

Tree 4: girth 3 ft. 8 in.
Tapped to height of 12 ft. by 12 incisions.
Weight of rubber obtained 191 grams (6¾ oz.).

What time should elapse before the trees flowed as well again, has not yet been ascertained. Perhaps the trees would not be worth tapping more than twice a year. In that case the yield of rubber per tree per year from a trunk 3 ft. in girth and 12 ft. in length would come to about 300 grams or 10¾ oz., a small amount compared to the results stated for its native country. In fact, the weight of rubber would not be much greater than from Heveas of corresponding size tapped ten to twelve times in the year, but the expense of extraction would be very much less.

[NOTE.—Experiments of yield of trees in Ceylon, started at various times during the past two years, are still in progress, and their results will be given in a latter Circular; I should be grateful for any notes on this subject from planters and others who may have experimented in this direction.—J.C.W.]

E.—NOTES ON OTHER CAOUTCHOUC-YIELDING PLANTS GROWING AT PERADENIYA AND HENARATGODA.

URCEOLA (CHAVANNESIA) ESCULENTA, Benth. (N. O. Apocynaceæ), native of Burmah.—This is a climbing plant. The specimen growing at Henaratgoda has its main stem of about 9 inches (?)* in girth. On wounding it the white latex trickles out in fair abundance and moulds into good rubber free of stickiness. The latex from the thin stems such as bear the leaves or have recently shed them forms a sticky substance when moulded between the finger and thumb. The plant resembles Castilloa in this respect.

The latex both from the pith and the cortex of the young stem is sticky; hence it looks as if the true caoutchouc is only formed in the secondary bast.

It is mentioned in Dr. Morris's Cantor Lectures, p. 43, as a probable source of some of the Burmah rubber.

LANDOLPHIA KIRKII (N. O. Apocynaceæ).—The best rubber-climber of Africa. The latex from the thick stems of the plants growing at Peradeniya and Henaratgoda yields good rubber free of stickiness. The latex from the cortex of young stems and from the pith dries to a viscous substance.

LANDOLPHIA FLORIDA.—The single plant at Peradeniya has a main stem of 12½ inches in girth. The latex from it flows freely, but does not yield true caoutchouc, only the common viscous matter. The same is true for the latex of the young stems. This plant then cannot be considered a true rubber-producing one.

It is reckoned one of the chief rubber plants of Africa, especially the West Coast. In the Cantor Lectures by Dr. Morris, p. 31, it is mentioned as producing a very adhesive rubber.

LANDOLPHIA HENDELOTII.—The small plant at Peradeniya has a main stem of only two inches in circumference, which yields a viscous latex. It is native of Eastern Africa, and in the Cantor Lectures is not definitely stated as a rubber liane.

TABERNÆMONTANA CRASSA (N. O. Apocynaceæ).—Dr. Morris says that this tree of West Africa is supposed to yield some of the rubber exported from Sierra Leone and the Gold Coast.

The tree examined at Peradeniya has a circumference of 2 ft. 3 in. at the base of the trunk. The latex flows freely, but produces only a thicky substance and not true caoutchouc.

SAPIUM BIGLANDULOSUM (N. O. Euphorbiaceæ).—This tree is recognized as producing a valuable rubber at elevations of 6,000 to 8,000 ft. in Columbia (Morris's Cantor Lectures, p. 28).

The moderate-sized tree at Peradeniya (girth 3 ft. 2 in.) yields from an incision in the trunk a little latex, which dries to a sticky resinous substance, wholly destitute of the characteristic properties of caoutchouc. Another tree growing on the other side of the Island in the Botanical Garden at Badulla yields a similar viscous substance.

FICUS VOGELII (N. O. Moraceæ).—Considered to be a rubber tree in its natural habitat on the West Coast of Africa. A paragraph is devoted to it in the Cantor lectures, p. 33. The milk is said to have a large percentage of resin, but samples have been prepared which were favourably reported on by the manufacturers.

The good-sized tree growing at Peradeniya yields from its trunk abundant latex. When tapped on December 10, 1898, 32 c. c. per oblique incision was measured. The solid matter of the latex dried to a sticky substance with little elasticity. Of these six or seven supposed rubber trees, only two, viz., *Urceola esculenta* and *Landolphia Kirkii*, produce from their older stems rubber free from stickiness, tough, and elastic.

In all cases the latex of the younger parts does not yield true caoutchouc, or at least caoutchouc alone.

Possibly there is a tendency for such trees in Ceylon to deteriorate in their rubber-yielding capacities. The case of *Sapium biglandulosum* certainly points that way.

(Signed) J. PARKIN.

Peradeniya, April 13, 1898.

GENERAL REMARKS ON THE ABOVE REPORT.

As the report is rather long, and goes into some detail, it may be well to briefly draw attention to some of the chief conclusions.

Caoutchouc or Indiarubber is found in certain families of plants, especially the Euphorbiaceæ, Moraceæ, and Apocynaceæ, contained in laticiferous vessels or tubes, which are quite closed, but when wounded exude the milky latex. They lie as a rule in the inner bark of the tree, and contain, besides caoutchouc, various other substances, suspended or dissolved in water. These interfere with the purity of the caoutchouc and lower its market value.

The ideal rubber yielding tree would be one in which there were many laticiferous vessels, all communicating freely with one another, and containing only caoutchouc in an emulsion with water. The trees cultivated in Ceylon do not reach this standard, but depart from it in different ways. Hevea contains very pure latex, but its laticiferous vessels do not seem to communicate freely, so that a large number of incisions are needed to get all milk; Castilloa has much freer communication, but a more impure latex, and less percentage of caoutchouc therein; Manihot has poor communication and very impure latex, containing a small percentage of rubber. The objects to be aimed at in practice are principally:—

(1) To get a good quickly growing tree, which will yield a large quantity of rubber after as few years as possible.

(2) To obtain the latex with as little labour as possible, and with the greatest possible cleanliness, as all impurity lessens its value.

(3) To obtain from this latex as pure caoutchouc as possible, with the least practicable labour and cost.

(4) To get the caoutchouc as dry and antiseptic as possible.

With regard to the first point, we have at present three trees which do well in Ceylon; Hevea, Castilloa, and Manihot. The second desideratum is best supplied by Castilloa, which yields latex very freely from a small number of incisions, and also gives a very fluid latex. Hevea is second best in this respect, and Manihot worst.

The preparation of the caoutchouc from the latex has hitherto been of the simplest description, the milk being merely allowed to dry. Under such conditions Hevea is distinctly the best tree, for its latex is naturally very free from other substances than caoutchouc (which from the point of view of rubber producers are regarded as impurities). When, however, the centrifugal machine is used, the distinction of this latex is lost, all latices yielding very similar rubber. If the machine be not used, some chemical or other mechanical method must be used. Hevea milk does well with the former, acetic acid or mercuric chloride being used; Castilloa milk does best with the latter, creaming being employed. The creaming must be done two or three times at least, and in this lies the superiority of the centrifugal machine over simple creaming, just as has been the case when it was applied to ordinary milk.

The question of what part of the plant to tap is gone into, and it is shown that only the main stem up to about ten feet from the ground is worth tapping. The possibility of obtaining good rubber from young stems and leaves has often been discussed, and Mr. Parkin shows good reasons for the belief that such parts contain no good caoutchouc, but rather an allied substance which may be called viscin. It is possible that some way of preparing caoutchouc from this, or of turning the viscin into caoutchouc, may be discovered, but at present there does not seem much prospect of success with the practice of growing annual crops of twigs.

The methods of tapping are then dealt with. For Hevea the well known V method is still recommended, but for Castilloa simple oblique cuts are enough, as each cut taps a much larger area in this plant. In Hevea and Manihot the incisions must be much closer together than in Castilloa, for the same reason. An ordinary carpenter's chisel is recommended for the purpose, rather than the small hatchet used in Para, as the latter is easily driven into the wood, and cannot be used after the collecting tins have been put on. The milk is collected in small tins, about 2 inches deep and 1 inch wide in the case of Hevea, and larger in the case of Castilloa. They have one flat side and one convex; the flat side is placed against the tree and held by a pin projecting at the top. The tin is luted on to the tree with wax or clay and the cut made just above it. Slightly ammoniated water is placed in the tins in the case of Hevea to prevent the latex from coagulating. One side of the tree should be tapped one year or season, the other the next.

The very important subject of the effect of wounding on the flow of latex is then gone into. Many planters who have made trial tappings of their trees have been much disappointed at the extremely small flow of milk. The chapter mentioned will throw light on this, and bring out several important points which require attention in practice.

* The symbol μ is used for the unit of length used in measurements under the microscope; it represents ·001 mm. or about $\frac{1}{25000}$ inch.

* The salt is not very soluble in water. A 4 per cent. aqueous solution was used

* Was not measured.

CAOUTCHOUC OR INDIA RUBBER.

CAOUTCHOUC OR INDIA RUBBER:

ITS ORIGIN, COLLECTION, AND PREPARATION FOR THE MARKET, &C.

(CEYLON ROYAL BOTANIC GARDENS CIRCULAR, JUNE, 1899.)

In two previous Circulars of this Series the cultivation, &c., of Para and Castilloa rubbers have been dealt with, and the rough method of tapping and preparation of Para rubber hitherto employed in Ceylon has been described. In the present paper is contained a report by Mr. J. Parkin, M.A., of Trinity College, Cambridge, who has been engaged since March, 1898, in scientific investigations upon rubber, its origin, flow in different species of tree, composition, coagulation, &c. The complete results of Mr. Parkin's work will be published elsewhere; the present paper is intended to place before those interested in the subject the chief conclusions which have been arrived at, together with such data as will explain them, so that those who work with rubber may at least to some extent understand what they are doing in the various processes, and, having this understanding, be themselves able to suggest improvements, or to surmount difficulties which may and will crop up in the course of work.

Those who read this paper with the intention of employing the methods described should first of all test them in detail themseves on a small scale, till they thoroughly comprehend both of them and the principles upon which they depend.

The measurements of bulk of liquid and of weight of product are given, it will be noticed, in the metric system, which is universally employed by all scientific workers. It is vastly more convenient to use than the cumbrous and antiquated British system, which renders all calculations into which such items as specific gravities, percentages, &c., enter, extremely complex and troublesome. A translation of the metric to British measures is given below. The unit of length in the metric system is the centimetre (cm.); the cube of this (c. c.) is the unit of volume; and the weight of one cubic centimetre of pure water at its temperature of maximum density is the unit of weight, and is termed a gramme (gm.). Thus, to make a 10 per cent. solution of salt, one takes 10 gm. and dissolves it in 100 c. c of water.

One gm. equals 15·43 English grains; 28·35 gm. equal 1 oz. avoirdupois; 1 c. c. equals 0·06 cubic inch; 100 c.c. equal 3·52 fluid oz.; 1 cm. equals 0·39 inch: it is divided into tenths, millimetres (m.m.).

Mr. Parkin's paper follows; it is arranged under the following heads:—

A.—Botanical.

B.—The Extraction of Latex.

I.—Incision.

(1) Kind of Incision.

(2) Instrument to Use.

II.—Collection of Latex from Incisions.

III.—Area of Trunk to be Tapped.

IV.—Effect of Wounding on Flow of Latex.

C.—The Preparation of Commercial Rubber from the Latex.

(1) Hevea.

(2) Castilloa.

(3) Manihot.

D.—Yield.

E.—Notes on other Caoutchouc-yielding Plants.

A.—BOTANICAL.

The milky juice, technically known as *latex*, which exudes from certain plants when wounded, is quite distinct from the so-called "sap" of plants. It is contained in special tubes running for the most part longitudinally in the other tissues of the plant and forming usually a connected and closed system.

This laticiferous system or tissue is an additional development in a comparatively few families of Flowering Plants, and although not altogether absent in the vegetation of temperate regions, it is markedly characteristic of tropical floras. The natural orders Euphorbiaceæ, Moraceæ, Apocynaceæ, and Asclepiadaceæ, chiefly tropical, are specially laticiferous, and it is the first three that have so far furnished commercial rubber-yielding trees. The small order Sapotaceæ contains the trees which supply guttapercha, indigenous and almost peculiar to the Malay Peninsula and Archipelago.

Since from the latex of certain of these plants the rubber (caoutchouc) and gutta of commerce are prepared, the whole question of the formation, functions, and properties of latex is not merely one of special interest to the botanist, but also of great practical importance, especially now that the demand for these commodities is increasing while the supply is tending to diminish.

Owing to the high price which rubber fetches in the market at the present time, attention is being turned to the production of substitutes, and even to the manufacture of artifical caoutchouc itself. *The latter has not as yet got beyond the stage of laboratory experiments, but the possibility of commercial success with it must be kept in view, as of course it is a point of vital interest to those engaged or intending to engage in rubber cultivation.*

At the present time, then, rubber of good quality, free of dirt and moisture can obtain a good price—as much as four shillings per pound. Consequently the planting of rubber trees is a tempting occupation, and one which has in a certain measure the promise of success, provided that the trees where planted will yield latex as freely, or nearly so, as in their natural habitats, and that every care is given to the extraction of the latex and the preparation of the rubber therefrom.

Hitherto the Para rubber collected by the natives in the Amazon valley from the indigenous tree *Hevea brasiliensis*, and prepared in a special manner known as the "smoking" method, has obtained the highest price and controlled the market. The loss of weight it undergoes in manufacture is from 10 to 15 per cent., due to impurity, while other rubbers lose more, even in some cases as much as 40 per cent. Ere long this is likely to be changed. The preparation of commercial rubber has recently received attention from a qualified botanist, Mr. Biffen, of Cambridge University, with signal success. His investigations carried out in Tropical America have resulted in the production of rubber from the milk with loss in manufacture of less than 1 per cent. We shall have occasion further on to discuss his method and its application, but shall merely lay stress here on the valuable aid which scientific investigation can render to the subject. In the light of this work the commercial rubber produced by cultivators will need careful preparation so as to reduce the amount of impurity to a minimum, else its value in the market will be greatly depreciated. Scrap rubber, such as is picked off the bark, will be apt to decrease in value, while the best rubber will, on the other hand, increase. Manufacturers will find the carelessly collected material not worth the trouble and expense of cleaning when a large supply of comparatively pure and dry caoutchouc is obtainable.

It thus behoves us to become acquainted with the important facts known relating to caoutchouc, and to endeavour to increase these by careful and systematic observation and experiment. We want to know the trees which promise best for cultivation, both as regards quality and yield of rubber. We have to consider the best times and means of tapping them, and then of preparing the rubber from the collected milk.

Before proceeding to these practical considerations and to the giving of details and conclusions of work recently carried out in the Island of Ceylon, it will be well perhaps to make a few remarks on the chemical and physical features of latex and on the structure and general arrangement of the tubes that hold it with special reference to the economic laticiferous trees, so as to approach the more strictly practical part in an intelligible manner.

Latex, as its name signifies, bears a strong resemblance physically to animal milk. The white capacity of this latter is, as is well known, due to innumerable globules of butter fat held in suspension in a clear aqueous fluid so as to form an emulsion; that of latex is likewise due to minute globules in suspension, which, however, are not of a fatty nature, but consist often of resinous matter, in which case the latex dries to a brittle solid, and occasionally of caoutchouc, when it dries to the tough elastic substance known commonly as indiarubber. The latex of species of Dichopsis and Payena, genera of the natural order Sapotaceæ, has its globules composed chiefly of guttapercha, a substance identical in its percentage composition with caoutchouc, but different in its properties.

Pure caoutchouc and gutta consist wholly of carbon and hydrogen united in definite proportions. Resins, on the other hand, contain oxygen as well, and often are present along with the above two substances. In the latex of gutta trees resin occurs in considerable amount varying in different plants. The gutta prepared from *Dichopsis gutta* contains about 17 per cent., whereas that from *Payena Leerii* reaches about 38 per cent.* Similarly, but in a less degree, caoutchouc-latices contain resin. Fortunately in such trees as *Hevea brasiliensis* (Para rubber), *Manihot Glaziovii* (Ceara rubber), and *Castilloa elastica* (Central American or Panama rubber) the resinous matter is in mere traces, so that the suspended globules of these latices may be considered as consisting almost wholly of caoutchouc.

Ficus elastica (Assam rubber), on the other hand, contains a larger amount, as much as 1.58 per cent., the caoutchouc being 9.57 per cent. in the pure latex.† Several trees, notably species of Ficus (figs) and Artocarpus (jak, bread-fruit, &c.), possess latex, which moulds between the finger and thumb to a very viscous substance, wholly unlike caoutchouc. This when treated with boiling alcohol yields a certain amount of resin, but it is by no means completely soluble in this medium. "Viscin" is an appropriate name given to a similar substance contained in the young shoots of *Ficus elastica*.

As far as I know such matter has not been submitted to careful chemical analysis to learn whether or not there is a substance present of the nature of a hydrocarbon (*i.e.*, containing only carbon and hydrogen), differing in properties from caoutchouc and gutta. Some latices, such as that of *Alstonia scholaris*, dry to a gutta-like mass and suggest that perhaps a member of the Apocynaceæ or Asclepiadeæ may be found to afford a useful gutta. Chemical analyses of the solid bodies of such latices are much to be desired. This is important to what will be pointed out later, viz., the difference in properties of the caoutchouc prepared from the twigs from that of the trunks of some rubber trees.

Latex, then, consists as a rule of globules or resin, caoutchouc gutta wax, &c., suspended in a watery medium.

The fluid part of the latex is not however plain water, but water containing various substances in solution. Of these perhaps albuminous matter (proteid)§ is of most frequent occurrence, and of chief importance, as will be shown, from a practical point of view. Salts, usually of organic acids, are often present. The latex of *Manihot Glaziovii* contains phosphates largely. Tannin, too, is characteristic of some latices *e.g.*, Castilloa. Generally small quantities of sugar can be recognized in analysis.

In view of the extraction of latex, a few remarks on the distribution of the laticiferous tissue in the plant seem desirable.

The laticiferous system is usually distributed throughout the organs of a plant, present alike in the stems, leaves, roots, and fruits, and is formed at a very early stage in the developing organs, so that some time ere the part is mature copious milk is seen to exude from a wound. The tubes originate in two distinct ways according to the kind of plant.

In one case exhibited by Hevea and Manihot the laticiferous vessels arise from series of sacs (cells) arranged for the most part longitudinally. The separating walls (septa) between the contiguous cells break down, the original protoplasmic contents transform into or rather secrete the latex, and the result is a number of communicating tubes full of a milky fluid. The more complete the dissolution of the intervening partitions between the original separate elements, the more perfect is this form of laticiferous system, and the better the flow of latex from an incision. This, of course, is an important practical point. In gutta trees the laticiferous sacs, although they lengthen considerably, never communicate one with another; hence the difficulty of extracting the latex in quantity. The whole trunk has to be cut all over, thus sacrificing the tree, in order to obtain the guttapercha.

The other type of laticiferous tissue is that shown by Castilloa, Ficus, Euphorbia, &c.: in fact, it is characteristic of the orders Moraceæ, Apocynaceæ, and part of the Euphorbiaceæ, the other part possessing the articulate system as it is called, which has just been briefly described. Instead of the laticiferous tubes arising *de novo* in the growing organs, the tubes present in the mature parts send branches into them. In fact, it has been established for several of these plants that the laticiferous system is laid down once for all in the seed in the form of a certain number of initial cells. Each of these commences branching in definite directions and keeps pace with the growth of the plant. Consequently this kind of system is throughly intercommunicative from the commencement and remains so. Hence as a connected system this is more perfect than the other, and the latex flows as a rule more freely from such plants. This may partly account for the much better yield of latex from an incision in the bark of Castilloa than in that of Hevea or Manihot.

The laticiferous system in the stem, the part of the plant of importance for rubber production, occupies definite positions.

In the stem bearing leaves the laticiferous ducts are situated as a rule in greatest abundance just without the vascular cylinder, the part between the pith and the external soft portion, the cortex. A lesser development may occur just within the outermost limiting layer of cells, communicating with the former at the nodes—*i.e.*, the points where leaves are attached to the stem. There may also be a third development in the pith very noticeable in such climbers as Landolphia. The first, however, is the important one to consider here.

After the primary growth has ceased, the stem begins to grow in a definite manner in thickness only; this is known as "secondary thickening" and continues during the whole life of a tree. The active part is situated between the bark and the wood and is known as cambium. The cells which compose it give rise on the internal side to new wood and on the external side to new bast, which goes to form a new addition to the bark. The older parts of the bark are continually being shed by means of a special cork layer. In laticiferous trees the laticiferous tubes continue to appear in each fresh addition to the bast by the cambium. Consequently the newest tubes are situated in the innermost part of the bast next the undifferentiated active layer of cells, the cambium. In Hevea and Manihot the tubes arise afresh from certain longitudinal rows of cambial cells, in the same way as they do during primary growth; whereas in Castilloa, *e.g.*, new branches are given off from the old and outer tubes, which penetrate and ramify through the new bast.

The laticiferous ducts as they are pushed outwards by the growth of the stem become crushed and dried up, so that the flow of latex from them is

* See Review of this paper following after it.—J. F.

† Obach, Cantor Lectures on Guttapercha, 1897, p. 21.

‡ Seligmann, Le Caoutchouc et la Guttapercha, 1896, p. 90.

§ A very complex class of nitrogenous compounds common to all living matter and essential to life.

1899–1900.

The Planters' Association of Ceylon,

KANDY.

FORTY-SIXTH ANNUAL REPORT.

FOR THE YEAR ENDING 17TH FEBRUARY, 1900.

Your Committee, in discharge of its duty, herein begs to submit the forty-sixth Annual Report of the Planters' Association of Ceylon. As the new year will be memorable in the annals of your Association by virtue of entering into possession of Buildings henceforth to be Headquarters, and the place where meetings are to be held, when such are called in Kandy, it may be interesting and useful to recall briefly and thus give prominence to a few facts relating to the early years of your organization before proceeding with the customary review of the work of the past year.

The Planters' Association of Ceylon was established at a Public Meeting held at Kandy on the 17th February, 1854, for the furtherance of the agricultural interests of the Colony, and has since continued the beneficial work thus inaugurated with great advantage to the planting community, and for the general good of Ceylon. One of the earliest acts of the Planters' Association was to memorialize Government as to the urgent and growing necessity for railway communication with the sea coast, that is, Colombo. So vital was the question deemed that the then memorialists had no hesitation in giving an assurance "that to obtain the unspeakable advantage of a railway the planting community would consent that an export duty be imposed on coffee sufficient to meet any amount in excess of which the Government may be able to pay." It would scarcely be credited that the Railway—Colombo—Kandy, persistently agitated for nearly half-century ago—has been built, is a monument of engineering skill, and is probably the best paying railway in the world. In proof of this the annexed statement from the Administration Report (Railways, 1898) is given, showing the revenue earned by the Railway from time of opening to date; also the net amount which has been available for Colonial purposes after paying interest on loans and sinking fund, and a table giving the capital outstanding on Railway loans.

It may be incidentally noticed that the well-known bridge over the Mahawili Ganga at Katugastota was successfully pressed for by the Planters' Association about 1855. Another matter that early engaged, as it has continued to engage, the serious attention of the Planters' Association was the difficult question of labour supply and the line of road for immigrant coolies *via* Mannar. In this connection railway extension northwards lately sanctioned will tend to greatly improve facilities for travelling, and be the means probably of maintaining an alternative route to that *via* Tuticorin for immigrant coolies. As regards other means of communication, the Planters' Association has always taken a lively interest in roads. *In 1856 application was made to Government for a Commission of Enquiry* to consist of nominees of the Government and nominees of the Planters' Association to sit in Kandy and to take evidence and to report as to the best means of placing District Roads under trust management, with the result that ultimately an Ordinance was framed and the Provincial and District Road Committees constituted through which substantial benefits have accrued. Closely connected with the subject of the labour supply has been that of the Labour Laws which from 1864 onwards has from time to time occupied a share of the earnest attention of the Planters' Association. There have been occasions when the relations between the Planters' Associations and Government have been somewhat strained, but difficulties having been overcome, on the whole the existing laws work well and have tended to maintain satisfactory relations between employer and employed. The latest step taken by the Planters' Association has been the establishment of a Labour Federation, with the object of checking the steady increase in the amount of so-called "Coast Advances", and for mutual co-operation and conference. One other matter of ancient history that may be mentioned is the privilege extended to the Planters' Association by Sir Henry Ward during his term of office as Governor, of nominating for approval a member to represent Planting Interests in the Legislative Council, and which has been continued by successive Governors of Ceylon with the best results.

Turning to the work of the past year, your Committee notes with satisfaction that the Register compares well with previous years, the number on the Roll at date being 946. There have been eight meetings of the Committee representative of all Districts, and two General Meetings of your Association. On Agricultural matters generally and the various questions that have been considered during the year your Committee records the following *resumé* :—

PLANTING PRODUCTS.

TEA.

Last year may be said to have been a wet season as compared with the previous year, with the result that the Tea harvested exceeded estimates generally. Your Committee estimated the Tea Crop for 1899, after allowing 1,500,000 lbs. for local consumption, at 125,000,000 lbs. available for export, but the exports, according to the Chamber of Commerce Returns, amounted to 129,894,150 lbs. or nearly 5,000,000 lbs. more than the estimate. Your Committee appends interesting statistics from various sources for reference. Under date London, December, 1899, Messrs. Gow, Wilson & Stanton report: The increase in Home Consumption during the past 11 months is very marked, being more than 8 millions above the corresponding period last year; *the fact that all growths show* an increase, and not only those from India and Ceylon, is probably due to the strong demand for low priced Teas.

Movements of Tea in United Kingdom from 1st January, to 30th November, as shown by Custom House Returns.

IMPORTS.	1899.	1898.	1897.
Indian ...	124,409,663	119,520,528	115,225,021
Ceylon ...	95,206,980	90,816,321	89,342,340
China ...	30,830,551	24,818,037	26,232,319
Other Countries.	8,803,484	7,102,095	6,364,973
Total lbs. ...	259,250,678	242,256,981	237,164,653

DUTY PAYMENTS.	1899.	1898.	1897.
Indian ...	123,790,871	121,517,853	114,330,690
Ceylon ...	79,103,171	76,657,021	79,273,409
China ...	15,525,882	13,687,442	16,120,525
Other Countries	6,360,204	4,511,130	3,793,987
Total lbs. ...	224,780,128	216,373,446	213,518,611

EXPORTS.	1899.	1898.	1897.
Indian ...	7,108,465	6,891,747	4,839,804
Ceylon ...	11,268,092	10,799,072	9,589,989
China ...	10,684,823	14,642,982	18,150,346
Other Countries.	649,465	1,121,071	908,275
Total lbs.	29,710,845	33,454,872	33,488,414

Analysis of above export of Tea from U.K. during the last two years (not including transhipments).

INDIAN.	1899.	1898.
Countries in Europe ...	3,802,854	3,863,673
United States ...	529,746	582,950
British N. America ...	1,614,430	1,331,137
Newfoundland ...	84,115	—
Other Countries ...	1,047,327	1,113,987
TOTAL lbs. ...	7,108,465	6,891,747

CEYLON.	1899.	1898.
Countries in Europe ...	6,839,227	6,302,803
United States ...	1,228,808	1,177,974
British N. America ...	1,713,261	1,943,594
Newfoundland ...	232,576	—
Other Countries ...	1,254,220	1,274,701
TOTAL lbs. ...	11,268,092	10,799,072

CHINA.	1899.	1898.
Countries in Europe ...	5,529,696	8,561,509
United States ...	456,615	935,574
British N. America ...	535,412	1,058,447
Newfoundland ...	272,857	—
Other Countries ...	3,890,219	4,087,452
TOTAL ...	10,684,823	14,642,982

OTHER COUNTRIES.	1899.	1898.
Countries in Europe ...	428,872	614,656
United States ...	20,433	157,531
British N. America ...	46,291	118,025
Newfoundland ...	4,956	—
Other Countries ...	148,913	230,859
TOTAL ...	649,465	1,121,071

Stock of all Tea in United Kingdom at the end of Nov. 1899, 103,248,000 lbs. 1898, 91,198,000 lbs. 1897, 91,095,000 lbs. The most noticeable feature in the history of the Tea trade during 1899 was the advance in value of low priced Teas which commenced early in the year. The rise, with various fluctuations, has been maintained, and this class of Tea is now something like 30 % dearer than in 1898. The altered position was mainly brought about by the sustained demand for cheap Teas, which then gradually absorbed the lower grades. This has now to a great extent necessitated the withdrawing of the much advertised cheap canister, a fact which may prove of lasting benefit to the trade. The average price has, however, not advanced to the extent which might have been expected, owing to lower quotations for better class grades.

Production of Tea in India and Ceylon during 1898 largely equalled consumption, while although estimates of the 1899 crop point to a larger supply, consumption both at home and abroad has so materially increased that it is doubtful whether the surplus will be heavy. The outlook for producers is decidedly more cheerful than a few years ago, when over-production was feared. HOME CONSUMPTION.—The elasticity so long noticeable has again been remarkable, coming as it has done after recent increases. The total of all Tea consumed in the United Kingdom during 1899 was about 244,000,000 lbs. against 235,414,105 lbs. in 1898, and lbs. 231,399,778 in 1897, British Grown Tea contributing 221,000,000 lbs. in 1899, against 215,202,090 lbs. in 1898, and 210,027,748 lbs in 1897. The following table shows the increase in the various growths :—

	1899.	percentages.	1898.	percentages.
Indian ...	136,000,000	56	133,430,251	57
Ceylon ...	85,000,000	35	82,471,745	35
China ...	16,500,000	7	14,695,334	6
Other Countries	6,500,000	2	4,816,675	2
Total lbs.	244,000,000		235,414,105	

	1897.	percentages	1896.	percentages
Indian ...	124,534,194	54	122,941,098	54
Ceylon ...	85,493,854	37	80,294,475	35
China ...	17,242,247	7	19,831,680	9
Other Countries	4,129,783	2	4,718,256	2
Total lbs.	231,399,778		227,785,509	

The quantity per head of population in 1899 was 6·01, against 5·85 lbs. in 1898, and 5·81 lbs. in 1897. NEW MARKETS.—Considering the higher prices ruling for Tea this year, much increase could hardly have been expected in foreign outlets. The substantial progress made is therefore the more gratifying, the total quantity exported to these markets during 1899 being about 68,000,000 lbs. against 52,439,832 lbs. in 1898, and 41,148,124 lbs. in 1897. The development since 1890, when only 14,000,000 lbs. were taken outside the United Kingdom, has been very marked, a circumstance which goes far to show the estimation in which British grown Tea is held. TRADE DISPUTE.—The trade was considerably disturbed in July through a dispute between importers of Indian and Ceylon Tea and their buyers; this was chiefly owing to economy necessitated by the poor results obtained by producers during the last few seasons. Importers wished to do away with the allowance for draft. Trade was almost entirely checked for about a month, when a resumption took place on the belief that a satisfactory settlement had been arrived at to come in force a few months later, but delays have since occurred so that the actual time has not yet been definitely fixed. CEYLON TEA.—The quality of the crop was somewhat on a par with that of 1898. The quantity exported from Ceylon in that year was 119,769,071 lbs., of which 96,133,833 lbs. came to London, while the supply in 1899 will probably total 127,000,000 lbs., of which 101,000,000 lbs. may come to London.

The average price for Teas sold in London on garden account was 7·96d. in 1899, against 7·76d. in 1898.

EXCHANGE averaged 1/4 13/32 during 1899, against 1/4 7/16 in 1898.

Messrs. George White & Co., London, in their Ceylon Tea Memoranda of January, 1900, state that the quantities offered at Public Sale in the past three years were :—

Sold in London from

1st Jan. to 31st Dec. 1899...1,138,100 pkgs. realizing 8d. per lb.
" " 1898...1,108,800 " " 7¾d. per lb.
" " 1897...1,138,000 " nearly 8d. per lb.

so that a slightly larger total was disposed of in 1899 at a fractionally higher price than in the year before, which is encouraging, considering some of the adverse conditions encountered, notably the dispute regarding the 1 lb. draft, &c., which paralyzed trade throughout July, and later on dear money. The quality of the crop did not differ materially from that of the foregoing season, and was of fair average. "Colonry" liquor or briskness and pungency in cup was appreciated by dealers and blenders alike. Continental and American orders at times came in freely for nearly all descriptions of leafy Teas. Exports from here to other countries are growing, and bid fair to mark an increase on those of 1898 when made up. A firm Market ruled for Pekoe Souchong, and Pekoes up to 7¾d. per lb. in December, the quotation for useful Common sorts of the former especially gradually hardening, so that at the close very little could be purchased at 6¼d. per lb. Medium Pekoes and Orange Pekoes did not receive so much support from outside quarters, but were taken by London buyers at, on the whole, steady rates. Broken Pekoes met an irregular demand, though desirable lots under 8d. per lb. were usually in good request. Above that range, however, values were uncertain and sellers often had to accept a reduction on those previously current to effect sales. The higher grades were somewhat scarce, which no doubt detrimentally affected the average.

LONDON TEA RETURNS.

1st Jan. to Dec., 1899.	Imports 1899.	Imports 1898.	Deliveries 1899.	Deliveries 1898
India ...	140,646,000 lbs.	138,875,000 lbs.	140,481,000 lbs.	139,090,000 lbs.
Ceylon ...	96,188,000 "	91,320,000 "	94,226,000 "	93,489,000 "
China ...	30,777,000 "	30,145,000 "	29,105,000 "	31,685,000 "
Java ...	4,115,000 "	3,370,000 "	4,169,000 "	3,393,000 "
	271,726,000 lbs.	266,710,000 lbs.	267,981,000 lbs.	267,657,000 lbs.

STOCK, 31st Dec.	1899.	1898.
India	61,484,000 lbs.	61,319,000 lbs.
Ceylon	19,187,000 "	17,224,000 "
China	19,157,000 "	17,483,000 "
Java	482,000 "	536,000 "
	100,310,000 lbs.	96,562,000 lbs.

From Messrs Wilson, Smithett & Co's London Tea circular for last month the subjoined figures of monthly shipments from Ceylon to the United Kingdom during the past five years are taken.

	1899.	1898.	1897.	1896.	1895.
January ...	6,750,000	8,000,000	8,700,000	7,300,000	8,200,000
February ...	7,750,000	6,750,000	6,500,000	8,000,000	6,000,000
March ...	8,500,000	9,500,000	9,000,000	7,120,000	6,900,000
April ...	8,000,000	6,750,000	9,500,000	9,000,000	7,400,000
May ...	8,500,000	9,500,000	9,500,000	10,250,000	10,600,000
June ...	14,000,000	10,900,000	11,500,000	10,500,000	8,700,000
July ...	8,750,000	10,800,000	10,250,000	9,000,000	8,500,800
August ...	7,500,000	6,250,000	6,600,000	5,250,000	6,500,000
September ...	7,500,000	7,500,000	6,250,000	6,500,000	5,000,000
October ...	8,750,000	6,500,000	6,000,000	6,750,000	5,400,000
November ...	6,500,000	6,500,000	6,500,000	7,500,000	5,500,000
December ...	11,000,000	8,500,000	8,600,000	7,500,000	8,500,000
	103,500,000	96,250,000	98,700,000	94,670,000	87,200,000

In reference to tea distribution from 1st January to 31st December, 1899, Messrs Forbes & Walker, Colombo, in their tea circular give the undermentioned figures.

	United Kingdom.	Russia.	Other countries in Europe.	America.
1899	103,699,248 lbs.	3,919,740 lbs.	885,051 lbs.	3,080,002 lbs.
1898	96,399,343 "	2,714,003 "	871,744 "	2,180,188 "

	Africa and Mauritus.	Australia.	India.	China and Singapore.	Total.
1899	388,487 lbs.	15,109,447 lbs.	567,616 lbs.	1,468,303 lbs.	129,147,894
1898	405,411 "	15,421,206 "	1,091,559 "	1,245,312 "	120,328,896

The following show an increase over 1898 :—America, Belgium, China, Holland, Italy, Malta, Mauritius, Russia, Singapore, Sweden, and United Kingdom; while Australia, Austria, France, Germany, Spain, Turkey, India, and Africa show a decrease.

As regards the quantity of tea sold in Colombo the "Ceylon Observer" quoted recently the annexed figures for a series of years.

	lbs.	Average price, cents.
1889	4,627,762 ...	46
1890	6,114,225 ...	43½
1891	9,578,611 ...	41
1892	11,578,869 ...	41
1893	14,365,917 ...	43
1894	15,723,080 ...	43
1895	19,668,116 ...	47
1896	25,402,624 ...	41
1897	25,630,499 ...	37
1898	28,831,747 ...	35
1899	31,870,936 ...	38½

Adverting to the foregoing remarks regarding the "Tea Trade Dispute", your Committee feels that the action taken by the Ceylon and Indian Associations in London would have stood a better chance of being successful if they had arranged for combined action in Calcutta and in Colombo before embarking on a crusade against such a powerful body as the London Tea Dealers' Association.

TEA BLIGHTS.

During the first half of the year great attention was paid throughout the Planting Community to the then prevailing blights on Tea. Your Committee feels that, although great attention should still be given, and all blights and pests carefully watched, there is at present no need for extreme anxiety. It would appear that the effects of the various blights are largely minimized by high cultivation, and that there is good reason to believe that last year's climatic conditions were unfortunately favourable for the propagation and existence of Tea pests.

LONDON CHARGES OF TEA COMPANIES.

With reference to this important matter, your Committe thinks that the time has come to discuss and consider it. With a view to this end, the following extracts are submitted from an article in "The Investors' Review":—

"We propose to deal exclusively with the warehouse and dock charge upon tea, about which there is so much complaint, and, to start with, cannot do better than quote the schedule of rates supposed to apply to every package of tea that goes through the Tea Clearing House. This is as follows :—

CHARGES ON TEA.

To apply to all parcels by ships reporting on and after July 1st, 1888.

Per package, weighing gross.	130 lb. to 150 lb. s. d.	90 lb. to 129 lb. s. d.	80 lb. to 89 lb. s. d.
Landing and housing rate	1 10	1 6	1 ½
Management rate ...	2 3	1 10	1 1
Bulking and taring ...	1 8	1 5	1 3
Bulking, taring, or weighing net separately ...	1 3	1 0	0 11
Rent per week ...	0 0¼	0 0¼	0 0¼

The above charges will be subject to a discount of 10 per cent. to importers only.

For determining the class under which the break is chargeable, the average gross weight must be ascertained. When the fraction of the average weight is half a pound or more, the dock companies or warehouse-keepers take the benefit. Thus, the average of a break being 79½ lb. gross, the whole break will be rated at 80-89 lb., but the average being less than 79½ lb., the whole break will be rated at 60-79 lb.

For the sake of bringing the table into manageable shape, we have deleted the rates upon certain exceptional sizes which are seldom used by importers. The general size of the packages is from 90 lb. to 129 lb., and in all calculations made in these articles we have taken the rates upon these weights as our basis, allowing the usual deduction of 21 lb., for the weight of the tare. The charges of most importance to the importer are "management rate"—*i.e.*, the working of the tea—"bulking and taring," and "rent." The management rate includes the landing and housing rate, and a large importer has defined the services rendered for this charge in the following terms :—

"Landing, wharfage, conveyance to warehouse, housing, sampling for importer and broker, sorting to marks and descriptions, weighing, examining for damage, laying down for broker's inspection, and attendance on broker, laying out in showroom for public sale, attendance while on show and sampling, adjusting to weights after sale, coopering, nailing down, trucking and piling for delivery, re-weighing and delivering to land conveyance. The rate also includes furnishing warrants and landing accounts."

Although this sounds formidable, an examination will prove that the greater portion of it represents work which is quite superficial. For instance, in "sampling for importer and broker" only one chest in a break is sampled, and when it is considered that a break consists more often of fifty chests than less, it is apparent that this entails no great amount of work. "Sorting to marks and descriptions" is for the convenience of the wharf in delivering. "Weighing" is only weighing the chest gross, as it arrives. "Examining for damage, laying down for broker's inspection, and attendance on broker, laying out in showroom for public sale, attendance while on show and sampling," are quite small items in dealing with a large number of chests. "Coopering and nailing down" applies to the sampled chests only, and although the rate includes furnishing the warrants, it does *not* include the warrant stamp (3d. per warrant).

"Bulking and taring" are rates that do not apply to every package. Teas are not infrequently bulked on the estate, and when this is done they are very rarely re-bulked. In regard to taring, according to the Customs regulations, a certain number of chests in every break must be tared from the gross weight of the package, in order to ascertain the amount of duty to be collected. Should there be a variation of more than a couple of pounds in the weight of the chest, nails, and lead—*i.e.*, the tare—each chest of the entire break must be tared, involving the heavy charge of 1s. per package throughout. In regard to "rent," all teas are sold on a "three months prompt," and rent is charged for these thirteen weeks, less five weeks, the rent for which is included in the "management rate." In most cases buyers take delivery of the tea within two or three weeks of the auction; but, however soon they may do this, the eight weeks' rent charged upon the tea, to make up the three months, has to be paid by the importer.

We have been at pains to explain the actual charges complained of by producers, and will now proceed to point out why they are considered onerous, but before doing so must first draw attention to the fact that the whole of the bonded tea warehouses in London are in a "ring." Treating the London and India Docks Joint Committee as one body, there are nineteen tea warehousing firms in the Tea Clearing House, which clearing house has a large number of subscribers, including all the principle buyers and Brokers in the trade. According to the rules of the Clearing House, no subscriber shall be entitled to warehouse or deposit tea with, or employ in connection with tea, any dock company or tea warehouse-keeper who is not a member of the Clearing House, or to purchase or sample any tea from the warehouse of any non-member." The "Ring," therefore, is most complete, for should a dissatisfied body of importers attempt to start a co-operative warehouse of their own, they find that they have the whole of the tea trade banded against them under the rules and regulations of the clearing house.

We shall have more to say about this matter later on. Returning to the subject of the charges, it is clear, both from internal and external evidence, that they are excessively high as consideration for the services rendered."

COCOA.

The estimate for the year 1899 was about 40,000 cwts. The amount actually shipped was 42,527 cwts., being the largest crop on record; probably 42,500 cwts. would again be a safe estimate. The agricultural position of the product may be summed up in the statement that owing to the ravages of canker, the red variety is being steadily superseded by Forastero. The various means of combating canker are well known, and the matter now remains with the Planters. It is a satisfactory point that since 1894 crops have steadily increased. As regards thefts of Cocoa, Government refused to consider any scheme of special legislation until existing means had been tried and proved a failure. A trial is now being given to the system of rural Police, under Ordinance No. 16 of 1865, and it is considered by some of those who have rural Police in their districts that the number of thefts has decreased, while others think that such Police have had no effect in checking crime. Your Committee would urge on Government the necessity of providing and removing the Police without going through all the formalities required by the Ordinance, as it is only during Crop time that their presence is required. The demand for Cocoa of inferior class has fluctuated considerably during the past year. Really fine Cocoas have been sought after, the demand for them continues, and prices for such are likely to go higher. The position of the London market, is on the whole, satisfactory, the supply has been larger than usual, but so has been the demand, the stocks are lower than they were a year ago. Your Committee annexes various tables and statistical returns as usual giving useful data regarding Cocoa.

Extract from a recent Circular by Messrs. Wilson, Smithett & Co., London.

	1899.	1898.	1897.	1896.	1895.	1894.
YEAR'S Total GUAYAQUIL ... quintals	[illegible]	[illegible]	331,594	343,310	361,030	391,637
December Receipts ...	[illegible]	[illegible]	13,350	13,000	15,567	17,300
YEAR'S AFRICAN receipts in LISBON ...	[illegible]	[illegible]	[illegible]	125,039	107,859	114,877
" December	[illegible]	[illegible]	18,503	12,450	15,886	17,381
YEAR'S shipments from PARA ...	[illegible]	[illegible]	3,705	3,328	5,525	3,591
" Jan.-Nov.	[illegible]	[illegible]	...	...	...	...
YEAR'S shipments from BAHIA ...	[illegible]	[illegible]	7,660	6,987	6,065	5,860
" Jan.-Oct.	[illegible]	[illegible]	6,545	4,388	...	...
YEAR'S shipments from JAVA ...	[illegible]	[illegible]	847	856	957	723
" Jan.-Sept.	[illegible]	[illegible]	528	583	626	...
YEAR'S shipments from CEYLON ...	[illegible]	[illegible]	1,450	1,480	1,380	1,140

The following is table of movements in the [illegible] not yet to hand; these, as they include considerable [illegible] figures from LIVERPOOL to the close of the year are [illegible] AMERICAN which have passed through that port, are necessary to exhibit the U. K. figures in their [illegible]

LONDON.	Imports 1899.	Imports 1898.	Imports 1897.	Deliveries 1899.	Deliveries 1898.	Deliveries 1897.	Stock 1899.	Stock 1898.	Stock 1897.
Trinidad ... bags	[illegible]	[illegible]	[illegible]	40,214	[illegible]	52,307	18,635	19,348	36,438
Grenada ...	[illegible]	[illegible]	[illegible]	30,882	[illegible]	46,337	9,343	12,947	12,868
Other British Possessions ...	[illegible]	[illegible]	[illegible]	6,252	[illegible]	8,097	4,137	4,658	4,395
Ceylon & Java ...	[illegible]	[illegible]	[illegible]	35,583	[illegible]	39,505	5,924	8,030	6,340
Guayaquil ...	[illegible]	[illegible]	[illegible]	50,703	[illegible]	46,279	30,734	30,879	19,243
Bahia ...	[illegible]	[illegible]	[illegible]	11,750	[illegible]	30,020	5,716	4,607	7,217
African ...	[illegible]	[illegible]	[illegible]	4,807	[illegible]	9,959	3,311	9,835	3,810
Other Foreign ...	[illegible]	[illegible]	[illegible]	16,210	[illegible]	20,592	4,915	7,853	4,235
Total ...	[illegible]	[illegible]	[illegible]	202,401	[illegible]	242,898	82,715	98,157	93,539
HAVRE ...	[illegible]	[illegible]	[illegible]	402,366	[illegible]	335,177	100,593	73,101	67,359

COCOANUTS.

1899 has been on the whole a good average year as regards crop. Judging from exports, it has given a better total crop than any previous year, with the exception of 1898, which was a record one, but the increased acreage coming into bearing must be taken into consideration. The price of nuts has kept up well all through the year and the average price was quite as good as 1898 and better than previous year. The rainfall in the West Coast was some 20 inches less than in 1898, and this caused young nuts to drop off in the drought, so lessening the crop. This short rainfall may effect the crop in 1900, as cocoanuts take a year to mature from blossom. For the total exports of cocoanut products for 1899 as compared with previous years, reference should be made to appendix **A** and **B** of your Committee's Report.

CARDAMOMS.

During the past year the cultivation of Cardamoms, your Committee understands, has been largely extended both in Ceylon and in Southern India, particularly about North Travancore, where a large acreage of suitable land has been recently cleared and planted, while in Ceylon native gardens have been opened up in almost every village in the Central Province. It seems probable that the planting of this product may be ere long considerably overdone, and that prices may fall below a paying point. Compared with the year 1898, prices locally have already fallen some 20 to 25%, which, of course, affects the Home market. Exports to Bombay and Calcutta markets appear to have fallen off considerably. Possibly this is still due to Plague restrictions, but more probably the trade is being freely supplied from Southern India. The Chamber of Commerce Return shows exports in 1897, 532,830 lbs. in 1898, 531,473 lbs. and in 1899, 499,959 lbs. evidencing a decline in the past two years' crop, although cultivation has largely increased during the past two years. Whether this may be accounted for by the fact that on many of the older estates the crops this season have fallen off very considerably—some of them being as much as 50 to 60% short of estimates, probably due to a very wet season and blossoms not setting, is matter for observation.

RUBBER.

Your Committee has very little new information locally to report as regards this product, as it is difficult to obtain reliable data. The demand for seed still continues but mainly for export. The Director of the Royal Botanic Gardens, Peradeniya, has issued from time to time circulars giving details of experiments carried on under his instructions as to the best mode of cultivation and extracting the juice from the trees. As an appendix C, an interesting extract is given from the Report of the Secretary of Agriculture, United States of America, for the year ending June 30th, 1899, under the heading "India Rubber".

APPENDIX C.—EXTRACT FROM THE REPORT OF THE SECRETARY OF AGRICULTURE, UNITED STATES OF AMERICA, FOR THE YEAR ENDING JUNE 30TH, 1899.

INDIA RUBBER.

IMPORTANCE OF THE TRADE.

"The India-rubber trade is of great importance to the United States, and has shown a rapid increase during the last few years. For the fiscal year ended June 30th, 1890, the total importations of crude rubber amounted to 33,842,374 pounds valued at $ 14,854,512, while that of manufactured rubber was valued at $ 367,647. In the fiscal year 1898 the imports of crude rubber and gutta-percha amounted to 46,055,497 pounds, valued at $ 25,386,010, while that of manufactured articles and waste or scrap rubber was 9,488,327 pounds, worth $ 805,951. This shows not only a decided increase in the quantity imported, but also a rapid rise in price. In 1890 about two-thirds of the entire amount imported came from Brazil. In 1898 about three-fifths came from that country.

A recent United States consular report shows that the importations into England for 1898 amounted to 20,026 tons, about half of this being Brazilian. New fine Para rubber was quoted at New York from 66 to 69 cents per pound in 1893, 69 to 71 cents per pound in 1894, 73 to 77 cents in 1895, 74 to 88 cents in 1896, 80 to 87 cents in 1897, and 82 to 83 cents January 1st, 1898. A single cargo of rubber, consisting of 1,167 tons, shipped from Para, February 23rd, 1898, was valued at $ 2,210,000 in United States gold. The exports of rubber from Brazil in 1898 amounted to $ 38,400,000 gold.

COLLECTION AND TREATMENT AND SOURCES OF SUPPLY.

Rubber is derived from the milky sap of a number of trees and shrubs, all native to the tropical regions of South America and the Old World. There are many plants with milky sap which contain small quantities of rubber, but none are known which produce it in commercial quantities anywhere outside of the tropics. The methods of collection and treatment of rubber are, in the main, very crude. There is a great deal of waste and considerable deterioration through improper methods of treatment in the field and in transit and through impurities. The only successful experiments at cultivating rubber plants which have thus far been made were undertaken by the English Government in Ceylon, India, and some of the other tropical colonies. By following the most improved methods of cultivation, and by giving the rubber plantations the same careful attention which is devoted to other crops, it appears possible *to make this an exceedingly* profitable investment.

The larger part of the Brazilian rubber is produced by the Para rubber tree, *Hevea brasiliensis*, which grows naturally in the deep shade of the swampy forests of the Amazon, where the air is fever-laden and the land is unsuited for human habitation. Experiments have been made with this tree in various of the British possessions in the East Indies, but without any marked degree of success, because the tree attains its full development only in the shade of dense tropical jungle lands, and not in the solid plantations. Its successful handling appears to lie in the direction of a proper system of forest management. The Central American rubber tree, *Castilloa elastica*, grows only in the dense tropical forests from Southern Mexico to Northern South America, on rich, well-drained bottom lands along the rivers. This tree has been found to grow luxuriantly under cultivation, but in the experiments thus far tried it develops a bark much thicker than in its native state, and this has been found a decided drawback to the successful drawing of the sap.

The Ceara rubber tree, *Manihot glaziovii*, is a native of one of the driest portions of Southern Brazil, where the mean temperature ranges from 77° to 86° F. There are now many plantations of it in India and Ceylon, and it is probable that this tree will be the first to produce an important addition to the natural supply of India rubber. there are 50 or more species of trees, vines, and shrubs which are a commercial source of India-rubber and gutta-percha, and the list is annually increasing. Experiments should be tried in the cultivation of every one of them. Gutta-percha is derived almost entirely from the tree *Isonandra gutta*, a native of the Islands of the Malayan Archipelago. The careless methods of the collectors have resulted in killing off most of the plants from which this substance is derived, so that a serious shortage has occurred during the last few years. The feasibility of cultivating this plant in the Philippines should be very carefully investigated."

TOTAL EXPORT FROM CEYLON DURING THE YEAR 1899.

Through the courtesy of the Hon'ble the Principal Collector of Customs your Committee places as an appendix hereto (A) statements of exports from Ceylon during the year 1899, and, as usual, submits also for purposes of comparison and reference the Returns for the same period drawn up by the Chamber of Commerce. (B.)

OFFICIAL ESTIMATE OF THE TEA CROP FOR THE YEAR 1900.

Your Committee estimates the Tea Crop for Export during the year 1900 at 138,000,000 lbs. As regards the distribution of the Crop the following is submitted :—"Russia 6,000,000 lbs; Australia 16,000,000 lbs; America 5,500,000 lbs; other countries 2,500,000 lbs. leaving, for the United Kingdom 108,000,000 lbs."

RAILWAY EXTENSION.

Members are aware that in General Meeting on the 17th February last year your Association endorsed its previous Resolutions on the question of Railway Extension Northwards and thereby reaffirmed your approval of His Excellency the Governor's policy as stated to the Legislative Council on the 5th November, 1897. His Excellency's policy is a policy of progress in reference to Railway Extension in Ceylon, and the particular Railways, the construction of which he proposed, are the Northern Railway; the Kelani Valley Railway; and the Uda Pussellawa Railway. By the courtesy and consideration of the Governor, your Committee is able to submit the following extracts from recent progress Reports by the Chief Resident Engineer as laid before His Excellency. In each case Mr. Oliver's report upon the work done is together with statement of expenditure as at the end of December, 1899. As regards the Northern Railway the plans showing the land required for this Railway have all been prepared, and all, with the exception of those for a distance of 11½ miles near the Kala Oya, which is about 50 miles from Kurunegala, have been forwarded to Government for transmission to the Surveyor-General. At the Kala Oya a deviation of the original line has been proposed and surveyed with the object of placing the railway on ground freer from floods. Plans of this deviation have been sent to England for the Consulting Engineers to consider. A large number of pegs which marked the centre line of the railway have been destroyed, some by people in the neighbourhood, and some by decay, consequently most of the line has to be reset out. A length of 16 miles from Kurunegala, and half of the length of the line in the Jaffna Peninsular, have now been done. There are four Assistant Engineers engaged in the work. A contract has been entered into with some Singhalese contractors to build the combined upstairs Passengers' Station and Station Master's dewellings at Rangama Road, Balalla, Galgamawa, and Talawa. The work has been begun at Rangama Road. These buildings were excluded from the railway contract in order that they might be put up in hand before the works were let, so as to provide accomodation for the Engineers. A large quantity of material for this railway has arrived in the Island and has been, or is now being, stacked at Kurunegala. This material includes most of the iron work of the bridges and all the Permanent Way material, rails, fastenings and sleepers for the first twenty miles. Indents for the Permanent Way Material and iron works for bridges for another sixty miles, of which 40 miles are from Kankesanturai southwards) have been prepared and forwarded to England. The switches and crossings for Stations on the first twenty miles from Kurunegala northwards and twenty miles from Kankesanturai southwards have also been indented for. Mr. P. A. Mackintosh, owing to ill-health, left the Colony on November 23rd last, having previously handed over charge of this railway to me on the 6th November. As regards the Kelani Valley, railway all the plans of the land required for this railway have been prepared and sent to Government for transmission to the Surveyor-General. I have received the preliminary plans of the land as surveyed for the first ten miles out of Colombo. A deviation of the line at Kirilapane at 3 miles 10 chains has been made for the purpose of getting better foundations for the bridge over the canal at the place. The diviation shortens the length of the line by seven chains (154 yards), and the earth-work in consequence will be somewhat reduced. Another deviation of about a mile in length has been surveyed and will be marked out as soon as I have an Assistant to do the work between 33 and 34 miles. This deviation will cause a considerable reduction in the earthwork, and a bridge of 20 feet span to be dispensed with. The Permanent Way material, rails, fastenings and sleepers for 20 miles have been ordered, and contracts have been entered into to supply the rails and fastenings (in England) in January and February, and the sleepers, which are to come from Australia, in Colombo, in March and May. The iron work for the bridges on the first 20 miles and the whole of the rolling stock have been indented for. As regards the Uda Pussellawa Railway, I took charge of this railway on my arrival in the Colony in the beginning of October last, and in the early part of November two Assistant Engineers, Messrs Ross and Cartwright of the Northern Railway, were lent for the work of resetting out this line. The last survey of this railway was made in 1897, but the line was not marked on the ground, except on part of the line between Nanu Oya and Newera Eliya; on that survey also the length of straight line between reverse curves was, in a number of cases, insufficient. Mr. C. Craig, Chief Assistant Engineer, arrived in Ceylon early in November and took charge under me of the survey of the railway, having as assistants Messrs. Ross and Cartwright, above mentioned, and Messrs. Fowke and Dissaneyaka, private surveyors, engaged locally. The line is now properly marked out, and the plans

longitudinal and cross sections are prepared for a distance of 9½ miles, from Nanu Oya to Newera Eliya, which is about one-third of the total length from Nanu Oya to Uda Pussellawa.

RAILWAY RATES.

The question of a Reduction of Railway Rates on Tea is still urgent and can in no sense be said to be settled satisfactorily to the concerned either in "outcast" Uva or elsewhere. His Excellency once remarked that the relief that would be most generally accepted would naturally be chosen. As a matter of fact, however, the reverse procedure was adopted in the concession so far granted, but as the Governor also observed that he did not wish to shut the door, it behoves your Association, your Committee, thinks to again agitate until the measure of relief sought for has been obtained. With a view to understanding the proposals under consideration, the following summary, drawn on behalf of the Railway, is recorded as showing the Estimated loss of Revenue involved:—

Reduction of the rate on Tea from 4th to 6th class	Rs. 252,571
Reduction of the rates per mile on the line above Nawalapitiya to the Main Line rates below Nawalapitiya on all traffic	339,286
Do. do. on tea, rice, and tea requisites only	210,907
Reduction of 50 per cent in the difference between the rates per mile above Nawalapitiya, and those charged on the Main Line below Nawalapitiya on all traffic	194,903
Do. do. on tea, rice, and tea requisites only	122,511
Reduction of the rate on rice for stations beyond Nanuoya only from 3rd to 4th class (a)...	67,691
Do. do. 3rd to 5th class (b)	87,565
Do. do. 3rd to 6th class (c)	129,094
Reduction of the rate on rice from 3rd to 4th class	407,146
Do. do. 4th to 5th class	113,215

(These calculations are based on the actual traffic conveyed over the Railway in 1897).

Table 33.—Statement of Payments made on account of Sinking Fund and Interest on Railway Loans, 1898.

	Sinking Fund. £ s. d.	Rs. c.	Interest and Commission. £ s. d.	Rs. c.	Total. £ s. d.	Rs. c.
Nanu-oya Railway	9,904 2 2	= 148,852 36	39,668 16 5	= 596,205 16	49,572 18 7	= 745,057 52
Matale Railway	2,703 2 4	= 40,626 12	10,829 4 1	= 162,757 75	13,532 6 5	= 203,383 87
Haputale Railway	4,500 0 0	= 67,434 21	13,533 15 0	= 202,808 38	18,033 15 0	= 270,242 59
Ordinance No. 17 of 1895 (3 per cent. Sterling Loan.)						
Matara Railway	—	26,391 0	—	79,472 0	—	105,863 0
Kurunegala Railway	—	5,594 0	—	16,846 0	—	22,440 0
Galle Railway	—	18,760 0	—	56,492 0	—	75,252 0
Bandarawela Railway	—	3,196 0	—	9,626 0	—	12,822 0
Main Line, improvements to Colombo Station	—	3,521 0	—	10,603 0	—	14,124 0
Haputale Railway	—	153 0	—	462 0	—	615 0
Ordinance No. 7 and 8 of 1892 (4 per cent. Local Loans).						
Galle Railway	—	16,706 0	—	66,655 0	—	83,361 0
Kurunegala Railway	—	991 0	—	3,954 0	—	4,945 0
Bandarawela Railway	—	6,969 0	—	27,807 0	—	34,776 0
Total ...		339,193 69		1,233,688 29		1,572,881 98

CEYLON GOVERNMENT RAILWAY.

A growing feeling of discontent in connection with the short delivery of goods on the Ceylon Government Railway, more particularly as regards Rice, led to the matter being brought before your Committee. A Sub-Committee was appointed to investigate the matter, and voluminous statistics were collected from Estate Agency Firms in Colombo showing that Rice was almost invariably delivered short. The papers showed that as much as 3½ per cent of shortage is a fairly common average in the case of Rice. As the correspondence chiefly dealt with shortages of Rice, the Sub-Committee confined [illegible] entirely to this matter. The great difficulty the Sub-Committee had to contend with, was that of finding out where exactly the alleged leakage took place, and before drafting the Report to your Committee, an invitation was sent to the General Manager of the Government Railway to meet the Sub-Committee in Kandy and to discuss the whole question in semi-private conference. It is matter for regret that this invitation was not availed of. The Sub-Committee thereafter drew up a short report which was submitted to your Committee, and after adoption forwarded to Government, to the Chamber of Commerce, and to the General Manager of the Railway. The Report briefly defined the situation and recommended certain alterations of the Rules and Regulations of the Railway which would tend to give greater security to the Consignee. The crux of the whole question at present is, that the Railway refuses to recognize its own weights as a basis for claim. This appears to your Committee a most undignified attitude for a Government Railway making enormous profits to engage; and is also quite indefensible legally. The small pecuniary value of each particular short delivery in comparison with the waste of time and money involved in fighting a Government Department has no doubt deterred individuals or Firms from taking a test case, and has encouraged the Railway authorities in their uncompromising attitude. The margin of 5 lbs. per ton under which amount the Railway will not recognize any claim for freight over charges, seems to your Committee to constitute a direct incentive to petty larceny. Incidentally the Sub-Committee could not fail to notice and to be impressed by other grievances connected with Railway transport and management such as leakage of wagons, careless weighment of Tea, inaccurate weighing machines at Stations, etc., etc. In fact, your Committee is of opinion that the time has arrived for a searching enquiry into the present management of the Railway.

MILITARY CONTRIBUTION TO THE IMPERIAL TREASURY.

In continuation of the paragraph in the Annual Report presented on the 17th February, 1899, your Committee deems it advisable to place on record for information and guidance the following statement by the War Office officially transmitted from Downing Street to the local Government on the subject of the cost of the Ceylon Garrison as defined by the Military Contribution Ordinance for the years 1895 to 1898.

	1895. £	1896. £	1897. £	1898. £
Cost of Garrison, omitting charges for new works ...	161,164	160,032	168,665	196,591
Three-quarters of above amounts ...	120,873	120,024	126,499	147,443
Military Contribution paid by the Colony for each year:— Expressed in Sterling ...	85,048	90,269	105,323	119,020
	Rs.	Rs.	Rs.	Rs.
Expressed in Rupees ...	1,540,499	1,611,943	1,763,066	1,684,934
Sterling value of Rupee during each financial year ...	1s. 1¼d.	1s. 1½d.	1s. 2¼d.	1s. 3⅓d.

The War Office state that it will be observed that, while the growth of the Ceylon Revenue has, on the percentage system, caused the contribution to increase annually, the expense of the Garrison has also increased, with the result that the contribution still falls short of the maximum fixed by the Ordinance, viz., three-quarters of the cost of the Garrison. The increase in expenditure is due to four principal causes:—(1) The gradual rise in the sterling value of the rupee from 1s. 1¼d. to 1s. 4d.; (2) an increase of the Garrison by seventy-four men; (3) special charges for new armaments; (4) the grant of messing allowance to European soldiers in 1898. The War Office add that there will be no objection to furnishing the Secretary of State for the Colonies with an annual statement of the military expenditure, and steps will be taken to supply it in November or December of each year, that being the time when the Army Appropriation Account is compiled and the information can be completed. It is estimated that the expenditure for 1899 will be about the same as for 1898, and that the contribution will be £122,035.

CEYLON.

ANNUAL COST OF THE GARRISON, EXCLUDING NEW BUILDINGS.

	1895. £	1896. £	1897. £	1898. £
Army vote, Vote 1. Pay, &c., of the Army (excluding Deferred Pay issued in the United Kingdom) ...	59,378	61,255	62,623	65,877
	1895. £	1896. £	1897. £	1898. £
Deferred Pay issued at home ...	3,000	3,000	3,000	a
Vote 3. Medical Services	2,851	3,317	3,183	3,480
Vote 6 Transport, land and sea ...	17,921	12,670	12,825	13,489
Vote 7 Provisions &c. ...	22,686	22,970	27,656	36,393
Vote 8 Clothing	6,657	5,826	6,112	6,783
Vote 9 Ordinance Wages, &c. Arms, Accoutrements, Ammunition, Barrack Stores and Armaments ...	11,426	13,642	14,979	b 31,481
Vote 10 Salaries, &c. ...	2,008	2,050	2,372	2,394
Maintenance of Works, &c. ...	4,319	4,349	4,918	4,913
Vote 11 Regimental Schools, Libraries, &c.	278	300	299	318
Vote 12 Miscellaneous ...	—	23	68	148
Home Charges for Dépots, &c.	11,320	11,320	11,320	12,000
Pensions, normal charge	19,310	19,310	19,310	19,310
Total	£161,164	160,032	168,665	196,591

a Not included for 1898, messing allowance £4,918 having been issued locally, and included under vote 7.

b In 1898 there were special charges for new armaments about £15,811.

PROPOSED GRANT TO MEN OF THE CEYLON MOUNTED INFANTRY.

Your Committee desires to record an expression of regret at the present unfortunate position of this matter, and is of opinion that Government cannot be exonerated from responsibility as to the result, which is open to question, alike on grounds of policy and expediency. Considerable interest was evinced in the proposal which emanated from Government, and the fact that your Association was invited to move in the matter, gave reasonable hope that no fiasco would be allowed to occur. In last year's Report it was stated: Your Committee has not learnt whether Government approval has followed, and whether the proposed grant of Rs. 120 per annum will be shortly announced, but trusts that so much trouble having been taken in the matter effect will be given to the recommendation even as a tentative measure. On information being sought later in the year in reference to the proposed grant, your Committee was informed that His Excellency abandoned the proposal, on receipt of the letter from the Association in reply to the communication from Government on the subject, and that the Lieutenant-Governor was unable to go beyond the original suggestion, in the absence of any fresh facts. When it is remembered that ten years ago the then Major-General Commanding approached the Association on the subject of a Planters' Volunteer Corps, and that recognizing the importance of such a proposed organization the Committee did all in its power to make the movement known through the various District Associations, it would have been a graceful and gratifying acknowledgment had Government readily accepted the considered recommendation forwarded by the Association for the favourable approval of His Excellency the Governor, and granted the desired concession of Rs. 120 a year towards the upkeep of a horse to each man of the Mounted Infantry who attended Camp, made himself efficient, and at same time owned a suitable horse not less than 14 hands in height.

THE CEYLON CONTINGENT OF MOUNTED INFANTRY FOR SOUTH AFRICA.

Though not all Members of your Association, your Committee herein records the names of the Ceylon Contingent of Mounted Infantry for South Africa as a slight tribute to the pluck, gallantry, and devotion to Her Majesty's Person and Throne, which the speedy satisfactory enrolment of the Contingent exhibits. Your Committee and the Planting Community generally will follow the fortunes of each Member with keen interest, and meantime re-echoes the good wishes and enthusiastic send-off that have been so cordially bestowed on the "Absent-minded beggars" from Ceylon's most favoured Districts. The full list including the staff is as follows:—

STAFF.

Capt. Rutherford	Sergt. Major Money
Capt. Anderson	Q.-M.-S. Cheyne

CONTINGENT.

Capt. W L Murray-Menzies	W Ferguson
Lieut A H Thomas	C S Northcote
Lieut R Coatesworth	E S Stephens
Lieut G M Wigram	T Y Wright
C Murland	C Hammond
E H L Thomas	D Gow
T Dickson	A H Parker
J H Thomas	J H Barker
P Sturdee	A Clementi-Smith
G C S Hodgson	J C Marsh
B C D A Hartwell	F E Saville
C Shelley	J P Hortin
Y Thorne	H St. George Carey
H C Wallace	W F G Campbell
G F Farquharson	C A Ferguson
F de Lancy Williams	H Alridge
H C Graham	N W Smellie
H V Hill	F D Green
G L O Armitage	G B B Brown
Lewis A Wright	J F Marshall
U F Mason	W R Keating
H S Brettell	Henry Gordon
A H Bury	M J Paine
W M Edley	J E B Horsfall
T Harward	A J Kinlock Paul
Claude C Bell	Preston White
R W Braithwaite	A de C Carson
G B Williamson	C E Shuttleworth
W A Tunstall	C Campion
S K Wickwar	W B Mortimer
C C Durrant	J B Sidgewick
G Scott	W Noble
J B Lindsay	J F Halliday
W Murray	W S D Oldman
R G Massey	N S Mansergh
A P Bell	C E Clarke
W A T Kellow	Alex. Tait
W J R Hamilton	E L Humfrey
C McLennan	H F Browell
Roy G Anderson	H J G Marley
Stanley Sinclair	M J Alderson
W N Robertson	V H Secker
A Dickson	A G Craighead
C Maxwell	Harold Tebb
R W Graham	Drummond Hay
H Heath	J Ironside
Geo. McLaren	L Dawson Campbell
W T Hodgson	R B Wilson
K Hamilton	F C Peek
G H Baird	Alex. L Baines
A S Hopper	A C Corbetta
J W B Paul	E G Anstruther
Trafford Lewes	E Massey
Thomas Lewis	S H Hayes
A E Pate	W M Kelly
J Becke	A A Franklin
Preston Plumridge	H A Bell
W A Tytler	M Corrie
R H Henning	R Agar
LW Graham Clarke	A J Maudsley

SADDLERS AND FARRIERS.

C Garlow	J Thibble
C Dweltze	Ramasamy
C Clarke	Kawadar Bey

TRANSVAAL WAR FUND FOR THE RELIEF OF THE WIDOWS AND ORPHANS OF SOLDIERS OF THE QUEEN KILLED IN SOUTH AFRICA.

A circular letter was forwarded to the Honorary Secretaries of all District Associations, and others, inviting their good offices in bringing the subscription lists, which accompanied, to the notice of members and others on behalf of the Transvaal War Fund for the relief of widows and orphans of soldiers of the Queen killed in South Africa. As duplicate lists appear also to have been circulated through other channels, it is not possible to state what the contribution to the Central Fund from the Planting Community aggregated, but according to the lists returned from the Honorary Secretaries of some of the District Associations over Rs. 6,000 was promised through these alone.

LABOUR SUPPLY.

Appended herein are abstracts of the Official Returns, showing the arrival and departure of coolies during 1897, 1898, and 1899, respectively.

Months.	1897. Ar'vals	1897. D'tures	No. since the commencement of the year: Ar'vals	D'tures
January ...	5,892	3,479	5,892	3,479
February ...	5,617	3,960	11,509	7,439
March ...	6,579	5,273	18,088	12,712
April ...	10,850	9,476	28,938	22,188
May ...	26,975	27,124	55,913	39,312
June ...	23,725	19,201	76,938	58,513
July ...	16,849	12,517	96,487	71,030
August ...	14,580	5,587	111,067	78,617
September ...	15,296	8,498	126,393	87,115
October ...	6,927	6,713	133,290	98,828
November ...	10,818	8,072	144,108	101,900
December ...	8,967	7,313	153,075	109,218

Months.	1898. Ar'vals	1898. D'tures	No. since the commencement of the year: Ar'vals	D'tures
January ...	6,805	7,745	6,805	7,745
February ...	5,586	8,077	12,391	15,822
March ...	9,532	11,596	21,923	27,418
April ...	13,643	16,932	35,566	44,350
May ...	18,785	8,383	54,351	52,733
June ..	20,808	10,600	75,199	63,333
July ...	14,228	7,310	89,387	70,643
August ...	10,691	6,776	100,078	77,419
September ...	13,846	6,388	113,924	83,807
October ...	8,712	6,409	122,636	90,217
November ...	6,732	8,164	129,368	98,380
December ...	7,496	7,326	136,364	105,706

Months.	1899. Ar'vals	1899. D'tures	No. since the commencement of the year: Ar'vals	D'tures
January ...	3,213	7,185	3,213	7,185
February ...	3,236	7,677	6,449	14,862
March ...	4,984	7,682	11,433	22,544
April ...	5,079	7,003	16,512	29,547
May ...	6,648	8,660	23,165	38,207
June ...	7,606	6,475	30,766	44,682
July ...	7,604	5,594	38,370	50,276
August ...	2,833	8,387	41,203	58,661
September ...	3,764	6,034	44,967	64,697
October ...	8,044	5,711	53,011	70,408
November ...	4,808	5,552	57,819	75,960
December ...	10,574	5,669	68,393	81,629

PUBLIC WORKS.

What has been called the "New Policy" was definitely decided upon by the Secretary of State and communicated to the Government in despatch No. 222 dated 21st July, 1899. This despatch was considered at a General Meeting of your Association held on 5th December, 1899, and the resolution which will be found in the record of the proceedings was passed. The "New Policy" involves an expenditure of Rs. 20,641,000, half of which is to be raised by loan and half taken from surplus revenues of past and future years. The works to be undertaken are the Northern Railway from Kurunegalla to Jaffna and Kangesanturai on the light broad gauge estimated to cost Rs. 11,060,000. The Kelani Valley Railway from Colombo to Avisawella and Yatiyantota on the 2 ft. 6 in. gauge to cost Rs. 3,400,000 (since increased to Rs. 3,672,575·96) and the Udapussellawa Railway from Nanuoya to Ragala *via* Newera Eliya, also on the 2 ft. 6 in. gauge, to cost Rs. 1,181,000. In addition to the above the "New Policy" includes the expenditure of a sum of approximately Five Million rupees on irrigation, to be spread over a period of some six or eight years, but of this sum Rs. 200,000 per annum may be taken from annual irrigation vote of that amount under Ordinance No. 6 of 1892. The surplus revenues accrued to the end of December, 1899, are expected to amount to at least Six Million rupees, and adding the Rs. 200,000 of the irrigation fund for eight years and the balance of the same fund unexpended which amounts to about Rs. 280,000 there would remain to be provided a sum of about Rs. 2,400,000, equal to Rs. 400,000 per annum for six years. The whole scheme came before the Legislative Council on the 13th December, 1899, and was unanimously approved of, though the Mercantile and Planting Members endeavoured to carry an amendment to the effect that it should be left to the Legislative Council to indicate how the funds for such purposes should be provided. In this, however, they were not supported by the other unofficial members. The estimates of expenditure for 1900 on Public Works annually recurrent amount to Rs. 2,011,200, a further increase on the amounts voted in previous years, and the estimates for Public Works extraordinary totalled Rs. 2,325,213, which amount was somewhat reduced by omission of the votes for new Public Works Department Offices and an extension of the Colombo Museum, as well as several other new buildings at outstations. It is noticeable that although several new roads have been applied for on the grant-in-aid principle they have nearly all had to be set aside owing to the very high cost of the work as estimated, which made it impossible for proprietors to accept the roads on those terms. Your Committee is of opinion that it should be optional for those interested to apply for a first, second, or third class road according to the requirements of the District, instead of being forced to accept any road that may be recommended by the Director of Public Works. If Government insist upon making first class roads when cheaper roads would be sufficient, they should bear the whole of the increased cost. At the request of the Mercantile and Planting Members a commission is to be appointed to inquire into the whole subject of the increased cost of Public Worke in recent years.

EMPLOYMENT OF ESTATE COOLIES ON NEW RAILWAYS AND OTHER PUBLIC WORKS.

Considerable dissatisfaction has been felt at the apparent failure of Government to take adequate steps for the provision of labour for the new schemes of Railway construction. There is, your Committee finds, a widespread feeling of apprehension among the Planting Community that the prospect of comparatively higher wages might induce coolies to leave Estates for these works. It is also considered that likely sub-Contractors, especially in Planting Districts, might be tempted to offer high advances for Estate labour, which would tend to a general upsetting of the labour force all over the Island, and to militating against the work of the Labour Federation of Ceylon. This organization has already been instrumental in greatly reducing abnormally high advances, which, increasing by leaps and bounds during the past few years, had reached dimensions that threatened the stability of the Planting industry. A sub-Committee appointed recently to consider the question of Labour, drew up a memorandum which was adopted by your Committee and forwarded to Government. The memorandum suggested that Government should appoint a Labour Bureau, or Committee, which should include at least one member of the Planters' Association, and that Government should attempt to secure the co-operation of the Madras Government in recruiting Labour from Districts in India, other than those which at present supply the bulk of your Estate labour. The memorandum also pointed out the danger to the health of Tamil coolies employed on earth works in the low country, and suggested the employment of local Sinhalese, as far as possible, as such labourers are more inured to attacks of Malaria. Your Committee is fully aware of the extreme importance of pressing Government to take steps as soon as possible to provide labour for the new Railways and other Public Works which will necessitate the employment of large forces of local or imported labour. This course is more advisable than ever, as the departures during 1899 of Estate coolies from the Island have exceeded the arrivals. The question is a serious one, with possible grave results both to the Planting enterprise, to the Railway, and to the General Revenue.

KEEPING OUT THE PLAGUE: GOVERNMENT PROPOSALS TO PROTECT TAMIL COOLIES.

In May last your Committee forwarded the following Report to Government: "Your Committee having conferred with the Principal Civil Medical Officer and Inspector-General of Hospitals as instructed on the subject of the following resolution—' that, in drawing the attention of Government to the list of drugs and disinfectants stated as necessary by the Principal Civil Medical Officer for the requirements of each estate in the event of Plague, the Committee would urge that sufficient quantities be indented for, and kept in stock at the district dispensaries and hospitals for their own use and for the use of estates, as the Committee understands, from complaints received from various districts, that the dispensaries and hospitals are very inadequately stocked, the supplies being quite insufficient for what is necessary'—have pleasure in reporting that the drugs and disinfectants as stated as being necessary by the Principal Civil Medical Officer and Inspector General of Hospitals for the requirements of each estate, will be available in ample quantities at the district dispensaries and hospitals. With reference to the supplies of ordinary medicines at Government Dispensaries and hospitals, your Committee were informed by the Principal Civil Medical Officer that a Committee is now investigating the question of the supply and distribution of medical stores. Your Committee accordingly recommend that the Planters' Association should apply to Government for a copy of this report, which it is understood will be ready on an early date, and enable the Planters' Association to take further action if necessary. Your Committee learn with satisfaction that in the event of Plague breaking out on an estate, the Principal Civil Medical Officer's Department will take charge of the case and will provide attendants. Your Committee further understand that for the purpose of watchmen, the police have already been supplemented by enrolling their pensioners for special Plague duty. The matter is doubtless receiving consideration, but so far your Committee has not been favoured with the desired copy of the report of the Principal Civil medical Officer referred to on the question of the supply and distribution of medical stores."

RAGAMA CAMP.

Last year your Committee was able to report that four separate camps had been constructed. To these a fifth has been added and the camp is now considered to be complete. Each of the five separate camps consists of four or five sheds and are capable of accomodating about 500 coolies. There is also an Observation Shed for each camp, where suspicious cases of infectious disease can be isolated and watched. A good water supply is provided, also bathing and latrine arrangements and kitchens. There is one Infectious Disease Hospital for the whole of the camps. This is fully equipped, and there is a resident Medical Officer and Assistant. There are two incinerators for the five camps for the destruction of excremental matter and refuse. There is also a Threslis Steam Disinfecting Apparatus for the whole of the Camps, and cauldrons at each Camp for the boiling of infected clothing. One, and if possible two, Camps will always be kept empty to allow for an outbreak of plague. In order to accomplish this the arrivals of several consecutive days will be placed in one Camp, those of the next few days in another, and those of a third period in the third Camp. By the time the third Camp is full the immigrants in the first Camp will have passed a full ten days period of quarantine from the time they left their last place of infection, and that Camp will be ready to receive fresh arrivals, and so on in rotation. It is claimed that the institution of the one route of immigration *via* Colombo, combined with the Ragama Camp which has made it possible to close the North Road without too seriously affecting the influx of labour, has had a most beneficial effect in preventing disease of all kinds from attacking the immigrant cooly. Small-pox has been rather more prevalent than it should have been, but a new system has now been introduced of inspection at the breakwater which is likely to prevent this in future. The affected coolies are generally found to be unvaccinated. This has caused the Principal Civil Medical. Officer to consider a plan by which the imigrants may be vaccinated immediately on arrival, and it is understood that this plan has been accepted by Government and will be carried out. It is matter for congratulation that the precautions adopted by the Plague Committee have been so far successful in preventing the outbreak of plague in the Island, and these precautions continue to be strictly enforced.

CEMETERIES ORDINANCE.

An Ordinance has been passed by the Legislative Council under the provisions of which the Government have power to make by-laws for the registration of burial grounds within specified areas, the limits of which shall be defined therein. Unless therefore by-laws are made specially including the planting districts within the limits defined, the ordinance will not be in force within those districts. During the debate on this Ordinance the Governor, at the request of the Planting Member, supported by the general European Member, stated that Government had no present intention of making such by-laws or of interfering with the customary method of burying the dead on estates. The Ordinance further provides that such by-laws, if made, have to be laid before the Legislative Council, when it is open to any member to move a resolution disapproving of them, and if such resolution be carried the by-laws will be disallowed. This Ordinance consolidates the law relating to General Cemeteries and Burial Grounds and will be of value in large towns and Municipilities, and it may even be advantageous to bring it into force in smaller towns and large bazaars, but so long as proper attention is paid to the burial of the dead on estates it will not be necessary to bring the Ordinance into force in the planting districts.

CRIME IN CEYLON.

A resolution on this grave subject was passed at a recent General Meeting of your Association, and was forwarded to Government, not certainly with the view to embarass those in authority in endeavouring to provide a remedy for the state of affairs disclosed judged from the information submitted, but so far as your Association is concerned, to strengthen the hands of His Excellency the Governor and his Executive Council. Your Association would dissociate itself from mere criticism or discussion as to the comparative prevalence of crimes of violence in different parts of the world, its sole object being by attracting notice to draw attention specially to the question of punishment. The deplorable state of crime in Ceylon, however, accounted for was certainly worse in 1886 than it now is bad as the record appears. Whether the time has not come to appoint a Commission of Enquiry for the purpose of considering means whereby crimes of violence may be more surely prevented is, your Committee feels, matter for consideration again. It will be remembered that in his address in opening the Legislative Council in 1886 His Excellency the then Governor remarked "I have been painfully impressed with the great prevalence of crimes of violence, and the comparative immunity with which they are committed. In 1885, and the first six months of 1886, one hundred and two distinct trials for murder, in some of which several persons were accused, took place in Ceylon. In only nineteen cases were capital convictions obtained. In addition to these cases twenty-nine murders were committed and reported by the police, for which no one has been even brought to trial; and large as this number would be if viewed relatively to the whole population, it must be remembered that with the exception of one or two, the whole of the murders have been committed by Sinhalese, and that the percentage of murderers must be taken from a population, not of nearly 3,000,000, but of less than 2,000,000. I offer no theory to explain these facts, but they are facts which call for very serious consideration." To these statements the Legislative Council replied:—"The Council share the deep concern felt by your Excellency at the prevalence of crimes of violence in Ceylon, and desire to express the earnest hope that some means may be devised for the better prevention, detection, and punishment of such crimes." Again, His Excellency, in opening the Legislative Council next Session, said—"When addressing you last year at the opening of the Session, I called your attention to the prevalence of unpunished, or inadequately punished, crime. I regret that I cannot perceive any improvement in this respect during the last twelve months. Crimes of violence continue to abound, and theft from dwelling houses has become so common an offence even in the capital as to create a general feeling of insecurity. My attention has been very seriously given to this most unsatisfactory condition of affairs, the causes of which are, I fear, complex, deep-seated, and of long duration. The evil is one with which it will be no easy task to grapple. To assist me in doing so I desire the co-operation of a strong Commission of Enquiry; but it is a matter of the utmost difficulty to find men competent to undertake such a duty, who have at the same time leisure to devote to it the time and close attention which its efficient discharge requires. In 1886, and the first six months of 1887, one hundred and forty persons were tried for murder, of whom 29 were sentenced to death. During the last three months there have been no fewer than 28 separate trials for murder, in which 43 persons were accused, of whom 9 were capitally convicted." Replying to these observations, the Council remarked—"Your Excellency's intention to appoint a Commission of Enquiry for the purpose of considering means whereby crimes of violence and thefts from dwelling-houses may be more surely prevented and punished meets with the cordial approval of the Council; and, while fully realizing the difficulties mentioned by Your Excellency, they yet hope that it may be possible to find among the several communities of the Island gentlemen with special fitness and qualifications, willing and able to serve upon the Commission." These somewhat lengthy quotations were made by your Committee at the time as a means of attracting notice to them, and because they unquestionably indicated a deplorable state of crime in Ceylon, however accounted for. It still appears to your Committee that a much more general use of the rattan as a means of punishment would be followed by satisfactory results, while whipping with the rattan is not open to the objections that may be raised in some quarters to lashes with the "Cat-o-nine tails."

PROVINCIAL AND DISTRICT ROAD COMMITTEES.

In your Committee's Report for the year ending 17th February, 1892, it was stated "Consideration has again been given to the proceedings of the Provincial and District Road Committees, and it is matter for regret that so far effect has not been given to your representations, though Government stated that they would have attention. Until the minutes of proceedings of the meetings are made public, as requested, it will not be possible to follow the decisions come to or to form a just opinion as to how far the provisions of the Ordinances are given effect to, and the interests of the tax-payers safeguarded. The commutation tax and the Ordinances enforcing it are so closely connected with the general good of Ceylon that your Committee feels that all sections of the community are deeply interested in the efficient and economical working of the laws on the subject. With a view to that cordial co-operation that is alike essential and advisable, your Committee would again urge Government to take the necessary steps in the matter without delay." It is satisfactory to report that after the lapse of years on a renewed representation being made a reply was received stating that in future the proceedings of the Provincial Road Committee, Central Province, and the District Road Committee, Kandy, would be forwarded to the newspapers for publication. There can be no doubt that this is a step in the right direction, because those interested instead of being kept in the dark have at all events now an opportunity of perusing the proceedings and of noting the progress of business in which they may be interested. Your Committee avails of the opportunity to strongly recommend every attention being given to the requirements of the law in relation to Local Committees, as their acts and decisions as well as their observations in regard to District roads and their requirements are of much value and assistance to the Provincial and District Road Committees.

EXCHANGE AND THE CURRENCY QUESTION.

In last year's Report it was remarked that it was impossible to foretell the ultimate result of the deliberations of Lord George Hamilton's Currency Committee, but your Committee is no longer in the dark, and has to record the following summary of the report to Parliament of the Indian Currency Committee.—"The Indian Currency Committee has made its report and recommend a gold standard with the sovereign as legal tender and fixing the rupee at sixteen-pence. The Currency report is divided into eight sections. The first section recounts the history of the Monetary System of India. Section two discusses the silver standard and says the re-opening of the Mints would be so fully and immediately discounted as to defeat the object of such a course. Discussing the fears of the Indian Tea Industry being threatened by China producing on a silver basis, the Committee consider that the permanent interests of the industry would be promoted if it was worked under the same standard of value as that of the countries to which they export their produce. The report concurs in the decision of Government not to revert to the silver standard. The third section argues in favour of a gold standard and says it is impossible to maintain the *status quo* permanently, though it might prove adequate to create a margin of gold sufficient to tide India over adverse years It advises that steps be taken to avoid all possibility of doubt as to the determination not to revert to the silver standard, and to proceed with measures for the effective establishment of a gold standard. The fourth section says the Committee is unable to commend the proposals of the Indian Government as embodied in its despatch of 3rd March, 1898. The fifth section deals with the scheme for establishing a gold standard without a gold currency. The Committee considers that the native habit of hoarding gold does not justify the permanent refusal to allow India a gold currency and favours making the British sovereign a legal tender. As to the current coin, it considers that the Indian Mints should coin gold unrestrictedly on the same terms as the Australian Mints. Section six of the Currency report, dealing with convertibility, says that the existing conditions prevent limiting the amount for which rupees should be legal tender, and for some time to come the Indian Government should not be legally bound to part with gold in exchange for rupees, but should make gold available for Foreign remittances whenever exchange falls below specie point. The exclusive right to the rupee coinage must remain vested in the Government, and profits should be kept in gold as special reserve. Section seven recommends a legal rate of six-pence for the rupee. The recommendation is not made unanimously, but by a majority of the Committee, who point out that this is now the normal rate to which prices may be assumed to have adjusted themselves. Section eight says, the effective establishment of a gold standard is of paramount inportance to the material interests of India, not only to promote existing trade but to encourage the influx of captial. For the speedy attainment of this object it is eminently desirable that the Government of India should husband its resouress and exercise resolute economy to restrict the growth of gold obligation.

DISCOUNTING OF PROMISSORY NOTES DRAWN UPON ESTATE KANGANIES BY THE LOCAL BANKS.

A letter was issued to all Banks in Ceylon pointing out that the custom of discounting Kanganies' notes is greatly prejudical to the interests of the Planting Community and tends to increase coast advances which the Assocciation is most anxious to check, and that facility so granted encourage fraudulent transactions. Your Committee urged all Managers of Banks in Ceylon as far as possible to discontinue the custom. From the replies received your Committee thinks that the practice will be discouraged as far as practicable but continues to give prominence to the matter.

JURY LISTS, CENTRAL PROVINCE.

Early in the year your Committee drew the attention of Government to the Jury Lists of the Central Province published in the Government Gazette as being most defective, and pointed out that the Resolution of the Committee forwarded to Government on the 26th March, 1898, recommending extension of radius of those liable to serve was accepted by Government and should be adhered to, the entire lists being thoroughly

revised. In reply Government stated that inaccuracies referred to would be corrected when the list was revised in January, 1900. Your Committee trusts that the lists of Jurors and Assessors under the provisions of the Ordinance of 1898 No. 15 section 257 Criminal Procedure Code recently published will prove to be more correct than previously and would invite the co-operation of all Planters in still further improving the said lists.

THEFT OF PRÆDIAL PRODUCTS.

A considerable amount of attention was given by your Committee to this subject, and it is hoped that some success has followed, in any case the question will by no means be lost sight of.

NOMINATION OF VISITORS TO HOSPITALS AND DISPENSARIES IN THE PLANTING DISTRICTS.

As indicated in last year's report a very considerable amount of trouble was taken in connection with lists forwarded by Government of the Visitors of Hospitals and Dispensaries in the planting districts with a view to revision and correction if necessary, and it is to be regretted therefore that notwithstanding, the matter cannot be said to have been materially advanced. All nominations submitted to Government, are of course, for approval while it has been usual for Government to give effect to the wishes of the Planting Community on the subject as notified by the Planters' Association. As it was found quite impracticable to revise the lists most recently received from Government, it was resolved that the Secretary be asked to continue the correspondence with a view to obtaining a correct list of visitors actually serving in the various districts, and whose appointments have been approved by Government. To this end a letter has been addressed to the Honorary Secretaries of each District Associations asking for the names of the visitors actually serving at date in each district with a view to co-operating in bringing the matter into order in so far as the lists are concerned.

REDUCTION OF THE BRITISH TEA DUTY.

Your Committee, in continuation of the paragraph under the above heading in the Report for last year, has now to add that this important question, at the instance of the Indian Tea Association (Calcutta), was again considered by your Committee on more than one occasion, and was eventually referred to a General Meeting of your Association for disposal. After a long and interesting discussion, it was deemed undesirable to take action in the matter at present. Your Association is thus free to re-open the question at any time should circumstances be more propitious, and the interests of the Tea Industry appear to call for such action in the future.

REDUCTION OF TELEGRAM CHARGES BETWEEN THE UNITED KINGDOM AND THE EAST.

During the year your Committee has watched with interest Mr. J. Henniker Heaton's action in reference to the reduction of Telegram charges between the United Kingdom and the East, and intimated to him that the Association would readily and cordially co-operate with him in his efforts to reduce the charges complained of, while your Committee has supported various Chambers of Commerce in the steps taken to a like end. In this connection it is interesting to note what recently fell from Mr. E. A. Sassoon, M. P., when reading a paper on "Imperial Telegraphic Communication" before the Liverpool Chamber of Commerce. He said on behalf of the House of Commons Imperial Telegraph Committee he thanked them for their presence, which might be regarded as a protest against one of the most gigantic impositions to which, perhaps, any civilized community had yet to submit......For a great many years past the burden of the excessive charges exacted for Imperial Telegraphic Communication had been felt by all the constituent portions of the Empire......The Chancellor of the Exchequer expressed himself as being in absolute agreement with them and admitted "that, at any rate with regard to India, there is a very considerable grievance in the cost of Telegraphic Communication, and, whether the matter had better be approached in the first instance by Royal Commission or by a Committee of the House of Commons, or whether it is possible by the action of the departments principally concerned. In the Post Office and the Indian Government, or by some such process as Sir Edward Sassoon has suggested of filling up gaps between different systems, a good deal might be done to improve the position......The rates of the Companies, though they were reasonable when the enterprise was in its infancy, were now, in view of the phenomenal increase of traffic, wholly antiquated and intolerable; and as to codifying, all the contrivances of codes and condensation had now reached their high mark of perfection, therefore no relief in that direction could be looked for......With the awakening of the constituent elements of the Empire to the necessity of drawing closer together to the Mother Country, a demand had arisen for facilities for the transmission of messages of a social character; that demand was irrepressible, and it was also one which no Government could wish or afford to neglect......All they asked for was fair play and bare justice. The fates were propitious, the auguries encouraging, and with their intelligent sympathy, and with their earnest, strenuous, and unfaltering support they should before long record a great and a beneficent triumph...". In the result it was recommended that support should be given to the action which the Imperial Telegraph Committee of the House of Commons propose to take with the view of placing the important matter of electrical communication between the United Kingdom, India, and the British Colonies and dependencies on a footing commensurate with the greatly altered conditions of Imperial and Colonial relations.

AGRICULTURAL DEPARTMENT.

In the Annual Report a year ago your Committee urged the importance of the inauguration of a Government Agricultural Department, being of opinion that such department should have for its purposes the advancement of all cultivation, agricultural and horticultural in the Island, also the improvement of stock. In support of the views entertained it is submitted that existing products require to be kept in as good a state of health and productivity as possible, by continually studying the best methods of cultivation, and by enabling all to benefit by the information thus gained. Further, that the *improvement* of varieties at present cultivated by hybridisation, grafting, approved methods, and the introduction from other Countries of new varieties, which may succeed better than those already grown, are desiderated. As a proof of this it is instanced how much had been done in the improvement of Cinchona in Java, owing to scientific advice. The necessity of watching the enemies of each cultivation and of investigating methods for combating these, so as to prevent the spread of diseases, and to minimise their evil effects is apparent while enquiries regarding various soils, their analyses and the analyses of manures, also the chemical investigation of the changes which take place in the curing of products, such as Tea, Cocoa, Cardamoms and the like, with a view to the discovery of the methods producing the best Commercial results, and the testing of the vitality and purity of seeds to be used in planting, are of the highest practical importance. In order to carry out these duties, your Committee urged the appointment of an Entomologist, a Mycologist, and an Agricultural Chemist, and your Committee is glad to report that His Excellency the Governor, fully realizing the duty of protecting the Agricultural Industries of Ceylon, selected a Mycologist, in addition to the Entomologist already appointed. His Excellency has further been asked by your Committee to add to the scientific staff by nominating Mr. M. Kelway Bamber as Agricultural Chemist—a step than which none would give greater satisfaction generally. The growing interest in scientific cultivation is most apparent, and your Committee feels confident that much benefit will accrue to both European and Native cultivation by the early establishment of an Agricultural Department.

DHARMA LINES OR COOLIE SHEDS ERECTED BY SUBSCRIPTIONS COLLECTED UNDER THE AUSPICES OF THE PLANTERS' ASSOCIATION OF CEYLON IN 1855.

In January, 1899, a letter was received from the Government Agent of the Central Province inquiring whether the Planters' Association had any objection to the appropriation of the Dharma lines in the neighbourhood of the Railway Terminus with a view to the premises being utilized as a House of Shelter within the Municipality of Kandy for the large number of destitute people who are found sleeping in open verandahs and other similar places. The reason given for approaching your Association in the matter was clearly stated to be because a moiety of the cost of the buildings has been paid by the Planters. In reply, your Committee stated that the Planters' Association had no objection to the proposed appropriation of the particular buildings referred to, but desired to be authoritatively informed whether in a similar manner a moiety of the cost of the Dharma lines situated on the Katugastota Road a little more than a mile from Kandy had not been paid for by the Planters. The Government Agent at once acknowledged with thanks the communication, and intimated that the other Dharma lines referred to were built by a similar arrangement. The matter having been considered by your Committee the following Resolution was passed on the subject and was forwarded to the Government Agent:—"That, as it is understood that the buildings are at present used in connection with the Civil Medical Department, Government be asked to a refund the moiety of the cost and/or rent to the Planters' Association since date of occupation, and to state why the said Dharma lines were so appropriated without reference to the Planters' Association as has been properly done in the case of the similar lines near the Railway Station." A bare acknowledgment only was received; but it having transpired that the Hon'ble Mr. Allanson Bailey had represented to Government that he did not see what claims the Planters' Association had to refund of a moiety of the Cost or to Rent on the ground that the moiety was not contributed by the Association, alleging that it was not in existence in 1856, your Committee deemed it proper to approach His Excellency the Governor. This was done by submitting a letter which had been addressed to the Colonial Surgeon, Central Province, as giving briefly a few indisputable facts and reasons why the Planters' Association was clearly entitled to claim a refund on sale or alienation of the premises. Your Committee regrets to say that the acknowledgment of this representation was unsatisfactory, it being indicated that the request could not be entertained. In reply to a further communication enquiring on what grounds the reasonable request conveyed could not be entertained, it was merely mentioned that as the money was devoted to the purpose for which it was intended, and was handed over to Government, the question of its refund could not be entertained, adding that when the building was no longer required for the particular purpose for which it was erected, it was converted at considerable cost to another useful purpose in the public interests, but that this gives the Planters' Association no right to ask for rent or a refund. In the opinion of your Committee such rejoinder carries its own refutation. When it was proposed to utilize a similar building for a purpose more or less analogous with the particular object for which it was originally erected, Government *ex mero motu* asked the Planters' Association for its consent to such appropriation, but when the Planters' Association properly points out that similar premises, built, according to Government, under the same conditions had been alienated without reference, agreement, or compensation, and invites some reasonable adjustment of accounts between Government and the Planters' Association as the acknowledged representatives of the subscribers in question, no gracious hearing is granted, but even a right to ask for an accounting is denied. So as to demonstrate and reiterate the right of your Association to consideration, especially in view of the intended disposal of whatever sum may be due, your Committee deems it proper and likely to be useful for reference in the settlement of the question to annex hereto extracts of the proceedings of your Association as authoritatively showing how the funds to erect the building were obtained, and that the least Government ought to do on appropriating the bricks and mortar for another purpose not contemplated, nor agreed to by the Association on behalf of the subscribers, is to refund the moiety contributed, or such sum of money as may be agreed upon on taking over the Dharma Lines or Coolie sheds alluded to. It should be added that, as representing the original subscribers and on its own behalf, the Planters' Association does not propose to use the money that would thus be available, on being repaid by Government, for ordinary expenditure, but to re-invest it in bricks and mortar for a semi-public purpose, namely in handing it over as a contribution to the cost of the foundations of the Victoria Commemoration Buildings at Kandy, which owing to the nature of the site, has reached a very much larger sum than was contemplated or could not have been foreseen when the particular scheme was undertaken. The following are the Resolutions, &c., referred to above. Extract of Minutes of Proceedings at the Annual General Meetings of the Planters' Association held at Kandy on the 17th February, 1855. Resolved:—"That in view of the satisfactory state of the funds of the Association, a sum of one hundred pounds be given towards the erection of a cooly shed at Kandy." Extract of Minutes of Proceedings of a Committee Meeting of the Planters' Association held at Kandy on 18th August, 1855. "Read a letter from the Government Agent requesting the deposit of the Public Subscription of £300 on account of new Cooly Shed, together with a letter from the Chairman in reply. The Secretary informed the Committee the money had been paid on the 6th instant; and read Government Agent's letter acknowledging receipt. Extract of Minutes of Proceedings of a Committee Meeting of the Planters' Association held in Kandy on 22nd September, 1855. Resolved:—"That the Secretary be requested to call a General Meeting of the subscribers to the fund for providing shelter for travelling coolies, to decide on the appropriation of any balance that may remain after building the Kandy Cooly shed, and that the Meeting be held on the day of the next Committee Meeting, and further, that a subscription paper be sent round to the various members of the Planting Community, whose Estates may be so situated as to make Gampola a point through which their coolies would in all probability pass, inviting them to subscribe to the erection of a shed there, provided that no objection be raised to such appropriation at the General Meeting. Extract of Proceedings of a Committee Meeting of the Planters' Association held in Kandy on January 19th, 1856. "Read a letter from the Acting Commissioner of Roads requesting to be informed whether the subscribers to the coolie sheds would wish the building to be erected by contract or by his department. Resolved:—"That the Secretary be instructed to reply that the Committee are of opinion it would be desirable that the buildings should be erected by the Commissioner of Roads, as the subscribers will then have the assurance that the work will be efficiently executed." Extract of Annual Report of the Planters' Association for the year ending 17th February, 1856. "A year ago a subscription was set on foot for the purpose of erecting one or more Sheds in Kandy, and a sum of £315 was subscribed for that purpose. To this the Association made a grant of £100, the Government contributing a further sum of £300, making altogether £715. It is estimated that a couple of sheds large enough to hold all the coolies that may require to be in Kandy at one time, may be erected for £600, leaving a surplus of £115, which it has been decided to appropriate towards building a shed at Gampola, where one is much needed, and to which the Government will contribute £100. Some little difficulty has been experienced with regard to one of the sheds in Kandy—in consequence of the ground in the vicinity of the lower lake, where it was judged desirable to place it—being claimed by the Military authorities. Your Committee, however, have reason to hope that this difficulty will shortly be removed, and that the work will shortly be executed without further delay. A second shed is now in course of erection at Mahayawa, between the end of Trincomalee Street and Katugastota Ferry, which, when completed, will be of great service to the coolies." Your Committee recommends that a copy of this paragraph be transmitted to His Excellency the Governor in continuation of previous correspondence and for his judicial and equitable instructions in the matter.

PLANTERS' WARDS AT THE GENERAL HOSPITAL, COLOMBO, AND AT THE BAKER WARD, NUWARA ELIYA.

As usual, your Committee begs to submit a return showing the number of planters who availed themselves of the Planters' Ward at the General Hospital, Colombo, during the year 1899, furnished by the courtesy of the Principal Civil Medical Officer and Inspector General of Hospitals.

Number remaining on 31st December, 1898 ...	5
Number admitted during 1899	50
Total	55
Number discharged	51
Number died	1
Number remaining on 31st December, 1899 ...	3

As regards the Baker Ward, Nuwara Eliya, 3 planters were admitted, and one died therein.

CEYLON TEA KIOSK.

In pursuance of His Excellency's decision as notified in last Annual Report of your Association, and with reference to further correspondence, the Planting Member in Council was empowered, having regard to the Governor's expressed preference in the matter, to arrange for the removal of the Tea Kiosk to the lower site with the same privileges as before on condition (1) that the new building be at least of equal capital value and as spacious as the old one; (2) that the new kiosk be erected before the old kiosk be dismantled. During the year an overture was made through the lessees of the property affecting the decision previously arrived at by the Planters' Association on this important matter, but your Committee declined the proposal and confirmed the action already desired and determined by your Association. The definite arrangements authorized having been thus confirmed and settled on the lines agreed upon with Government, your Committee desires, in again recording your appreciation of His Excellency's attitude in the matter to quote here for future reference and guidance the following sentences from "Hansard" as summing up the position of the question at date. During the consideration of the Supply Bill in Committee of the Legislative Council in December, the Hon'ble the Low Country Sinhalese Member "asked permission to return to the 'New Works and Buildings,' and said he would like to have some information regarding the item of Rs. 15,000 for the cost of building the Tea Kiosk. He would like to know whether it meant that Government undertook to put up another building at that cost or whether the money was to be given up to the persons who put up the building for them. His Excellency the Governor:—For this vote of Rs. 15,000 I am personally responsible, and I think it requires an explanation. My predecessor gave the site for the Tea Kiosk to the Planters' Association and promised that it should not be removed unless it was absolutely necessary. Absolutely necessary is very difficult to define, but in order to avoid anything that might give a pretext for a charge of breach of faith against the Government, you know how easily these charges are made and the levity with which they are made, I thought it better to stretch a point as to whether the absolute necessity did exist, and to grant a vote of Rs. 15,000 to the Planters' Association to enable the Tea Kiosk to be removed to a more convenient site. We cannot compel them to do so, but it certainly would be a great concession to the public if they do. That is how the matter stands. The Hon'ble the Low Country Sinhalese Member:—Does this mean that the Government intend to provide a site as well? His Excellency the Governor:—Certainly, according to the reading of the engagement the Government are to put the Kiosk and the Planters' Association exactly in the same position as if the Kiosk had not been removed."

CRIMINAL PROCEDURE CODE—INSTRUCTIONS FOR THE USE OF JUSTICES OF THE PEACE AND UNOFFICIAL POLICE MAGISTRATES.

The appended Resolution having again been forwarded to Government a reply has been received stating quite lately that the Attorney General, who has been asked to prepare the necessary instructions, reports that the matter is receiving his attention. The words of the Resolution were as follows—"That the attention of Government be drawn to the second paragraph of letter dated 2nd December, 1897, in which it is stated, in reply to the Resolution, 'that Government be asked to issue a memorandum defining and explaining the powers and duties of Justices of Peace and Unofficial Police Magistrates,' that it was considered desirable to await the amendment of the Criminal Procedure Code before issuing such a guide as had been suggested for the use of Unofficial Police Magistrates, and, with reference thereto, to enquire when it is proposed to issue the Guide Book."

ANALYSIS OF MANURE: DRAFT ORDINANCE FOR REGULATING THE SALE OF MANURE.

Adverting to the paragraph on this subject in last year's report, your Committee is extremely disappointed that, though the matter has continued to engage attention and correspondence has passed between the Chamber of Commerce and your Association, the result at date is unsatisfactory, inasmuch as another Session of the Legislative Council has practically passed without Government having been approached on the subject of the legislation desired and determined by both representative bodies for a number of years.

ANALYSIS OF SAMPLES OF COCOA.

On the recommendation of the Cocoa Committee of the Planters' Association an analyses of nine samples of Cocoa of the principal brands sold in London were submitted to Mr. John Hughes, F. C. S. for analyses, with a view to ascertaining if any adulteration exists which might prejudice the interests of Cocoa Planters. Your Committee has made public the results of Mr. Hughes' analyses and your Association paid the cost thereof amounting to Rs. 202.

FIRE INSURANCE RATES.

This matter has received a good deal of consideration from your Committee, who adopted a Report by the Sub-Committee of the Committee of the Planters' Association of Ceylon appointed to collect information on the subject of Fire Insurance Rates. Your Committee considers tha the rates charged bear an undue proportion to the risks incurred, and a copy of the Report and Resolution were forwarded to the Secretary of the Ceylon Fire Insurance Association with a request that the matter should be submitted to the Fire Offices in London. A reply has now been received from the Secretary, Fire Offices Committee (foreign), to the Secretary of the Ceylon Fire Insurance Association expressing regret that no reduction in the rates can be made and pointing out that the rates for Tea Factories have lately been reduced. The decision of the Fire Offices Committee (foreign) has not yet been discussed by the Ceylon Fire Insurance Association but it will be considered shortly.

CRIMINAL BREACH OF TRUST BY SERVANTS IN THIS COLONY.

During the year the Chamber of Commerce endeavoured to have the question of extending the provisions of Ordinance No. 22 of 1889 (An Ordinance relating to Criminal Breach of Trust by Public Servants in this Colony) to private employees, and the matter was brought before your Committee who passed the following Resolution—"That it is desirable to extend the application of the provisions of Ordinance No. 22 of 1889 (relating to Criminal Breach of Trust) to others than public servants with such modification or alteration as may seem necessary to Government, and that a copy of this Resolution be forwarded to Government with a request that it may receive their favourable consideration." Government, however, having refused to extend the Provisions of the said Ordinance it is not proposed to take any steps further on the question at present.

CEYLON ASSOCIATION IN LONDON.

During the year the question of how the Ceylon Association in London originated was discussed both in London and in Ceylon, and the relations and position of the respective institutions were subject of comment. The matter may be said still to be under consideration, as the reply from the Ceylon Association in London to your representations has not been laid before the Committee until to-day, it having been only recently received. The communication has been published meantime, and will doubtless have careful attention from your Committee in the new year. Your usual Annual contribution of £60 sterling for the year 1899 has been paid, and whatever may be the result of a further interchange of views, your Committee would repeat the words used last year as to the maintenance of a good understanding and express the hope that cordial co-operation will not be impaired by past events, but that greater efforts will be made to keep in close touch as regards all matters having for their object continued agricultural prosperity and the general good of Ceylon.

VICTORIA COMMEMORATION BUILDINGS SCHEME.
(Monument of the Reign of Her Majesty Queen Victoria.)

Though by no means complete, your Committee decided at a recent meeting to invite His Excellency the Governor to formally declare the Victoria Commemoration Buildings open on the 17th February, 1900, and in the sixty-second year of the reign of Her Majesty. The regret will be general that His Excellency is unable to be present, as he is on tour and his plans were made. It is understood, however, that at a later date he would make an effort to attend some other function in connection with the Victoria Commemoration Buildings Scheme. Members will no doubt recollect that the site on which the buildings have been erected has been granted and assigned by the Crown to your Trustees in free and common socage for ever subject to the following conditions and provisions:—(1) that the land be used for the erection of buildings to be called the "Victoria Commemoration Buildings", in accordance with the plan approved by the Governor of Ceylon and annexed to the grant; (II) that the Buildings be kept up and maintained as (a) a Monument of the Reign of Her Majesty Queen Victoria, (b) a Hall therein as a Memorial to the late Alstair Mackenzie Ferguson, C.M.G.; (c) a Tower thereon as a Memorial of the late George Wall; (d) the place in which the meetings of the Planters' Association of Ceylon are to be held when such are called in Kandy; and for such further and other purposes as may from time to time be allowed. The amount of money collected and paid over to the Treasurer to the subscribers aggregates Rs. 43,219·73, while the disbursements so far amount to Rs. 38,719·94. Members are referred to paragraphs appearing in the Annual Report for the years ending 17th February, 1898, and 17th February, 1899, for further concise information and details and from which it will be plain that before the undertaking can be said to be accomplished further efforts will be needed, and will doubtless be supported as may be hereafter recommended. Meantime your Committee proposes to vote Rs. 1,000 this year towards the cost of the foundations, which, as already stated, have entailed an unavoidable expenditure of large amounts in excess of estimates. Your Committee would only add that the opening ceremony must be gratifying to Mr. Hugh Blacklaw as Honorary Secretary to the Committee who first collected the subscriptions that have enabled the "Ferguson Hall" to be erected and thus to perpetuate the memory of one who, through his long public life, did so much to advance the material, moral, and social condition of the inhabitants of Ceylon during the reign of Her Majesty the Queen.

PLANTERS' BENEVOLENT FUND.
Established to Commemorate the Jubilee of Her Majesty Queen Victoria, 1837-1887.

The Planters' Benevolent Fund, your Committee is glad to report, has maintained its position, as the accounts for the year ending 31st December, 1889, show that the sum of Rs. 4,566·87 has been collected by the Honorary Treasurer during the past year. Your Committee understands that several applications for assistance were received, but most of them were of such informal character that they failed to come within the scope of the Regulations; the principal grant made, however, would, in the opinion of your Committee, of itself fully demonstrate the value of the organization and the importance of steady support and generous monetary donations. One or two wealthy Proprietors, who made money in Ceylon, have lately passed away, and it can hardly be doubted that, had the Fund been prominently brought under their notice, that a bequest or legacy to the "Planters' Benevolent Fund" would not have been overlooked. Your Committee again appeals to all Planters of Ceylon as well as to the Subscribers to pay either by Donation or Annual Subscription towards rendering the Fund not only permanent but capable of extended usefulness and beneficence. When settling affairs, as all must do, Proprietors should remember a legacy to the Fund.

GEORGE WALL REFERENCE LIBRARY AND TOWER.

The usual additions have been made to the Reference Library by the courtesy of Government and kindred Institutions to whom your thanks are thus publicly tendered. Much remains to be done, but in the new domicile, beneath the George Wall Tower now completed and erected to keep in remembrance the founder of your Association nearly half a century ago, it is hoped that gradually a useful and valuable collection of Books of Reference and of other data desiderated will be available. In this connection, and in view of the ceremonial inauguration to-day, it is interesting to recall that Mr. George Wall was present at the Public Meeting held at Kandy on the 17th February, 1854, for the purpose of organizing a Planters' Association, and it is at least matter of tradition in the present generation that he was the moving spirit in its establishment during these early days of the Planting enterprise and years before the Railway to Kandy from Colombo was constructed or even roads had been made into the Planting Districts. Mr. George Wall was elected along with others to act for the first year as a member of Committee with Captain Jolly and Mr. A. Brown ex-officio as Chairman and Secretary respectively, while on the 17th of February, 1885, by an unanimous and cordial vote the honour of the Honorary membership of your Association was conferred on Mr. Wall whose services to your Association and the Planting Community had been alike unique and invaluable. On only two other gentlemen has this honour been conferred namely, the late Robert Boyd Tytler and G. H. K. Thwaites, C.M.G.

PORTRAITS OF CHAIRMEN, REPRESENTATIVES IN THE LEGISLATIVE COUNCIL, AND SECRETARIES OF THE PLANTERS' ASSOCIATION OF CEYLON.

One of the members of your Committee has, with characteristic enthusiasm, been instrumental in carrying to a successful issue his scheme, which had your approval, for obtaining portraits of Chairmen, Representatives in the Legislative Council, and Secretaries of your Association to be placed in one of the rooms of the Victoria Commemoration Buildings. Your thanks are due to Mr. Westland for much time and trouble kindly taken in connection with the collection which, it is hoped, will shortly be completed as desired and determined.

DISTRICT ASSOCIATIONS.

At the conclusion of another year your Committee has much pleasure in placing on record an expression of appreciation and thanks in connection with the labours of the office-bearers of the twenty affiliated District Associations. Without the cordial co-operation accorded the continued success of your Association from various standpoints would not be so manifest, and it is but right that mention thereof should be made herein. Your Committee has been informed of the formation of a District Association for Rangalla, but so far it has not been affiliated, while your Committee would again recommend to those directly interested the re-organization of a District Association for Kotmalie and the neighbourhood of Nawalapitiya. Only gain can result by the public spirit necessary in such matters and the advantages of well directed efforts for the welfare of the Community cannot be doubted apart from the benefits that always follow united action on questions relating to the general good.

REPRESENTATIVE IN THE LEGISLATIVE COUNCIL.

Your Committee begs to render to the Hon'ble Mr. J. N. Campbell your hearty acknowledgment and thanks for his able and valuable services as your Representative in the Legislative Council of Ceylon. As already indicated, your Committee believes that much good has accrued to the Planting Community by the representation thus afforded, and desires herein to support the action of your Representative on questions of General-Policy Railway Extensions, and other matters lately under consideration, and to assure him of the confidence of your Association.

TRIMEN MEMORIAL BRASS.

Your Committee has to report that, finding exception taken to the location of the Trimen Memorial Brass, in consultation with the Director of the Royal Botanic Gardens and by his courtesy it has now been placed on the wall of the Museum Buildings at Peradeniya.

OBITUARY.

With every mark of regret and respect your Committee has to add to the Death Roll the following names of members of the Planting Community who have departed this life:—James Bisset; Philip Anstruther; Charles Tottenham; Charles Ogilvie; P. E. T. Rogers; F. C. Woods; A. Scott Blacklaw; Donald Reid; Donald Cameron; C. M. McCausland; A. C. Campbell; C. H. Morris; A. J. Pomeroy; Jas Stephens; A. C. White; Alexander Ross; R. V. Millington; A. D. Souter; J. Nutcombe Gould; John A. Rossiter; Alexander Maitland; John Walker; F. Drummond; T. C. Anderson.

FINANCES.

The usual statement of accounts is laid on the table and shows a credit balance of Rs. 1,830·16.

Mr. Philip having been suddenly ordered Home on peremptory Medical advice, after arranging as far as possible for the Meeting of Committee held a few days later, left Ceylon on the 8th July and returned on the 12th November, 1899. He was also able to attend to and to complete as usual the compilation of the Book of Proceedings for the year ending 17th February, 1899, taking with him all necessary papers for the purpose, while Mr. W. D. Gibbon kindly acted as Secretary during Mr. Philip's short absence.

Though from a local standpoint perhaps there is not much to add by way of general remarks, the year has been especially eventful owing to the state of War that broke out between the Transvaal and Orange Free State and Her Majesty's Government by reason of the ill-advised and reckless Ultimatum transmitted from Pretoria in October, 1899, and which act will ever remain matter of History throughout the whole world. Abundant proof, if such were needed, has been evoked at Home and abroad of the loyalty and patriotism that, as a late poet wrote, "surrounds your 'revered, beloved,' Queen Empress, Victoria, who has ever wrought her people lasting good, and by her Statesmen known the seasons when to take occasion by the hand and make the bounds of freedom wider yet." At present, your Committee feels that no more appropriate words can be used in closing your Association's year than "God save the Queen.'

APPENDIX A.

General Export from the Island of Ceylon in the year 1899.

ARTICLES.		QUANTITIES.	
		lbs.	lbs.
Tea	.. United Kingdom	103,651,067¼	103,651,067¼
	BRITISH COLONIES, ETC.		
	Africa		
	British East Africa ...	61,563 11/16	61,563 11/16
	Cape Colony	57,612	57,612
	Mauritius	94,746	94,746
	Zanzibar	39,702	39,702
	America.		
	British West Indies ...	27,371½	27,371½
	Canada	1,532,698 11/16	1,532,698 11/16
	Asia		
	Aden	10,190	10,190
	Hongkong	775,933¼	775,933¼
	British India	662,708	662,708
	Maldive Islands	314	314
	Straits Settlements ...	92,164	92,164
	Other British Possessions ...	454	454
	Australasia.		
	Australia	15,316,115¼	15,316,115¼
	New Zealand	125,077	125,077
	Europe.		
	Gibralter	8,000	8,000
	Malta	107,866	107,866
	FOREIGN COUNTRIES.		
	Africa.		
	Egypt	45,611½	45,611½
	Madagascar	5,560	5,560
	Other foreign countries ...	3,200	3,200
	America		
	South America	15,843	15,843
	United States	2,060,347 [illegible]	2,060,347 [illegible]
	Asia.		
	Arabia	55	55
	China (excluding Hongkong)	324,632¼	324,632¼
	Dutch Indies	45	45
	India (excluding British) ...	440	440
	Japan	2,234	2,234
	Persia	1,480	1,480
	Philippines	515	515
	Turkey in Asia	6,675	6,675
	Europe.		
	Austria Hungary	9,456¼	9,456¼
	Belgium	17,104½	17,104½
	Denmark	10,040¼	10,040
	France	100,361¼	10,364¼
	Germany	352,813¾	352,813¾
	Greece	2,516	2,516
	Holland	26,027	26,027
	Italy	10,830½	10,830½
	Norway	6,950	6,950
	Roumania	200	200
	Spain (excluding Gibraltar) ...	110	110
	Sweden	41,842¼	41,852¼
	Turkey in Europe ...	7,219	7,219
	Russia	4,041,322	4,041,322
	Sandwich Islands	4,880	4,880
		129,661,908 3/16	129,661,908 5/16

REPORT OF THE THIRTY COMMITTEE.

Report of the "Thirty Committee" appointed to administer the proceeds of the Export Duty on Tea, levied under Ordinance No. 4 of 1894 for increasing the consumption of Ceylon Tea in foreign lands for the year 1899.

MEMBERS OF THE "THIRTY COMMITTEE," 1899.

The following is a list of the "Thirty Committee" at 31st December, 1899.

Messrs. James Westland, J. A. Burmester, A. C. Kingsford, J. B. Coles, Hon. Mr. J. N. Campbell, Messrs. A. J. Denison, Geo. Kent Deaker, Joseph Fraser, Wm. Forsythe, R. A. Galton, H. O. Hoseason, F. G. A. Lane, H. V. Masefield, T. C. Huxley, Gordon Pyper, A. Philip, J. P. E. Ryan, H. B. Roberts, J. H. Renton, Edgar Turner, A. Melville White, A. E. Wright, F. M. Mackwood, G. H. Alston, E. C. Skrine, E. M. Shattock, J. A. Henderson, David Kerr, Edward Rosling, W. Saunders.

For part of the year Messrs W. D. Gibbon, A. T. Rettie, John H. Starey, H. Cumberbatch, W. H. Figg, Gordon Frazer served as members.

FINANCES.

The total collections paid into the Ceylon Tea (New Markets) Fund on account of the export duty on Tea from January to 31st December, 1899, amount to Rs. 255,693·50. The balance in the Bank, brought forward from 1898, was Rs. 122,745·03.

The usual summary of accounts for the half-yearly periods ending 30th June, 1899, and 31st December, 1899, with various connected statements of Charges and Discharges, are appended.

MINUTES OF PROCEEDINGS.

The Minutes of Proceedings of the Meetings of the "Thirty Committee" have been regularly forwarded to Government for information and guidance after confirmation.

GOVERNOR IN EXECUTIVE COUNCIL.

During the year the approval of the Governor in Executive Council was obtained to the following appropriations of the proceeds of the levy as from time to time desired and determined by the "Thirty Committee."

	Credit opened for
1. Ceylon Tea in Germany.—Repayment of duty in connection with the original grant of 5,000 lbs. Ceylon Tea for free distribution in Germany per letter dated 21st February, 1899	Rs. 2,375·24
2. Ceylon Tea in Norway.—Repayment of Customs duty on Tea granted for free distribution in Norway per letter dated 21st February, 1899, £26	389·24
3. Ceylon Tea in Russia.—Cost of Pictorial advertisements of Ceylon Tea distributed over Russia granted to Mr. Rogivue per letter dated 21st February, 1899, £40	598·83
4. Ceylon Tea in Russia.—Expenditure for further advertising Ceylon Tea in Russia per letter dated 30th March, 1899, £500	7,500·00
5. "Times of Ceylon" "Art Supplement."—Expenditure in advertising Ceylon Tea per letter dated 2nd April, 1899, £55	825·00
6. Dietetic value of Ceylon Tea.—For expenditure in connection with the printing of Pamphlet on the Dietetic value of Ceylon Tea by M. Kelway Bamber, M. R. A. C., F. C. S., per letter dated 13th June, 1899	500·00
7. Ceylon Tea in Germany.—Expenditure for advertising Ceylon Tea in Germany per letter dated 17th August, 1899, £2,000	30,000·00
8. Representative at Paris International Exhibition, 1900, per letter dated 17th August, 1899, £500	7,500·00
9. Commissioner for the Continent of Europe.—Per letter dated 17th August, 1899, £3,000	45,000·00
10. Presentation to Admiral Dewey.—Amount sanctioned in terms of the Resolution passed by the Committee on 9th September, 1899, per letter dated 14th August, 1899	1,451·60
11. Ceylon Tea in Sweden.—Expenditure for advertising Ceylon Tea in Sweden, per letter dated 22nd September, 1899, £100	1,500·00
12. Ceylon Tea in Manila.—Expenditure for advertising Ceylon Tea in Manila per letter dated 22nd September, 1899, £50	750·00
13. Ceylon Tea on the Continent of Europe. Expenditure for advertising Ceylon Tea per letter dated 29th December, 1899, £10,000, say ...	150,000·00
14. Representative in America.—Expenditure for pushing and advertising Ceylon Tea in America per letter dated 29th December, 1899, £10,000, say	150,000·00
	Rs. 398,389·91

to the list of appropriations noted in the previous year, to which the approval of the Governor in Executive Council was obtained during 1898 should have been included a sum of £500 sterling to be devoted to pushing Ceylon Tea amongst the Green Tea drinkers of Canada per letter dated 28th June, 1898.

CEYLON TEA IN AMERICA.

The total amount of money shown by the accounts in Ceylon appropriated by Mr. Wm. Mackenzie, Representative in America, since the commencement of his operations in 1894, aggregated as at 31st December, 1899, Rs. 811,862·11.

For the year 1900 the amount voted to Mr. Wm. Mackenzie as Representative in America is £10,000, say Rs. 150,000, for pushing and advertising Ceylon Tea. Accounts as received from Mr. Wm. Mackenzie during the past year are annexed.

IN CONTINUATION OF THE TABLES GIVEN IN LAST YEAR'S REPORT, THE FOLLOWING STATISTICS ARE INSTRUCTIVE.

Extracted from year-book of the United States Department of Agriculture.

TEA, COFFEE, AND LIQUORS.

Consumption of Tea, Coffee, Wines, Distilled Spirits, and Malt Liquors in the United States, per capita of population, 1870 to 1898.

(From Division of Statistics.)

Year ending June 30th	Tea.	Coffee.	Wines.	Distilled Spirits.	Malt Liquors.
	Pounds.	Pounds.	Gallons.	Proof Gals.	Gallons
1870 ...	1·10	6·00	0·32	2·07	5·31
1871 ...	1·14	7·91	0·40	1·62	6·10
1872 ...	1·46	7·28	0·41	1·68	6·66
1873 ...	1·53	6·87	0·45	1·63	7·21
1874 ...	1·27	6·59	0·48	1·51	7·00
1875 ...	1·44	7·08	0·45	1·50	6·71
1876 ...	1·35	7·33	0·45	1·33	6·83
1877 ...	1·23	6·94	0·47	1·28	6·58
1878 ...	1·33	6·24	0·47	1·09	6·68
1879 ...	1·21	7·42	0·50	1·11	7·05
1880 ...	1·39	1·78	0·56	1·27	8·26
1881 ...	1·54	1·95	0·47	1·38	8·65
1882 ...	1·47	1·30	0·49	1·40	10·03
1883 ...	1·30	1·91	0·48	1·46	10·27
1884 ...	1·09	9·26	0·37	1·48	10·74
1885 ...	1·18	9·60	0·39	1·26	10·62
1886 ...	1·37	9·36	0·45	1·26	11·20
1887 ...	1·40	8·53	0·55	1·21	11·23
1888 ...	1·40	6·81	1·61	1·26	2·80
1889 ...	1·29	9·16	0·56	1·32	2·72
1890 ...	1·33	7·83	0·46	1·40	3·67
1891 ...	1·29	7·99	0·45	1·42	5·28
1892 ...	1·37	9·61	0·44	1·50	5·10
1893 ...	1·32	8·24	0·48	1·51	6·08
1894 ...	1·34	8·01	0·31	1·33	5·18
1895 ...	1·38	9·22	0·28	1·12	4·95
1896 ...	1·31	8·04	0·26	1·00	5·16
1897 ...	1·55	9·95	0·53	1·01	4·69
1898 ...	0·91	11·45	0·28	1·10	5·64

(EXTRACT CONTINUED.)

AGRICULTURAL IMPORTS OF THE UNITED STATES DURING THE SIX YEARS ENDED JUNE 30th, 1898.

Articles imported.	1893. Quantities.	1893. Values.	1894. Quantities.	1894. Values.	1895. Quantities.	1895. Values.	1896. Quantities.	1896. Values.	1897. Quantities.	1897. Values.	1898. Quantities.	1898. Values.
Chocolate, other than confectionery, and sweetened chocolate, pounds ...	543,266	118,479	965,855	198,425	897,637	174,805	1,145,467	198,417	1,467,077	239,819	992,288	149,866
COCOA OR CACAO. Crude, and leaves and shells of, pounds	24,460,325	4,017,801	17,634,779	2,401,382	29,307,048	3,195,811	23,276,597	2,387,078	31,406,612	2,997,866	25,717,404	3,492,033
Prepared or manufactured lbs. ...	1,456,289	499,974	1,294,759	454,730	1,433,576	482,532	1,244,309	410,249	1,495,459	443,604	815,824	290,844
Total lbs.	25,916,614	4,517,775	18,929,538	2,857,112	30,740,624	3,678,343	24,520,906	2,797,327	32,902,071	3,441,470	26,533,228	3,782,877
COFFEE, lbs.	563,469,068	80,485,558	550,934,337	90,314,676	652,208,975	96,130,717	580,597,915	84,793,124	737,645,670	81,544,384	870,514,455	65,067,631
COFFEE SUBSTITUTES. Chicory root-Raw unground, lbs. ...	6,689,332	134,070	7,951,042	168,892	9,544,186	158,142	15,841,955	210,228	16,930,162	232,494	315,707	5,100
Roasted, ground or otherwise prepared pounds	2,007,738	74,814	1,906,300	74,516	445,458	14,816	475,933	15,849	399,008	13,899	....	......
Total lbs.	8,697,070	208,884	9,857,342	243,408	9,989,644	172,958	16,317,888	226,077	17,329,170	246,393	315,707	5,100
All other, lbs....	1,729,124	64,298	1,389,672	55,554	2,776,117	106,886	2,366,962	90,532	2,373,245	87,679	857,810	29,562
Total lbs.	10,426,194	273,182	11,247,014	298,962	12,765,761	279,844	18,684,850	316,609	19,702,415	334,072	1,173,517	34,662
TEA, lbs.	89,061,287	$13,857,482	93,518,717	$14,144,243	97,253,458	$13,171,379	93,998,372	$12,704,440	113,347,175	$14,835,86	71,957,715	$10,054,283

The undernoted table from Circular No. 12, Section of Foreign Markets of the extent of the market for tea in this country:

Imports of Tea into the United States from each of the leading countries of supply during the five fiscal years, 1892–1896.

QUANTITIES.

Countries from which imported.	Year ended June 30th. 1892.	1893.	1894.	1895.	1896.	Annual average, 1892–1896.	P. ct.
	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	
United Kingdom ...	3,305,284	2,647,361	3,744,360	3,622,984	2,066,481	3,177,094	3·4
Canada ...	839,062	785,369	626,572	1,081,972	293,422	726,279	·8
China ...	46,718,019	45,653,172	50,405,188	54,170,393	50,916,111	49,678,377	53·6
British East Indies	346,721	164,806	452,317	662,205	1,239,094	552,920	·6
Hongkong ...	233,836	281,451	282,404	304,820	315,788	283,660	·3
Japan ...	38,622,956	39,602,319	37,980,987	36,941,894	38,552,467	38,340,055	41·3
Other countries ...	14,161	26,609	26,939	39,687	15,510	24,581	...
Total ...	90,079,039	89,061,287	93,518,717	97,253,458	93,998,372	92,782,175	100

VALUES.

Countries from which imported.	Year ended June 30th. 1892.	1893.	1894.	1895.	1896.	Annual average, 1892–1896.	P. ct.
United Kingdom ...	$681,154	$540,611	$693,886	$748,980	$561,488	$644,224	4·7
Canada ...	155,308	119,785	121,445	169,353	58,725	122,713	·9
China ...	7,914,122	7,413,984	7,697,253	7,534,364	6,966,766	7,505,296	55
British East Indies	65,842	32,066	79,582	83,105	166,341	85,387	·6
Hongkong ...	45,849	47,318	43,274	40,467	42,168	43,751	·3
Japan ...	5,508,347	5,699,532	5,504,411	4,601,041	4,911,446	5,244,966	38·5
Other countries ...	2,600	4,186	4,392	5,389	2,514	3,816	...
Total ...	14,373,222	13,857,482	14,144,243	13,171,379	12,704,440	13,650,153	100

"MR. WM. MACKENZIE RECENTLY REPORTING ON THE PAST YEAR'S WORK WRITES.

In sending you a general report on our work in America this year, I necessarily, in a great measure, repeat what I have said during the last few years. Our methods are the same as a whole, although many new detail experiments have been tried, when members of the trade suggest them as likely to be useful in their districts; and our best and strongest allies are those who have worked with us for four years. That they have continued to do so in the face of the very disheartening blows the tea trade has received during the last three years,—for instance the rejection for many months of all fine teas caused by the sieve test, the heavy duty imposed last year and the cheapness of coffee, proves that some success has attended their efforts.

Some weak friends have dropped out, but many new ones have applied for help. With India's aid practically withdrawn, except in the matter of newspapers, and with Ceylon's appropriation reduced to £6,000, I was obliged to warn our friends that I could not assist them in 1900 to the extent I have been doing. But your Chairman has now told me the £6,000 is to be raised to £10,000, and I have already sent the encouraging news to America.

In my report, written a year ago, I ventured to hope that Ceylon teas would be taken to the extent of 8,000,000 lbs. in 1899, in the States and Canada. The figures for December are not yet known. But we know enough to lead us to believe the estimate I made was fairly correct.

From Colombo direct, and by China, the export will probably be	4,500,000 lbs.
To end of November, Messrs. Gow, Wilson and Stanton have kindly furnished me with the exports from London to America as ...	3,175,000
Total...	7,675,000

Taking the export from London during December at the average during the first 11 months of almost 300,000 lbs., then my estimate of 8,000,000 lbs. is very nearly touched.

Tea drinking in the States fell to a very low ebb between June, 1898, and June, 1899; but during the last half year, the deliveries show a great improvement. The figures must be received with caution although official; as I have got them, they run as follows:—

In June	5,800,000 lbs.
" July	7,097,000 "
" August	7,143,000 "
" September	8,698,000 "

I have applied for figures for October and November, but have not yet received them. In a Grocery Newspaper I see them stated for October at 9,000,000 lbs. Those deliveries are for the States only, and do not include Canada. They would seem to indicate that because of the great prosperity of all industries, the Americans are getting over the shock caused by the imposition of duty.

So far as I can ascertain, the figures for Indian tea will also show a good increase over any previous year.

Teas for price seem to have the call everywhere. It certainly is so in the States. Ceylons partly, but Indians to a much greater extent, on account of the cheapness of some grades from Sylhet, Cachar and the Dooars, have been helped by the rise in price of China blacks, caused by the "Standards," which keep out the lowest grades. Three years ago those China teas were landed in N. York at 4d. to 5d. per lb., now they cost 6d. to 6½d.

Our teas are displacing those China varieties in blends; and it is in that direction, and in packets of pure Ceylon and Indian, now being pushed vigorously wherever people of British origin are to be found in the States, that our trade is increasing. My enquiries have failed to find evidence that we are converting Americans to the use of straight black tea, to an extent that would materially help our exports.

As I began by saying, this is a *general* report, I cannot enter into details without giving away business, which would offend our friends. But the Chairman will support me in saying that week by week I keep him and the Committee fully informed of *nearly* everything that is going on. I say *nearly*, because with so many Colombo merchants on the Committee, I am forced to be silent on points concerning Firms who are helping us from Colombo.

The *Daily Mail* has the following para this morning: "The Boers'" Ambulance of Colesburg is a grocer's wagon and has a red cross painted on it next the Grocer's name, and "Drink Ceylon Tea" on the other side.

PRESENTATION OF AN ADDRESS AND SILVER CASKET CONTAINING CEYLON TEA TO ADMIRAL DEWEY, OF THE UNITED STATES NAVY, ON HIS ARRIVAL AT COLOMBO IN JUNE, 1899.

In reference to the incident of the visit of the Hero of Manila to Ceylon in 1899 *en route* to America, where he afterwards was the recipient of one of the most enthusiastic and remarkable demonstrations from his countrymen on record, it is worth reproducing here a copy of the telegram on the subject that appeared in the *New York Tribune* and in the *Chicago Record* at the time as showing how widely known the Reception was throughout America. All the members of the Deputation were impressed with Admiral Dewey's cordiality and the personal interest he so distinctly evinced in Ceylon's great staple—Tea—and the British enterprise under which it flourished.

CEYLON GREEN TEAS.

With regard to the grant of 10 cents per lb. on Ceylon Green Teas, the following statement, from the commencement to date, may be useful for reference.

			R.	c.
October 1898...	2010 lbs.	Tillyrie Green Teas ...	201	00
Do. ...	2187 lbs.	Dehiowita do. ...	218	70
November 1898...	7800 lbs.	Brunswick do. ...	780	00
December 1898...	1355 lbs.	do. do. ...	135	50
January 1899...	6655 lbs.	do. do. ...	665	50
Do. ...	5093 lbs.	do. do. ...	509	30
March 1899...	5971 lbs.	do. do. ...	597	10
Do. ...	5145 lbs.	do. do. ...	514	50
April 1899...	3080 lbs.	do. do. ...	308	00
Do. ...	3154 lbs.	Dewalakanda do. ...	315	40
Do. ...	4740 lbs.	Brunswick do. ...	474	00
May 1899...	4500 lbs.	do. do. ...	450	00
June 1899...	5340 lbs.	do. do. ...	534	00
July 1899...	4500 lbs.	do. do. ...	450	00
Do. ...	6060 lbs.	do. do. ...	606	00
August 1899...	4020 lbs.	do. do. ...	402	00
Do. ...	3060 lbs.	do. do. ...	306	00
September 1899...	8580 lbs.	do. do. ...	858	00
Do. ...	1974 lbs.	do. do. ...	197	40
November 1899...	3000 lbs.	do. do. ...	300	00
December 1899...	6000 lbs.	do. do. ...	600	00
Do. ...	3540 lbs.	do. do. ...	354	00
Total...	99629 lbs.	Total Rs...	9962	90

Leaving the balance of Rs. 20,037·10 still available at date.

AGRICULTURAL CHEMIST.

The interesting work commenced by Mr. M. Kelway Bamber in October, 1898, was brought to a point by your Committee receiving an elaborate report which is being printed under Mr. Bamber's directions, and which will be issued free on application to every tea estate.

UNIVERSAL INTERNATIONAL EXHIBITION TO BE HELD IN PARIS IN THE YEAR 1900.

Mr. J. H. Renton has been appointed representative at the Paris Exhibition at a salary of £500 sterling, and it is felt that in his hands nothing will be left undone to ensure the best results which the opportunity should afford of making Ceylon Tea known to all the nations of the world who will doubtless visit the French Capital on this great occasion.

CEYLON TEA IN RUSSIA.

Members will recollect that on Mr. Christie's recommendation a contract was entered into for advertisements appearing once a week for 35 weeks, that is to the end of May, 1899, in 48 Newspapers and 6 Illustrated Periodicals in Russia. The contract has not been renewed, and the total cost of the advertisement has been Rs. 41,814·21. Though no report has yet been received, there need be little doubt that benefit has resulted from such advertisement of Ceylon Tea in Russia undertaken solely on the lines laid down, and with the one object to advertise the merits of Ceylon Tea. The following extract from a Diplomatic and Consular Report (Russia) for the year 1898 is interesting, regarding Agriculture and Trade of Odessa and District. Under the heading Ceylon Tea it is recorded:—"Ceylon tea, which was introduced into Russia only a few years ago, is being consumed in rapidly increasing quantities. In 1898 2,714,000 lbs. of tea were shipped from Ceylon direct to Odessa, as against 429,350 lbs. in 1897—a very notable increase. China and Ceylon teas are imported in vessels of the Russian Volunteer Fleet, which, owing to the low freights charged by that line of steamers on their homeward voyages, have now practically the monopoly of the tea carrying trade from Yangtse ports, Shanghai, and Colombo. Moreover, tea imported from the Far East in Russian bottoms enjoys preferential railway rates between Odessa and Moscow.

It is worthy of note that there is a growing reciprocal purchase of Russian petroleum by Ceylon. In 1897, 1,357,400 gallons of this product were imported at Colombo, and last year 1,398,900 gallons."

EXTRACT OF RETURN OF PRINCIPAL ARTICLES OF IMPORT TO ODESSA DURING THE YEARS 1898—96.

Articles.	Tons.	1898. Quantity	1897. Quantity	1897. Value.	1896. Quantity.	1896. Value.
				£		£
Tea...	Tons	2,344	1,933*	257,780	1,490	202,200

* Exclusive of upwards of 1,700 tons in bond at Odessa.

In addition to the above further and later particulars received at Foreign Office, November 18th, 1899, from the same source, are given thus. "The imports of Tea have again increased, the quantity received at Odessa for local consumption in 1898 being 5,232,780 lbs, representing an augmentation of 317,604 lbs, exclusive of Tea in bond in warehouses. Tea imported up to a recent date, via London, destined for Moscow and other towns in the interior, now passes in transit through Odessa. This is due to the increased activity of the Volunteer Fleet, which, aided by preferential railway freights in Russia, has secured the monopoly of the tea carrying trade between the Far East and Odessa. Customs returns estimate the quantity of Tea imported into Russia at 108,000,000 lbs, and show an increased importation over 1897 of 4,890,600 lbs passing through Odessa in transit. Trade in Ceylon Tea continues to flourish, the quantities imported steadily increasing from year to year. Up to the present only cheap Teas have been found profitable, the heavy duty on Tea excluding the higher qualities from the market; but the increase of duty on Tea crossing the Eastern frontier by the overland route from 19 r. 50 c. to 22 r. 50 c. per pood (36 lbs), will doubtless favour the trade in Ceylon Teas which enter Russia by sea. The fact that a Russian firm has opened a branch office in Colombo augurs well for the future trade in Ceylon Teas, which were introduced into Russia only a few years ago for blending with China Teas."

Adverting to Mr. Christie's first recommendation in his valuable Report, namely to endeavour to get the Russian Import Duty on Tea reduced as the greatest aid to increased consumption, and in continuation of correspondence given in last year's Report in Appendix A, the following important further communication is herein added. It should be noted that by a printer's mistake the letter from Government referred to was given as dated "Colombo, 17th January 1828," instead of as "Colombo, 17th January, 1899." This correction is noted to guide in looking over the earlier letters on the subject of the Duties levied on Tea by the Russian Government.

Colonial Secretary's Office, Colombo, 25th August, 1899.

SIR,

Adverting to my letter of the 17th January, 1899, forwarding for the information of the Planters' Association a copy of a Despatch from the Secretary of State for the Colonies, together with a copy of a communication from Her Majesty's Ambassador at St. Petersburg, on the subject of the duties levied on tea by the Russian Government, I am directed by His Excellency the Lieut.-Governor to forward, for the information of your Association, a copy of a Despatch received through the Secretary of State from Her Majesty's Ambassador at St. Petersburg to the Marquess of Salisbury reporting certain alterations in the duties payable on imported tea under the Russian Customs Tariff.

I am, Sir,
Your obedient Servant,
J. J. THORBURN,
for Colonial Secretary.

The Secretary,
Planters' Association
of Ceylon.

(*Copy referred to.*)

Copy No. 97, Commercial. St. Petersburg, July 12th, 1899.

MY LORD,

I have the honour to report that, according to a decision of the Council of the Empire, passed on the 4th/16th June, 1899, and published in the Bulletin of Laws of the 25th June/7th July, 1899, the following alteration under the Russian Customs Tariff in respect of the duty payable on tea are decreed:—

1.—Brick Tea, Black and Green, imported into Russia across the European frontier to pay duty at the rate of 11 Roubles 25 Copecks per pood (former duty 21 Roubles 50 Copecks per pood.)

2.—Black, flower, green and yellow teas imported at the frontiers of the Steppe, Irkutsk and Cis-Amur Governor Generalships to pay duty at the rate of 22 Roubles 50 Copecks per pood. (Former duty 19 Roubles 50 Copecks per pood.)

With the completion of the Russian lines of rail to the Pacific the rates of duty on tea will be subject to further consideration.

I have, &c.,
(Signed) CHARLES S SCOTT.

The Marquess of Salisbury, K. G.
&c., &c.

CEYLON TEA IN GERMANY.

A sum of Rs. 31,752·61 has been paid in connection with pushing and advertising Ceylon Tea in Germany during the past year almost entirely by the efforts of Messrs. Hagenbeck & Co. It has been decided now as regards the year 1900 that all fresh expenditure must be sanctioned by Mr. J. H. Renton as the Representative of the Committee on the Continent of Europe, though in the opinion of the Committee the methods adopted have been novel and popular. Early in the past year Mr. J. P. Ryan as representing the Committee had the distinguished honour of being received by His Imperial Majesty the Emperor of Germany and of presenting a special silver mounted chest of fine Ceylon Tea, which was graciously accepted, while at the same time the opportunity was availed of to bring under notice the gift of 5,000 lbs. Ceylon Tea for distribution to German Regiments. A hearty vote of thanks was passed to Mr. Ryan for his services, and for the manner in which he had carried out the duties entrusted to him in the matter.

CEYLON TEA ON THE CONTINENT OF EUROPE.

The post of Commissioner for the Continent of Europe was offered to, and has been accepted by, Mr. J. H. Renton for a period of three years at a salary of £1,000 per annum, to cover all expenses, while a further sum of £10,000 sterling has been voted to be expended by Mr. Renton in pushing and advertising Ceylon Tea under the following heads: Paris Exhibition £1,000; in France £6,000; in Germany £2,000; in Austria £500; in Holland £200; in Scandinavia £300.

CEYLON TEA IN SWEDEN AND NORWAY.

It will be remembered that it was decided to present to His Majesty the King of Sweden and Norway ten boxes of fine Ceylon Tea on the auspicious occasion of His Majesty's Seventieth anniversary of his Birthday. The Tea was packed in handsome silver bound boxes made of the various kinds of the finest Ceylon woods, and the gift was very graciously accepted by His Majesty, and his best thanks conveyed early in 1899.

COOLGARDIE EXHIBITION, 1899.

The accounts submitted by Mr. A. P. Wahlock, who was in charge of the Tea and other exhibits from Ceylon at the Coolgardie Exhibition, are annexed. It seems doubtful whether the Advertisement obtained was proportionate to the expenditure, though doubtless the best was made of the Exhibition for pushing and advertising Ceylon Tea.

ADVERTISING CEYLON TEA BY PHOTOGRAPHS IN THE RAILWAY CARRIAGES OF THE GOVERNMENT RAILWAY.

The idea of availing of the inside of railway carriages for exhibiting views of interesting and attractive scenery is not new, as it is carried out in many railways elsewhere—but nothing of the kind has been attempted in Ceylon; it is therefore gratifying to report that His Excellency the Governor favours an approved scheme being tried on the Government railway. The General Manager will be glad to co-operate, and it is accordingly intended to make use as early as possible of the excellent photographs depicting the Ceylon Tea Industry lately selected in connection with the Paris Exhibition. There can be no doubt that the attention of the numerous visitors who travel by the railway will be drawn to the pictures, and lead to enquiry and greater interest in Tea, its cultivation, and manufacture in "Sunny Ceylon."

THE DIETETIC VALUE OF CEYLON TEA.

Mr. M. Kelway Bamber's Pamphlet on the Dietetic Value of Ceylon Tea has been widely circulated, and cannot fail to create interest, and to draw attention to the important subject dealt with.

Summary of Receipts and Expenditure: Ceylon Tea (New Markets) Fund, as per Abstract for the six months ending 30th June, 1899.

RECEIPTS.		Rs.	Cts.
Ceylon Tea (New Markets) Fund		120,082	13
Government Grant (Coolgardie Exhibition, 1899...	Rs. 2,500·00		
Do. Concession do. Refund of Rail Freights	40·86	2,540	86
Interest		777	30
Advances against Credits opened (as per previous statement) memo. annexed hereto		27,071	80
Credits payable		148,318	99
Balance in National Bank of India, as per previous statement		122,745	03
Balance in Petty Cash as per previous statement		272	81
Rs...		421,808	92

EXPENDITURE.		Rs.	Cts.
Credit opened for Ceylon Tea in Russia ...	Rs. 61,432·17		
Less Credit written back	7,619·05	53,813	12
Credit opened for Ceylon Tea in South Africa		3,047	62
Do. do. in Germany		18,137	14
Do. do. in Belgium & Holland		500	00
Do. Agricultural Chemist		15,000	00
Do. Paris International Exhibition, 1900		30,000	00
Do. Representative do.		7,500	00
Do. Ceylon Green Teas		30,000	00
Do. Ceylon Tea in Norway		1,139	24
Do. Representative in America		150,000	00
Do. Ceylon in Sweden		375	00
Do. do. in Austria & Hungary		3,000	00
Do. Coolgardie Exhibition, 1899		7,500	00
Do. "Times of Ceylon" "Art Supplement"		825	00
Coolgardie Exhibition, 1899		2,232	56
Do. Suspense Account		790	56
Contribution to Office Expenses, say, Rent, Clerical, Accountant's, Typewriter's Services, &c.		1,500	00
Secretary		1,500	00
Miscellaneous		450	00
Stationery Account		449	87
Telegrams		244	80
Printing		705	42
Charges: Peons, Coolies, Petties Postages and Sundry Disbursements		331	43
Auditor		100	00
National Bank of India Limited, Colombo ...	Rs. 26,501·43		
Do. No. 2 Account	73,477·15	99,978	58
Petty Cash		191	88
Rs...		421,808	92

E. & O. E. Audited and found correct,
Kandy, 30th June, 1899. (Signed) JOHN GUTHRIE.

SKETCH MEMO. SHOWING CREDITS PAYABLE AND AVAILABLE BALANCES AS AT 30TH JUNE, 1899.

	Credits. Rs.	Payments. Rs.	Balances. Rs.
Agricultural Chemist ...	15,000·00		
Since paid ...		11,250·00	3,750·00
Green Tea ...	30,000·00		
Since paid ...		5,889·50	24,110·50
Ceylon Tea in Germany ...	18,137·14		
Since paid ...		17,317·01	820·13
Ceylon Tea in Austria and Hungary ...	3,000·00		
Since paid ...		1,943·81	1,056·19
Ceylon Tea in Russia ...	53,813·12		
Since paid ...		32,666·60	21,146·52
Ceylon Tea in Norway ...	1,139·24		
Since paid ...		389·24	750·00
Representative in America	150,000·00		
Since paid ...		89,986·30	60,013·70
Coolgardie Exhibition ...	7,500·00		
Since paid ...		5,243·26	2,256·74
Ceylon Tea in South Africa	3,047·62		3,047·62
Ceylon Tea in Belgium and Holland ...	500·00		500·00
Paris Exhibition, 1900 ...	30,000·00		30,000·00
Art Supplement "Times of Ceylon" ...	825·00		825·00
Ceylon Tea in Sweden ...	375·00		
Since paid ...		332·41	42·59
		165,018·13	148,318·99
Balances Payable...		148,318·99	
Rs...	313,337·12	313,337·12	

BANK BALANCES.

National Bank of India, Ltd., Colombo	... Rs.	26,501·43
Do. do. No. 2 a/c	... "	73,477·15
	Rs.	99,978·58

SKETCH MEMO. SHOWING ADVANCES AGAINST CREDITS OPENED AS AT 31ST DECEMBER, 1898.

Agricultural Chemist ...	... Rs.	3,750·00
Ceylon Green Teas ...	... "	1,330·20
Ceylon Tea in Germany ...	... "	14,441·77
Ceylon Tea in Austria and Hungary	... "	1,943·81
Ceylon Tea in Russia ...	... "	5,580·02
Coolgardie Exhibition ...	... "	26·00
	Rs.	27,071·80

(Initialled) J. G.

Summary of Receipts and Expenditure: Ceylon Tea (New Markets) Fund, as per Abstract for the six months ending 31st Dec., 1899.

RECEIPTS.		Rs.	Cts.
Ceylon Tea (New Markets) Fund		135,611	37
Coolgardie Exhibition, 1899, Suspense Account (Refund)		790	56
Telegrams (Refund)		348	53
Interest		186	30
Advances against credits opened (as per previous statement) memo. annexed hereto		165,018	13
Credits payable		133,769	99
Balance in National Bank of India, Limited, as per previous statement		99,978	58
Balance in Petty Cash as per previous statement ...		191	88
Rs...		536,494	84

EXPENDITURE.		Rs.	Cts.
Credits opened for Ceylon Tea in Russia...		53,813	12
Do. do. in South Africa		3,047	62
Do. do. in Germany		48,137	14
Do. do. in Belgium & Holland		500	00
Do. Agricultural Chemist		15,000	00
Do. Paris International Exhibition, 1900		30,000	00
Do. Representative do.		7,500	00
Do. Ceylon Green Teas		30,000	00
Do. Ceylon Tea in Norway		1,139	24
Do. Representative in America		150,000	00
Do. Ceylon Tea in Sweden		1,875	00
Do. do. in Austria & Hungary		3,000	00
Do. Coolgardie Exhibition, 1899		7,500	00
Do. "Times of Ceylon" "Art Supplement"		825	00
Do. Bamber's "Dietetic Pamphlet"		500	00
Do. Commissioner for the Continent of Europe		45,000	00
Do. Presentation to Admiral Dewey		1,451	60
Do. Ceylon Tea in Manila		750	00
Coolgardie Exhibition, 1899*		48	45
Contribution to Office expenses say, Rent, Clerical, Accountant's, Typewriters' Services, &c.		1,500	00
Secretary		1,500	00
Miscellaneous		1,625	00
Stationery Account		102	83
Charges: Peons, Coolies, Petties, Postages and Sundry Disbursements		344	44
National Bank of India, Limited, Colombo ...	Rs. 83,442·56		
Do. No. 2 Account ...	" 47,798·40	131,240	96
Petty Cash		94	44
Rs...		536,494	84

	Rs.	Cts.
*NOTE:—Coolgardie Exhibition, 1899, as per previous statement	2,232	56
Do. do. as above ...	48	45
Rs...	2,281	01

E. & O. E. Audited and found correct,
Kandy, 31st December, 1899. (Signed) J. D. FORBES, A.S.A.A., Auditor.

SKETCH MEMO. SHOWING CREDITS PAYABLE AND AVAILABLE BALANCES.

	Credits. Rs. c.	Payments. Rs. c.	Balances. Rs. c.
Ceylon Tea in Russia ...	53,813·12	46,510·21	7,302·91
Do. South Africa...	3,047·62	—	3,047·62
Do. Germany ...	48,137·14	31,752·61	16,384·53
Do. Belgium and Holland ...	500·00	—	500·00
Do. Agricultural Chemist ...	15,000·00	15,000·00	—
Paris International Exhibition, 1,900 ...	30,000·00	—	30,000·00
Representative do. ...	7,500·00	—	7,500·00
Ceylon Green Teas	30,000·00	9,962·90	20,037·10
Ceylon Tea in Norway ...	1,139·24	1,009·24	130·00
Representative in America ...	150,000·00	149,695·60	304·40
Ceylon Tea in Sweden ...	1,875·00	332·41	1,542·59
Ceylon Tea in Austria and Hungary ...	3,000·00	1,943·81	1,056·19
Coolgardie Exhibition, 1899...	7,500·00	7,500·00	—
"Times of Ceylon" "Art Supplement" ...	825·00	650·00	175·00
Bamber's "Dietetic Pamphlet"	500·00	460·35	39·65
Commissioner for the Continent of Europe...	45,000·00	—	45,000·00
Presentation to Admiral Dewey	1,451·60	1,451·60	—
Ceylon Tea in Manila ...	750·00	—	750·00
		266,268·73	133,769·99
Balance Payable...		133,769·99	
	Rs...400,038·72	400,038·72	

BANK BALANCES.

National Bank of India, Limited, Colombo	Rs.	83,442·56
Do. No. 2 Account	"	47,798·40
	Rs.	13,1240·96

MEMO.

To balance payable still under credits opened for Ceylon Tea (New Markets) Fund as per sketch memo	... Rs.	133,769·99
By Balance in Bank	... "	131,240·96
Amount still required...	Rs.	2,529·03

E. & O. E.

Kandy, 31st December, 1899.
Xd.
(Initialled) J. D. F.

SKETCH MEMO. SHOWING ADVANCES AGAINST CREDITS OPENED AS AT 30TH JUNE, 1899.

1898 Agricultural Chemist ...	Rs. 3,750·00	
1899 do. ...	" 7,500·00	Rs. 11,250·00
1898 Ceylon Green Teas ...	... Rs. 1,330·20	
1899 do. ...	... " 4,559·30	
		" 5,889·50
1898 Ceylon Tea in Germany	... Rs. 14,441·77	
1899 do. ...	... " 2,875·24	
		" 17,137·01
1898 Ceylon Tea in Austria and Hungary		" 1,943·81
1898 Ceylon Tea in Russia	... Rs. 5,580·02	
1899 do. ...	... " 27,086·58	
		" 32,666·60
1899 Ceylon Tea in Norway ...		" 389·24
1899 Representative in America ...		" 89,986·30
1898 Coolgardie Exhibition, 1899...	Rs. 26·00	
1899 do. ...	... " 5,217·26	
		" 5,243·26
1899 Ceylon Tea in Sweden ...		" 332·41
		Rs. 165,018·13

Xd.
(Initialled) J. D. F.

CEYLON TEA (NEW MARKETS) FUND.—COLLECTION FOR YEAR 1899:
FROM 1ST JANUARY TO 30TH JUNE, 1899.

	Rs.	cts.
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during December, 1898 ...	19,939	55
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during January, 1899 ...	16,511	34
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during February, 1899 ...	20,191	25
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during March, 1899 ...	19,558	62
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during December, 1898 ...	585	20
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during April, 1899 ...	18,144	60
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during May, 1899 ...	25,151	57
Rs.	120,082	13

CEYLON TEA (NEW MARKETS) FUND.
FROM 1ST JULY TO 31ST DECEMBER, 1899.

	Rs.	cts.
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during June, 1899 ...	28,890	96
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during July, 1899 ...	24,178	66
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during August, 1899 ...	19,954	33
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during September, 1899 ...	23,436	67
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during October, 1899 ...	19,967	99
Paid in per Colonial Treasurer proceeds of the levy imposed on Tea during November, 1899 ...	19,182	76
Rs.	135,611	37

RECAPITULATION.

	Rs.	cts.
Ceylon Tea (New Markets) Fund, Receipts from January to 30th June	Rs. 120,082	13
Do. do. do. July to 31st Dec.	" 135,611	37
E. & O. E.	Rs. 255,693	50

Kandy, 31st December, 1899.
Audited and found correct.
(Signed) J. D. FORBES, A.S.A.A., Auditor.

NO. 23 COLOMBO, JUNE 19, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[600,109 lb.]

Lot.		Box	Pkgs.		Name.	lb.	c.
1	N	1792	20	cb	bro tea	2600	24
2	B, in estate mark	1795	11	do	dust	1650	24
3		1798	9	do	sou	810	30
10	M'Golla	1819	21	do	pek	1890	33
12	Strathspey	1825	22	hf-ch	or pek	1144	50
13		1828	20	do	pek	960	40
14	Ingrogalla	1831	15	cb	bro pek	1500	40
15		1834	19	do	pek	1615	38
16	Waltou	1837	22	do	bro pek	2464	44
17		1840	28	do	pek	2800	37
		1843	18	do	pek sou	1620	33
21	Dambagastalawa	1852	22	do	bro or pek	2420	44 bid
22		1855	15	do	or pek	1620	39 bid
23		1858	13	do	pek	1196	36
33	Derby	1888	18	hf-cb	or pek	1080	35
34		1891	14	do	bro pek	784	35
37	Grange Garden	1900	44	cb	bro or pek	4400	43
38		1903	22	do	pek	2200	36
41	Mousakellie	1912	34	do	bro or pek	3400	41 bid
42		1915	19	do	or pek	1900	40
43		1918	19	do	pek	1900	38
49	Woodend	1936	27	do	pek	2700	34 bid
50		1939	34	do	bro pek	3230	33
52	Monkswood	1945	21	hf-ch	bro pek	1050	59 bid
53		1948	18	do	or pek	900	65
54		1951	16	cb	pek	1520	48
57	Gallawatte	1960	10	do	bro pek	950	39
58		1963	9	do	pek	765	35
59	Devonford	1966	21	hf-cb	bro or pek	1155	82
60		1969	14	ch	pek	1980	50
61		1972	11	do	pek sou	880	44 bid
62	W V R	1975	12	do	fans	960	25
66	Kitulgalla	1987	23	hf-cb	or pek	1265	37 bid
67		1990	13	do	bro or pek	780	38
68		1993	24	ch	pek	1920	35
71	Tymawr	2002	22	bf-ch	or pek	1100	53
72		2005	22	do	bro pek	1210	51 bid
73		2008	24	do	pek	1080	41
77	Agra Oya	2020	8	ch	bro mix	720	34
78	Monkswood	2023	22	hf-cb	bro pek	1210	53 bid
79		2026	22	do	or pek	1100	65
80		2029	40	ch	pek	3800	47 bid
81		2032	16	do	pek sou	1360	44
84		2041	15	bf-ch	bro pek	825	50 bid
85		2044	16	do	or pek	800	64 bid
86		2047	21	ch	pek	1890	45 bid
87	Deaculla	2050	60	hf-cb	bro pek	3300	46
88		2053	40	do	pek	2800	37
89	O'Bodde	2056	8	cb	bro pek	920	44 bid
90		2059	9	do	or pek	900	46 bid
91		2062	12	do	pek	1380	36 bid
94	Middleton	2071	12	do	bro pek	1200	53
95		2074	12	do	pek	1020	42
97	Passara Group	2080	12	do	bro or pek	1200	42 bid
98		2083	18	do	or pek	1800	39
99		2086	27	do	pek	2430	37
100		2089	8	do	pek sou	800	35
102	Sunnycroft	2095	12	do	pek sou	1200	34
103		2098	12	do	congou	1200	32
104		2101	6	do	dust	900	23
107	Dewalakande	2110	10	bf-ch	dust	850	23
108	Matalawa	2113	30	ch	pek sou	2730	30
111		2122	14	do	pek sou	1400	23
114	High Forest	2131	40	bf-ch	or pek	2000	48 bid
115		2134	17	do	bro or pek	1071	45 bid
116		2137	18	do	pek	792	43
117	Polatagama	2140	33	ch	bro pek	3300	39
118		2143	25	do	or pek	2000	36
119		2146	55	do	pek	4675	34
120		2149	34	do	pek sou	2720	32
125	Kirklees	2164	31	hf ch	bro or pek	1860	45
126		2167	21	ch	or pek	1995	55
127		2170	43	do	pek	4085	38
128		2173	18	do	pek sou	1530	34
131	Weoya	2182	37	do	bro or pek	3700	35
132		2185	34	do	or pek	3400	40
133		2188	33	do	pek	2970	35
134		2191	35	do	pek sou	3150	32
135	Galapitakande	2194	40	do	bro pek	4000	44
136		2197	35	do	pek	3500	35
137		2200	10	do	pek sou	950	33

Lot.		Box	Pkgs.		Name.	lb.	c.
139	Tonacombe	2206	37	cb	or pek	3700	42
140		2209	49	do	bro pek	4900	48
141		2212	41	do	pek	3690	39
142		2215	20	do	pek sou	1800	34
146	Macaldeniya	2227	20	hf-ch	bro pek	1200	47
147		2230	9 1	ch bf-ch	pek	910	40
148		2233	7	ch	pek sou	700	39
150	Palmerston	2239	36	hf-ch	bro pek	1980	50
151		2242	22	ch	pek	1980	43
152		2245	12	do	pek sou	960	39
153	Roeberry	2248	35	do	bro pek	3850	44
154		1	33	do	pekoe	3168	37
155		4	11	do	pek sou	990	36
156	St. Heliers	7	30	hf-cb	bro or pek	1560	42 bid
157		10	12	ch	pek	1056	35
161	P	22	12	ch	bro pek	852	20 bid
163	K P W	28	29	hf-ch	or pek	1740	42
164		31	20	do	bro pek	1100	37
165		34	45	do	pek	2250	35
166		37	15	do	pek sou	750	33
185	Freds Ruh	94	36	ch	bro pek	3600	40
186		97	33	do	pek	2970	35
187		100	16	do	pek sou	1440	32
188	Kincora	103	12	do	bro or pek	1080	36 bid
189		106	47	hf-cb	bro pek	2320	44
190		109	28	do	or pek	2660	36
191		112	36	do	pek	2880	33
193	Cooroondoowatte	118	13	bf-ch	bro pek	715	45
194		121	17	do	pek	850	38
202	Waratenne	145	22	ch	bro pek	1980	35
203		148	21	do	pek	1080	33
204		151	8	do	pek sou	720	32
205		154	26	ch	bro pek	2340	36
206		157	22	do	pek	1870	33
207	Geragama	160	15	do	bro pek	1425	37
208		163	16	do	pek	1360	34
209		166	10	do	pek sou	900	32
211	Columbia	172	39	hf-cb	or pek A	2106	45 bid
212		175	28	do	or pek B	1260	49
213		178	49	do	pek	2205	41
214		181	33	do	pek	1485	40
215	Vegan	184	36	ch	bro pek	3240	45
216		187	34	do	pek	2890	35
221	Marguerita	202	8	do	bro or pek	832	37
222		205	10	do	pek	930	withd'n
224	Stafford	211	19	do	bro or pek	1330	47 bid
225		214	13	do	or pek	1330	52
226		217	19	do	pek	1805	44
230	Arapolakande	229	9	do	bro or pek	990	41
231		232	71	do	bro pek	6390	46
232		235	41	do	pek	3760	35
233		238	8	do	pek sou	720	33
235	Scrubs	244	12	do	bro or pek	1200	45 bid
236		247	10	do	bro pek	1000	38 bid
237		250	12	do	pek	1056	38 bid
238		253	9	do	pek sou	756	30
239	Pussella	256	11	do	bro pek	1144	38
240		259	11	do	or pek	924	36 bid
241		262	20	do	pek	1640	34
244	Weyungawatte	271	47	hf-cb	bro or pek	2820	42
245		274	52	ch	bro pek	4940	35
246		277	47	do	pek	3995	34
249	Blairgowrie	286	10	do	bro pek	1000	29
250		289	11	do	pek	1056	30
251		292	11	do	pek sou	935	22
254		301	14	hf-cb	dust	700	22
255	Castlereagh	304	34	ch	bro pek	3400	45
256		307	24	do	or pek	2040	40
257		310	22	do	pek	1760	37
259		316	13	bf-ch	fans	910	35
262	Galkadua	325	14	ch	bro pek	1540	36 bid
263		328	16	do	pek	1600	33
264		331	10	do	pek sou	1000	32
267	High Forest	340	39	hf-ch	or pek	1950	48
268		343	17	do	bro or pek	1071	41 bid
269		346	18	do	pek	792	42
270	Hayes	349	14	ch	bro or pek	1400	52
271		352	34	do	bro pek	3400	43
272		355	15	do	or pek	1350	44
273		358	30	do	pek	2850	36
274		361	22	do	pek sou	2090	33
276	Ganapalla	367	22	do	or pek	1680	42
277		370	36	do	bro or pek	3240	35
278		373	64	do	pek	5120	33
279		376	40	do	pek sou	3000	31
280		379	6	do	bro pek fans	800	31
281		382	12	bf-ch	dust	1032	23
282	Aberdeen	385	34	ch	bro pek	3400	36
283		388	50	do	pek	4100	34
284		391	26	do	sou	1976	32

Lot.		Box.	Pkgs.		Name.	lb.	c
285	Pallagodda	394	19	ch	bro or pek	1900	39
286		397	15	do	bro pek	1500	45
287		400	13	do	or pek	1170	37
288		403	12	do	pek	960	36
289		406	12	do	pek sou	1080	34
291	Dammeria	412	8	do	bro or pek	960	42
292		415	40	do	or pek	4000	38 bid
293		418	31	do	bro pek	2790	38 bid
294		421	21	do	pek	1890	35
295		424	15	do	pek sou	1350	34
298		433	15	hf-ch	dust	1275	26
299	Ruanwella	436	26	ch	or pek	2210	35
300		439	23	hf-ch	bro pek	1380	35
301		442	33	ch	pek	2970	34
302		445	12	do	pek sou	1080	32
304	Polatagama	451	24	do	bro mix	1920	30
305		454	29	do	fans	2900	25
306		457	14	do	dust	2100	22
307	Killarney	460	12	do	or pek	960	43
308		463	69	hf-ch	bro or pek	3795	44
309		466	12	ch	pek	960	38
310		469	41	do	pek sou	3960	36
311	Inverness	472	41	hf-ch	bro pek	2255	45 bid
312		475	22	ch	pek	2090	39
313		478	11	do	pek sou	1045	37
315	Dunkeld	484	47	do	bro pek	5170	45
316		487	15	do	or pek	1425	44
317		490	28	do	pek	2520	38 bid
318		493	10	do	bro pek fans	1300	34
319	Fairlawn	496	24	hf-ch	bro pek	1200	56
320		499	44	do	or pek	1980	40
321		502	18	ch	pek	1650	36
322		505	16	hf-ch	pek sou	720	35
325	Carfax	514	18	ch	bro pek	1800	53
326		517	19	do	or pek	1710	51
327		520	29	do	pek	1800	43
328	Vathalana	523	48	hf-ch	bro or pek	2880	39
329		526	37	do	or pek	3145	35
330		529	16	do	pek	1280	34
331		532	9	do	pek sou	856	32
333	Maligatenne	538	16	do	bro pek	1760	35
334		541	10	do	pek	987	32
342	M'Golla	565	13	hf-ch	dust	1040	20
350	B D W G	580	40	do	bro pek	2000	43
351		592	46	do	pek	2300	36
354	Rowley	601	24	do	bro pek	1200	45
355		604	40	do	pek	2000	36
362	Hornsey	625	21	do	pek sou	1860	38
369	Talgaswela	646	32	do	bro pek	2880	36
370		649	12	do	or pek	1200	38
371		652	11	do	pek	990	34
372		655	13	do	pek sou	1105	32
373	Knavesmire	658	33	hf-ch	bro pek	1815	38
374		661	41	ch	pek	3280	35
377	Daphne	670	8	do	bro pek	800	34
380	Nillomally	679	39	do	bro pek	3900	47
381		682	35	do	bro or pek	2100	55
382		685	21	do	or pek	2016	39
383		688	19	do	pek	1558	36
384		691	25	do	pek sou	1650	34
388	Moneragalla	703	10	hf-ch	pek fans	758	25
396	K P W	727	28	do	or pek	1680	42
397		730	23	do	bro pek	1265	38
398		733	54	do	pek	2700	35
403	Hatherleigh	748	18	ch	bro or pek	1980	38
404		751	27	do	bro pek	2700	33
405		754	31	do	pek	2945	32
406		757	8	do	pek sou	760	31
408	Clyde	763	24	do	bro pek	2160	38 bid
409	Mawaliganga-watte	766	17	hf-ch	bro or pek	935	41
410		769	19	do	or pek	760	37
411		772	29	ch	bro pek	2765	36
412		775	27	do	pek sou	2160	32
414	Harrow	781	47	hf-ch	bro or pek	3055	37
415		784	28	ch	pek	2520	35
416		787	10	do	pek sou	1000	35
418	Clyde	793	25	do	bro pek	2250	41
419		796	11	do	bro or pek	1210	41
420		399	38	do	pek	3420	34
421		802	10	do	pek sou	900	33
423	Ganapala	808	23	do	pek sou	1725	30 bid
426	Pine Hill	817	26	hf-ch	bro or pek	1560	47 bid
427		820	40	do	or pek	2400	41
428		823	56	ch	pek	4760	36
429		826	9	do	sou	765	33
431	Ireby	832	45	hf-ch	bro pek	2700	54
432		335	32	do	pek	1600	44
433		838	11	ch	pek sou	990	40
436	Dyakvlla	847	20	do	pek	1400	35 bid
437	Queensland	850	12	do	bro pek	1200	40 bid
438	Frogmore	853	17	do	or pek	1350	39
439		856	30	hf-ch	bro pek	1650	47

[Messrs. Somerville & Co.—166,660lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	S L G	340	31	hf-ch	sou	1395	30
2	Charlie Hill	343	19	do	bro pek	1045	34
3		346	21	do	pek	1155	32
6	Moragalla	355	9	ch	bro pek	900	36
7		358	19	do	pek	1900	32
8		361	20	do	pek sou	2000	31
11	S K R	370	6	do	dust	900	23
12	Galphele	373	39	hf-ch	bro pek	2145	40
13		376	49	do	pek	2205	35
14		379	31	do	pek sou	1395	34
17	J K	388	8	ch	dust	1400	20
26	D V	520	8	do	pek dust	1400	22
29	R C W	529	30	ch	bro pek	2850	38 bid
31		535	30	do	pek sou	2700	33
32	Dikm alana	538	31	hf-ch	bro pek	1705	41 bid
33		541	24	do	pek	1200	36
34		544	27	do	or pek	1350	37 b
35		547	27	do	pek sou	1215	34
36		550	40	do	bro pek fan	2200	35
38	Woodthorpe	556	15	ch	bro pek	1500	41
39		559	24	do	pek	2064	35
40		562	19	do	pek sou	1520	33
45	Primrose Hill	577	9	ch	pek	774	35
50	Raven Oya	592	9	ch	pek	774	36
54	Irrigama	604	50	hf-ch	bro pek	2850	36 bid
55		607	36	do	or pek	1980	38 bid
56		610	20	ch	pek	1800	34
57	Kuralana	613	14	ch	unas	1400	26 bid
58	Glenalla	616	33	ch	bro pek	3300	37 bid
59		619	33	do	pek	2970	34
60		622	12	do	pek sou	1080	32
63	Mahatenne	631	32	ch	bro pek	3200	36
64		634	18	do	pek	1800	34
65		637	10	do	pek sou	950	32
67	M. in estate mark	643	8	ch	pek dust	728	20 bid
69	Kosgama	649	30	ch	bro pek	3150	38
70		652	16	do	pek	1360	34
73	Hapugasmulle	661	24	ch	bro pek	2640	34 bid
74		664	15	do	pek	1425	32
76	Paradise	670	7	ch	bro pek	700	37
77		673	18	do	pek	1800	33
78		676	16	do	pek sou	1520	31
81	Romania	685	13	ch	bro pek	1300	37
82		688	14	do	pek	1400	32
85	Welgampola	697	36	hf-ch	bro pek	1980	37
87	Kelani	703	30	ch	bro or pek	3000	39
88		706	55	do	bro pek	4400	36
89		709	30	do	pek	2550	34
90		712	25	do	pek sou	2125	32
91		715	15	do	sou	1350	31
92		718	12	do	dust	1380	23
93	Glenalmond	721	19	ch	bro pek	1900	36
94		724	20	do	pek	1800	34
95		727	16	do	pek sou	1280	32
99	Kekuna Hena	739	19	ch	bro pek	1900	37
100	Warakamure	742	28	ch	bro pek	2300	35
101		745	31	do	pek	2945	33
104	H K	754	16	hf ch	bro pek	960	36
105		757	21	do	pek	1050	33
108	Ingeriya	766	52	do	bro pek	2496	36
109		769	41	do	pek	1968	34
110		772	16	do	pek sou	768	32
111		775	21	do	bro pek fans	1260	34
117	Harangalla	793	13	ch	bro pek	1235	39
118		796	29	do	pek	2610	34
120		802	14	hf-ch	dust	1120	24
122		808	9	do	unas	810	31
123	G A	811	12	hf-ch	dust	924	22
124	St. Paul's	814	8	ch	bro mix	705	17
126	Siriniwasa	820	22	ch	bro pek	2310	38
127		823	25	do	pek	2500	35
128		826	20	do	pek sou	1900	33
135	Mossville	847	9	ch	bro pek fans	900	30
136		850	28	hf ch	dust	2380	23
138	Ravenscraig	856	12	ch	or pek	1020	36 bid
139		859	24	hf-ch	bro pek	1320	39
140		862	23	ch	pek	2070	35
141		865	8	do	pek sou	720	33
142	Killin	868	12	ch	bro pek	1200	35
143	Monrovia	871	20	ch	bro pek	2000	37
146		880	19	ch	pek	1710	34
147		883	14	do	pek sou	1330	32
150	Citrus	892	31	ch	bro pek	3096	37
152		898	28	ch	pek	2500	34
153		901	16	do	pek sou	1591	32

[Mr. E. John.—276,507 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
8	Coslande	843	13	hf-ch	bro pek	715	45
9		846	13	ch	pekoe	1300	35
13	Loughton	858	40	hf-ch	bro pek	2200	39 bid

Lot.		Box.	Pkgs.	Name	lb.	c.
14		861	60 hf-ch	pekoe	3000	36
15		864	24 do	pek sou	1200	33
17	Oonoogaloya	870	23 ch	bro pek	2300	38 bid
18		873	26 do	pekoe	2080	35
19	St. Julia	876	14 hf-ch	bro pek	770	32
24	Rookwood	891	18 ch	bro or pek	1836	39 bid
25		894	23 do	pekoe	2346	35
26		897	30 do	pek sou	2700	33
27		900	34 do	sou	2448	31
28	Claremont	903	40 hf-ch	bro or pek	2200	37
29		906	18 ch	pekoe	1620	34
30	Eiduwa	909	10 do	bro pek	1000	35
31		912	19 do	pekoe	1710	32
33	Mount Temple	918	30 do	bro or pek	3000	35 bid
34		921	26 do	pekoe	2158	35
35	Mocha	924	31 do	bro or pek	3100	51
36		927	12 do	or pek	1140	57
37		930	34 do	pekoe	3230	45
38	Koslande	933	13 hf-ch	bro pek	715	43 bid
39		936	13 ch	pekoe	1300	35
43	Templestowe	948	23 do	or pek	2185	40
44	Ottery	951	30 do	bro or pek	3000	46 bid
45		954	10 do	or pek	900	43 bid
46		957	12 do	pekoe	1140	42
48	B K	963	10 hf-ch	dust	902	27
49	Uda	966	10 ch	bro pek	1000	31
50		969	18 do	pekoe	1476	33
51		972	22 hf-ch	pek dust	1980	24
52	St. John's	975	28 do	bro or pek	1736	54 bid
53		978	30 do	or pek	1560	68
54		981	30 do	pekoe	1680	49
55		984	30 do	pek sou	1620	43
56	Kanangama	987	35 ch	bro pek	2975	33
57		990	31 do	pekoe	2480	32
58		993	18 do	bro pek fans	1800	33
59		996	20 do	pek sou	2250	30
62	Templestowe	5	31 do	bro or pek	3100	42 bid
63		8	25 do	or pek	2375	36 bid
64		11	32 do	pekoe	2880	35 bid
65		14	18 hf-ch	dust	1440	26
66	Brownlow	17	55 do	bro or pek	3025	44
67		20	21 ch	or pek	1848	40
68		23	14 do	pekoe	1190	36
69		26	9 hf-ch	bro pek fans	702	27
75	Katahoola	44	13 do	dust	1040	24
76	Gangawatte	47	47 do	or pek	2350	41
77		50	31 ch	pekoe	2635	35
79		56	15 hf-ch	dust	1425	23
80		59	44 do	bro or pek	2640	45
81	Dickapittiya	62	26 ch	bro pek	2600	39 bid
82		65	34 do	pekoe	3400	35
84	Agra Ouvah	71	15 do	pek fans	1275	34
86	Kondura	77	20 do	or pek	1800	41
87		80	43 do	bro pek	4300	36
88		83	43 do	pekoe	3870	33
89		86	23 do	pek sou	2070	31
91	Agra Ouvah	92	49 hf-ch	bro or pek	3185	47
92		95	20 do	or pek	1100	50
94	Dalhousie	101	32 do	bro pek	1920	52
95		104	14 do	or pek	700	58
96		107	50 do	pekoe No. 1	2500	40
97		110	26 do	pekoe No. 2	1305	33
101	Poilakande	122	58 ch 1 hf-ch	bro pek	5860	37
102		125	34 ch 1 hf-ch	pekoe	3120	35
104	Hiralouvah	131	39 do	bro pek	2145	37
105		134	27 ch	pekoe	2295	35
106		137	14 do	pek sou	1120	33
114	Murraythwaite	161	14 do	bro pek	1330	45
115		164	15 do	pekoe	1275	35
119	Kadienlena	176	49 do	bro or pek dust	3920	26
120	Lameliere	179	72 hf-ch	bro pek	4274	44 bid
121		182	47 ch	pekoe	4324	37 bid
122		185	21 do	pek sou	1680	36
124	Kotuagedera	101	24 do	bro pek	2400	35
125		194	12 do	pekoe	1140	31
128	Troup	203	20 do	sou	1700	35
129		206	7 do	bro mix	700	32
130	Nahavilla	209	19 do	bro or pek	1900	51
131		212	10 do	or pek	1000	48
132		215	10 do	pekoe	1000	40
133	Myraganga	218	106 hf-ch	bro pek	5300	35
134		221	38 ch	pekoe	3420	33
135		224	44 do	pek sou	3080	31
136	P	227	15 do	bro pek	1425	33
142	Morahela	245	32 do	bro pek	3200	39
143		248	16 do	pekoe	1504	34
144		251	28 do	or pek	2744	36
145	Mount Everest	254	34 hf-ch	bro pek	1870	59
146		257	44 do	or pek	2200	62
147		260	38 ch	pekoe	3800	47
148		263	16 do	pek sou	1440	43
154	Bokotua	281	112 hf ch	bro or pek	5600	36
159	Kadienlena	296	31 ch	pek sou	3100	31
160	M R	299	8 hf-ch	dust	720	23

Lot		Box.	Pkgs.	Name.	lb.	c.
169	Maskeliya	326	12 ch	pek sou	2080	36
172	Nelun	335	9 do	pekoe	900	32
173	Iona	338	19 hf-ch	bro or pek	1140	62
174		341	17 do	or pek	1700	49
175		344	19 ch	pekoe	1805	40
176		347	12 do	pek sou	1080	37
177		350	10 do	bro or pek fans	700	39

SMALL LOTS,

[Messrs. Forbes & Walker

Lot		Box	Pkgs.	Name.	lb.	c.
4	Horagaskelle	1801	10 hf-ch	bro pek	632	36
5		1804	9 do	pek	508	33
6		1807	11 do	pek sou	660	32
7		1810	1 do	dust	66	23
8	M'Golla	1813	5 ch	or pek	450	36
9		1816	10 hf-ch	bro or pek	550	33
11		1822	5 ch	pek sou	450	31
19	Walton	1846	1 do	fans	130	31
20		1849	1 do	dust	150	23
24	Damhagastalawa	1861	4 do	pek sou	380	34
25		1864	6 hf-ch	bro pek fans	492	29
35	Derby	1894	11 hf-ch	pek	605	33
36		1897	5 do	pek sou	265	33
39	Grange Garden	1906	2 ch	pek sou	200	34
40		1909	3 hf-ch	dust	255	27
44	Mousakellie	1921	5 ch	sou	500	34
45		1924	5 do	dust	425	24
51	Woodend	1942	3 do	dust	420	22
55	Gallawatte	1954	6 do	bro pek	570	35
56		1957	7 do	pek	595	33
63	Ookoowatte	1978	2 do	sou	200	30
64		1981	3 do	pek fans	270	27
65		1984	1 do	dust	120	21
69	Kitulgalla	1993	3 hf-ch	pek sou	165	32
70		1999	2 ch	dust	240	24
74	Tymawr	2011	5 hf-ch	dust	425	22
75		2014	4 do	fans	260	33
76	Agra Oya	2017	2 ch	bro pek	200	40
82	Monkswood	2035	7 hf-ch	fans	420	36
83		2038	8 do	dust	680	24
92	O Bodde	2065	6 ch	pek sou	480	35
93		2068	1 do	dust	83	21
96	W, in estate mark	2077	1 do	pek	75	35 bid
101	Passara Group	2092	1 do	fans	75	29
105	Sunnycroft	2104	2 hf-ch	bro tea	140	20
106	Dewalakande	2107	4 ch	bro tea	308	30
109	Matalawa	2116	6 hf-ch	bro pek fans	360	27
110		2119	4 do	dust	324	23
112		2125	3 do	bro pek fans	183	27
113		2128	5 do	dust	405	22
129	Kirklees	2176	1 ch	congou	95	33
130		2179	4 hf-ch	dust	380	26
138	Galapitakande	2203	5 ch	dust	575	28
143	D	2218	5 do	sou	450	26
144	Tillicoultry	2221	1 do	pek	95	41
145	Macaldeniya	2224	6 hf-ch	bro or pek	360	38
149		2236	2 do	dust	170	25
158	St. Heliers	13	7 ch	pek sou	630	32
159	D	16	2 do	sou	180	} 28
160		19	1 do	sou	85	
162	H P	25	1 hf-ch	pek	48	28
167	K P W	40	2 hf-ch	dust	170	25
195	Cooroondoowatte	124	6 hf-ch	pek sou	300	33
196		127	1 do	con	50	31
197		130	1 do	pek dust	76	24
198	Bodawa	133	9 hf-ch	bro pek	522	37
199		136	5 do	pek	250	34
200		139	6 do	pek sou	270	32
201		142	2 do	dust	140	24
210	Hopton	169	1 ch	bro pek	100	37
217	Vogan	190	4 ch	pek sou	320	32
218		193	5 do	dust	425	23
219		196	3 do	bro pek fans	330	35
220		199	3 do	unas	240	31
223	Marguerit	208	1 ch	pek sou	90	30
227	Stafford	220	6 ch	pek sou	540	42
228		223	2 hf-ch	fans	150	31
229		226	1 do	dust	95	27
234	Arapolakande	241	3 ch	dust	300	21
247	Weyungawatte	280	4 ch	pek sou	340	33
248		283	5 hf-ch	dust	425	23
252	Blairgowrie	295	1 ch	bro pek fans	95	29
253		298	2 do	pek fans	420	23
258	Castlereagh	313	6 ch	pek sou	480	34
269		319	6 hf-ch	dust	480	24

Lot.		Box.	Pkgs.e.	Nam	lb.	c.
261	Galkadha	322	3 ch	bro or pek	360	39
265		334	1 ch	dust	185	21
266		337	1 hf-ch	fans	70	28
275	Hayes	364	6 ch	dust	510	24
290	Pallagodda	409	2 do	sou	180	32
296	D M	427	4 do	bro pek	400	35
297		430	4 do	pek	360	32
303	Ruanwella	448	5 do	dust	400	23
314	Inverness	481	5 hf-ch	dust	400	25
323	Fairlawn	508	3 do	dust	255	24
324	F L in est mark	511	1 ch	bro mix	90	25
332	Vathalana	535	6 hf-ch	dust	480	24
335	Maligatenne	544	3 ch	pek sou	270	30
352	B D W G	595	13 hf-ch	pek sou	650	34
353		598	3 do	dust	270	25
375	Knavesmire	664	4 ch	pek sou	300	32
373		667	3 hf-ch	dust	240	25
378	Daphne	673	5 do	pek	450	33
379		676	3 ch	pek sou	240	29
385	Moneragalla	694	7 do	pek sou	630	32
386		697	3 do	sou	270	32
387		700	2 hf-ch	bro mix	100	28
392	Sunnycroft	715	5 ch	pek sou	500	31
393		718	3 do	congou	300	30
394		721	1 hf-ch	bro tea	70	24
395		724	9 do	dust	675	23
399	K P W	736	9 do	pek sou	450	31
400		739	1 do	dust	85	23
401	W	742	1 do	bro pek	55	34
402		745	6 do	pek	300	32
407	Hatherleigh	760	2 ch	dust	200	22
413	Mawaliganga-watte	778	4 hf-ch	pek dust	300	23
417	Harrow	790	3 ch	dust	510	23
422	Clyde	805	3 do	bro tea	450	27
424	Relugas	811	5 do	sou	390	31
430	Pine Hill	829	1 do	sou	85	25
434	Ireby	841	3 hf-ch	fans	210	35
435		844	8 do	dust	400	26
440	Frogmore	859	1 do	dust	80	26

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb	c.
4	Charlie Hill	349	7 hf-ch	pek sou	385	30
5		352	8 do	pek fans	520	28
9	Moragalla	364	2 ch	red leaf	193	23
10	S R K	367	1 ch	sou	100	30
15	Galphele	382	2 hf ch	dust	150	23
16		385	1 do	sou	45	28
18	G P	391	1 hf-ch	bro or pek	45	43
19		394	1 do	or pek	50	40
20		397	2 ch	pek	170	34
21		505	1 do	pek sou	75	32
22		508	1 hf-ch	fans	55	25
23	Allakolla	511	2 ch	sou	180	29
24		514	1 do	red leaf	90	23
25		517	2 hf-ch	dust	200	22
27	Blinkbonnie	523	4 hf-ch	fans	260	36
28		526	5 do	dust	425	24
30	R C W	532	7 ch	or pek	686	37 bid
37	Dikmukalana	553	6 hf-ch	sou	300	31
41	Woodthorpe	565	4 ch	sou	304	32
42		568	1 hf-ch	red leaf	24	25
43		571	1 do	dust	61	22
44	Primrose	574	5 ch	bro pek	500	39 bid
46		580	7 do	pek sou	560	34
47		583	2 do	sou	152	32
48		586	1 hf-ch	dust	41	23
49	Raven Oya	589	10 hf-ch	bro pek	540	41
51		595	6 ch	pek sou	480	33
52		598	2 do	sou	152	31
53		601	1 hf-ch	dust	60	22
61	Glenalla	625	4 ch	dust	300	23
62		628	1 do	fans	100	27
66	Mahatenne	640	2 ch	dust	200	27
68	Dea Ella	646	3 hf-ch	or pek	150	36
71	Kosgama	655	8 ch	pek sou	640	32
72		658	4 hf-ch	pek fans	280	27
75	Hapugasmulle	667	1 ch	dust	150	23
79	Paradise	679	5 ch	bro mix	535	29
80		682	4 ch 1 hf ch	dust	607	23
83	Romania	691	6 ch	pek sou	600	31
84		694	5 do	bro mix	500	27
86	Welgampola	700	1 hf-ch	pek	56	33
96	Glenalmond	730	1 ch	sou	85	30
97		733	3 hf-ch	dust	210	22
98		736	3 do	fans	210	24
102	Warakamure	748	7 ch	sou	630	30
103		751	1 hf-ch	dust	90	22
106	H K	760	5 hf ch	pek sou	250	31
107		763	2 do	dust	130	24
112	Meddegodda	778	1 hf-ch	pek sou	45	29
113	O S T	781	1 hf-ch	bro pek	50	34
114		784	1 do	pek	55	32
115		787	1 do	pek sou	60	30
116		790	1 do	pek dust	50	22
119	Harangalla	799	5 ch	sou	450	30
121		805	5 do	fans	500	33
125	St. Paul's	817	6 hf-ch	dust	500	21
129	Siriniwasa	829	3 ch	bro pek fans	315	33
130		832	2 do	dust	200	22
131	Ratuville	835	1 ch	bro pek	88	26
132		838	1 do	pek	65	26
133		841	2 do	pek sou	138	26
134		844	2 do	con	172	26
137	Mossville	853	3 ch	red leaf	270	20
144	Monrovia	874	4 ch	bro or pek	400	36
145		877	7 do	pek No. 1	630	34
148	R O	886	3 ch	bro tea	285	27
149		889	1 do	pek dust	155	22
151	Citrus	895	3 ch	bro or pek	300	34
154	H A	904	2 ch	fans	163	20
155		907	1 do	unas	69	26
156		910	1 do	bro tea	57	19

[Mr. E. John.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	S T	822	1 ch	bro or pek	115	36
2		825	1 hf-ch	pekoe	73	33
3		828	1 do	pek sou	54	31
4		831	1 do	dust	61	22
10	Coslande	849	6 ch	pek sou	570	33
11		852	1 do	fans	125	26
12		855	1 hf-ch	dust	80	23
16	Loughton	867	7 do	dust	350	25
20	St. Julia	879	13 do	pekoe	650	30
21		882	4 do	pek sou	200	28
22		885	2 do	fans	110	23
23		888	5 do	dust	300	22
32	Eladuwa	915	7 ch	sou	630	31
40	Koslande	939	6 do	pek sou	570	33
41		942	1 do	fans	125	26
42		945	1 hf ch	dust	80	23
47	Ottery	960	1 ch	dust	170	26
60	Kanangama	999	6 hf-ch	congou	390	29
61		2	8 do	dust	640	22
70	G L	29	5 ch	sou	500	38
71		32	5 hf-ch	dust	425	24
72		35	5 do	bro pek fans	265	29
73	W H	38	2 do	pek sou	96	33
74		41	3 do	dust	240	27
78	Gangawatte	53	8 ch	pek sou	640	33
83	Agra Ouvah	68	6 do	pek sou	540	36
85		74	2 do	dust	200	28
90	Rondura	89	4 do	dust	520	24
93	Agra Ouvah	98	12 hf-ch	pekoe	624	39
98	Dalhousie	113	6 do	dust	420	25
103	Poilakande	128	7 ch	fans	560	23
107	Hiralouvah	140	3 do	pekoe No. 2	285	31
108		143	4 do	bro pek fans	280	33
116	Murraythwaite	167	8 do	pek sou	640	31
117		170	5 hf-ch	bro pek fans	325	28
118		173	3 do	dust	240	22
123	Lamiliere	188	8 ch	pek fans	665	27
126	Kotuagedera	197	2 do	pek sou	190	30
127		200	3 hf-ch	bro pek fans	240	27
137	P	230	6 ch	dust	540	22
155	G T	284	5 hf-ch	or pek	280	37
156		287	6 ch	pekoe	570	33
157		290	6 hf-ch	dust	570	23
158		293	5 ch	sou	500	30
178	Iona	353	6 hf-ch	dust	510	26

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE May 26.

"Golconda."—O Ampittiakande, 1 barrel sold at 99s; Size 1 ditto, 1 cask sold at 96s; Size 2 ditto, 4 casks sold at 92s; Size 3 ditto, 1 barrel sold at 45s; PB ditto, 1 barrel sold at 60s; Size 1 Arnhall, 1 barrel sold at 80s; Size 2 ditto, 1 tierce sold at 70s; PB ditto, 1 barrel sold at 54s.

NO. 24 COLOMBO, JUNE 26, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[547,953 lb.]

Lot.		Box	Pkgs.		Name.	lb.	c.
6	New Peacock	877	26	hf-ch	pek fans	1950	26
17	C S G	910	110	hf-ch	bro pek	5500	44
18		913	76	ch	pek	6080	37
19		916	19	do	pek sou	1520	35
20		919	15	hf-ch	dust	1200	25
27	Ewhurst	940	18	ch	bro pek	1638	38
28		943	26	do	pek	2236	35
30	Mansfield	949	34	hf-ch	bro pek	2040	45 bid
31		952	23	ch	pek	2070	42
32		955	9	do	pek sou	765	39
33		958	13	hf-ch	dust	1105	26
34	Harrington	961	14	ch	bro or pek	1330	64
35		964	17	do	or pek	1530	45 bid
36		967	14	do	pek	1260	40
40	Shrubs Hill	979	55	ch	bro pek	5500	40
41		982	20	do	pek	2610	36
42		985	12	do	pek sou	1008	34
43		988	21	do	bro pek fans	1680	25 bid
44	Great Valley Ceylon, in estate mark	991	14	ch	or pek	1190	41 bid
45		994	8	do	pek	720	39
46		997	17	ch	pek sou	1275	36
47		1000	11	do	sou	825	30
48		1003	15	hf-ch	dust	1200	25
49		1006	10	do	fans	1000	33
50	Thedden	1009	58	ch	bro pek	6380	38
51		1012	15	do	pek	1500	35
52		1015	13	do	pek sou	1170	34
54	W L	1021	10	ch	bro pek	776	38
62	Monkswood	1045	16	hf-ch	bro pek	800	56 bid
63		1048	16	do	or pek	800	68
64		1051	29	do	pek	2755	50
65		1054	40	do	pek sou	1800	41
69	K M	1066	20	hf-ch	pek	1150	38
71	Gonapatiya	1072	35	hf-ch	bro pek	1925	50 bid
72		1075	25	do	or pek	1127	50 bid
73		1078	64	do	pek	3200	41 bid
74	Ascot	1081	38	ch	or pek	3420	36
75		1084	26	do	bro pek	2600	39
76		1087	21	do	pek	1890	36
		1090	20	do	pek sou	1800	33
		1093	17	hf-ch	or pek fans	1190	29
81	Cotswold	1102	23	ch	bro pek	2800	41
82		1105	26	ch	pek	2340	37
83		1108	17	do	pek sou	1275	37
85	Agra Oya	1117	18	ch	bro pek	1808	45
87		1120	15	do	or pek	1275	38 bid
88		1123	20	do	pek	1800	37 bid
89		1126	8	do	pek sou	720	34
91	Rowley	1132	20	hf-ch	bro pek	1000	47 bid
92		1135	19	do	pek	950	37 bid
39	Gallawatte	1138	10	ch	bro pek	950	38 bid
94		1141	11	do	pek	935	34 bid
95		1144	12	do	pek sou	840	34 bid
96	St. Leonards-on-Sea	1147	18	ch	bro pek	1710	36
98		1153	14	do	pek	1260	34
99		1156	8	do	pek sou	720	31
100	Middleton	1159	15	ch	bro pek	1500	45 bid
101		1162	12	do	pek	1020	39 bid
105	Glencorse	1174	37	ch	bro or pek	3515	46
106		1177	44	do	bro pek	3960	37
107		1180	37	do	pek	2960	35
108		1183	31	do	pek sou	2325	32
117	Hentleys	1210	21	hf-ch	bro pek	1176	39
119		1216	18	ch	pek	1494	33
127	Longford	1240	11	ch	bro pek	1045	38
128		1243	9	do	or pek	810	37
129		1246	18	do	pek	1710	34
130		1249	8	do	pek sou	720	32
131	Tonacombe	1252	39	ch.	or pek	3900	44
132		1255	46	do	bro pek	4600	46 bid
133		1258	57	do	pekoe	5130	39
134		1261	13	do	pek sou	1170	37
135		1264	10	hf-ch	dust	900	24
136	Allagalla	1267	16	ch	bro mix	1200	32
137		1270	28	do	dust	2380	24
138		1273	25	do	fans	1500	33
139	Passra Group	1276	17	do	bro or pek	1700	44 bid
140		1279	18	do	or pek	1800	40
141		1282	21	do	pek	1890	39

Lot		Box.	Pkgs.		Name.	lb.	c.
142		1285	8	ch	pek sou	800	35
144	Putupaula	1291	49	do	bro pek	4410	39 bid
145		1294	37	do	pek	2770	34
146		1297	14	do	pek sou	980	32
149	Inicawatte	1306	40	ch	bro pek sou	3200	28
150	Carberry	1309	26	ch	bro pek	2340	37 bid
152		1315	25	do	pek	2250	36
156	G K	1327	14	ch	bro tea	1260	31
157		1330	11	do	dust	1540	23
158	Naseby	1333	27	hf-ch	bro or pek	1512	46 bid
159		1336	18	do	or pek	828	50
160		1339	17	do	pek	850	43
167	Erlsmere	1360	12	ch	bro or pek	720	56
168		1363	36	do	bro pek	3492	43
169		1366	18	do	pek	1548	38
170		1369	15	do	pek sou	1395	35
172	Morankande	1375	40	ch	bro pek	4000	42
173		1378	35	do	pek	2625	35
174		1381	11	do	pek sou	990	33
179	Clunes	1396	17	ch	bro or pek	1615	40
180		1399	22	do	bro pek	1870	38 bid
181		1402	47	do	pek	3760	35
182		1405	16	do	pek sou	1360	32
183	Pallagodda	1408	26	ch	bro or pek	2600	39
184		1411	32	do	bro pek	3200	43
185		1414	28	do	or pek	2380	36
186		1417	23	do	pek	1725	35
187		1420	23	do	pek sou	1955	34
189		1426	11	do	dust	935	24
190	High Forest	1429	37	hf-ch	or pek	1850	50
191		1432	15	do	bro or pek	945	42 bid
192		1435	21	do	pek	924	42
193	Maha Uva	1438	105	hf-ch	bro pek	6825	45
194		1441	30	ch			
			44	hf-ch	pek	2380	40
195		1444	28	ch	pek sou	2380	36
197		1450	8	do	dust	720	24
198	High Forest	1453	28	hf-ch	or pe No. 1	1484	64
199		1456	20	do	or pek	960	50
200		1459	21	do	pek	945	42
208	Tymawr	1483	20	hf-ch	or pek	1000	53
209		1486	22	do	bro or pek	1210	68
210		1489	26	do	pek	1170	42
211		1492	23	do	pek sou	1035	39
212	A M B	1495	11	ch	bro pek sou	990	27
213		1498	11	do	fans	1628	23
222	Dunbar	1525	28	hf-ch	bro or pek	1400	56
224		1531	14	ch	pek	1050	41
231	Coreen	1552	40	hf-ch	bro pek	2320	44 bid
232		1555	15	ch	or pek	1350	39 bid
233		1558	13	do	pek	1005	35 bid
236	Amblakande	1567	17	ch	bro pek	1700	40
237		1570	23	do	pek	1955	35 bid
238		1573	16	do	pek sou	1230	34
239	Penrhos	1576	32	hf-ch	bro bek	1792	44
240		1579	24	do	or pek	1152	40
241		1582	33	ch	pek	2805	35
244	Tavalamtenne	1591	15	ch	bro or pek	1500	40
245		1594	12	do	pek	1080	36
248	S, in estate mark	1603	19	hf-ch	dust	1805	
250	O S S, in est. mark	1609	22	ch	bro or pek	1650	40
251		1612	20	do	bro pek	1500	36
252		1615	30	do	pek	2100	34
259	Queensland	1636	7	ch	bro or pek	700	65
260		1639	7	do	bro pek	700	43
261		1642	22	do	pek	1870	42
263	Bargany	1648	21	do	bro or pek	1470	54
264		1651	14	do	bro pek	1680	41 bid
265		1654	8	do	pek	800	42
272	Ugieside	1675	15	do	congou	1200	28
273		1678	8	do	bro mix	880	29
275	Caledonia	1684	12	do	bro pek	1200	33
276		1687	9	do	pek	900	33
277		1690	7	do	pek sou	700	30
279	Great Valley, Ceylon in est. mark	1696	12	do	pek	1080	37 bid
282	Mawaliganga-watte	1705	17	hf-ch	bro or pek	935	45
283		1708	19	do	or pek	760	39
284		1711	70	do	bro pek	3500	37
285		1715	27	do	pek sou	2160	33
287	Beausijour	1720	17	ch	bro pek	1445	36
288		1723	23	do	pek	1840	33
292	A I	1735	8	do	bro or pek	1040	31
297	Lochiel	1750	21	do	dust	2100	25 bid
303	C N	1768	7	do	bro tea	700	28
306	Blairgewrie	1777	28	do	sou	2380	25

Lot.		Box.	Pkgs.		Name.	lb.	c.
309	Kilkenny	1786	36	ch	bro or pek	3600	37 bid
310		1789	24	do	pek	1872	34
311	Knavesmire	1792	33	hf-ch	bro pek	1815	38 bid
312		1795	29	ch	pek	2320	36
313		1798	10	do	pek sou	700	33
315	Harrow	1804	19	do	bro or pek	2090	45
316		1807	21	do	pek	1890	37
319	Hayes	1816	34	do	bro pek	3400	40 bid
332	C B	1855	7	do	pek	700	33
334	Carlabeck	1861	10	do	pek sou	1000	39
335		1864	9	hf-ch	bro pek fans	738	31
336	Hatton	1867	26	ch	bro pek	2860	56
337		1870	34	do	pek	3060	43
342	Walpita	1885	27	do	bro pek	2700	40
343		1888	18	do	pek	1800	35
353	Theydon Bois	1918	9	do	bro or pek	810	57
354		1921	16	do	bro pek	1440	45
355		1924	23	do	pek	1840	38
360	Erracht	1939	40	do	bro or pek	4000	39
361		1942	25	do	bro pek	2125	39
362		1945	42	do	pek	3150	34
363		1948	18	do	pek sou	1350	32
365		1954	4	do	pek dust	704	20
366	Battalgalla	1957	18	do	pek sou	1040	39
367	H G M	1960	23	do	bro pek	1794	36
368		1963	21	do	pek	1848	36
369		1966	12	do	bro or pek	1056	49
371		1972	14	do	pek	1120	36
372		1976	9	do	bro pek fans	810	33
387	Stamford Hill	2020	18	hf-ch	bro or pek	1080	43 bid
388		2023	28	do	or pek	1400	64
389		2026	22	ch	pek	1980	44
390		2029	9	do	pek sou	765	39
392	B D W G	2035	38	hf-ch	bro pek	1900	44
393		2038	40	do	pek	2000	38
394		2041	14	do	pek sou	700	37
396	Monkswood	2047	21	do	bro pek	1050	55 bid
397		2050	15	do	bro pek	825	51
398		2053	40	do	pek	3800	45 bid
399		2056	21	do	pek	1890	45
400	O'Bedde	2059	12	ch	pek	1380	37
401	B & D	2062	13	do	sou	1170	35
402		2065	9	do	unast	990	33
403	Farnham	2068	69	do	bro pek	4140	39 bid
404		2071	115	hf-ch	pek	5750	36
406	Gonapatiya	2077	8	ch	bro or pek	832	36 bid
407	Bandara Eliya	2080	83	hf-ch	bro or pek	5146	43
408		2083	97	do	or pek	4850	38
409		2086	30	ch	pek	2550	35
410		2089	33	do	pek sou	2475	34
412	Kincora	2095	21	do	bro or pek	1030	38
413	Doranakande	2098	12	do	bro pek	1260	38
425	Gallaustain	2134	75	hf-ch	bro pek	3750	39
426		2137	27	ch	pek	2160	34
427		2140	16	do	pek sou	1280	32
429	Geragama	2146	27	do	bro pek	2565	37
430		2149	29	do	pek	2465	34
431		2152	11	do	dust	825	22
432	Waratenne	2155	19	do	bro pek	1710	37
433		2158	17	do	pek	1360	34
434		2161	11	do	dust	1825	23
437	New Galway	2170	13	hf-ch	bro pek	780	52
438		2173	20	do	pek	1100	47
440	Mapitagama	2179	12	do	bro pek	1108	42
441		2182	22	do	pek	1530	37
442		2185	18	ch	pek sou	1120	34
443	Anningkande	2188	8	do	congou	720	33
444	High Forest	2191	40	hf-ch	or pek	2000	44 bid
445		2194	17	do	bro or pek	1071	45 bid
446		2197	17	do	bro or pek	1071	45 bid

[Messrs. Somerville & Co.—204,885lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
3	Kurulugalla	919	21	ch	bro pek	2100	33
4		922	31	do	pek	2790	29
5		925	14	do	pek sou	1260	27
10	Honiton	940	28	ch	bro pek	2576	38
11		943	25	do	pek	1800	33
12		946	24	do	pek sou	1680	32
14	Choughleigh	952	11	ch	bro or pek	990	39 bid
16		958	18	do	pek	1692	34
21	Dryburgh	973	32	hf-ch	pek	1568	31
24	Wilpita	982	8	ch	bro pek	800	36
33	Ukuwela	10	20	do	bro or pek	2200	37
34		13	33	do	bro pek	3300	35
35		16	17	ch	pek	1700	33
36		19	13	do	pek sou	1300	31
38	Forest Hill	25	13	ch	bro pek	1183	36
39		28	18	do	pek	1518	34
40		31	10	do	pek sou	850	33
43	Mousakande	40	13	ch	bro pek	1183	36
44		43	18	do	pek	1548	33
45		46	10	do	pek sou	850	32

Lot.		Box.	Pkgs.		Name.	lb.	c.
47	G K	52	8	hf-ch	dust	720	21
49	G A Ceylon	58	18	ch	bro mix	1404	24
50	Marigold	61	29	hf-ch	bro or pek	1508	41
51		64	34	do	or pek	1598	43
52		67	34	do	bro pek	1870	40
53		70	33	do	pek	1584	38
54		73	37	do	pek sou	1776	35
55		76	25	do	bro pek fan	1650	34
57	New Valley	82	28	ch	bro or pek	2800	46
58		85	8	do	or pek	720	38 bid
59		88	26	ch	pek	2600	39 bid
60		91	14	do	pek sou	1260	38
62	N I T	97	12	ch	unas No. 2	1080	29
63	Mary Hill	100	11	ch	bro pek	1100	39 bid
64		103	10	do	pek	950	35
67	Theberton	112	25	ch	bro or pek	2500	37 bid
68		115	36	do	pek	3420	36
71	Yarrow	124	60	hf-ch	bro pek	3360	37 bid
72		127	73	do	pek	3650	35 bid
79	St. Catherine	148	42	ch	bro or pek	3780	35
84	H J S	163	20	hf-ch	pek sou	1200	33
86	Ambalawa	169	30	hf-ch	bro pek	1440	36
87		172	27	do	pek	1188	33
88		175	21	do	pek sou	840	33
90	Rayigam	181	81	ch	bro pek	8100	36
91		184	50	do	or pek	3900	35
92		187	48	do	pek	4080	33
93		190	24	do	pek sou	2040	32
94		193	36	hf-ch	dust	2880	24
95	Nugawella	196	53	hf-ch	bro pek	3074	38
96		199	60	do	pek	3000	35
97		202	10	ch	pek sou	850	43
100	P T N, in estate mark	211	30	hf-ch	pek sou	1500	28
101	Minna	214	52	do	bro or pek	3120	47
102		217	24	ch	or pek	2160	41
103		220	8	do	pek	720	38
104		223	8	do	pek sou	720	36
105	Ranasinghapatna	226	74	hf-ch	bro or pek	4440	38 bid
106		229	91	do	or pek	4550	35 bid
107		232	31	ch	pek	2635	34
108		235	37	do	pek sou	2849	33
113	Glenalla	250	23	ch	bro pek	2300	38
114		253	20	do	pek	1800	33
115		256	12	do	pek sou	1080	32
116	Neboda	259	19	ch	bro or pek	1900	35
117		262	41	do	bro pek	4100	35
118		265	15	do	pek	1350	33
121	Neuchatel	274	46	ch	bro pek	4370	38 bid
122		277	8	do	bro or pek	960	34
123		280	[illegible]	do	pek	935	34
124		283	19		pek sou	1615	33
126	Ferriby	289	19	[illegible]	bro pek	1710	39
127		292	[illegible]	do	pek	1920	34
128		295	20	[illegible]	pek sou	1400	32
137	T S N	322	32	hf-ch	pek	1600	38
138		325	44	do	pek sou	2035	33
139	Depedene	328	124	hf-ch	bro pek	6820	36
140		331	100	do	pek	5000	34
141		334	87	do	pek sou	4350	32
142		337	13	do	dust	1040	26
143	Blinkbonnie	340	23	hf-ch	bro pek	1380	57
144		343	24	ch	pek	2040	41
145		346	10	do	pek sou	850	39

[Mr. E. John.—207,030 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
5	M T P, 1 2, in est. mark	368	21	ch	sou	1785	28
6		371	11	do	dust	1320	22
8	Ferndale	377	20	do	bro or pek	2000	44
9		380	11	do	or pek	990	38
10		383	34	do	pekoe	3060	36
12	Eadella	389	31	do	bro pek	3100	36
13		392	22	do	pekoe	1980	34
15		398	6	do	dust	720	23
16	Bellongalla	401	43	hf-ch	bro pek	2408	40
17		404	44	ch	pekoe	3520	35
18		407	30	do	pek sou	1800	32
21	Galloola	416	33	do	bro pek	3300	47
22		419	48	do	pekoe	4800	42
23		422	30	do	pek sou	3000	39
25	Oonoogaloya	428	57	do	bro pek	5700	38 bid
26		431	34	do	pekoe	2720	34
27		434	16	do	pek sou	1410	33
28		437	9	do	fans	1080	27
30	Osborne	443	17	do	bro or pek	1700	43
31		446	19	do	pekoe	1805	37 bid
32	Cleveland	449	34	hf-ch	bro or pek	1870	52
33		452	34	do	pekoe	1768	38 bid
34		455	19	do	pek sou	912	38
36	Glentilt	461	35	ch	bro pek	3500	51

Lot.		Box.	Pkgs.		Name.	lb.	c.
37		464	15	ch	pekoe	1500	39
39		470	12	hf-ch	fans	960	27
44	Harrisland	485	7	ch	bro pek	700	37
46		491	9	do	pek sou	720	33
48	Arncliff	497	13	do	pek sou	1010	36
49		500	12	hf-ch	bro pek fans	840	22 bid
50	Theresia	503	13	ch	bro pek fans	1300	42
53	Ben Nevis	512	46	hf-ch	flowy or pek	2300	53
54		515	25	ch	pekoe	2250	40
55		518	10	do	pek sou	840	38
57	Glasgow	524	32	do	bro or pek	2560	43 bid
58		527	14	do	or pek	910	42
59		530	11	do	pekoe	1100	38
60		533	14	do	pek sou	1400	38
61		536	14	do	fans	1400	27
64	Akkara Totum	545	12	do	bro pek	1080	35
65		548	11	do	pekoe	990	32
66		551	9	do	pek sou	720	29
73	Bokotua	572	58	hf-ch	bro or pek	2900	37 bid
77	Glentilt	584	10	ch	pekoe	1000	38 bid
78	Yapame	587	38	do	bro pek	4180	42 bid
79		590	19	do	pekoe	1805	40
80		593	12	do	pek sou	1140	36
83		602	11	hf-ch	fans	770	31
85	Gangawatte	608	31	do	or pek	1550	40
86		611	16	ch	pekoe	1280	36
88		617	26	hf-ch	bro or pek	1560	48
91	Brownlow	626	46	do	bro or pek	2530	46
92		629	22	ch	or pek	1870	41
93		632	11	do	pekoe	891	36
94		635	9	do	pek sou	756	35
95	Ohiya	638	14	hf-ch	bro pek	784	43 bid
96	N	641	11	do	dust	935	26
97	Birnam	644	42	ch	pek sou	2520	33
98	Mount Everest	647	18	hf-ch	bro pek fans	1260	32
104	Mossend	665	46	do	bro or pek	2530	38 bid
105		668	39	do	or pek	1950	37 bid
107	Templestowe	674	31	ch	bro or pek	3100	43
108		677	25	do	or pek	2375	40
109	Maskeliya	680	16	hf-ch	bro or pek	800	68
110		683	20	ch	or pek	1800	43
111		686	15	do	pekoe	1200	39
112		689	8	do	pek sou	720	37
113		692	9	do	sou	900	34
120	Mahanilu	713	41	hf-ch	bro pek	2378	45
121		716	24	ch	pekoe	2280	40
122		719	34	do	pek sou	3570	38
123	N B	722	10	hf-ch	dust	850	27
124		725	13	ch	unas	1300	36
126	Glassaugh	731	27	hf-ch	or pek	1404	60
127		734	30	do	bro or pek	1950	48
128		737	24	ch	pekoe	2160	42 bid
129		740	9	hf-ch	dust	810	27
130	Myraganga	743	110	hf-ch	bro pek	5500	35
131		746	40	ch	pekoe	3200	33
136	Glentilt	761	30	do	bro pek	2000	51
137		764	14	do	pekoe	1400	40
138	Lameliere	767	47	do	pekoe	4342	35 bid
139	Myraganga	770	160	hf-ch	bro pek	8600	35
140		773	30	ch	pekoe	2400	33

SMALL LOTS,

[Messrs. Forbes & Walker

Lot		Box	Pkgs.		Name.	lb.	c.
1	Moray	862	1	ch	pek No. 2	72	33
4	New Peacock	871	7	ch	pek sou	630	34
5		874	4	hf-ch	bro mix	200	26
7	K D	880	3	ch	bro pek	180	37
8		883	3	hf-ch	pek	150	33
9		886	2	do	pek sou	120	30
10	O H S, in estate mark	889	6	ch	bro pek	600	37
11		892	6	do	pek	600	34
12		895	3	do			
			1	hf-ch	pek sou	360	31
13		898	2	ch	fans	240	25
21	Yatiyana	922	3	ch	or pek	180	38
22		925	10	hf-ch	bro pek	460	39
23		928	10	do	pek	540	35
24		931	4	do	pek sou	216	32
25		934	3	do	unas	133	31
26	Ewhurst	937	11	hf-ch	bro or pek	594	38
29		946	9	do	fans	666	28
37	Harrington	970	4	ch	pek	300	36
38		973	6	do	or pek fans	660	37
39		976	3	do	dust	420	25
53	Thedden	1018	3	ch	dust	480	23
55	W L	1024	8	do	pek	589	34
56		1027	3	do	pek sou	202	32
57		1030	1	do	congou	88	20
58		1033	3	do	pek dust	105	23
59	Reglan	1036	4	do	bro pek	366	34

Lot.		Box.	Pkgs.		Name	lb.	c.
60		1039	8	ch	pek	677	33
61		1042	1	do	dust	71	23
66	Monkswood	1057	5	hf-ch	fans	300	39
67		1060	5	do	dust	375	25
68	K M	1063	12	hf-ch	bro pek	660	38
70		1069	10	do	pek sou	450	34
78	Ascot	1093	3	ch	sou	270	30
79		1096	3	do	dust	300	23
84	Cotswold	1111	3	ch	sou	225	30
85		1114	6	hf-ch	dust	480	24
90	Agra Oya	1129	5	hf-ch	fans	400	34
97	St. Leonards-on-Sea	1150	2	ch	brok pek No. 2	200	34 bid
109	Glencorse	1186	5	ch	pek fans	600	28
110		1189	3	ch	bro tea	300	35
111		1192	2	do	dust	350	23
115	S W	1204	4	ch	sou	360	27
116		1207	1	do	fans	120	18
118	Hentleys	1213	10	hf-ch	or pek	480	35
120		1219	5	ch	pek sou	380	29
121		1222	2	do	bro mix	200	25
122		1225	7	hf-ch	pek dust	560	23
143	Passara Group	1288	1	ch	fans	805	26
151	Carberry	1312	6	ch	bro or pek	650	37
153		1318	6	do	pek sou	540	34
154		1321	2	do	bro tea	180	29
155		1324	3	do	dust	420	23
162	B D W P	1345	1	ch	bro pek No. 2	90	35
163		1348	2	do	pek No. 2	160	32
164		1351	1	do	pek sou No. 2	75	29
165		1354	2	do	dust	170	24
166		1357	1	do	dust No. 2	75	23
171	Erlsmere	1372	6	ch	dust	516	24
188	Pallagodda	1423	6	ch	sou	510	31
196	Maha Uva	1447	3	hf-ch	pek fans	250	30
223	Dunbar	1528	13	hf-ch	or pek	624	44
225	D B R	1534	6	hf-ch	bro pek fans	360	34
226		1537	1	ch	pek sou	80	33
227		1540	1	hf-ch	dust	80	25
228	Cooroondoo-watte	1543	6	hf-ch	bro pek	330	43 bid
229		1546	10	do	pek	500	36
230		1549	5	do	pek sou	250	35
234	Coreen	1561	4	ch	pek sou	360	33
235		1564	6	hf-ch	dust	480	24
242	Penrhos	1585	6	ch	pek sou	480	34
243		1588	5	hf-ch	fans	350	26
246	Tavalam-tenne	1597	4	ch	pek sou	340	32
247		1600	1	do	dust	125	24
253	O S S, in estate mark	1618	4	ch	pek sou	320	32
254		1621	2	do	sou	160	31
255		1624	3	do	fans	300	24
256	Rangwel-tenne	1627	3	ch	bro pek dust	366	22
257		1630	2	do	pek dust	240	23
258		1633	2	do	sou	200	23
262	Queensland	1645	2	ch	bro mix	170	27
266	Bargany	1657	1	do	dust	100	24
271	Ugieside	1672	5	ch	dust	400	23
278	Caledonia	1693	2	do	pek dust	240	20
280	Yataderia	1699	1	do	bro pek	106	35
281		1702	1	hf-ch	bro or pek	60	39
286	Mawiliganga-watte	1717	4	do	pek dust	300	24
289	Beausejour	1726	2	ch	pek sou	170	30
290		1729	1	hf-ch	fans	63	26
291		1732	3	do	dust	240	23
295	Lochiel	1744	2	do	bro pek	166	30
296		1747	2	do	congou	110	28
298	L G A	1753	5	ch	bro pek	500	33
299		1756	1	do			
			1	hf-ch	pek	160	32
300	Ingoya	1759	2	ch	dust	210	23
301	Invery	1762	1	do	pek	96	37
302	Wallaha	1765	1	do	bro pek	131	37
304	Dromoland	1771	5	hf-ch	bro pek	280	43
305		1774	3	do	dust	240	25
307	B D W P	1780	2	ch	bro pek No. 2	180	32
308		1783	1	do	pek	80	30
314	Knavesmire	1801	6	hf-ch	dust	460	24
317	Harrow	1810	2	ch	pek sou	200	34
318		1813	1	do	dust	117	24
320	K in est. mark	1819	1	do	dust	113	23
321	W	1822	2	hf-ch	dust	186	24
322	E R	1825	1	ch	dust No. 2	106	22
323	N B	1828	1	do			
			1	hf-ch	dust	159	25
324	G	1831	1	do	dust	50	24
331	C B	1852	4	do	bro pek	440	37
333		1858	5	hf-ch	bro pek fans	410	26
338	Hatton	1873	6	ch	pek sou	510	39
339		1876	3	do	dust	450	24
340		1879	1	do	dust No. 2	170	24

Lot		Box	Pkgs.		Name.	lb.	c.
341	Walpita	1882	24	boxes	bro or pek	480	54
344		1891	8	ch	pek sou	640	33
345	Panslatenne	1894	3	do	dust	435	23
346	Halloowella	1897	6	do	or pek	540	33
347		1900	6	do	pek	420	33
348		1903	9	do	pek sou	657	30
349		1906	2	do	souchong	160	29
350		1909	3	do	dust	420	27
351		1912	3	do	red leaf	244	25
352	Passara Group	1915	1	do	bro pek fans	70	29
356	Theydon Bois	1927	7	do	pek sou	560	35
357	T B in est. mark	1930	1	do	congon	80	30
358		1933	2	do	dust	180	22
359		1936	1	do	fans	90	28
364	Erracht	1951	5	do	bro mix	425	26
370	H G M	1969	6	do	or pek	540	44
373		1978	3	hf-ch	dust	255	23
391	Stamford Hill	2032	2	do	dust	170	24
395	B D W G	2044	2	do	dust	180	24
405	Farnham	2074	9	do	pek fans	540	32
411	Bandara Eliya	2093	7	do	bro pek fans	490	29
414	Doranakande	2101	7	ch	pek	665	35
415		2104	6	do	pek sou	540	32
428	Gallustain	2143	7	do	dust	560	23
435	W W	2164	1	ch	pek	93	33
436		2167	1	do	pek	88	34
439	Maptigama	2176	12	hf-ch	bro or pek	660	45

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.		Name.	lb	c.
1	B'Watte	913	2	ch	pek sou	200	29
2		916	2	do	bro mix	200	23
6	K G A, in estate mark	928	6	ch	unas	600	25
7		931	5	do	bro tea	500	19
8		934	1	do	fans	140	26
9		937	2	do	pek dust	30?	23
13	Honiton	919	2	ch	dust	306	23
15	Choughleigh	955	3	ch	or pek	210	39
17		961	2	ch	pek sou	184	30
18		964	2	do	dust	280	23
19	Dryburgh	967	9	hf ch	bro or pek	558	40
20		970	13	do	or pek	676	39
22		976	10	ch	pek sou	640	32
23		979	2	hf-ch	fans	154	27
25	Wilpita	985	5	ch	pek	500	34
26		988	4	do	pek sou	380	33
27		991	3	hf-ch	fans	147	23
28		994	1	do	dust	89	22
29	S P	997	2	hf-ch	unas	102	33
30	F, in estate mark	1	5	ch	sou	430	35
31		4	8	hf-ch	dust	584	23
32	Barnagalla	7	2	ch	fans	180	33
37	Forest Hiil	22	10	hf-ch	bro or pek	550	39
41		34	5	do	fans	375	25
42	Mousakande	37	10	hf-ch	bro or pek	580	40
46		49	5	do	fans	375	25
48	G A Ceylon	55	1	hf-ch	dust	80	22
56	M T	79	7	hf ch	dust	603	22
61	N I T	94	4	ch	unas No. 2	400	28
65	Mary Hill	106	6	ch	pek sou	570	33
66		109	2	do	bro mix	300	26
69	Theberton	118	3	ch	pek sou	270	32
70		121	1	do	pek fans	100	23
78	Yspa	145	6	ch	pek sou	480	32
80	St. Catherine	151	9	ch	pek	693	32
81		154	6	do	pek sou	450	29
82		155	1	do	dust	122	23
83	H J S	160	7	hf-ch	pek	420	34
85		166	8	do	dust	680	23
89	Ambalawa	178	5	hf-ch	unas	230	31
98	Nugawella	205	5	hf-ch	dust	425	24
99		208	4	ch	fans	340	28
109	Ranasingnapatna	238	8	hf-ch	bro pek fans	560	27 bid
110	Batgodde B	241	2	ch	bro pek	216	49
111		244	1	ch	pek	148	40
			1	hf ch			
112		247	1	hf-ch	pek No. 2	53	35
119	Neboda	268	5	ch	pek sou	400	31
120		271	5	hf-ch	dust	400	23
125	Neuchatel	286	4	ch	dust	640	23
129	Fernby	298	1	ch	sou	90	30
130		301	7	hf-ch	bro pek fans	350	29
131		304	2	do	dust	160	24
132	Donside	307	8	hf-ch	dust	680	23
133	Wevetenne	310	10	hf-ch	bro pek	600	35
134		313	7	do	pek	392	32
135		316	5	do	pek sou	300	30
136	T S N	319	10	hf-ch	or pek	500	52

[Mr. E. John.]

Lot		Box.	Pkgs.		Name.	lb.	c.
1	Gonavy	356	8	hf-ch	fans	640	25
2		359	6	ch	dust	480	24
3		362	3	do	sou	240	31
4	Ardlaw	365	6	do	bro mix	630	31
7	Farm	374	6	do	dust	540	24
11	Ferndale	386	5	do	dust	625	24
14	Eadella	395	8	do	pek sou	648	33
19	Bellongalla	410	8	hf-ch	bro pek fans	560	33
20		413	7	do	dust	630	23
24	Galloola	425	7	do	dust	560	26
29	O N O	440	4	ch	sou	320	30
35	Cleveland	458	5	hf-ch	fans	400	26
38	Glentilt	467	3	ch	pek sou	270	31
45	Harrisland	488	7	do	pekoe	574	35
47	Arncliff	494	4	do	pekoe	400	36
51	Theresia	506	1	do	sou	80	33
52		509	7	hf-ch	dust	560	24
56	Ben Nevis	521	3	do	dust	246	24
62	L E L	539	4	ch	pek sou	320	35
63		542	3	hf ch	dust	210	23
67	Akkara Totum	554	1	ch	bro mix	85	20
68		557	1	do	dust	100	22
74	Bokotua	575	10	hf ch	pekoe	400	35
75		578	4	do	pek sou	140	33
76		581	1	do	pek dust	75	26
81	E K, in estate mark	596	4	ch	bro mix	360	23
82	Yapame	599	5	hf-ch	dust	450	25
84		605	4	do	bro mix	232	32
87	Gangawatte	614	7	do	pek fans	530	30
89	G B	620	7	do	bro pek	385	35
90		623	10	do	pekoe	500	33
99	Mount Everest	650	1	do	dust	100	21
101	H F	656	3	ch	bro or pek	300	37
102		659	2	do	pekoe	170	29
103		662	4	do	sou	360	20
106	N B	671	3	hf-ch	bro or pek	180	51
114	Maskeliya	695	11	do	fans	660	35
115		698	3	do	dust	270	23
125	N B	728	5	ch	sou	450	34
141	M	776	3	do			
			1	hf-ch	bro pek	350	34
142		779	2	ch	pekoe	220	32

CEYLON CINNAMON SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, May 31

"Elphinstone."—NDPS Ekelle Plantation in estate mark, 8 bales sold at 11½d; 11 bales sold at 10d; 35 bales sold at 9½d; 33 bales sold at 9d; 37 bales sold at 8½d; 21 bales sold at 7½d; 3 bags sold at 7d, broken; 6 bags out at 7d chips.

"Clan Alpine."—AP & Co. in estate mark, 2 bales sold at 8d; 1 bale sold at 7½d; 3 bales sold at 6½d; 2 bales sold at 5d; 3 packages out at 4d.

"Clan McGregor."—1 bale sold at 8d; 3 bales sold at 7½d; 2 bales at 5½d; 3 bales sold at 4½d.

"Duke of Portland."—ASGP Kadirane in estate mark, 6 bales sold at 1s 5d; 4 bales sold at 1s 6d; 12 bales sold at 1s 4d; 6 bales sold at 1s 5d; 4 bales sold at 1s 6d; 13 bales sold at 1s 4d; 4 bales sold at 1s 3d; 12 bales sold at 11½d; 18 bales sold at 10½d; 4 bales sold at 9½d; 1 bale sold at 8d; 1 box sold at 8½d, overtakers broken; 6 bales sold at 8½d.

"Derbyshire."—ASGP Kadirane in estate mark, 2 bales sold at 10d.

"Port Denison."—FSWS North Kanderane in estate mark, 9 bales sold at 1s 3d; 1 bale sold at 9½d; 5 bales sold at 1s 4d; 1 bale sold at 9½d; 1 bale sold at 10d; 4 bales sold at 9d; 1 box sold at 8½d. FSK Kadirane, 4 bales sold at 1s 3d; 6 bales sold at 1s 2d; 1 bale sold at 11d; 4 bales sold at 1s 1d; 1 bale sold at 9½d; 6 bales sold at 9d; 1 bale sold at 7½d; 1 box sold at 8½d.

"Ulysses."—FSWS North Kadirane in estate mark, 5 bales sold at 1s 3d; 15 bales sold at 1s 2d; 3 bales sold at 10½d; 3 bales sold at 9½d; 2 bales sold at 8d. FSWS Kadirane in estate mark, 4 bales sold at 1s 3d; 5 bales sold at 1s.

3d ; 4 bales sold at 1s 1d ; 1 bale sold at 10d ; 4 bales sold at 9d ; 1 bale sold at 8d ; 1 parcel sold at 8d ; 1 bag sold at 7½d broken ; 5 bales sold at 1s 3d ; 7 bales sold at 1s 2d ; 3 bales sold at 1s ; 1 bale sold at 11½d ; 2 bales sold at 9½d ; 7 bales sold at 8½d ; 1 box sold at 7½d ovtks brok. FSWS North Kadirane in estate mark, 3 bags sold at 8½d pieces, cuttings and clippings. FSWS Kanderane in estate mark, 2 bags sold at 8½d pieces, cuttings and clippings ; 2 bags sold at 7½d pieces, cuttings and clippings ; FSK Kadirane, 1 bag sold at 8d pieces, cuttings and clippings ; 2 bags sold at 8½d pieces, cuttings and clippings.

"Port Elloit."—Horahena Estate, JDSR Kadirana Plantation in estate mark, 6 bales sold at 1s 3d ; 9 bales sold at 1s 2d; 7 bales sold at 1s 1d ; 3 bales sold at 1s ; 1 bag sold at 7½d ovtks brok. JRKP in estate mark, 3 bales sold at 11½d ; 3 bales sold at 11d ; 4 bales sold at 10½d ; 4 bales sold at 9d ; 1 parcel sold at 9d ; 2 bales sold at 8½d ; 1 parcel sold at 8½d ; 1 bale sold at 7½d ; 1 parcel sold at 7½d ; 1 box sold at 7½d. JDSR in estate mark 3 bags sold at 7½d.

"Dardanus."—Horahena Estate JDSR Kadirana Plantation in estate mark, 1 bale sold at 1s 3d ; 5 bales sold at 1s 2d ; 5 bales sold at 1s 1d ; 1 parcel sold at 1s 1d ; 4 bales sold at 1s 1d ; 1 parcel sold at 1s ; 1 bale sold at 9½d ; 1 box sold at 7½d. JRKP in estate mark, 1 bale sold at 1s ; 1 bale sold at 11d ; 1 parcel sold at 11d ; 1 bale sold at 10d ; 1 parcel sold at 10d ; 1 bale sold at 9½d ; 1 bale sold at 8½d ; 1 bale sold at 8d ; 2 bags sold at 7½d ; 3 bags sold at 8d.

"Duke of Portland."—C H de S, Kandevalle, 3 bales sold at 10½d ; 7 bales sold at 9½d ; 7 bales sold at 9d ; 11 bales sold at 8½d. C H de S, Morotto, 5 bales sold at 10½d ; 9 bales sold at 10½d ; 8 bales sold at 9d ; 3 bales sold at 8½d. C H de S, Ratmalane, 5 bales sold at 11d ; 6 bales sold at 9½d ; 8 bales sold at 9d ; 2 bales sold at 8½d. C H de S, Salawa, 3 bales sold at 10½d ; 6 bales sold at 9½d ; 4 bales sold at 9d ; 1 bale sold at 8d. C H de S, Innegaltudawa, 1 bale sold at 11d ; 4 bales sold at 9½d ; 2 bales sold at 8d ; 2 bales sold at 10½d. C H de S, Koottariavalle, 3 bales sold at 9½d ; 2 bales sold at 9d ; 1 bale sold at 8d. C H de S, TPW in estate mark, 1 bale sold at 11d 1 bale sold at 10d ; 2 bales sold at 9½d ; 1 bale sold at 8d. C H de S, Herenpitiya, 1 bale sold at 9½d ; 1 bale sold at 9d 1 bale sold at 8½d ; 1 bale sold at 9½d. C H de S, Mattegodde. 1 bale sold at 9d ; 1 bale sold at 9½d ; 1 bale sold at 8½d. C H de S, TPW in estate mark, 10 bales out at 9d.

"Manila."—C H de S, Kandevalle, 1 bale sold at 9½d ; 1 bale sold at 9d. C H de S, TPW in estate mark, 3 bales sold at 8½d ; 1 bale sold at 10d ; 1 bale sold at 9d ; 3 bales sold at 8d. C H de S, Ratmalane, 1 bale sold at 9d ; 1 bale sold at 8½d.

"Kamakura Maru."—AMK in estate mark, 9 bags out at 4d ; 22 bags sold at 3d.

"Duke of Argyll."—DB & Co, 354 in estate mark, 10 bales sold at 10½d ; 12 bales sold at 9½d ; 13 bales sold at 9d ; 2 bales sold at 8d.

"Duke of Portland."—F in estate mark, Estate Plantation, 5 bales sold at 11d ; 12 bales sold at 8½d ; 4 bales sold at 7½d ; 6 bales sold at 10d ; 14 bales sold at 10½d ; 8 bales sold at 9½d ; 23 bales sold at 9d ; 5 bales sold at 8½d.

"Hitachi Maru."—BS in estate mark, Ekelle 1899, 1 bale sold at 10½d ; 3 bales sold at 10d ; 3 bales sold at 9½d ; 1 bale sold at 9d ; 1 bale sold at 8d.

"Sanuki Maru."—AL Diggoda Plantation 1898 2 bales sold at 9d ; 6 bales sold at 8d.

"Duke of Devonshire."—JL in estate mark, Ittagalla, 1 bale sold at 8½d ; 4 bales sold at 8d ; 2 bales sold at 7½d ; 2 bales sold at 4½d.

"Dardanus."—AMK in estate mark, 1 bale sold at 8d ; 1 bale sold at 5d.

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, June 2.

"Ulysses."—Tillicoultry O, 1 tierce sold at 113s ; ditto 1, 2 casks out at 106s ; ditto 2, 2 casks and 1 barrel sold at 105s ; ditto 3, 1 barrel sold at 51s ; ditto No. I PB, 1 tierce out ; ditto Triage, 1 barrel out. Tillicoultry, 1 bag out ovkrs ; Size 1, MAK in estate mark, 1 cask and 1 barrel sold at 71s ; ditto 2, 4 casks and 1 barrel sold at 64s 6d ; ditto 3, 1 barrel out at 30s ; PB ditto, 1 tierce sold at 60s ; T, 1 cask out.

"Clan Chisholm."—Keenakella A, 1 barrel sold at 78s ; ditto B, 2 casks sold at 80s 6d ; ditto C, 1 tierce sold at 41s ; ditto PB, 1 barrel sold at 73s ; ditto T, 1 tierce out.

CEYLON COCOA SALES IN LONDON.

"Manila."—Palli 1, 3 bags sold at 65s ; ditto 2, 3 bags sold at 48s. Keenakella, 5 bags sold at 61s ; ditto B, 10 bags sold at 53s. Warrakettia, 8 bags sold at 71s ; ditto 2, 3 bags sold at 48s.

"Clan Macpherson."—B Grove, 2 bags sold at 42s.

"Rosneath."—JS, 2 bags sold at 64s sea dam. bulked.

"Hitachi Maru."—Hylton OO, 19 bags sold at 78s ; ditto O, 2 bags sold at 58s.

"Dardanus."—B Glenalpine, 19 bags sold at 46s 6d.

"Orissa."—Ingurugalle 2, 14 bags sold at 53s 6d.

"Tosa Maru."—Yattawatte, 3 bags sold at 53s 6d.

"Duke of Portland."—Yattawatte 2, 5 bags sold at 54s 6d ; 1 Dark, 6 bags sold at 60s 6d ; 1 Black, 2 bags sold at 54s 6d ; 1 Black, 1 bag sold at 56s ; ditto P, 36 bags sold at 50s.

"Duke of Argyll."—NDPS in estate mark, No. 2, 2 bags sold at 62s 6d.

NO. 25 COLOMBO, JULY 3, 1899.

PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[483,097 lb.]

Lot.		Box	Pkgs.	Name.	lb.	c.
3	E D P	2206	12 ch	fans	1320	30
4		2209	13 hf-ch	dust	1040	22
5	N	2212	17 ch	bro tea	2210	24
6		2215	10 do	unas	900	34
16	B B B, in estate mark	2227	8 ch	dust	800	22
17	L G F, in estate mark	2248	21 ch	sou	2100	32
18		1	31 do	dust	2480	25
19	Sirikandura	4	18 ch	bro pek	1800	39
20		7	12 do	pek	1140	35
21		10	9 do	pek sou	810	34
25	Galkande	22	20 ch	bro pek	2000	37
26		25	16 do	pek	1440	33
29	Pospone	34	53 ch 1 hf-ch	bro pek	5621	42
30		37	46 ch 1 hf-ch	pek	4643	36
34	Cooroondoowatte	49	17 hf-ch	pek	850	37
37	Curzon	58	17 ch	pek	1360	37
38		61	13 do	pek sou	910	34
39		64	20 hf-ch	bro mix	840	35
43	Ella Oya	76	47 ch	bro pek	4700	37
44		79	26 do	pek	22 0	33
46		85	11 hf-ch	bro pek fans	1365	27
48	Monkswood	91	37 hf-ch	bro pek	2035	55 bid
49		94	17 do	bro pek	850	58
50		97	20 do	or pek	1000	68
51		100	28 ch	pek	2520	49
52		103	12 do	pek sou	1020	43
54	Lyegrove	109	21 ch	bro pek	2352	42
55		112	11 do	pek	1045	37
56	Malvern	1 5	45 hf-ch	bro pek	2475	49
57		118	21 do	pek	1470	39
58	Moncton	121	10 ch	bro pek	1020	40
59		124	15 do	pek	1500	35
63	Pambagama	136	14 ch	sou	1400	31
64		139	8 do	bro pek fans	800	32
68	Kilkenny	151	25 ch	bro or pek	2500	38
69		154	30 do	pek	2250	34
73	Meemorakande	166	10 ch	dust	850	22
78	Yoxford	181	18 ch	pek sou	1530	38
79		184	20 hf-ch	dust	1600	25
80		187	25 do	bro pek fans	1625	37
81	Gampaha	190	21 ch	bro or pek	2310	45
82		193	20 do	or pek	1900	48
83		196	17 do	pek	1445	43
84		199	20 do	pek sou	1800	38
85	Kirklees	202	29 ch	or pek	2900	50
86		205	31 do	bro or pek	1860	43
87		208	35 do	pek	3500	39
88		211	16 do	pek sou	1360	37
89	Carendon	214	7 ch	bro pek	744	36
91	Munukattia Ceylon, in est. mark	220	15 hf-ch	or pek	750	44
92		223	34 do	bro pek	1870	49
93		226	14 ch	pek	1120	39
99	Holton	244	22 ch	bro pek	2090	37
100		247	16 do	pekoe	1280	34
101		2 0	17 do	pek sou	1360	32
105	Rockside	262	7 ch	dust	945	27
106		265	8 do	bro pek fans	960	34
107	Patiagama	268	16 hf-ch	bro or pek	880	50
109		274	22 ch	pek	1760	36
111	St. Heliers	280	27 hf-ch	bro or pek	1404	39 bid
112		283	14 ch	pek	1232	36
114	Lindoola	289	17 do	dust	1530	24
115	Penylan	292	23 hf-ch	dust	1870	26 bid
118	Great Valley Ceylon, in estate mark	301	30 hf-ch	or pek	1500	45
119		304	37 do	bro pek	2035	53
120		307	23 do	pek	2070	38
121		310	22 do	pek sou	1650	35
124	Glendon	319	19 ch	bro or pek	1235	41
125		322	49 do	bro pek	4655	38
126		325	21 do	or pek	1680	35
127		328	50 ch	pek	4000	34
128		331	26 do	pek sou	2080	32
129	G	334	9 ch	sou	720	31
131	Hornsey	340	24 ch	or pek	2400	41 bid
132		343	34 hf ch	bro or pek	1700	51 bid
133		346	24 ch	pek	2280	37
134		349	10 do	pek sou	800	36
135	Waitalawa	352	52 hf-ch	bro pek	2600	42
136		355	61 do	pek	3050	37
137		358	20 do	pek sou	1000	34
138	Nugagalla	361	42 hf-ch	bro pek	2100	44 bid
139		364	103 do	pek	5150	36
142	Penrhos	373	39 do	bro pek	2184	46
143		376	27 do	or pek	1215	40 bid
144		379	40 ch	pek	3400	35 bid
147	Digdola	388	16 ch	bro pek	1440	39
148		391	24 do	pek	1680	35
150	Vogan	397	50 ch	bro pek	4750	44
151		400	45 do	pek	3825	35
156	K P W	416	13 hf-ch	or pek	780	41 bid
158		421	31 do	pek	1550	36
166	Ambalangodda	445	25 ch	bro pek	2500	43
167		448	18 do	pek	1710	38
171	Middleton	460	18 hf-ch	bro or pek	990	90
172		463	13 ch	bro pek	1300	54
173		466	12 do	pek	1020	43
174		469	12 do	pek sou	1080	40
176	Bloomfield	475	20 ch	unas	2000	33
177		478	9 do	pek fans	720	28
178	Dammeria	481	7 ch	bro or pek	840	42
179		484	35 do	or pek	3500	42
180		487	25 do	bro pek	2500	41
181		490	24 do	pek	2160	38
182		493	12 do	pek sou	1080	36
183	Dea Ella	496	20 hf-ch	bro or pek	1200	42
184		499	47 do	or pek	2585	38
185		502	45 do	pek	2250	36
186		505	20 do	pek sou	1000	33
187	High Forest	508	21 hf-ch	or pek No 1	1092	71
188		511	17 do	or pek	816	53
189		514	23 do	bro or pek	1426	45
190		517	17 do	pek	765	43
191	Weoya	520	34 ch	pek sou	3060	33
192		523	20 do	sou	1800	31
193		526	17 do	dust	2550	23
194	High Forest	529	16 hf-ch	or pek No 1	848	70
195		532	19 do	or pek	912	52
196		535	19 do	bro or pek	1197	45
197		538	17 do	pek	765	43
198	Polatagama	541	37 ch	bro pek	3700	38 bid
199		544	25 do	or pek	2000	36
200		547	42 do	pek	3570	34
201		550	18 do	pek sou	1440	32
202	Pallagodda	553	24 ch	bro or pek	2280	38
203		556	24 do	bro pek	2400	41
204		559	22 do	or pek	1760	36
205		562	24 do	pek	1800	35
206		565	18 do	pek sou	1530	33
207	Seenagolla	568	41 hf-ch	bro pek	2665	44
208		571	10 ch	or pek	960	42
209		574	11 do	pek	1100	39
213	Killarny	586	45 do	bro or pek	2475	41
214		589	21 ch	pek sou	1890	37
215		592	10 do	congou	900	33
217	Carfax	508	11 do	bro pek	1210	37
218	Fairlawn	601	14 hf-ch	bro pek	700	60
219		604	29 do	or pek	1305	39 bid
220		607	10 ch	pek	900	37
228	Dunkeld	631	50 hf-ch	bro pek	3000	47
229		634	10 ch	or pek	950	44
230		637	18 do	pek	1620	38
231	Unugalla	640	13 do	bro pek	1326	44
232		643	17 do	pek	1479	39
233		646	8 do	pek sou	704	37
235	Geragama	652	21 do	bro pek	1890	37
236		655	18 do	pek	1530	34
237	Waratenne	658	27 do	bro pek	2430	37
238		661	20 do	pek	1600	34
239	Geragama	664	18 do	bro pek	1620	37
240		667	16 do	pek	1360	33 bid
250	Gallawatte	697	9 ch	pek	765	34
251		700	9 do	pek sou	765	33
252	Matale	703	35 do	bro pek	3500	39
253		706	24 do	pek	2160	36
254		709	14 do	pek sou	1260	34
261	A	730	12 do	bro pek	1200	32
262		733	9 do	pek	855	30
263		736	8 do	pek sou	720	29
264		739	19 hf-ch	bro pek fans	1235	27
268		751	13 ch	bro mix	1235	19
272	Mawiligangawatte	763	23 hf-ch	bro or pek	1265	46

Lot.		Box.	Pkgs.	Name.	lb.	c.
273		766	20 hf-ch	or pek	800	38
274		769	45 ch	bro pek	4500	37
275		772	30 do	pek sou	2700	32
279	Weyungawatte	784	39 hf ch	bro or pek	2340	43
280		787	38 ch	bro pek	3610	37
281		790	44 do	pek	3740	35
285	Torwood	802	11 do	bro or pek	1155	41 bid
286		805	24 do	bro pek	2112	41 bid
287		808	27 do	or pek	2214	31 bid
288		811	29 do	pek	2088	34 bid
289		814	19 do	pek sou	1444	33
300	Stisted	847	62 do	bro or pek	4030	38
301	Melrose	850	38 do	bro pek	3800	37 bid
302		853	28 do	pek	2520	36
303		856	24 do	pek sou	1920	34
304	Urugalla	859	12 do	bro pek	1066	34
312	Kincora	883	42 hf-ch	bro pek	2520	42
314		889	11 do	dust	990	24
316	Agra Elbedde	895	30 do	bro pek	1800	50
317		898	52 do	pek	2860	39
318		901	27 do	pek sou	1350	36 bid
322	Mapitigama	913	18 do	bro pek	900	42
323		916	25 do	pek	1125	37
324		919	10 ch	pek sou	800	34
330	Pine Hill	937	29 hf-ch	bro pek	1740	57
331		940	44 do	or pek	2552	42 bid
332		943	48 ch	pek	4080	37 bid
335	Anningkande	952	25 do	bro pek	2500	41
336		955	16 do	pek	1520	35 bid
337	Irex	958	23 do	bro pek	2300	38
338		961	15 do	pek	1500	35
342	S K D	973	22 hf ch	bro pek	2200	35
345		982	16 ch	dus	1280	22
348	Maha Oya	991	10 do	sou	900	29
349		993	22 hf-ch	dust	1760	24
350	Matalawa	997	20 ch	pek sou	2340	31
358	Kakiriskande	1021	10 do	pek	950	34
360	Wooleyfield	1027	9 do	unast	855	30
363	Knavesmire	1036	36 hf-ch	bro or pek	2052	39
364		1039	26 ch	bro pek	2600	37
365		1042	9 do	or pek	810	35 bid
366		1045	30 do	pek	2250	33
367		1048	19 do	pek sou	1292	32
374	Coreen	1069	15 do	or pek	1350	42 bi
375		1072	13 do	pek	1105	37 bid

[Messrs. Somerville & Co.—203,507lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Warakamure	349	8 ch	bro pek	800	36
2		352	13 do	pek	1300	34
3		355	18 do	pek sou	1710	32
4		358	8 do	sou	720	30
7	Labugama	367	29 hf-ch	bro pek	1450	38
8		370	17 ch	pek	1615	33
9		373	15 do	pek sou	1275	30
10		376	10 do	bro pek fan	1200	31
13	Maligatenne	385	9 ch	unas	721	27
17	P	397	9 ch	unas	870	27
20	Salawe	511	15 ch	bro pek	1575	37
21		514	10 do	bro pek	950	34
22		517	14 do	pek sou	1260	32
30	Ritni, in estate mark	541	20 hf-ch	bro pek	1100	39 bid
31		544	14 do	or pek	700	38
36	Oakham	559	29 ch	pek	2610	36
37		562	20 ch	pek	1800	35
38		565	8 do	pek sou	760	33
51	Ukuwela	604	19 ch	bro or pek	2090	37
52		607	32 do	bro pek	3200	36
53		610	25 do	pek	2500	34
54		613	9 do	pek sou	900	31
55	Bogahagoda-watte	616	13 ch	bro pek	1235	37
56		619	9 do	pek	810	33
59	Rothes	628	16 hf-ch	bro or pek	960	52
60		631	15 do	or pek	825	41
61		634	15 do	pek	750	38
65	S L G	646	17 hf-ch	sou	765	30
66	Bidbury	649	17 ch	bro pek	1700	41
67		652	13 do	pek	1040	34
68	Park Hill	655	24 hf-ch	bro pek	1296	38
70		661	15 ch	pek sou	900	32
72	Ravana	667	35 hf-ch	bro pek	1925	40
73		670	35 do	pek	1575	35
74		673	30 do	pek sou	1350	33
76	Deniyaya	679	14 ch	or pek	1400	41
77		682	35 do	bro pek	3500	41
78		685	17 do	pek	1700	35
79		688	19 do	pek sou	1900	33
86	Narangoda	709	33 ch	bro pek	3300	38
87		712	22 do	pek	2090	35
88		715	21 do	pek sou	1890	32
89	Lyndhurst	718	100 hf-ch	bro pek	5500	37

Lot		Box	Pkgs.	Name.	lb.	c.
90		721	40 hf-ch	pek	2000	34
91		724	50 do	pek sou	2250	32
92	Hatdowa	727	26 ch	bro pek	2470	36 bid
93		730	22 do	pek	1650	33
94		733	18 do	pek sou	1350	31
97	Nillicollay-watte	742	27 hf-ch	bro pek	1512	39
98		745	28 ch	or pek	2324	37
99		748	29 do	pek	2668	34
103	Daluk Oya	760	21 hf ch	or pek	1155	38
104		763	23 do	pek	1265	34
105		766	17 do	bro or pek	1020	45
110	Dartry A	781	11 ch	bro tea	946	32
111		784	17 hf-ch	fans	1326	27
113	Dartry B	790	19 hf-ch	dust	1520	22
116	Roseneath	799	21 ch	bro pek	2205	38
117		802	22 do	pek sou	1870	34
118		805	11 do	pek	990	35
120	Yspa	811	23 hf-ch	pek dust	1955	24
121	D	814	10 ch	bro pek	1000	38
126	Forest Hill	829	14 ch	bro pek	1274	36
127		832	18 do	pek	1548	34
135	Gangwarily	856	29 ch	or pek	2320	35 bid
136		859	44 do	bro pek	4400	37
137		862	41 do	pek	3280	34
138		865	28 do	pek sou	2240	32
139	Minna	868	52 hf-ch	bro or pek	3120	47
140	Annandale	871	18 hf ch	bro or pek	954	60
141		874	16 do	or pek	832	48
142		877	16 do	pek	800	40
143		880	16 do	pek sou	880	38
144		883	9 do	fans	720	24
151	Warakamure	904	12 ch	pek	1200	34 bid
152		907	21 do	pek sou	1995	32
153		910	9 do	sou	810	31
157	Lower Dickoya	922	16 ch	bro pek	1520	36
158		925	8 do	pek	760	33
159	Theberton	928	25 ch	bro or pek	2500	39
160	F F, in estate mark	931	18 hf-ch	bro pek	990	36
188		934	14 do	pek	700	33
166	Monte Christo	952	39 ch	bro pek	4290	41
169	Weyweltalawa	958	14 hf-ch	pek fans	700	33 bid
175	S P	976	18 hf-ch	dust	1623	19 bid
176	Lyndhurst	979	32 hf-ch	bro pek	1760	36
177		982	30 do	pek	1500	33
178		985	30 do	pek sou	1350	32
197	J M D M	988	14 ch	bro pek	1400	33 bid
180		991	16 do	pek	1520	34
185	R C T F, in estate mark	7	14 ch	bro pek	1400	38
186		10	16 do	pek	1440	33
187		13	9 do	pek No. 2	765	32
188		16	21 do	pek sou	1680	31
192	M	28	11 ch 1 hf-ch	sou	1040	out
194	B T	34	16 hf ch	bro or pek	1440	20
195	Rambodde	37	28 hf-ch	bro or pek	1680	40 bid
196		40	42 do	bro pek	2310	37
197		43	19 do	pek	950	35
201	Corfu	55	56 hf-ch	or pek	3080	37
202		58	41 do	bro pek	2665	40
203		61	16 do	pek sou	800	33

[Mr. E. John.—164,773 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Vincit	785	16 ch	bro pek	1440	37
3		788	12 do	pek sou	1080	33
4		791	8 do	pek sou	720	32
6	Mossend	797	39 hf-ch	or pek	1950	39
7		800	43 ch	pekoe	2150	36
8		803	24 do	pek sou	1080	34
9		806	13 do	fans	845	35
11	Coslande	812	23 hf-ch	bro pek	1265	42 bid
12		815	15 ch	pekoe	1500	36
15	Bittacy	824	40 do	bro pek	4000	42 bid
16		827	31 do	pekoe	2480	39 bid
19	Mocha	836	27 do	bro or pek	2700	58
20		839	15 do	or pek	1350	51
21		842	26 do	pekoe	2470	41 bid
22		845	20 do	fans	1500	30
23	Eila	848	36 do	bro or pek	3600	38 bid
24		851	47 do	bro pek	3995	37
25		854	11 do	or pek	825	38
26		857	11 do	pekoe	990	35
27		860	30 do	pek sou	2400	33
28		863	8 do	fans	960	31
29		866	16 hf-ch	dust	1360	24
30	Templestowe	869	30 ch	bro or pek	2850	42 bid
31		872	22 do	or pek	1980	38 bid
32		875	30 do	pekoe	2550	37
33	Koslande	878	23 hf-ch	bro pek	1265	43 bid
34		881	15 ch	pekoe	1500	36
37	Agra Ouvah	890	56 hf-ch	bro or pek	3640	49

Lot.		Box.	Pkgs.		Name.		c.
38		893	24	do	or pek	1320	48
39		896	8	ch	pekoe	760	43
40	Glasgow	899	36	do	bro or pek	2880	44 bid
41		902	17	do	or pek	1105	42
42		905	9	do	pekoe	900	38
43	Bellongalla	908	22	hf-ch	bro pek	1232	41
44		911	31	ch	pekoe	2480	34
45		914	19	do	pek sou	1140	32
50	Kotuagedera	929	23	do	bro pek	2300	36
51		932	9	do	pekoe	855	34
52	Galella	935	20	do	or pek	1700	46
53		938	26	do	bro or pek	2600	44
58	W H G	953	22	do	pek sou	2200	36
59		956	11	hf-ch	dust	935	24
62	Little Valley	965	30	ch	bro pek	3000	37
63		968	39	do	pekoe	3315	36
65	Nahavilla	974	30	hf-ch	bro or pek	1800	58
66		977	26	do	or pek	1300	66
67	•	980	14	ch	pekoe	1400	50
70	Myraganga	989	18	hf-ch	dust	1440	20
71	Gampai	992	48	do	or pek	2400	36
72		995	27	ch	pekoe	2160	34 bid
73		998	23	do	pek sou	1725	32
74		1	23	hf-ch	bro or pek	1426	38
78	Poilakande	13	56	ch	bro pek	5600	38
79		16	36	do	pekoe	3240	34
80	Bowhill	19	18	do	bro pek	1800	40
84	Woodlands	31	11	do	bro pek	1100	47
85		34	10	do	pekoe	950	36
89	Glentilt	46	26	do	bro pek	2600	53
90		49	12	do	pekoe	1200	40
91	Cleveland	52	21	hf-ch	bro pek	1155	60
92		55	22	do	pekoe	1144	41
93	Claremont	58	31	do	bro or pek	1705	39
94		61	9	ch	pekoe	810	34
95		64	9	do	pek sou	765	32
101	Osborne	82	22	do	bro or pek	2200	41 bid
102		85	27	do	pekoe	2565	35 bid
103	Templestowe	88	48	do	or pek	4560	37 bid
106	Ferndale	97	15	do	pek sou	1350	35
107	Brownlow	100	41	hf-ch	bro or pek	2214	44
108		103	19	ch	or pek	1596	37 bid
109		106	11	do	pekoe	913	35 bid
110		109	13	hf-ch	pek fans	1092	26
118	Galella	133	8	ch	dust	800	23
121	Ottery	142	29	do	bro or pek	2900	51
122		145	10	do	or pek	900	40 bid
123		148	12	do	pekoe	1140	40 bid
125	Murraythwaite	154	19	do	bro or pek	1805	38
126		157	18	do	pekoe	1530	35

SMALL LOTS,

[Messrs. Forbes & Walker

Lot		Box	Pkgs.		Name.	lb.	c.
1	I K V	2200	2	ch	bro mix	224	29
2		2203	4	do	pek fans	480	24
11	Elfindale	2230	3	ch	bro pek	300	34
12		2233	5	do	pek	450	33
13	Bodawa, Invoice No. 6	2236	7	hf-ch	bro pek	420	39
14		2239	6	do	pek	318	36
15		2242	4	do	pek sou	212	33
16		2245	2	do	dust	150	25
22	Sirikandura	13	1	ch	bro pek sou	80	31
23		16	3	do	bro pek fans	339	34
24		19	2	do	unas	190	32
27	Galkanda	28	4	ch	pek sou	400	33
28		31	2	hf-ch	dust	160	24
31	Puspone	40	5	ch			
			1	hf-ch	pek sou	450	33
32		43	4	ch			
			1	hf-ch	dust	637	23
33	Cooroondoo-watte	46	11	hf-ch	bro pek	605	44
35		52	4	do	pek sou	200	33
36		55	1	do	pek dust	90	23
40	Ella Oya	67	6	ch	bro pek	600	36
41		70	5	do	pek	450	34
42		73	3	do	pek sou	270	32
45	Ella Oya	82	17	hf-ch	pek sou	595	32
47		88	2	do	dust	180	21
53	Monkswood	106	1	hf-ch	red leaf	45	27
60	Moncton	127	7	ch	pek sou	630	32
61		130	1	do	bro mix	100	28
62		133	2	do	pek fans	220	25
65	Pambagama	142	2	hf-ch	dust	220	23
66	A D E	145	1	do	bro or pek	50	53
67		148	1	do	bro pek	50	44
70	Augusta	157	1	ch	sou	98	32
71		160	4	do	dust	600	23
72		163	1	hf-ch	red leaf	34	26
74	Peak Shadow	169	2	ch	bro pek	200	33
75		172	4	do	pek	360	33
76		175	1	ch	bro mix	80	31
77		178	1	do	dust	130	22
90	Carendon	217	4	ch	pek	392	33
94	Munukattia Ceylon, in est. mark	229	5	do	pek sou	450	35
95	Dunbar	232	10	hf-ch	bro or pek	500	58
96		235	7	do	or pek	336	46
97		238	6	ch	pek	450	40
98	D B R	241	2	hf-ch	bropek fans	120	39
102	Holton	253	6	ch	dust	480	22
103	Rockside	256	7	ch	sou	560	33
104		259	2	do	bro mix	200	32
108	Patiagama	271	8	ch	or pek	680	41
110		277	6	do	pek sou	480	33
113	St. Heliers	286	5	ch	dust	400	24
116	Habragalla	295	11	hf-ch	bro tea	605	24
117		298	5	do	dust	425	23
122	Great Valley Ceylon, in estate mark	313	3	hf-ch	fans	300	35
123		316	5	do	dust	400	25
130	G	337	4	ch	dust	540	22
140	Nugagalla	367	13	hf-ch	pek sou	650	32
141		370	4	do	dust	360	23
145	Penrhos	382	8	ch	pek sou	640	33
146		385	4	hf-ch	fans	300	25
149	Digdola	395	5	ch	pek sou	425	33
152	Vogan	403	6	ch	pek sou	480	32
153		406	5	do	dust	400	22
154		409	4	do	bro pek fans	440	33
155		412	2	do	unas	160	32
157	K P W	418	12	hf-ch	brok pek	660	38
159		424	6	do	pek sou	300	31
160		427	2	do	dust	170	23
161	Bodawa Invoice No. 7	430	5	hf-ch	bro pek	275	40
162		433	3	do	pek	129	35
163		436	4	do	pek sou	172	33
164		439	1	do	dust	75	25
165	W O P	442	4	hf-ch	unas	360	35
168	Amblan-godda	451	5	ch	pek sou	475	35
169		454	2	do	sou	190	33
170		457	3	do	dust	330	24
175	Middleton	472	6	hf-ch	dust	480	26
216	Killarney	595	2	ch	bro mix	200	25
221	Fairlawn	610	8	hf-ch	pek sou	360	34
222		613	2	do	dust	170	24
234	Unugalla	649	3	do	dust	234	23
241	S	670	3	do	bro pek	140	35
242		673	3	do	pek	140	33
243		676	3	do	pek sou	132	31
244		679	1	do	dust	68	22
245	K W D in est. mark	632	4	ch	bro tea	352	3
246		685	5	hf-ch	br or pk fans	300	33
265	A	742	4	ch	pek fans	440	22
266		745	4	do	congou	380	22
267		748	1	hf-ch	congon	50	22
269	S	754	1	do	bro pek	50	30
270		757	1	do	bro pek fans	65	22
271		760	3	do	pek sou	150	22
276	Mawaliganga-watte	775	5	do	dust	450	23
277	A in est. mark	778	4	ch	bro tea	400	27
278	C in est. mark	781	3	do	bro tea	300	27
282	Weyungawatte	793	4	do	pek sou	340	32
283		796		hf-ch	dust	340	23
284	N W D	799	1	ch	bro tea	107	21
305	Uragalla	862	4	do	pek	320	32
306		865	4	do	pek sou	350	30
307		868	1	do	dust	111	22
311	Kincora	880	2	do	bro or pek	190	37
313		886	4	do	pek	352	33
315	Agra Elbedde	892	12	hf-ch	or pek	600	46
319	X X	904	2	do	pek fans	150	34
320		907	5	do	dust	400	23
321	Mapitigama	910	10	do	bro or pek	520	42
325		922	6	do	br or pk fans	390	36
326		925	6	do	bro tea	510	23
333	Pine Hill	946	5	ch	pek sou	425	33
334		949	5	hf-ch	dust	425	24
339	Irex	964	7	ch	pek sou	665	32
340		967	1	do	dust	100	24
343	S K D	976	6	hf-ch	sou	270	30
344		979	12	do	unast	660	29
346	B F B	985	1	do	bro pek	50	46
347		988	8	do	unast	391	32
351	Graceland	1000	7	do	bro pek	392	37
352		1003	13	do	pek	650	32
353		1006	6	do	pek sou	264	30
354		1009	1	do	fans	50	28
355		1012	1	do	bro mix	45	28
356		1015	1	do	dust	78	22
357	Kakiriskande	1018	3	ch	bro pek	300	39
359		1024	3	do	pek sou	285	33

Lot.		Box.	Pkgs.	Name	lb.	c.
361	Wolleyfield	1030	3 ch	sou	225	25
		1033	1 do	fans	120	21
368	Knavesmire	1051	7 hf-ch	bro pek fans	420	30
369		1054	4 do	dust	316	22
370	O F in est. mark	1057	3 ch	bro pek	261	33
371		1060	3 do	pek	217	32
372		1063	2 hf-ch	pek sou	103	29
373		1066	1 do	dust	104	22

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb	c.
5	Warakamure	361	1 hf-ch	dust	90	22
6		364	4 do	bro pek fan	260	35
11	Maligatenne	379	3 ch	bro pek	252	33
12		382	5 do	pek	433	29
14		388	6 do	pek sou	482	28
15		391	5 do	bro sou	453	27
16		394	1 do	dust	127	24
18	Killin	505	7 ch	pek	620	32
19		508	2 do	sou	180	30
23	Salawe	520	2 ch	pek dust	296	24
24	Paragahakande	523	4 ch	bro pek	400	40
25		526	6 do	pek	540	34
26		529	3 do	pek sou	320	33
			1 hf-ch			
27		532	2 ch	fans	170	29
28		535	1 do	dust	130	23
			1 hf-ch			
29	Ritni, in estate mark	538	8 hf-ch	bro or pek	480	49 bid
32		547	13 do	pek	585	36
33		550	11 do	pek sou	385	33
34		553	2 do	sou	80	32
35		556	1 do	fans	80	31
39	Oakham	568	7 ch	pek sou	665	34
40		571	4 hf-ch	pek fans	300	26
41	Alutkelle	574	10 hf-ch	bro pek	500	34
42		577	3 do	pek	150	33
43		580	7 do	sou	350	31
44		583	1 do	fans	77	27
45		586	1 do	dust	60	24
46	Katukitula	589	6 hf-ch	bro pek	300	34
47		592	7 do	pek	350	31
48	L F	595	2 hf ch	bro pek	101	33
49		598	3 do	pek	139	32
50		601	2 do	pek sou	86	29
57	Bogahagoda-watte	622	2 ch	pek sou	200	30
58		625	1 do	bro pek fan	130	27
62	R, in estate mark	637	6 hf-ch	pek sou	270	33
63		640	1 do	dust	95	23
64		643	1 do	red leaf	50	28
69	Park Hill	658	8 ch	pek	600	35
71		664	1 hf-ch	dust	75	22
75	Ravana	676	2 ch	dust	170	23
80	Deniyaya	691	3 ch	sou	300	31
81	G K	694	1 ch	bro pek	101	33
82		697	1 hf-ch	pek	46	32
83		700	1 ch	pek sou	73	30
84		703	1 hf-ch	dust	87	22
85		706	1 do	red leaf	13	26
95	Hatdowa	736	5 ch	fans	500	31
96		739	1 hf-ch	sou	75	32
100	Nillicollay-watte	751	8 ch	pek sou	680	32
101		754	5 hf-ch	dust	375	23
102		757	3 do	fans	219	29
106	Daluk Oya	769	8 hf-ch	pek sou	400	31
107		772	7 do	pek fans	420	31
108		775	5 do	dust	300	26
109	Dartry A	778	2 ch	pek	168	36
112		787	3 hf-ch	dust	270	21
114	Dartry B	793	9 do	fans	585	33
115		796	7 ch	bro tea	525	30
119	Roseneath	808	1 ch	bro mix	93	28
122	D	817	7 do	pek	660	32
123		820	3 do	pek sou	276	31
124		823	1 do	bro pek dust	63	24
125	Forest Hill	826	9 hf-ch	bro or pek	483	38 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
145	Orion	886	1 ch	fans	120	31
146		889	3 hf-ch	dust	225	23
147	T, in estate mark	892	1 ch	pek	105	26
149		898	7 ch	sou	615	19 bid
150	Warakamure	901	6 ch	bro pek	600	37
154		913	6 do	unas	540	29
155		916	3 hf ch	bro pek fans	210	35
156		919	2 do	dust	180	23
162	F F, in estate mark	667	11 hf ch	pek sou	495	32
163		940	2 do	bro pek fans	130	29
164		943	1 do	dust	90	23
165		946	1 do	bro mix	50	28
167	Monte Christo	952	7 ch	sou	595	32
168	Weyweltalawa	955	3 hf ch	dust	240	22
170	S P	961	3 ch	bro pek	315	30 bid
171		964	2 do	pek	246	29
			1 hf-ch			
172		967	8 ch	pek sou	680	26
173		970	6 do	pek sou a	600	27
174		973	7 do	red leaf	630	20
181	J M D M	994	6 ch	pek sou	510	32
182		997	3 do	fans	270	27
183		1	1 do	con	67	27
184		4	1 do	dust	235	23
			1 hf ch			
189	R C T F	19	5 ch	bro pek fans	475	32
190		22	4 hf ch	dust	320	22
191	M	25	5 ch	pek sou	475	out
193		31	3 hf ch	dust	390	20
198	Rambodde	46	3 hf ch	pek sou	150	33
199		49	1 do	dust	90	22
200		52	2 do	fans	140	25
204	Corfu	64	1 hf ch	dust	70	22
205		67	4 do	fans	280	30

[Mr. E. John.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Mount Everest	782	1 ch	bro mix	100	27
5	Vincit	794	2 do			
			1 hf ch	bro pek fans	250	28
10	Mossend	809	7 ch	dust	525	23
13	Coslande	818	4 do	pek sou	400	33
14		821	1 hf-ch	dust	80	23
17	Bittacy	830	5 ch	pek sou	450	35
18		833	8 hf-ch	dust	680	24
35	Koslande	884	4 ch	pek sou	400	33
36		887	1 hf-ch	dust	80	26
46	Bellongalla	917	7 do	bro pek fans	455	35
47		920	1 do	dust	90	22
48	Chapelton	923	6 do	dust	540	22
49		926	8 ch	bro mix	640	30
54	Galella	941	6 do	pekoe	540	37
55	K P	944	5 hf-ch	dust	500	22
56		947	7 do	fans	560	23
57	M G	950	8 do	fans	640	36
60	W H G	959	6 do	fans	450	31
61		962	3 ch	bro mix	300	31
64	Little Valley	971	1 hf-ch	dust	85	20
68	B P S	983	2 ch	pekoe	200	30
69	Myraganga	986	3 do	bro pek	315	
75	Gampai	4	4 hf-ch	dust	360	
76		7	1 ch	red leaf	100	24
77	R, in est. mark	10	5 hf-ch	unas	313	33
81	Bowhill	22	7 ch	pekoe	630	34
82		25	6 do	pek sou	540	33
83		28	1 do	dust	150	23
86	Woodlands	37	7 do	pek sou	630	34
87		40	2 do	bro mix	200	24
88		43	1 hf-ch	dust	75	22
96	Claremont	67	3 do	dust	270	22
97		70	2 ch	red leaf	190	25
111	W H	112	1 hf-ch	pek sou	53	35
112		115	3 do	dust	240	15
113		118	4 do	fans	288	35
119	Galella	136	4 ch	scu	380	34
120	Elston	139	2 do	congou	200	30
124	Ottery	151	1 do	dust	170	27

TEA, COFFEE, CINCHONA, COCOA, AND CARDAMOM SALES.

NO. 26 COLOMBO, JULY 10, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

[Mr. E. John.—163,585 lb.]

Lot		Box.	Pkgs.		Name.	lb.	c.
1	A A	160	13	ch	dust	1300	21
2	Polduwa	163	13	do	bro pek	1300	36
3		166	18	do	pekoe	1800	32
9	Callander	184	26	hf-ch	bro or pek	1560	46
13	Kotuagedera	196	35	ch	bro pek	3500	37
14		199	13	do	pekoe	1235	33
16	Yapame	205	46	do	bro pek	5060	42
17		208	22	do	pekoe	2090	40
18		211	18	do	pek sou	1710	37
19	Dickapittiya	214	30	do	bro pek	3000	44
20		217	33	do	pekoe	3200	38
25	Mocho	232	23	do	bro or pek	2300	58
26		235	10	do	or pek	900	55
27		238	18	do	pekoe	1710	48
28		241	27	do	pek sou	2160	39
29	N C R, in estate mark	244	30	hf-ch	bro pek	1500	36
30		247	12	ch	pekoe	960	33
33	G E	256	9	do	pekoe	855	34
34	Agra Ouvah	259	80	hf-ch	bro or pek	5200	54
35		262	33	do	or pek	1815	48
36		265	12	ch	pekoe	1140	41
37	Glasgow	268	17	do	bro or pek	1360	50
38		271	12	do	or pek	780	47
39		274	8	do	pekoe	800	44
41	Mount Temple	280	18	do	bro or pek	1746	36 bid
42		283	27	do	pekoe	2106	33 bid
43		286	18	do	pek sou	1350	32 bid
49	St. John's	304	25	hf-ch	bro or pek	1550	78
50		307	29	do	or pek	1508	80
51		310	30	do	pekoe	1680	57
52		313	18	do	pek fans	1260	42
53	Uda	316	12	ch	bro pek	1200	31
54		319	21	do	pekoe	1680	31
59	Mossend	334	24	hf-ch	pek sou	1080	34
61	Mount Temple	340	26	ch	bro pek	2600	35 bid
62		343	26	do	pekoe	2080	33 bid
63	Ferndale	346	13	do	bro or pek	1300	48
64		349	15	do	pekoe	1350	35
66	Hiralouvah	355	9	do	bro pek fans	710	35
69	Myraganga	364	54	do	bro pek	5400	37 bid
70		367	25	hf ch	bro or pek	1425	40
71		370	55	ch	pekoe	4730	36
72		373	25	do	pek sou	1750	34
75	Arncliff	382	16	do	or pek	1360	45
76		385	33	hf ch	bro or pek	1995	38 bid
77		388	14	do	pekoe	700	38 bid
78		391	11	do	bro pek fans	759	26 bid
79	Lynford	394	15	do	dust	1245	24
80		397	11	ch	bro tea	1100	23
88	Glentilt	421	24	do	bro pek	2400	53
89		424	12	do	pekoe	1200	42
90	Y K	427	6	do	dust	930	20
91	Morahela	430	35	do	bro pek	3570	36 bid
92		433	28	do	or pek	2800	35
93		436	15	do	pekoe	1440	34
95		442	10	hf-ch	dust	740	22
96	Kanangama	445	33	ch	bro or pek	3300	33
97		448	51	do	bro pek	4590	32
98		451	50	do	pekoe	4000	33
99		454	14	do	bro pek fans	1260	30
28		151	29	ch	or pek	2465	42
29		154	17	do	pek	1530	38
30		157	12	do	pek sou	1020	35
31		160	10	hf-ch	fans	750	35
33	Gwernet	166	17	ch	bro pek	17 0	38 bid
34		169	10	do	pek	950	40
36	Mahatenne	175	19	ch	bro pek	1900	37
37		178	11	do	pek	1100	34
38		181	8	do	pek sou	760	32
40	Havilland	187	46	hf-ch	bro or pek	2760	38 bid
41		190	36	ch	or pek	3240	35
42		193	32	do	pek	2880	34
43		196	14	do	pek sou	1050	32
47	D M R, in estate mark	208	22	ch	bro pek	2112	37 bid
48		211	16	do	pek	1280	36 bid
49	Ukuwela	214	12	ch	bro tea	1140	24
50		217	23	ch	bro or pek	2300	37
51		220	30	do	bro pek	3000	36
52		223	21	do	pek	2100	33
53		226	8	do	pek sou	788	31
54	Harangalla	229	11	ch	bro pek	1045	39
55		232	31	do	pek	2790	33 bid
57		238	8	do	sou	720	31
58	Romania	241	12	ch	bro pek	1200	34
59		244	8	do	pek	800	33
64	Dikmukalana	259	27	hf-ch	pek	1350	34
65	Ambalawa	262	28	hf-ch	bro pek	1450	36
66		265	22	ch	pek	990	34
71	Pindeni Oya	280	21	ch	bro or pek	2100	36
72		283	20	ch	pek	1800	33
73		286	18	ch	pek sou	1530	32
88	Mousakande	331	18	ch	bro pek	1656	36
89		334	20	do	pek	1720	33
91	Gangwarily	340	13	hf-ch	dust	975	22
93		346	20	ch	sou	1400	31
94		349	21	do	or pek	1575	35
95		352	37	do	bro pek	3700	36
96		355	33	do	pek	2640	33
97		358	34	do	pek sou	2550	32
102	Kelani	373	39	ch	bro pek	3120	37
103		376	25	do	bro or pek	2500	41
104		379	30	do	pek	2550	34 bid
105		382	25	ch	pek sou	2250	32 bid
109	C T F	394	21	ch	pek sou	1680	29 bid
110	Marigold	397	102	hf-ch	bro pek	5712	43
111		505	33	do	pek	1650	38
112		508	41	do	pek sou	2050	36
114	Rayigam	514	66	ch	bro pek	6270	36
115		517	40	do	or pek	3000	34
116		520	43	do	pek	3440	33
117		523	31	do	pek sou	2480	32
127	I P	553	25	ch	pek sou	2250	32
128		556	22	hf-ch	dust	1870	23
131	Dryburgh	565	28	hf-ch	pek	1176	34
134	R C T F, in estate mark	574	7	ch	bro pek	700	37
135		577	17	do	pek	1445	33
136		580	8	do	bro pek fan	800	31 bid
137	Neboda	583	18	ch	bro or pek	1800	36
138		586	49	do	bro pek	4900	36
139		589	23	do	pek	2070	33 bid
140		592	10	do	pek sou	800	32

[Messrs. Somerville & Co.—170868,lb.]

Lot.		Box.	Pkgs.		Name.	lb.	
1	Kurulugalla	70	15	ch	bro pek	1500	33
2		73	16	do	pek	1440	30
4	K G A in estate mark	79	15	ch	bro tea	1350	23
11	Wewatenne	100	9	ch	bro pek	810	39
12		103	17	do	pek	1445	34
13		106	21	do	pek sou	1890	32
15	Hangranoya	112	71	hf ch	bro pek	3550	38 bid
16		115	14	ch	pek	1260	35
17		118	11	do	pek sou	825	32
21	Nyanza	130	7	ch	bro or pek	700	65
22		133	11	ch	bro pek	1100	43
23		136	13	do	or pek	1170	44
24		139	27	do	pek	2295	38
26		142	8	do	pek sou	720	35
27	Minna	148	41	hf-ch	bro or pek	2460	47

Messrs. Forbes & Walker.

[470,665 lb.]

Lot.		Box	Pkgs.		Name.	lb.	c.
1	Igalkande	1075	20	ch	pek	1700	33
2	Wewawatte	1078	23	hf-ch	bro pek	1265	36
3		1081	17	do	pek	850	33
20	Great Valley Ceylon, in est. mark	1132	15	hf-ch	bro pek	2550	41 bid
21		1135	24	ch	bro or pek	2400	48
22		1138	16	do	or pek	1600	42
23		1141	14	do	pek	1400	40
26	Mansfield	1150	53	hf-ch	bro pek	3180	53
27		1153	32	ch	pek	2880	43
28		1156	13	do	pek sou	1105	39
35	Rowley	1177	26	do	bro pek	1300	42 bid
36		1180	25	do	pek	1250	38 bid
37	C N N	1183	14	ch	dust	1330	24
38	G M, in estate mark	1186	37	hf-ch	bro or pek	1924	42 bid
39		1189	45	do	pek	2250	43
40		1192	18	do	pek sou	846	36 bid
41	Gallawatte	1195	11	ch	bro pek	1045	37 bid
42		1198	9	do	dust	765	24

Lot.		Box.	Pkgs.	Name.	lb.	c.
44	Pambagama	1201	12 ch	scu	1200	32
43		1204	8 do	bro pek fans	840	31
46	Glengariffe	1210	30 hf-ch	bro pek	1650	43
47		1213	44 ch	or pek	2200	38
48		1216	18 do	bro or pek	1170	46 bid
49		1219	17 do	pek	1615	38
50		1222	9 do	pek sou	720	34
51		1225	10 do	dust	800	27
52	Regulas	1228	8 do	dust	960	26
53	Woodend	1231	40 do	bro pek	4000	37
54		1234	70 do	pek	6300	35
55		1239	23 do	pek sou	1955	32
56	Matalawa	1240	54 do	pek sou	4320	32
57		1243	20 do	pek sou	2000	30
59		1249	9 hf-ch	bro pek dust	765	24
60	Castlereagh	1252	27 ch	bro pek	2565	49
61		1255	18 do	or pek	1530	38
62		1258	16 do	pek	1280	36
72	Bickley	1288	15 hf-ch	pek sou	825	33
78	Aberdeen	1306	52 do	bro pek	4836	38
79		1309	44 do	pek	1300	34
80		1312	41 hf-ch	bro pek fans	2870	27
81	Massena	1315	52 do	bro pek	2600	42
82		1318	27 do	pek	1350	34
83		1321	22 do	pek sou	1100	33
86	Strathspey	1330	19 do	or pek	950	54
87		1333	18 do	pek	864	40
88		1336	20 do	pek sou	1060	36
93	Hornsey	1351	20 ch	or pek	1900	44
94		1354	32 hf-ch	bro pek	1920	44 bid
95		1357	18 ch	pek	1140	40
96		1360	25 do	fans	2000	28
97	Farnham	1363	50 hf-ch	pek sou	2000	34
98		1366	25 do	bro tea	1125	27
103	Dyakulla	1381	25 do	bro pek	1375	43 bid
104		1384	20 ch	pek	1400	37
105		1387	12 hf-ch	pek sou	840	35
106		1390	9 ch	dust	720	26
107	Erlsmere	1393	13 hf-ch	bro or pek	780	54
108		1396	41 ch	bro pek	3977	40
109		1399	20 do	pekoe	1720	38
110	Middleton	1402	14 do	bro pek	1400	52
111		1405	12 do	pek	1080	45
113	Putupaula	1411	25 hf-ch	bro or pek	1500	38 bid
114		1414	60 ch	bro pek	5400	38 bid
115		1417	46 do	pek	3450	35
116		1420	12 do	pek sou	840	33
117		1423	13 hf-ch	dust	1040	26
119	D H, in est. mark	1429	12 ch	bro mix	960	33
120	Columbia	1432	12 hf-ch	bro pek	780	36 bid
121		1435	24 do	bro or pek	1200	44
122		1438	27 do	or pek	1215	51
123		1441	34 do	pek	1530	45
124		1444	17 do	pek sou	714	37
125	Penrhos	1447	33 do	bro or pek	1848	49
126		1450	23 do	or pek	1035	43
127		1453	32 ch	pek	2720	36
130	Vogan	1462	50 do	bro pek	4750	38
131		1465	47 do	pek	3995	35
135	Waitalawa	1477	52 hf-ch	bro pek	2600	42
136		1480	60 do	pek	3000	37
137		1483	17 do	pek sou	850	33
138		1486	11 do	dust	990	28
139	K P W	1489	15 do	or pek	900	42
140		1492	14 do	bro pek	770	38
141		1495	29 do	pek	1450	34
144	Bloomfield	1504	27 ch	bro pek	2970	45
145		1507	17 do	pek	1700	43
146		1510	11 do	pek sou	1100	41
148	High Forest	1516	15 hf-ch	or pek No 1	780	69
149		1519	19 do	or pek	912	55
150		1522	18 do	pek	810	46
151		1525	19 do	or pek No 1	988	69
152		1528	24 do	or pek	1104	55
153		1531	26 do	pek	1144	45
155	Clunes	1537	19 ch	bro or pek	1805	37
156		1540	19 do	bro pek	1615	37
157		1543	40 do	pek	3200	34
158		1546	17 do	pek sou	1445	33
159	Maha Uva	1549	80 hf-ch	bro or pek	5200	44
160		1552	47 ch	pek	4465	41
161		1555	23 do	pek sou	1955	33
164	Erracht	1564	22 do	bro or pek	2200	37
165		1567	14 do	bro pek	1120	40
166		1570	34 do	pek	2380	35
167		1573	15 do	pek sou	1200	33
170	Gampaha	1582	20 do	bro or pek	2200	46
171		1585	25 do	pek	2125	44
172		1588	20 do	or pek	1900	50
173		1591	15 do	pek sou	1350	43
179	Knavesmire	1609	23 do	bro pek	2300	40
180		1612	35 do	pek	2800	36
181		1615	21 do	pek sou	1470	33
183	Kaduoya	1621	35 do	bro pek	3675	44 bid
184		1624	35 do	or pek	3150	45
185		1627	53 do	pek	4505	37 bid
186		1630	23 do	pek sou	1840	35

Lot.		Box.	Pkgs.	Name	lb.	c.
187	Vathalana	1633	27 ch	bro or pek	1620	38 bid
188		1636	37 do	or pek	3145	37
189		1639	15 do	pek	1200	34
196	G. P. Gama	1660	18 do	bro pek	1980	32
197		1663	12 do	pek	1140	29
198		1666	15 do	pek sou	1350	26
205	T U	1687	54 hf-ch	bro or pek	2970	42 bid
206		1690	28 do	or pek	1400	48 bid
207		1693	12 ch	pek	1200	39 bid
208	G'nie	1696	16 ch	or pek	1580	40 bid
209		1699	14 do	or pek	1440	40 bid
210	Gallawatte	1702	9 do	pek	765	33 bid
211	Ambalawa	1705	30 hf-ch	bro pek	1440	37
212	O'Bodde	1708	8 ch	bro pek	920	46
213	Mapitagama	1711	22 hf-ch	bro pek	1110	43
214	Roeberry	1714	64 ch	bro pek	7040	44 bid
215		1717	59 do	pek	5664	45
216		1720	31 do	pek sou	2790	38
217		1723	6 do	dust	720	24
219	SVin est.mark	1729	14 hf-ch	pek fans	1120	31
224	Weyungawatte	1744	31 do	bro or pek	1860	41 bid
225		1747	31 ch	bro pek	2945	37
226		1750	43 do	pek	3655	35
229	Arapolakande	1759	21 do	bro or pek	2100	40
230		1762	85 do	bro pek	7650	39 bid
231		1765	58 do	pek	4640	36
232		1768	11 do	pek sou	900	34
234	V O A	1774	9 do	bro tea	990	29
240	Ingurugalla	1792	8 do	red leaf	720	25
241	A G	1795	14 do	pek sou	1400	32
243		1801	11 do	bro tea	1100	31
244	Blairgowrie	1804	11 do	sou	935	25
247	Mawiliganga-watte	1813	14 hf-ch	bro or pek	770	46
249		1819	68 do	bro pek	3400	37
250		1822	27 ch	pek sou	2025	33
252	Waratenne	1828	26 do	bro pek	2340	37
253		1831	23 do	pek	1840	34
254		1834	10 do	pek sou	650	33
255		1837	10 hf-ch	pek fans	700	24
256	Geragama	1840	14 ch	bro pek	1260	36
257		1843	14 do	pek	1120	34
258		1846	10 do	pek sou	850	32
259		1849	9 hf-ch	dust	720	24
260	Gallawatte	1852	13 ch	pek	1105	34
261	Mary Hill	1855	9 do	pek	855	35
262	Clyde	1858	33 do	bro pek	2970	40
263		1861	11 do	bro or pek	1100	38 bid
264		1864	37 do	pek	3330	34
265		1867	15 do	pek sou	1350	33
267	Queensland	1873	27 do	pek	2295	40
268	Erlsmere	1876	23 do	pek	1909	37 bid
269	Hornsey	1879	22 do	or pek	2200	41 bid
270	Ascot	1882	26 do	bro pek	2600	38 bid
271		1885	17 do	or pek	1530	36
272		1888	12 do	pek	1080	35
273		1891	13 do	pek sou	1170	34
274		1894	8 do	or pek fans	800	30
276	Harrow	1900	14 do	bro or pek	1540	51
277		1903	31 do	pek	2790	38
282	Ingrogalla	1918	19 do	bro pek	1900	40
283		1921	23 do	pek	1955	38
284	Tonacombe	1924	30 do	or pek	2700	47
285		1927	42 do	bro pek	4200	50
286		1930	62 do	pek	4960	42
287		1933	21 do	pek sou	1680	38
288	P	1936	33 do	pek sou	3135	31
291	Talgaswela	1945	7 do	br pk No. 2	770	33
292		1948	43 do	or pek	3870	35
293		1951	13 do	pek	1260	34
294		1954	21 do	pek sou	1785	32
295		1957	8 do	dust	1080	24
296	Nahalma	1960	15 do	sou	1500	32
306	Bandara Eliya	1990	97 hf-ch	or pek	4850	38
307		1993	85 do	bro or pek	5100	41
308		1996	35 ch	pek	2975	35
309		1999	36 do	pek sou	2772	33
310		2002	10 hf-ch	bro pek fans	700	30
312	Palmerston	2008	29 do	bro pek	1508	49
313		2011	16 ch	pek	1440	45
315		2017	16 hf-ch	dust	1280	28
321	Battalgalla	2035	18 ch	pek sou	1440	39
322	Patiagama	2038	18 hf-ch	bro or pek	990	48
323		2041	14 ch	pek	1120	37
326	R	2050	55 do	pek sou	4850	31
328	Hyson	2056	18 do	pek	1620	29
331		2065	9 do	pek	720	27
335	Queensland	2077	14 hf-ch	bro or pek	700	80
336		2080	14 do	or pek	700	53
337		2083	13 ch	pek	1105	44

SMALL LOTS.

[Mr. E. John.]

Lot		Box.	Pkgs.	Name.	lb.	c.
4	Polduwa	169	3 ch	sou	300	27

Lot.		Box.	Pkgs.	Name.	lb.	c.
5		172	2 do	unas	200	24
6		175	2 do	red leaf	200	21
7		178	1 do	fans	100	23
8		181	1 do	congou	100	24
10	W H G	187	5 hf-ch	hro pek	275	37
11		190	3 ch	pekoe	300	35
12		193	4 do	pek sou	380	32
15	Kotuagedera	202	5 hf-ch	bro pek fans	375	26
31	N C R, in estate mark	250	9 ch	pek sou	675	30
32	G E	253	2 hf-ch	or pek	110	37
40	Natuwakelle	277	3 ch	dust	360	24
55	Uda	322	4 do	pek sou	300	27
56	Dickapittiya	325	1 do	pekoe	100	33
60	Mossend	337	1 hf-ch	fans	65	29
65	Anamallai	352	3 do	dust	255	22
67	Hiralouvah	358	2 do	dust	180	23
68	K T, in est. mark	361	2 ch	sou	180	28
73	Myraganga	376	4 hf-ch	dust	312	23
74		379	6 do	pek fans	378	31
94	Morahela	439	2 ch	sou	186	31

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Kurulugalla	76	6 ch	pek sou	540	29
5	K G A, in estate mark	82	1 ch	fans	140	23
6		85	1 do	dust	150	23
7	S	88	6 hf-ch	dust	480	23
8		91	7 do	bro tea	350	29
9	A	94	3 hf-ch	dust	240	24
10		97	4 do	bro tea	200	29
14	Wewatenne	109	8 ch	pek dust	480	25
18	Hangranoya	121	4 hf ch	fans	260	27
19		124	2 do	dust	170	22
20	W V Y	127	6 ch	pek	600	33
26	Nyanza	145	2 ch	dust	200	25
32	Gwernet	163	6 ch	hro or pek	660	39 bid
35		172	2 do	pek sou	180	33
39	Mahatenne	184	1 ch	dust	100	23
44	Havilland	199	2 ch	dust	200	22
45		202	2 ch	fans	200	25
46		205	2 do	sou	180	23
56	Harangalla	235	6 ch	fans	600	28 bid
60	Cosgahawella	247	3 ch	bro pek	350	34
			1 hf ch			
61		250	5 ch	pek	542	29 bid
			1 hf-ch			
62		253	3 ch	pek sou	290	28 bid
63		256	1 do	fans	200	21 bid
			2 hf-ch			
67	San Cio	268	9 hf-ch	sou	342	32
68		271	5 do	bro mix	225	25
69		274	5 do	dust	250	25
70	Oolapane	277	4 hf-ch	dust	300	24
74	Pindeni Oya	289	1 ch	fans	120	26
75	St. Paul's	292	2 hf-ch	bro pek	112	34
76		295	2 do	dust	110	18
77		298	7 do	bro mix	553	21
78	St. Peter's	301	1 hf-ch	hro pek	60	32
79		304	2 do	pek	90	28
80		307	1 do	pek sou	41	26
83	K L	316	8 hf-ch	bro pek	480	32
84		319	3 ch	pek	300	28
85		322	1 do	sou	90	22
86	D	325	5 ch	bro pek	500	33
87	Mousakande	328	9 hf-ch	bro or pek	495	39
90		337	5 do	fans	360	29
92	Gangwarily	343	4 hf-ch	fans	260	26
106	Radage	385	3 ch	hro pek	150	35
107		388	2 hf-ch	pek	100	32
108		391	2 do	pek sou	100	30
113	Marigold	511	8 hf-ch	bro pek dust	600	26
118	SangalyToppoe	526	8 hf-ch	bro pek	520	35
119		529	1 do	bro tea	76	25
120		532	1 do	pek dust	90	22
121		535	1 ch	red leaf	63	25
122	Deniyagama	538	8 hf-ch	hro pek fan	520	28 bid
123	S in estate mark	541	2 hf-ch	hro pek	125	32
124		544	2 do	pek	100	31
125		547	4 do	pek sou	200	30
126		550	2 do	dust	180	23
129	Dryburgh	559	7 hf-ch	bro or pek	420	41
130		562	10 do	or pek	520	40
132		568	9 ch	pek sou	531	31
133		571	2 hf-ch	fans	144	27
141	Nehoda	595	6 hf-ch	dust	480	23
142	Jak Tree Hill	598	10 hf-ch	pek sou	450	29
143		601	6 do	fans	390	22
144		604	3 do	dust	240	21
145	XX XX, in estate mark	607	10 boxes	pek	50	41

[Messrs. Forbes & Walker

Lot		Box	Pkgs.	Name.	lb.	c.
4	Wewawatte	1084	1 hf-ch	fans	53	26
5	Gingranoya	1087	6 do	dust	540	24
6		1090	6 do	fans	468	28
7	Hnrstpier Point	1093	3 ch	or pek	219	36
8		1096	4 do	hro pek	328	34
9		1099	5 do	pek	330	31
10		1102	3 do	pek sou	285	29
11		1105	2 do	dust	186	26
12	Cooroondoowatte	1108	6 hf-ch	hro pek	330	44
13		1111	11 do	pek	550	38
14		1114	6 do	pek sou	300	34
15		1117	1 do	dust	79	23
24	Great Valley Ceylon, in est. mark	1144	3 do	sou	300	33
25		1147	4 do	dust	460	34
45	Pamhagama	1207	2 ch	dust	220	21
58	Matalawa	1246	6 hf-ch	hro pek fans	420	29
63	Castlereagh	1261	4 ch	pek sou	320	32
64		1264	9 hf-ch	fans	630	36
65		1267	4 do	dust	320	25
66	Bamhragalla	1270	10 do	hro or pek	600	40
67		1273	9 do	bro pek	450	36
68		1276	8 do	pek	400	37
69		1279	6 do	pek sou	300	33
70		1282	1 do	sou	50	31
71		1285	1 do	dust	80	23
84	Massena	1324	4 do	hro pek fans	280	25
85		1327	1 do	dust	75	18
89	Bodawa	1339	5 do	bro pek	290	40
90		1342	4 do	pek	180	34
91		1345	4 do	pek sou	172	32
92		1348	1 do	dust	75	24
99	Farnham	1369	5 do	dust	375	23
100		1372	3 do	fans No. 1	180	18
101		1375	2 do	bro tea No. 2	80	21
102	B D W G	1378	1 do	dust	90	25
112	Delmar	1408	1 ch	pek	105	36
118	Putupaula	1426	2 hf-ch	sou	180	26
128	Penrhos	1456	7 ch	pek sou	560	33
129		1459	8 hf-ch	pek dust	640	23
132	Vogan	1468	6 ch	pek sou	480	33
133		1471	5 do	dust	400	23
134		1474	4 do	bro pek fans	440	27
142	K P W	1498	4 hf-ch	pek sou	200	32
143		1501	1 ch	dust	85	23
147	Bloomfield	1513	6 do	pek fans	480	24
154	W W	1534	1 box	dust	25	24
162	Maha Uva	1558	2 hf-ch	pek fans	160	27
163		1561	5 do	dust	425	23
168	Erracht	1576	3 ch	hro mix	270	27
169		1579	3 do	dust	498	22
182	Knavesmire	1618	3 hf-ch	dust	240	22
190	Vathalana	1642	6 ch	pek sou	570	32
199	G. P. Gama	1669	4 do	sou	380	28
200		1672	2 do	congou	180	26
201		1675	2 do	pek dust	264	23
202	Penrhos	1678	6 do	pek sou	480	33
203	Farnham	1681	9 hf-ch	bro fans	540	33 bid
204	Kelvin	1684	7 do	dust	420	23
218	S V in estate mark	1726	4 do	dust	336	25
220		1732	4 do	fans	260	28 bid
221	Kennington	1735	1 ch	unast	100	27
222		1738	7 do	unast	686	31
223		1741	4 do	dust	616	23
227	Weyungawatte	1753	3 do	pek sou	255	32
228		1756	4 hf-ch	dust	340	23
233	Arapolakande	1771	5 ch	dust	550	23
235	P G A	1777	1 do	hro mix	80	23
236		1780	1 do	sou	95	31
237	L G A	1783	3 do	hro pek	300	34
238		1786	2 do	pek	200	33
239		1789	5 do	red leaf	500	28
242	A G	1798	1 do	dust	115	22
245	Tangakellie	1807	1 do	hro or pek	106	50
246		1810	1 do	or pek	98	50
248	Mawaliganga-watte	1816	15 hf-ch	or pek	600	41
251		1825	3 do	dust	270	24
266	Clyde	1870	4 ch	dust	600	23
275	Ascot	1897	3 hf-ch	dust	300	22
289	Talgaswela	1939	6 ch	bro or pek	660	40
290		1942	6 do	hro pek	570	40
297	Nahalma	1963	8 hf-ch	bro pek fans	560	30
298		1966	6 do	dust	570	23
299	K G D	1969	7 ch	or pek	630	32
300		1972	7 do	pek	630	32
301		1975	1 do	dust	130	23
302	Poengalla	1978	7 do	dust	595	23
311	Bandara Eliya	2005	6 hf-ch	dust	540	23
314	Palmerston	2014	8 ch	pek sou	640	38

Lot		Box	Pkgs.		Name.	lb.	c.
316	Mount Pleasant	2020	4	hf-ch	bro pek	240	36
317		2023	2	do	pek	100	34
318		2026	2	do	pek sou	100	31
319		2029	1	do	unast	50	31
320		2032	1	do	fans	60	25
324	Patiagama	2014	7	do	fans	445	34
325	B D W G	2047	11	do	pek sou	550	33
327	Hyson	2053	7	ch	bro pek	630	31
329		2059	4	do	pek sou	320	25
330		2062	2	do	bro pek	180	33
332		2068	4	do	pek sou	320	25
333		2071	1	do	dust	110	21
334		2074	1	do	red leaf	75	18

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, June 16

"Duke of Portland."—Niabedda 1, 1 barrel sold at 100s; ditto 2, 2 casks sold at 94s 6d; ditto S, 1 cask sold at 76s; ditto PB, 1 barrel sold at 96s; NBT in estate mark, 1 barrel out; NB, 1 barrel out; NBP in estate mark, 1 barrel and 1 cask out; ditto, 1 bag out sea damaged.

"Staffordshire."—Craig O, 2 casks sold at 94s; ditto 1, 2 casks sold at 84s; ditto 2, 1 tierce sold at 50s; ditto P, 1 tierce sold at 97s; ditto T, 1 tierce out; ditto, 1 bag overtaker.

"Ulysses."—JB Ouvah O, 1 barrel sold at 92s; ditto 1, 1 cask and 1 barrel sold at 85s; ditto 2, 2 casks sold at 75s; ditto 3, 1 barrel sold at 36s; ditto PB, 1 barrel sold at 81s; ditto Triage, 1 tierce out.

"Staffordshire."—Large Size Gonamotava, 1 barrel sold at 105s; Size 1 ditto, 3 casks sold at 87s; PB ditto, 1 barrel sold at 102s; P, 1 tierce sold at 96s.

CEYLON COCOA SALES IN LONDON.

"Kamakura Maru."—MAK in estate mark, 30 bags sold at 60s.

"Duke of Devonshire."—O JJA in estate mark, 20 bags sold at 56s; sea damaged and bulked.

CEYLON CARDAMOMS SALES IN LONDON.

"Telena."—Gallantenne in estate mark AA, 1 case sold at 3s 11d; ditto A, 6 cases sold at 3s 5d; 1 case sold at 3s 6d; ditto B, 2 cases sold at 2s 10d; ditto B, 4 cases sold at 2s 9d; ditto C, 1 case sold at 2s 6d; ditto D, 5 cases sold at 2s 3d; ditto E, 6 cases sold at 2s 5d.

"Wakasa Maru."—Gallantenne in estate mark AA, 1 case sold at 4s; ditto A, 3 cases sold at 3s 5d; ditto B, 2 cases sold at 2s 9d; ditto C, 2 cases sold at 2s 7d; ditto D, 8 cases sold at 2s 3d.

"Ulysses."—Vedehette Cardamoms EX, 1 case sold at 3s 8d; ditto B, 4 cases sold at 1s 6d; ditto B, 1 case sold at 1s 7d; ditto C, 1 case sold at 2s 4d.

"Dardanus."—Nichola Oya No. 1, 1 case sold at 2s 9d; ditto No. 2, 1 case sold at 2s; ditto No. 2, 1 case sold at 2s 2d.

"Clan Mackinnon."—Altwood, 2 cases sold at 2s 9d; ditto, 3 cases sold at 2s 10d; ditto, 2 cases sold at 2s 3d; ditto, 2 cases sold at 1s 11d; ditto, 1 case sold at 1s 4d; ditto, 1 case sold at 2s 3d.

"Ulysses."—Kirinde Ella, 6 cases sold at 2s 2d.

"Staffordshire."—Kandaloya Cardamoms, 3 cases sold at 1s 9d; ditto, 1 case sold at 1s 6d.

"Telena."—Goomera in estate mark, 2 cases sold at 1s 9d.

"Duke of Portland."—Nawanagalla 1, 4 cases sold at 3s 8d; ditto 1, 1 case sold at 3s 7d; ditto 3, 1 case sold at 1s 11d; ditto 4, 1 case sold at 2s; ditto 5, 2 cases sold at 1s 9d; ditto seeds, 3 cases sold at 2s 2d.

"Clan Mathieson."—Delpotonoya, 2 cases sold at 3s 2d; ditto, 1 case sold at 2s 10d; ditto, 3 cases sold at 2s 11d; ditto, 1 case sold at 2s 1d; ditto, 1 case sold at 2s; ditto, 1 case sold at 1s 10.

OBSERVER PRINTING WORKS.

NO. 27 COLOMBO, JULY 17, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[450,575 lb.]

Lot.		Box	Pkgs.	Name.	lb.	c.
1	B, in estate mark	2086	9 ch	sou	810	32
2		2089	9 do	dust	1350	24
3	Doranakande	2092	11 ch	bro pek	1155	39
5		2098	8 do	pek No 2	720	34
17	Sirikandura	2134	8 cb	bro pek	800	41
23	Shrubs Hill	2152	46 cb	bro pek	4600	40
24		2155	50 do	pek	4250	37
25	Kincora	2158	39 hf-ch	bro pek	2340	42
26		2161	27 do	or pek	1350	39
27		2164	21 ch	pek	1680	35
28		2167	13 do	pek No. 2	1040	33
38	Sutton	2197	34 hf-ch	bro or pek	1904	62 bid
39		2200	32 ch	or pek	3200	43 bid
40		2203	12 do	pek	960	41 bid
41		2206	18 do	pek sou	1260	40
54	St. H	2245	13 ch	bro pek	1480	32
55		2248	13 do	pek	1170	33
66	Errolwood	31	18 hf-ch	bro or pek	810	77
67		34	11 ch	or pek	935	52
68		37	18 do	pek	1620	41
69		40	12 do	pek sou	1020	38
70		43	15 hf-ch	or pek fans	750	36
71		46	19 do	dust	1425	25
72	Gonapitiya	49	31 hf-ch	bro pek	1705	45
73		52	35 do	bro pek	1925	45
74		55	30 do	or pek	1470	52
75		58	23 do	or pek	1127	50
76		61	91 do	pek	4368	41
78	Kitulgalla	67	23 do	bro or pek	1150	38
79		70	13 do	or pek	780	39
80		73	19 ch	pek	1520	34
86	Passara Group	91	19 ch	bro or pek	1900	49
87		94	12 do	or pek	1200	48
88		97	16 do	pek	1440	46
91	D, in estate mark	106	18 hf-ch	bro or pek	1080	34
95		118	22 do	sou	1100	31
97	Ugieside	124	10 ch	congou	800	30
98		127	7 do	bro mix	700	29
101	Hayes	136	11 do	bro or pek	1100	56
102		139	23 do	bro pek	2300	40
103		142	13 do	or pek	1105	43
104		145	36 do	pek	3420	36
105		148	15 do	pek sou	1350	34
106	Ganapalla	151	20 ch	or pek	1800	42
107		154	29 do	bro or pek	2610	37
108		157	45 do	pek	3600	34
109		160	25 do	pek sou	1875	32
110		163	7 do	bro pek fans	700	34
111		166	9 do	dust	774	23
112	Morankande	169	28 cb	bro pek	2800	38
113		172	25 do	pek	1875	35
114		175	11 do	pek sou	990	33
126	High Forest	211	18 hf-ch	or pek	832	76
127		214	20 do	bro or pek	1240	45
128		217	21 do	pek	924	45
129	Dammeria	220	7 ch	bro or pek	840	43
130		223	44 do	or pek	4400	46
131		226	31 do	bro pek	3100	43
132		229	29 do	pek	2610	40
133		232	13 do	pek sou	1170	40
134		235	11 do	dust	990	24
135	Ruanwella	238	27 ch	or pek	2295	35
136		241	21 do	bro pek	1260	37
137		244	26 do	do	2340	33
138		247	10 do	pek sou	900	31
141	Pallagodda	256	24 cb	bro or pek	2280	37
142		259	23 do	bro pek	2185	40
143		262	22 do	or pek	1760	36
144		265	24 do	pek	1800	34
145		268	26 do	pek sou	2080	33
157	Stamford Hill	304	13 ch	bro pek	136	52
158		307	16 hf-ch	or pek	720	60 bid
159		310	19 ch	pek	1710	44
162	Digdola	319	36 ch	bro pek	3240	36 bid
163		322	23 do	pek	1610	33
164		325	9 do	pek sou	720	31
165	W L	328	10 hf-ch	bro pek	769	43
170	Maligatenne	343	10 ch	bro pek	1100	36
173	Holton	352	21 ch	bro pek	1995	36
174		355	14 do	pek	1120	34
175		358	9 do	pek sou	720	33
188	N	397	11 hf-ch	dust	990	21
194	Torwood	415	20 ch	bro or pek	2000	38 bid
195		418	28 do	bro pek	2408	43
196		421	37 cb	or pek	3034	37
197		424	39 do	pek	2730	35
198		427	20 do	pek sou	1620	33
200	Macaldeniya	433	6 ch 4 hf-ch	bro or pek	840	39
202		439	15 do	or pek	825	46
203		442	11 ch	pek	1000	39
204		445	7 do 1 hf-ch	pek sou	755	36
206	Hunasgeria	451	12 ch	sou	1080	27
207		454	9 hf-cb	dust	720	24
208	Stisted	457	50 hf-cb	bro or pek	3250	38 bid
209		460	26 do	or pek	1560	38
210		463	46 do	pek	2760	37
211		466	57 do	pek sou	3249	36
212		469	10 do	dust	800	24
218	Thedden	487	33 cb	bro pek	3465	39
219		490	8 do	pek	800	37
222	C	499	24 ch	sou	2280	witbd'n.
223	Kelburne	502	8 hf-cb	fans	760	do
225	Robgill	508	46 hf-ch	pek sou	2070	do
226	Knavesmire	511	24 ch	bro pek	2280	39
227		514	34 do	pek	2720	36
232	Castlereagh	529	17 cb	bro pek	1615	53
233		532	15 do	or pek	1275	43
234		535	14 do	pekoe	1120	42
238	L	547	35 ch	sou	2800	19 bid
245	Mawiliganga-watte	568	14 hf-ch	bro or pek	770	45
247		574	60 do	bro pek	3000	37
248		577	63 do	pek sou	2530	33
261	Monkton	616	8 ch	bro pek	816	40
262		619	8 do	pek	760	35
267	Lyegrove	634	10 do	pek	1000	40
268		637	8 do	pek sou	720	39
283	Ella Oya	682	17 do	bro pek	1700	32 bid
288	Middleton	697	12 do	bro pek	1200	54
289		700	12 do	pek	1020	46
291	Melrose	706	28 do	bro pek	2800	38
292		709	28 do	pek	2520	39
293		712	33 do	pek sou	2640	34
294	K P W	715	16 hf ch	or pek	880	46
295		718	15 do	bro pek	750	40
296		721	30 do	pek	1500	36
299	Columbia	730	32 do	or pek	1600	5
300		736	20 do	pek	990	43
301	Inicawattie	733	33 ch	bro pek sou	2904	29 bid
302	A M B	739	11 do	dust	1573	22
304	Battawatte	745	28 do	bro pek	3080	44 bid
305		748	34 do	pek	3230	38
306		751	28 do	pek sou	2240	35
307	Ella Oya	754	15 do	bro pek	1500	38 bid
308		757	12 do	pek	1080	35
312	Opalgalla	769	10 hf-ch	dust	800	23
317	Matale	784	30 hf-ch	bro pek	1800	38 bid
318		787	15 ch	pek	1350	36
319		790	10 do	pek sou	900	34
322	H G M	799	18 do	bro pek	1440	38
323		802	15 do	pek	1275	36
324		805	10 do	pek sou	850	34
325		808	12 do	bro pek fans	744	34
332	Craigmore	829	25 do	bro or pek	2500	34 bid
333		832	28 do	pek sou	2520	30 bid
336	H F in estate mark	841	11 do 1 hf-ch	bro or pek	1146	41 bid
340	Weyungawatte	853	17 hf-ch	bro or pek	1020	40
341		856	21 cb	bro pek	1995	35 bid
342		859	30 do	pek	2550	34
345	Amblakande	868	10 do	bro pek	1000	40
346		871	14 do	pek	1190	36
347		874	18 do	pek sou	1440	33
348	Penrbos	877	25 hf-ch	bro or pek	1325	56
349		880	20 do	or pek	900	46
350		883	31 ch	pek	2635	39
354	Fairlawn	895	31 hf-ch	or pek	1240	45
355		898	9 ch	pek	810	42
359	Ambragalla	910	100 hf-ch	or pek	5000	40
360		913	85 do	bro or pek	5100	38
361		916	25 ch	pek	2125	35
362		919	40 do	pek sou	3080	33
375	I W	958	20 do	pek sou	1700	29
403	T in est. mark	1042	7 do	bro or pek	700	40
419	Florence	1090	9 do	bro pek	900	36
420		1093	24 do	pek	2112	33
425	Waratenne	1108	15 do	bro pek	1350	37
426		1111	13 do	pek	1040	34
427	Vathalana	1114	27 hf-ch	bro or pek	1620	38

[Mr. E. John.—200,854 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
8	Galloola	478	29 ch	bro pek	2900	47
9		481	38 do	pekoe	3800	43
10		484	26 do	pek sou	2600	42
16	Oonoogaloya	502	8 do	bro or pek	800	45
17		505	18 do	bro pek	1620	43
18		508	14 do	pekoe	1190	38
19	Rookwood	511	31 do	pekoe	3410	39
20		514	35 do	pek sou	3570	36
21	Rondura	517	19 do	or pek	1710	41
22		520	56 do	bro pek	5600	37
23		523	44 do	pekoe	3960	34
24		526	19 do	pek sou	1710	32
26	Agra Ouvah	532	90 hf-ch	bro or pek	5850	58
27		535	38 do	or pek	2090	45
28		538	12 ch	pekoe	1140	42
29		541	9 do	pek sou	810	43
30		544	18 hf-ch	pek fans	1530	32
32	Eila	550	39 ch	bro or pek	3900	38
33		553	41 do	bro pek	3485	37
34		556	14 do	or pek	980	36
35		559	8 do	pekoe	720	35
36		562	31 do	pek sou	2480	33
38	Gangawatte	568	29 hf-ch	or pek	1450	43
39		571	17 ch	pekoe	1360	38
41		577	24 hf-ch	bro or pek	1440	49
42	H S, in estate mark	580	9 bags	red leaf	900	17
43	Brownlow	583	48 hf-ch	bro or pek	2640	44 bid
44		586	26 ch	or pek	2210	40 bid
45		589	16 do	pekoe	1280	37
46		592	13 hf-ch	dust	1092	24 bid
53	Mount Temple	613	20 do	or pek fans	2510	26 bid
54	Eadella	616	34 ch	bro pek	3400	36 bid
55		619	22 do	pekoe	1980	34
56		622	11 do	pek sou	880	33
58	E E	628	35 do	pek sou	2800	28 bid
59		631	17 hf-ch	fans	1040	27
60		634	15 do	dust	1200	21 bid
67	Poilakande	655	38 ch	bro pek	3800	38
68		658	28 do	pekoe	2520	36
70	A E	664	7 do	bro pek	700	36 bid
78	G W	688	19 do	pek sou	1710	40
79		691	40 hf-ch	fans	3400	25
87	O F G, in estate mark	715	57 ch	bro pek	5700	37 bid
88	P F G, in estate mark	718	17 do	bro or pek	1700	41 bid
89	H G M, in estate mark	721	31 do	bro or pek	3094	41 bid
90		724	19 do 1 hf-ch	pek sou	1750	33
91	A O, in est. mark mark	727	18 ch 1 hf ch	bro pek	1863	48 bid
93	Bellongalla	733	22 ch	pekoe	1760	34
94		736	12 do	pek sou	720	32
96	Kotuagedera	742	27 do	bro pek	2700	37
97		745	9 do	pekoe	855	34
101	Eladuwa	757	10 do	bro pek	1000	35
102		760	17 do	pekoe	1530	33
104	Ferndale	766	14 do	or pek	1260	41
107	Maryland	775	11 do	bro pek	1100	35
108		778	11 do	pekoe	1045	32
109	Anchor, in est. mark	781	18 do	unas	1440	33
113	Iona	793	23 hf-ch	bro or pek	1380	84
114		796	19 ch	or pek	1805	51
115		799	17 do	pekoe	1530	46
119	Murraythwaite	811	13 do	bro pek	1235	43
120		814	13 do	pekoe	1105	35
124	Lameliere	826	38 hf-ch	bro pek	2128	49
125		829	24 ch	pekoe	2160	41
126		832	11 do	pek sou	880	38
128	L P	838	12 do	bro mix	1020	27
131	Dalhouse	847	17 hf ch	bro pek	1020	60
132		850	24 do	pekoe No. 1	1080	41
133		853	19 do	pekoe No. 2	760	40

[Messrs. Somerville & Co.—216,562 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Florida	610	8 ch	bro pek	800	34
2		613	13 do	pek	1300	31
18	Lower Dickoya	661	15 ch	bro pek	1425	35 bid
29	Hanagama	610	33 ch	bro pek	3296	35 bid
30		697	42 do	pek sou	3996	33
34	Nugawella	709	38 hf-ch	bro pek	2204	40
35		712	49 do	pek	2450	35
40	Gangwarily	727	30 ch	bro pek	3000	33 bid
41		730	32 do	pek	2560	32
42		733	26 do	pek sou	1950	30
43		736	18 do	sou	1170	27 bid
49	Yarrow	754	72 hf-ch	bro pek	4032	41
50		757	71 do	pek	3550	38
52	Ellatenne	763	18 ch	pek	1494	32
53	Blackburn	766	26 ch	bro pek	2470	37
55		772	10 do	pek sou	700	33
59	Warakamure	784	25 ch	bro pek	2500	34 bid
60		787	20 do	pek	1900	33 bid
61		790	12 do	pek sou	1080	30 bid
67	Matapitiya	808	23 ch	bro pek	2300	32 bid
69	Dartry B	814	13 hf-ch	fans	845	33
70		817	11 do	dust	825	[illegible]
71	E L F	820	9 ch	pek	810	32
79	Glenalla	844	7 ch	dust	1015	23
84	Gampola	859	35 ch	bro pek	2800	35 bid
85	Amhalawa	862	13 hf-ch	pek fans	780	30
86		865	20 do	pek sou	800	32
87	M B	868	13 ch	fans	2002	23 bid
88	Ravenscraig	871	17 ch	or pek	1445	37
89		874	32 hf-ch	bro pek	1760	35
90		877	23 ch	pek	2070	35
92		883	12 hf-ch	fans	960	26
97	G	893	20 ch	bro pek	1900	35 bid
98	Rayigam	901	46 ch	bro pek	4370	36
99		904	35 do	or pek	2625	35
100		907	24 do	pek	1920	34
101		910	10 do	pek sou	750	33
103	Salawe	916	14 ch	bro pek	147	37
104		919	11 do	pek	1045	35
105		922	14 do	pek sou	1260	33
107	Ingeriya	928	56 hf ch	bro pek	2688	35 bid
108		931	54 do	pek	2484	33
109		934	45 do	pek sou	2070	32
110		937	26 do	bro pek fans	1560	33
111	W	940	5 ch	dust	700	22 bid
112	I P	948	21 ch	pek sou	1890	33
114	Handrokande	949	17 hf ch	bro pek	10	
115		952	17 do	pek	850	33
121	Roseneath	970	20 ch	bro pek	2100	40
122		973	9 do	pek	810	36
123		976	18 do	pek sou	1530	34
126	Harangalla	985	20 ch	bro pek	1900	37 bid
127		988	40 do	pek	3600	34
128	Eilandhu	991	10 ch	bro pek	1000	37
129		994	10 do	pek	950	33
135	Raxawa	13	57 ch	bro or pek	5700	40
136		16	28 hf ch	or pek	1288	45
137		19	51 do	pek	4080	36
138		22	24 ch	pek sou	1800	35
139		25	12 hf-ch	dust	1020	23
145	M A	43	30 hf ch	bro or pek	1800	48 bid
146		46	9 ch	pek	792	40 bid
147		49	10 do	pek fans	820	28 bid
148	Galphele	52	43 hf-ch	bro pek	2360	39
149		55	50 do	pek	2250	37
150		58	32 do	pek sou	1440	33
153	Tiddydale	67	16 hf-ch	bro pek	800	35
154		70	18 ch	pek	1620	32
156	G	76	19 ch	red leaf	1653	15 bid
157	Monrovia	79	29 ch	bro pek	2900	37
159		85	33 do	pek	2970	35
160		88	14 do	pek sou	1330	33
163	California	97	8 ch	bro		35
164		100	9 do	pek	855	33
170	Forest Hill	118	25 ch	pek	2125	33
173	Kosgama	127	17 ch	bro pek	1785	38 bid
174		130	10 do	pek	850	36
176	C T F	136	21 ch	pek sou	1680	28 bid
177	Ukuwela	139	34 ch 1 hf-ch	bro or pek	3444	36
178		142	43 ch	bro pek	4285	35
179		145	22 ch 1 hf ch	pek	2245	32
185	Woodthorpe	163	10 ch	bro pek	1000	43
186		166	18 do	pek	1530	37
187		169	16 ch	pek sou	1248	34
198	Hatdowa	202	17 ch	bro pek	1615	36
199		205	15 do	pek	1125	33
200		208	17 do	pek sou	1275	32
205	K	223	12 Bags	pek sou	861	27
206		226	68 do	sou	3095	25
209	Hangran Oya	235	30 hf-ch	bro pek	1650	40
211		241	13 ch	pek	1170	35
212		244	11 do	pek sou	825	33

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
4	Doranakande	2095	6 ch	bro pek	570	35
13	M'Golla	2122	2 ch	or pek	190	37
14		2125	2 hf-ch	bro or pek	110	39
15		2128	2 ch	pek	190	35
16		2131	2 do	pek sou	180	33

Lot		Box	Pkgs.	Name.	lb.	c.
18	Sirikandura	2137	6 ch	pek	540	35
19		2140	7 do	pek sou	560	34
20	S, in estate mark	2143	1 ch	dust	150	21
21		2146	1 do	fans	81	27
22		2149	1 do	bro tea	82	28
37	Munukattia Ceylon, in est. mark	2194	7 hf-ch	dust	560	24
42	J S	2209	6 do	fans	420	26
43		2212	3 do	dust	252	25
56	St. H.	1	1 ch	dust	100	22
61	D F D	16	4 hf-ch	bro pek	200	45
62		19	2 ch	or pek	180	45
63		22	4 do	pek sou	320	38
64	St. Andrew	25	2 hf-ch	sou	120	29
65		28	2 do	bro tea	140	25
77	Gonapitiya	64	8 hf-ch	dust	640	25
81	Kitulgalla	76	2 do	pek sou	100	33
82		79	2 do	dust	170	23
83	U S A	82	2 ch	bro pek	200	33
84		85	4 do	pek	360	32
85		88	7 do	pek sou	595	31
89	Passara Group	100	4 ch	pek sou	400	42
90		103	1 hf-ch	pek fans	75	25
92	D, in estate mark	109	5 hf-ch	fans	300	31
93		112	8 do	bro mix	480	25
94		115	6 do	dust	540	22
96	Ugieside	121	7 ch	dust	560	22
99	B P C	130	3 ch	pek	249	32
100		133	4 do	red leaf	340	25
115	Morankande	178	2 hf-ch	dust	180	22
116	K	181	1 ch	sou	100	30
117		184	2 do	dust	340	21
139	Ruanwella	250	1 ch	congou	90	29
140		253	8 do	dust	640	20
146	Pallagodda	271	3 ch	bro or pek No. 2	285	33
147		274	2 do	bro pek No. 2	200	36
148		277	2 do	or pek ,, 2	150	36
149		280	2 do	pek ,, 2	150	32
150		283	2 do	pek sou ,, 2	160	31
160	Stamford Hill	313	5 ch	pek sou	425	41
161		316	4 hf-ch	dust	340	26
166	W L	331	6 hf-ch	pek	422	35
167		334	3 do	pek sou	193	33
168		337	1 box	pek dust	37	24
169		340	2 do	dust	87	21
171	Maligatenne	346	6 ch	pek	600	32
172		349	2 do	pek sou	200	30
176	B A	361	5 ch	red leaf	475	21
185	N	388	2 ch	bro pek	210	28
186		391	4 do 1 hf-ch	pek sou	430	21
187		394	4 ch	pek fans	480	20
189		400	1 do 1 hf-ch	red leaf	137	14
190		403	1 do	fans	50	20
191	L N S, in est. mark	406	1 hf-ch	bro pek	41	36
192		409	1 do	dust	50	22
193		412	2 ch	pek sou	169	30
199	Torwood	430	9 hf-ch	dust	630	24
201	Macaldeniya	436	7 ch	bro pek	630	40
205		448	1 do	sou	95	32
213	B D B, Invoice No. 9	472	3 hf-ch	red leaf	132	22
214	Derby	475	11 hf-ch	bro or pek	638	36
215		478	11 do	bro pek	627	34
216		481	10 do	pek	570	33
217		484	5 do	pek sou	260	32
220	Thedden	493	5 ch	pek sou	450	34
221		496	1 do	dust	160	22
228	Knavesmire	517	5 do	pek sou	350	33
229		520	4 hf-ch	dust	320	23
235	Castlereagh	538	2 ch	pek sou	160	35
236		541	5 hf-ch	fans	350	33
237		544	2 do	dust	160	24
239	K W	550	8 hf-ch	bro pek	576	38
240		553	8 do	or pek	464	42
241		556	6 do	pek	288	37
242		559	2 do	bro tea	132	35
243		562	7 do	dust	651	24
244	Waverley	565	5 ch	bro pek	479	39
246	Mawiliganga-watte	571	16 hf-ch	or pek	640	38
249		580	9 do	pek sou	360	32
250		583	4 do	dust	300	23
256	N W D	601	1 ch	bro tea	107	19
257	Kirrimettia	604	2 do	bro mix	200	30
258		607	2 do	dust	240	23
259		610	2 do	fans	200	31
260		613	7 do	unast	630	32
263	Monkton	622	5 do	pek sou	450	33
264		625	1 do	bro mix	69	30
265		628	1 do	pek fans	82	24
266	Lyegrove	631	5 ch	bro pek	550	40
269		640	2 hf-ch	fans	190	23
284	Ella Oya	685	4 do	pek	360	31
285		686	6 do	pek sou	510	29
286		691	4 hf-ch	bro pek fans	260	27
287		694	2 do	bro pek dust		21
290	Kalupahana	703	7 do	pek sou	350	31
297	K P W	724	7 do	pek sou	315	31
298		727	1 do	dust	80	22
303	A M B	742	6 ch	red leaf	504	20
309	Ella Oya	760	7 do	pek sou	595	32
310		763	6 do	bro pek fans	390	32
311		766	1 do	dust	85	22
315	W in est. mark	778	6 do	pek	590	34
316		781	1 do	bro mix	100	24
320	Matale	793	3 hf-ch	fans	210	31
321		796	5 do	dust	400	26
326	K G D	811	6 ch	bro or pek	600	35
327		814	4 do	bro pek	360	34
328		817	3 do	or pek	270	33
329		820	3 do	pek	270	31
330		823	1 do	pek sou	90	29
331		826	1 do	dust	120	23
334	Passara Group	835	1 hf-ch	br or pk fans	75	31
335	Maligatenne	838	1 [illegible]	pek sou	100	31
343	Weyungawatte	862	2 do	pek sou	170	32
344		865	3 hf-ch	dust	255	22
351	Penrhos	886	6 ch	pek sou	480	35
352		889	4 hf-ch	fans	260	28
353	Fairlawn	892	12 do	bro pek	600	62
356		901	9 do	pek sou	405	37
357		904	2 do	dust	170	24
358		907	2 ch	bro mix	190	23
363	Ambragalla	922	9 hf-ch	bro pek fans	630	26
364		925	7 do	dust	630	23
365		928	2 ch	red leaf	200	23
371	Aigburth	946	4 hf-ch	congou	360	32
372		949	3 do	dust	285	21
373		952	1 do	bro mix	110	24
374		955	1 do	pek	50	34
404	B B in estate mark	1045	2 ch	bro pek	210	34
405		1048	2 do	pek	180	33
406		1051	1 do	dust	125	24

[Mr. E. John.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	M G, in est. mark	457	12 hf-ch	bro pek sou	660	33
2		460	6 do	fans	480	34
3		463	2 ch	bro mix	140	22
4	H S, in est. mark	466	3 do	or pek	285	33
5		469	6 do	bro pek	600	36
6		472	4 do	pekoe	380	33
7		475	3 do	pek sou	270	32
11	Galloola	487	3 hf-ch	dust	240	24
25	Rondura	529	4 ch	dust	480	23
31	Agra Ouvah	547	5 hf-ch	dust	500	24
37	Eila	565	1 ch	fans	120	29
40	Gangawatte	574	6 do	pek sou	510	35
47	Orwell	595	4 do	congou	400	34
48		598	1 do	red leaf	100	23
49	H	601	1 do	pekoe	75	34
50	Gonavy	604	4 hf-ch	fans	320	24
51		607	2 do	dust	160	23
52		610	2 ch	congou	170	21
57	Eadella	625	7 hf-ch	dust	609	20
61	St. Adam	637	1 ch	bro pek	108	30
62		640	2 do	pekoe	173	21
63		643	1 do	pek sou	80	18
64		646	1 do 1 hf-ch	unas	150	19
65		649	1 do	sou	80	15
66		652	3 do	bro mix	208	17
69	Poilakande	661	4 do 1 hf-ch	or pek fans	370	33
71	S	667	2 do	fans	158	23
80	G W	694	3 ch	bro mix	240	31
92	A C B A	730	2 hf-ch	bro mixed	100	24
95	W H R	739	5 ch	dust	500	21
90	Kotuagedera	748	4 do	pek sou	380	31
99		751	2 hf-ch	dust	180	22
100		754	4 do	bro pek fans	300	30
103	Eladuwa	763	6 ch	sou	540	30
105	Ferndale	769	4 do	fans	440	32
106		772	2 do	dust	250	25
110	Anchor, in est. mark	784	6 hf-ch	dust	570	22
116	Iona	802	5 ch	pek sou	450	40
117		805	3 hf-ch	bro or pek fans	210	39
118		808	2 do	dust	170	25
121	Murraythwaite	817	8 ch	pek sou	640	32

Lot.		Box.	Pkgs.	Name.	lb.	c.
122		820	5 hf-ch	bro pek fans	325	32
123		823	2 do	dust	180	23
127	Lameliere	835	6 do	pek fans	450	29
129	Sumtravalle	841	4 ch	unas	286	32
130	Dalhouse	844	6 hf-ch	or pek	270	61
134		856	4 do	dust	280	24

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb	c.
3	Florida	616	5 ch	pek sou	500	27
4		619	3 do	bro tea	300	25
5		622	1 do	dust	130	22
6	Allakolla	625	3 ch	sou	270	27
7		628	2 hf ch	dust	190	21
8	F, in estate mark	631	1 ch	dust	107	21
9		634	4 do	hro pek	420	30
10		637	2 do	pek	174	31
11		640	5 do 1 hf-ch	pek sou	480	31
12		643	1 ch 1 hf-ch	bro tea	320	26
13		646	3 ch	pek dust	555	20
14	Kirimettia	649	3 ch 1 hf ch	bro pek	390	34
15		652	3 ch 1 hf-ch	pek	356	32
16		655	1 ch 1 hf-ch	pek sou	134	29
17		658	3 ch 1 hf-ch	pek fans	360	26
19	Lower Dickoya	664	6 ch	pek	540	33
20		667	2 do	pek sou	190	31
21		670	2 hf-ch	unas	108	34
22		673	2 ch	hro mix	132	23
23		676	1 hf ch	dust	92	22
24		679	2 Sacks	red leaf	130	19
25	T K, in estate mark	682	1 hf-ch	bro pek	50	25
26		685	1 do	pek sou	48	24
27		688	1 do	unas	46	27
28		691	3 ch	bro or pek	291	30
31	Hanagama	700	7 ch	pek sou	630	30
32		703	1 ch	sou	83	29
33		706	2 do	fans	240	27
36	Nugawella	715	3 ch	pek sou	255	33
37		718	2 do	bro mix	170	26
38		721	2 hf-ch	dust	170	24
39	H, in estate mark	724	3 ch	pek dust	555	20
44	Aberfoyle	739	12 hf-ch	bro or pek	600	42
45		742	3 ch	pek	300	36
46		745	3 do	pek sou	300	33
47		748	3 hf-ch	bro pek fans	225	34
48	X V T	751	3 ch	pek dust	555	20
51	Y, in estate mark	760	4 hf-ch	dust	320	22
54	Blackburn	769	7 ch	pek	560	35
56		775	5 do	dust	375	24
57		778	2 do	bro tea	124	28
58	Y B	781	2 ch	pek dust	200	21
62	A A, in estate mark	793	3 hf ch	pek	171	32
63	D B R, in estate mark	796	1 hf ch	hro pek	38	36
64		799	2 do	pek sou	113	28
65		802	1 do	dust	79	22
66		805	1 do	pek	49	31
68	Dartry B	811	5 ch	bro tea	335	28
80	Glenalla	847	5 ch	fans	500	23 bid
81		850	3 do	bro mix	315	25
82		853	2 do	con	180	27
83	L	856	6 ch	pek dust	630	21 bid
91	Ravenscraig	880	3 ch	pek sou	240	32
93	K	886	4 hf ch	pek fans	330	24
94	Galatotta	889	7 hf ch	bro pek	385	32
95		892	3 do	pek	165	30
96		895	2 do	pek sou	110	27
102	D B K, in estate mark	913	2 ch	pek	180	31
106	Salawe	925	2 ch	pek dust	306	24
113	I P	946	5 hf-ch	dust	435	22
116	Handrokande	955	3 hf-ch	pek sou	150	30
117		958	2 do	dust	140	24
118	T U	961	6 ch	or pek	600	34
119		964	2 do	red leaf	120	23
120		967	3 hf-ch	dust	250	27
124	Roseneath	979	2 ch	dust	310	23
125		982	1 do	bro mix	85	25
140	Raxawa	28	5 ch	fans	550	31
141		31	1 do	sou	92	30
142		34	2 hf-ch	bro mix	130	35
143	X X X	37	5 hf-ch	hro pek	300	32 hid
144	M A	40	8 ch	or pek	656	52 bid

Lot		Box	Pkgs.	Name.	lb.	c.
151	Galphele	61	1 ch	dust	105	21
152		64	1 hf-ch	sou	56	30
155	Tiddydale	73	6 ch	pek sou	540	30
158	Monrovia	82	6 ch	bro or pek	620	35
161	R O	91	3 ch	bro tea	285	27
162		94	1 do	pek dust	155	21
165	California	103	6 ch	pek sou	600	30
166		106	3 do	red leaf	267	86
167		109	1 do 1 hf-ch	pek dust	203	20 24
168	Forest Hill	112	3 hf-ch	hro or pek	165	23
169		115	5 ch	bro pek	455	27
171		121	4 hf-ch	fans	300	23
172	Donside	124	5 hf ch	dust	450	32
175	Kosgama	133	3 ch	pek sou	225	31
180	Ukuwela	148	6 ch 1 hf-ch	pek sou	645	
181	Raven Oya	151	8 hf-ch	bro pek	416	41
182		154	13 do	pek	585	36
183		157	12 do	pek sou	480	33
184		160	1 do	dust	42	22
188	Woodthorpe	172	4 ch	sou	304	31
189		175	1 hf-bh	dust	34	22
190	Primrose Hill	178	4 hf-ch	bro pek	208	42
191		181	3 ch	pek	255	36
192		184	7 do	pek sou	560	33
193		187	1 hf-ch	dust	44	21
194	Patulpana	190	10 hf ch	bro pek	550	34
195		193	10 do	pek sou	500	30
196		196	8 do	pek	400	31
197		199	3 do	bro mix	150	35
201	Hatdowa	211	4 ch	fans	400	30
202		213	1 do	sou	75	28
203		217	1 do	bro mix	85	27
204		220	2 do	dust	290	22
207	K	229	4 Bags	red leaf	232	17
208		232	4 do	dust	348	18
210	Hangran Oya	238	7 ch	or pek	525	41
213		247	3 hf ch	fans	195	31
214		250	4 do	dust	340	24
215	Anganakettia	253	5 ch	hro pek	500	34
216		256	4 do	pek	390	32
217		259	3 do 1 hf ch	sou	350	31
218		262	1 ch	bro mix	100	24
219		265	1 hf ch	dust	70	19

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, June 23

"Sado Maru."—Large Size Gonamotava, 1 tierce sold at 102s ; Size 1 ditto, 1 cask and 1 tierce sold at 93s.

"Duke of Portland."—Size 1 Thotulagalla, 1 tierce sold at 102s ; Size 2 ditto, 4 casks sold at 97s 6d ; Size 3 ditto, 1 tierce sold at 67s ; PB ditto, 1 tierce sold at 95s.

CEYLON COCOA SALES IN LONDON.

"Duke of Portland."—Sirigalla A, 47 bags sold at 47s 6d ; ditto T, 3 bags sold at 47s.

"Port Elliot."—Wiharagama 3, 2 bags sold at 45s 6d.

"Clan Sutherland."—Wiharagama D, 2 bags sold at 32s.

"Dardanus."—OO Wiharagama, 19 bags sold at 66s.

"Clan Chisholm."—2 Palli, 6 bags sold at 50s.

"Clan Mathieson."—Palli, 3 bags sold at 51s ; sea damaged &c.

"Clan Chisholm."—A Palli, 31 bags sold at 68s.

"Clan Mathieson."—Kepitigalla, 14 bags sold at 63s ; ditto, 19 bags sold at 56s ; ditto, 21 bags sold at 54s : ditto, 4 bags sold at 48s ; ditto, 3 bags sold at 44s.

"Prometheus."—Lower Haloya, 3 bags sold at 48s ; ditto, 1 bag sold at 43s.

"Shropshire."—Kepitigalla, 12 bags sold at 61s.

"Orissa."—Bandarapola, 44 bags sold at 68s ; ditto 2, 4 bags sold at 54s.

"Ulysses."—Ingurugalla A, 33 bags sold at 65s.

"Orissa."—Ingurugalla 2, 1 bag sold at 48s.

"Dardanus."—Maousava AA, 13 bags sold at 67s.

CEYLON CARDAMOMS SALES IN LONDON.

"Prometheus."—Katooloya EX, 1 case sold at 4d; ditto AA, 6 cases sold at 2s 8d; ditto A, cases sold at 2s 3d; ditto B, 4 cases sold at 6s 7d; ditto B, 3 cases sold at 1s 6d; ditto C, 1 case sold at 2s 3d; OBEC in estate mark, Nilloomally Mysore, 1 case sold at 2s 5d; 2 cases sold at 2s 3d; 1 case sold at 2s; Seed, 1 bag sold at 1s 11d; OBEC Dankande in estate mark, 3 cases sold at 2s 10d; 2 cases sold at 2s 4d.

"Matiana."—Yattawatte 1, 4 cases sold at 2s 8d; ditto 2, 1 case sold at 1s 6d; Seed, 2 cases sold at 2s 11d.

"Duke of Norfolk."—FFS in estate mark, 3 cases sold at 2s 8d; 1 case sold at 1s 10d; 2 cases sold at 2s 6d; 1 case sold at 1s 9d.

"Ulysses."—Peru, 2 cases sold at 2s 4d.

"City of Sparta."—OBEC in estate mark, Nillomally, 2 cases sold at 2s 4d; 2 cases sold at 2s 1d; 1 case sold at 2s; OBEC Dankande in estate mark, 2 cases sold at 1s 9d; Elkadua, 2, cases sold at 2s 1d; 1 case sold at 2s.

"Socotra."—OBEC in estate mark, Niloomally, 4 cases sold at 2s 1d; 1 case sold at 1s 8d.

"Clan Mathieson."—Pitakande Group No. 1, 2 cases sold at 2s 8d; 2 cases sold at 2s 7d; No. 2, 2 cases sold at 2s 2d; 1 case sold at 2s 1d; No. 3, 1 case sold at 1s 6d; No. 1, 2 cases sold at 2s 4d; 2 cases sold at 2s 3d; No. 2, 2 cases sold at 1s 9d; No. 3, 1 case sold at 1s 6d; No. 1, 2 cases sold at 2s 6d; 4 cases sold at 2s 5d; No. 2, 4 cases sold at 2s 2d; No. 3, 1 case sold at 1s 5d.

"Duke of Norfolk."—JJA & Co. in estate mark A Mysore, 4 cases sold at 2s 3d; ditto C, 2 cases sold at 1s 6d; ditto D, 7 cases sold at 1s 6d; ASM in estate mark, Mysore, 2 cases sold at 1s 9d; ditto C Ceylon, 3 cases sold at 1s 10d.

"Clan Mathieson."—ASM in estate mark, Mysore Seed, 1 case sold at 2s.

"Sado Maru."—CC, 6 cases sold at 1s 8d; CC, 1 bag sold at 2s 1d; CC, 2 bags sold at 1s 10d.

"Prometheus."—Duckwari A1, 1 case sold at 4s; ditto C Splits, 2 cases sold at 2s 8d; ditto Seed, 1 case sold at 2s 4d.

"Sado Maru."—Nawanagalla 1, 1 case sold at 3s 8d; ditto 2, 9 cases sold at 2s 9d; ditto 3, 1 case sold at 1s 10d; ditto 4, 1 case sold at 2s; ditto 5, 2 cases sold at 1s 10d.

"Oceanien."—Nawanagalla 2, 4 cases sold at 2s 9d; ditto 3, 1 case sold at 1s 8d; ditto 4, 1 case sold at 1s 9d.

"Clan Matheson."—Nawanagalla C, 1 case sold at 1s 10d.

OBSERVER PRINTING WORKS.

TEA, COFFEE, CINCHONA, COCOA, AND CARDAMOM SALES.

NO. 28 COLOMBO, JULY 24, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[672,888 lb.]

Lot.		Box	Pkgs.	Name.	lb.	c.
2	New Peacock	1120	14 ch	pek sou	1260	33
4		1126	23 hf-ch	pek fans	1725	27
8	Karowkettia	1137	7 ch	pek	723	29
18	Kosgalla	1168	49 hf-ch	bro pek	2450	35
19		1171	41 do	pek	1845	33
21		1177	23 do	pek sou	1150	31
26	Ketadola	1192	7 ch	pek	700	32
31	Abbotsleigh	1207	11 ch	or pek	1001	62
47	Grange Garden	1555	24 ch	bro or pek	2400	43
48		1258	13 do	pek	1300	36 bid
51	Hatton	1267	24 ch	bro pek	1440	55
52		1270	33 do	pek	1650	42
55	Mousakelle	1279	24 ch	bro or pek	2400	43
56		1282	10 do	or pek	1000	38 bid
57		1285	10 do	pek	1000	36
60	Daphne	1294	8 ch	bro pek	760	36
66	Trewardene	1312	11 ch	bro pek	1100	32 bid
67		1315	17 do	pek	1530	30
73	Anningkande	1333	11 ch	bro pek	1100	38
74		1336	22 do	pek	2090	36
75	Deaculla	1339	50 ch	bro pek	3025	49
76		1342	90 do	pek	2100	41
77		1345	20 do	pek sou	1400	36
78	Agraoya	1348	19 ch	bro pek	1900	43
79		1351	20 do	pek	1800	36
80		1354	19 do	or pek	1615	41
81		1357	9 do	pek sou	810	34
84	Ascot	1366	15 ch	bro pek	1500	37
85		1369	16 do	or pek	1440	37
86		1372	15 do	pek	1350	34
87		1375	10 do	pek sou	900	33
93	Cotswold	1393	17 ch	bro pek	1530	44
94		1396	16 do	pek	1440	37
95		1399	14 do	pek sou	1050	35
98	Monkswood	1408	21 hf-ch	bro pek	1050	50 bid
99	St. Leonards-on-Sea	1411	21 ch	bro pek	1890	34
101		1417	27 do	pek	1360	32
102		1420	10 do	pek sou	900	29
104	Ambalangoda	1426	18 ch	bro pek	1800	48
105		1429	16 do	pek	1520	45
116	Monkswood	1462	21 hf-ch	bro pek	1050	61
117		1465	22 do	or pek	1100	67
118		1468	33 ch	pek	2970	48
119		1471	11 do	pek sou	880	41
120		1474	16 hf-ch	fans	896	37
125	O'Bedde	1489	8 ch	bro pek	800	43
127		1495	8 do	pek	760	36
137	Springwood	1525	12 ch	congou	900	29
142	Ismalle	1540	21 ch	sou	1722	29
143		1543	26 do	fans	3380	28
144		1546	14 do	dust	1960	23
146	Hornsey	1552	21 hf-ch	bro or pek	1050	51 bid
147		1555	17 ch	or pek	1615	45 bid
148		1558	26 hf-ch	bro pek	1560	46
149		1561	11 ch	pek	990	43
152	Vogan	1570	52 ch	bro pek	4940	38 bid
153		1573	47 do	pek	3995	34
162	D M V	1600	25 ch	bro pek	2375	35
163		1603	30 do	pek	2550	33
164		1606	11 do	pek sou	880	31
165	Holton	1609	22 ch	bro pek	2090	34 bid
166		1612	10 do	pek	800	33
173	C S G	1633	56 hf-ch	bro pek	2800	42 bid
174		1636	41 ch	pek	3280	36
175		1639	10 do	pek sou	800	32
179	Frogmore	1651	13 hf-ch	bro pek	715	49
183	Bargany	1663	19 hf-ch	bro or pek	1235	56 bid
184		1666	14 ch	or pek	1540	41 bid
185		1669	12 do	pek	1200	40 bid
188	Yaha Ella	1678	13 ch	bro pek	1300	36 bid
189		1681	15 do	pek	1260	34 bid
190		1684	12 do	pek sou	1170	32
193	Glendon	1693	40 ch	bro pek	3800	36
194		1696	12 do	or pek	900	36
195		1699	44 do	pek	3080	33
196		1702	16 do	pek sou	1200	32
199	Gallustain	1711	28 hf-ch	bro pek	1400	39
200		1714	15 ch	pek	1200	34
204	Cooroondoowatte	1726	14 hf-ch	bro pek	770	45
205		1729	19 do	pek	950	37
210	D M V	1744	25 ch	bro pek	2375	34 bid
211		1747	31 do	pek	2635	31 bid
212		1750	10 do	pek sou	800	30
216	Scrubs	1762	10 ch	bro or pek	1000	46 bid
217		1765	7 ch	bro pek	700	38 bid
218		1768	9 do	pek	720	41
221	Matalawa	1777	10 hf-ch	dust	840	21
222		1780	87 do	pek	6351	31 bid
225	H, in estate mark	1789	13 ch	unas	1235	31
233	St. Heliers	1813	23 hf-ch	bro or pek	1150	53
234		1816	20 ch 5 hf-ch	bro pek	1535	42
235		1819	16 ch	pek	1408	36
239	Patiagama	1831	19 ch	or pek	1615	42
240		1834	20 do	pek	1600	37
241		1837	25 do	pek sou	2000	34
242	Stafford	1840	16 ch	bro or pek	1120	51
243		1843	13 do	or pek	1300	52
244		1846	15 do	pekoe	1425	48
248	W N	1858	16 ch	bro tea	1344	21
249		1861	8 do	fans	960	14
250		1864	15 do	bro tea	1320	26
251	Naseby	1867	30 hf-ch	bro or pek	1710	58
252		1870	15 do	pek	750	48
253		1873	14 do	pek sou	742	43
254	Kilkenny	1876	30 ch	or pek	3000	38 bid
255		1879	29 do	pek	2262	33
256	a Uva	1882	58 hf-ch	bro or pek	3770	45
257		1885	33 ch	pek	3135	41
258		1888	13 do	pek sou	1040	40
264	Pallagodda	1906	16 ch	bro or pek	1600	35
265		1909	17 do	bro pek	1700	39
266		1912	15 do	or pek	1350	35 bid
267		1915	16 do	pek	1280	33
268		1918	16 do	pek sou	1360	32
270		1924	23 do	dust	1840	23
274	Ruanwella	1936	24 hf-ch	or pek	2040	35 bid
275		1939	17 do	bro pek	1020	36
276		1942	22 do	pek	1980	33
277		1945	9 ch	pek sou	810	31
280	Dammeria	1954	6 do	bro or pek	720	40
281		1957	15 do	or pek	1500	48
282		1960	14 do	bro pek	1400	43
283		1963	11 do	dust	990	40
293	Weoya	1993	45 ch	bro or pek	4500	36
294		1996	20 do	or pek	1900	37
295		1999	36 do	pek	3240	35
296		2002	27 do	pek sou	2295	33
297		2005	44 do	sou	3520	28
299		2011	14 do	dust	2100	22
300	Erracht	2014	44 ch	bro or pek	4180	34
301		2017	23 ch	bro pek	1840	37
302		2020	57 do	pek	3990	32
303		2023	30 do	pek sou	2100	31
304		2026	17 do	do No 2	1377	28
306	Clunes	2032	26 ch	bro or pek	2470	34
307		2035	26 do	bro pek	2080	35 bid
308		2038	51 do	pek	4080	32
309		2041	23 do	pek sou	1955	30
311	Dea Ella	2047	30 hf-ch	bro or pek	1800	42
312		2050	61 do	or pek	3050	39
313		2053	46 do	pek	2300	36
314		2056	34 do	pek sou	1564	33
315		2059	14 do	fans	784	28
317	Knavesmire	2065	23 ch	bro pek	2185	38
318		2068	32 do	pek	2560	35
329	O S S, in estate mark	2101	20 ch	bro or pek	1500	39 bid
330		2104	21 do	bro pek	1470	37 bid
331		2107	31 do	pek	2480	36
337	Harrington	2125	27 hf-ch	bro or pek	1458	65
338		2128	22 ch	or pek	1980	42 bid
339		2131	15 do	pek A	1350	38 bid
342	Tavalamtenne	2140	14 do	bro or pek	1400	36 bid
348	K P W	2158	37 hf-ch	pek	1665	34
352	Middleston	2170	17 do	bro or pek	935	90
353		2173	13 ch	bro pek	1300	55
355	Coreen	2179	36 hf-ch	bro pek	2160	39 bid
356		2182	14 ch	or pek	1260	43 bid
357		2185	12 do	pek	1080	37 bid
358	Geragama	2188	25 do	bro pek	2375	36
359		2191	20 do	pek	1700	33
360		2194	10 do	pek sou	850	32
362		2200	9 hf-ch	dust	720	22
363	Waratenne	2203	25 ch	bro pek	2375	36
364		2206	22 do	pek	1760	33
368	Inverness	2218	47 hf-ch	bro pek	2585	47
369		2221	23 ch	pek	2185	42
370		2224	14 do	pek sou	1330	38
372	Carfax	2230	19 do	bro or pek	1900	50
373		2233	20 do	or pek	1800	46
374		2236	22 do	pek	1980	44

Lot		Box.	Pkgs.		Name.	lb.	c.
375	Dunkeld	2239	60	hf-ch	bro pek	3600	46
376		2242	11	ch	or pek	1045	43
377		2245	25	do	pek	2250	41
380		4	11	hf-ch	dust	990	25
381	D B E	7	8	ch	red leaf	880	27
383	Letchemy	13	8	do	dust	1120	22
388	Seenagolla	28	15	hf-ch	bro pek	975	45
394	Aberdeen	46	32	ch	bro pek	2976	36
395		49	42	do	or pek	3150	43
396		52	29	do	pek	2175	35
399	Killarney	61	36	hf-ch	bro or pek	1980	44
400		64	23	ch	pek sou	2070	37
402	Hatherleigh	70	40	do	bro or pek	4000	34 bid
403		73	35	do	pek	3325	32
404		76	20	do	pek sou	1900	28 bid
406		82	6	do	dust	900	20 bid
407	Grat Valley, Ceylon in est. mark	85	25	hf-ch	or pek	1540	40
408		88	28	do	bro pek	1250	51
409		91	19	ch	pek	1710	38
410		94	15	do	pek sou	1125	35
414		106	100	hf-ch	bro pek	5500	42
417	Pussella	115	18	ch	bro pek	1692	40
418		118	21	do	or pek	1596	36
419		121	34	do	pek	2686	35
422	H E	130	10	do	pek	950	35
424	Arapolakande	136	13	do	bro or pek	1300	40
425		139	59	do	bro pek	5310	39 bid
426		142	44	do	pek	3520	36
427		145	8	do	pek sou	720	33
435		169	60	do	bro pek	5400	39 bid
436		172	40	do	pek	3200	35 bid
437		175	8	do	pek sou	720	33
447	Forres	205	19	hf-ch	bro pek	950	47
448		208	9	do	dust	720	21
449	Yataderiya	211	18	ch	bro or pek	1836	41
450		214	34	do	bro pek	3230	34
451		217	13	do	or pek	1144	35 bid
452		220	53	do	pek	4134	32 bid
453		223	15	do	pek sou	1095	30 bid
459	Irex	241	29	do	bro pek	2900	39
460		244	20	do	pek	1950	34
461		247	15	do	pek sou	1392	30
464	Maligatenne	256	9	do	unast	721	26 bid
466	Gonapitiya	262	23	hf-ch	or pek	1150	48
467		265	23	do	bro pek	1150	47
468		268	55	do	pek sou	2585	39
469		271	26	do	pek fans	1664	31
470		274	10	do	dust	800	23
479	B and D	301	16	do	dust	1150	22
482	Talgaswela	310	9	ch	bro pek	855	37 bid
483		313	7	do	bro pek No 2	700	33
484		316	15	do	or pek	1350	36
485		319	14	do	pek	1260	33
486		322	9	do	pek sou	765	32
488	Pansalatenne	328	15	do	bro or pek	1425	45
489		331	43	do	bro pek	3870	37 bid
490		334	18	do	pek	1440	35
491		337	18	do	pek sou	1440	32
495		349	12	do	unast	960	29
496	Udabage	352	29	hf ch	bro pek	1740	34 bid
497		355	20	do	pek	1100	34
498		358	20	do	pek sou	1000	32
500	D in est. mark	364	22	do	sou	1100	27
501	Pine Hill	367	32	do	bro or pek	1856	53
502		370	52	do	or pek	2912	43
503		373	54	ch	pek	4590	36
504		376	10	do	pek sou	850	34
510	Lauderdale	394	19	ch	bro pek	1900	35
511		397	37	do	pek	3515	32
512		400	35	do	pek sou	3325	30 bid
513		403	21	do	bro pek fans	2100	33
514		406	15	do	dust	1050	24
515		409	69	do	bro pek	6900	34 bid
517	Blairgowrie	415	54	do	sou	4320	23
519	W K	421	27	hf-ch	or pek	1350	44 bid
521	Ellamulla	427	9	ch	dust	900	23
525	Hunasgeria	439	18	do	bro or pek	1800	35 bid
526		442	38	do	bro pek	3800	34 bid
527		445	22	do	pek	2090	31 bid
528		448	19	do	pek sou	1710	30 bid
529	Longford	451	7	do	bro pek	700	39
530		454	10	do	or pek	850	41
531		457	17	do	pek	1615	36
532		460	9	do	pek sou	810	33
534	G K	466	10	do	bro tea	900	30
535		469	14	do	dust	1960	22
536	Carberry	472	27	do	bro pek	2430	35
537		475	22	do	pek	1980	34
539		481	8	do	bro or pek	880	34
550	Telkelled	514	30	do	or pek	2980	43 bid
551	Bandara Eliya	517	86	hf-ch	bro or pek	5160	38
552		520	98	do	or pek	4900	40
553		423	36	ch	pek	3060	30
554		526	37	do	pek sou	2849	33
556		532	8	do	dust	720	22

Lot		Box	Pkgs.		Name.	lb.	c.
558	T'Villa	538	14	do	bro pek	1400	33 bid
559		541	9	do	or pek	900	33 bid
560		544	37	do	pek	3330	30 bid
561		547	12	do	pek sou	1080	28 bid
562		550	22	do	sou	1870	26 bid
563		553	5	do	fans	700	21
570	Matale	574	32	hf-ch	bro pek	1920	38
571		577	13	ch	pek	1170	37
572		580	9	do	pek sou	810	33
574	Digdola	586	10	do	bro pek	900	34
575		589	31	do	pek	2170	32
578	Glencorse	598	31	do	bro or pek	2945	42
579		601	9	do	bro or pek	720	50
580		604	32	do	bro pek	3060	36
581		607	29	do	pek	2175	34
582		610	25	do	pek sou	1750	32
586	West Holyrood	622	19	do	pek sou	1520	38
587		625	27	hf-ch	dust	2430	26
592	Galapitakande	640	47	do	bro pek	4700	43
593		643	29	do	pek	2900	42
594		646	15	do	pek sou	1425	40

[Messrs. Somerville & Co.—251,324 lb.]

Lot		Box	Pkgs.		Name.	lb.	c.
1	Ossington	268	12	ch	bro pek	1200	35
2		271	18	do	pek	1800	32
3		274	10	do	pek sou	1000	29
6	Tientsin	283	10	ch	dust	1300	25
9	H J S	292	18	hf-ch	bro pek	1080	36 d
10		295	16	do	pek	960	35
11	Illukettia	298	13	ch	bro pek	1430	35
12		301	13	do	pek	1300	32
13		304	7	do	pek sou	700	29
18	Clova	319	18	hf ch	bro pek	900	37
19		322	22	do	pek	1100	32 bi
20		325	30	do	pek sou	1350	30
23	Nyanza	334	8	ch	bro pek	800	46 bid
25		340	15	do	pek	1275	37 bid
28	Havilland	349	60	hf-ch	bro or pek	3600	37 bid
29		352	43	ch	or pek	3870	34 bid
30		355	43	do	pek	3665	33
31		358	14	do	pek sou	1120	29
35	Theberton	370	22	ch	bro or pek	2090	38
36		373	19	do	pek	1710	34
41	Dryburgh	388	22	hf-ch	pek	924	35
44	Marigold	397	95	hf-ch	bro pek	5320	39 bid
45		505	45	do	pek	2250	41
46		508	24	do	pek sou	1056	38
58	Minna	544	27	ch	or pek	2295	41
59		547	11	do	pek	990	39
60		550	9	do	pek sou	810	36
62	P T N, in estate mark	556	30	hf-ch	pek sou	1500	26
63	Charlie Hill	559	20	hf ch	bro pek	1100	34
64		562	14	do	pek	760	32
67	Mary Hill	571	13	ch	bro pek	1300	37 bid
68		574	10	do	pek	950	35
71	Arduthie	583	28	hf ch	bro pek	1400	38
72		586	39	do	pek	1950	35
76	Wilpita	598	8 ch 1 hf-ch		bro pek	855	35
83	Mipitiakande	619	31	ch	pek sou	2480	30
84		622	17	do	pek fans	1360	22
85	Orion	625	28	ch	bro or pek	3080	39 bid
86		628	88	do	bro pek	8800	35 bid
87		631	26	do	pek	2470	35
88		634	13	do	pek sou	1170	33
89	Annandale	637	17	hf-ch	or pek	884	47
90		640	21	do	pek	1008	41
91		643	17	do	pek sou	935	37
92	New Valley	646	25	ch	bro or pek	2500	48
93		649	16	do	or pek	1440	43
94		652	21	do	pek	2100	39
95		655	12	do	pek sou	1080	38
98	N I T	664	12	ch	unas No. 2	1080	27
100	Goonambil	670	25	ch	bro or pek	2100	37 bid
101		673	53	do	bro pek	3816	37
102		676	43	½ ch	or pek	774	46
103		679	27	ch	pek No. 1	2160	34
104		682	18	do	pek No. 2	1548	33
105		685	23	do	pek sou	1656	33
106		688	18	do	dust	1620	21
109	Rarnagalla	697	42	ch	bro or pek	3360	40
110		700	10	do	or pek	800	46
111		703	37	do	pek	3108	37
112		706	24	do	pek sou	1920	35
113		709	18	do	fans	1656	33
114		712	15	do	fans	1560	32
116	Castlemilk	718	20	ch	bro pek	2200	41
117		721	18	do	or pek	1620	39
118		724	35	do	pek	3325	36
119		727	20	do	pek sou	1600	33
123		739	17	hf-ch	bro pek	1003	57
124		742	21	ch	pek	1386	42

Lot		Box	Pkgs.	Name.	lb.	c.
127	Weyweltalawa	751	57 ch	bro pek	5130	36
128		754	29 hf-ch	or pek	1550	42
129		757	31 ch	pek	2480	34
130		760	22 do	pek sou	1540	32
144	I P	802	8 ch	pek sou	720	32
146	W	803	5 ch	dust	700	22
148	Romania	814	18 hf-ch	bro pek	1007	34
149		817	19 do	pek	950	31
150		820	14 do	pek sou	700	29
155	Hapugasmulle	835	28 ch	bro pek	3080	35
156		8 8	34 do	pek	3230	32
157		841	8 do	sou	720	30
160	Rayigam	850	46 ch	bro pek	4140	35 bid
161		853	28 do	or pek	2100	34 bid
162		856	23 do	pek	1840	32 bid
163		859	13 do	pek sou	1014	31 bid
164		862	42 hf ch	dust	3108	20 bid
167	R C T F, in estate mark	871	25 ch	pek sou	2125	28
170	M B	880	13 ch	fans	2002	22 bid
171	Siriniwasa	883	21 ch	bro pek	2100	38
172		886	24 do	pek	2400	34
173		889	23 do	pek sou	700	31
176	Welgampola	898	17 hf-ch	bro pek	935	33
177		901	29 do	pek	1624	31
180	D	910	5 ch	dust	820	19 bid
181	Ferriby	913	23 ch	bro pek	2070	36
182		916	30 do	pek	2550	32
183		919	21 do	pek sou	1680	30
188	Tyspane	934	30 ch	bro pek	3000	40
189		937	42 do	pek	3360	35
190	Killin	940	17 hf-ch	bro pek	850	35
195	Kurulugalla	955	17 ch	bro pek	1700	34
196		958	23 do	pek	2070	28
197		961	11 do	pek sou	990	26
210	Y S P A	1	10 ch	pek sou	800	30
213	Ravenscraig	10	9 ch	pek	810	33
218	M A	25	30 hfch	bro or pek	1800	47
19	ugama	28	30 hf-ch	bro pek	1500	39
220		31	17 ch	pek	1615	32
221		34	15 do	pek sou	1275	30
223	Weygalla	40	29 ch	bro pek	2900	39
224		43	27 do	pek	2430	33
225		46	15 do	sou	1476	31

[Mr. E. John.—223,992 lb.]

Lot		Box	Pkgs.	Name.	lb.	c.
4	Mel Villa	868	20 hf-ch	bro pek	1300	30 bid
5		871	26 do	pekoe	1300	out
6		874	14 do	pek sou	700	out
9	Loughton	883	46 do	bro pek	2530	39
10		886	74 do	pekoe	3700	35
11		889	27 do	pek sou	1350	33
13	Perth	895	99 do	bro or pek	4950	36 bid
14		898	21 do	pekoe	840	36
23	Mocha	925	30 ch	bro or pek	3000	withd'n
24		928	14 do	or pek	1260	withd'n
25		931	28 do	pekoe	2520	withd'n
26		934	12 do	pek sou	960	withd'n
27		937	20 do	fans	1770	withd'n
29	Yapame	943	22 do	bro pek	2420	47
30		946	11 do	pekoe	1015	43
31		949	8 do	pek sou	760	42
32	Glassaugh	952	21 hf-ch	or pek	1092	70
33		955	24 do	bro or pek	1560	46 bid
34		958	18 ch	pekoe	1620	44
35		961	7 do	pek sou	700	43
36	Nahavilla	964	35 hf-ch	bro or pek	2100	60 bid
37		967	16 ch	or pek	1600	60
38		970	15 do	pekoe	1500	47
40		976	9 do	sou	810	45
42	Tebuana	982	22 do	bro pek	1870	34
43		985	26 do	pekoe	1950	31 bid
44		988	25 do	pekoe No. 1	2125	28 bid
48	R, in est. mark	1000	25 do	dust	2875	20
49		3	8 do	congou	720	30
50	Glasgow	6	25 do	bro or pek	2100	60
51		9	36 do	bro pek	2808	50
52		12	26 do	or pek	1690	46
53		15	26 do	pekoe	2600	43
56		18	12 do	fans	1200	56
55	N D	21	11 do	bro pek	935	38
58	Rondura	30	12 do	or pek	1080	41
59		33	36 do	bro pek	3600	36 bid
60		36	28 do	pekoe	2520	33
61		39	20 do	pek sou	1800	30
63	Coslande	45	23 hf-ch	bro pek	1265	42 bid
64		48	19 ch	pekoe	1805	39
69	Oonoogaloya	63	11 do	pek sou	880	withd'n
70		66	8 do	fans	960	withd'n
71	Cleveland	69	14 hf-ch	bro or pek	742	67
72		72	15 do	pekoe	750	40
73		75	17 do	pek sou	816	39
75	Koslande	81	24 do	bro pek	1320	42 bid
76		84	20 ch	pekoe	1900	39

Lot.		Box.	Pkgs.	Name.	lb.	c.
81	St. John's	99	28 hf-ch	bro or pek	1736	54 bid
82		102	30 do	or pek	1560	75
83		105	30 do	pekoe	1680	47 bid
84		108	30 do	pek sou	1620	42 bid
85	Whyddon	111	15 ch	bro pek	1710	39 bid
86		114	10 do	or pek	1000	40 bid
87		117	17 do	pekoe	1700	36
88		120	13 do	pek sou	1040	33
89	Glentilt	123	22 do	bro pek	2200	46 bid
90		126	9 do	pekoe	891	40
92		132	12 hf-ch	fans	960	34
93	Ben Nevis	135	14 do	bro pek	840	53
95		141	14 ch	pekoe	1260	41
110	Park Hill	186	15 do	pek sou	900	30 bid
111	Brownlow	189	32 hf-ch	bro or pek	1760	46 bid
112		192	17 ch	or pek	1496	41
113		195	11 do	pekoe	935	38
114		198	13 hf-ch	dust	1092	23
118	Ratwatte	210	36 ch	bro pek	3600	35 bid
119		213	41 do	pekoe	3690	32 bid
120		216	14 do	pek sou	1120	30 bid
121	Eadella	219	21 do	bro pek	2100	36 bid
122		222	18 do	pekoe	1620	34
123		225	10 do	pek sou	800	32
124		228	7 do	dust	875	21
125	Claremont	231	36 hf ch	bro or pek	1980	37
126		234	9 ch	pekoe	810	34
128	Ferndale	240	12 do	bro or pek	1200	withd'n
131		249	13 do	pekoe	1170	withd'n
133	Delpotonoya	255	25 do	dust	1750	23
135	Agra Ouvah	261	22 hf-ch	bro pek No. 1	1364	71
136		264	23 do	bro or pek No. 2	1426	62
137		267	20 do	or pek	1080	50
143	G Valley	285	12 ch	pekoe	1080	37
145	Orange Field	291	28 do	bro pek	2800	32
146		294	31 do	pekoe	3100	31
152	W K	312	12 do	bro or pek	1140	37
156	Arncliff	324	16 do	or pek	1392	41 bid
157		327	44 hf-ch	bro or pek	2640	37 bid
158		330	24 ch	pekoe	2088	36
160	New Ella	336	8 do	pekoe	800	30
164	Doonhinda	348	18 do	bro pek	1980	53 bid
165		351	31 do	pekoe	3100	46
166		354	15 do	pek sou	1425	39
169	Dickapittiya	363	16 do	bro pek	1600	43
170		366	22 do	pekoe	2200	38
171		369	9 do	pek sou	900	34
172		372	10 hf-ch	dust	800	22
173		375	11 do	fans	770	28
180	Suduganga	396	10 ch	or pek	900	40
181		399	26 hf-ch	bro or pek	1560	43 bid
182		402	22 ch	pek sou	1870	36
185	Galella	411	12 do	or pek	1020	46
186		414	18 do	bro or pek	1800	38 bid
188	Birnam	420	45 do	pek sou	2700	32
192	Bellongalla	432	40 hf-ch	bro pek	2000	36 bid
194	Elemane	438	35 ch	bro pek	3500	40 bid
195		441	31 do	pekoe	2790	38
196		444	10 do	pek sou	900	35
198	CW, in est. mark	450	37 do	bro pek	3644	38 bid

SMALL LOTS.

[Messrs. Forbes & Walker]

3	New Peacock	1123	5 hf-ch	bro mix	250	26
5	S G	1129	4 ch	pek sou	368	29
6		1132	2 do	sou	184	27
7	Karowkettia	1135	5 ch	bro pek	562	35
9	Carandon	1141	6 ch	bro pek	660	34
10		1144	4 do	pek	400	32
11	M'Golla	1147	4 ch	dust	400	21
15	U B N	1159	5 hf-ch	bro pek	260	33
16		1162	5 do	pek	247	31
17		1165	5 do	pek sou	215	29
20	Kosgalla	1174	9 hf-ch	or pek	450	40
22		1180	7 do	bro pek	350	39
23		1183	1 hf-ch	bro pek fans	70	24
24	G A B	1186	11 do	bro tea	550	30
25	Ketadolla	1189	4 ch 1 hf-ch	bro pek	519	35
27		1195	2 ch	pek sou	180	30
28		1198	1 do	sou	96	28
29		1201	1 hf-ch	fans	60	24
30		1214	1 do	bro mix	71	18
32	Abbotsleigh	1210	7 ch	sou	637	37
39	Yatiyana	1231	2 hf-ch	or pek	120	38
40		1234	10 do	bro pek	460	38
41		1237	12 do	pek	648	34
42		1240	1 do	do No 2	56	32
43		1243	2 do	congou	104	30
44		1246	1 do	dust	56	22
45		1249	3 do	unas	162	28
46		1252	7 do	peksou	378	30

Lot		Box	Pkgs.		Name.	lb.	c.
49	Grange Garden	1261	1	cb	pek sou	100	34
50		1264	3	hf-ch	dust	255	30
53	Hatton	1273	3	ch	pek sou	240	37
54		1276	2	do	dust	224	22
58	Mousakella	1288	3	ch	sou	300	33
59		1291	3	hf-ch	dust	255	35
61	Dapbne	1297	7	ch	pek	595	31
62		1300	4	ch	pek sou	320	29
63		1303	1	do	bro pek fans	95	26
64		1306	1	do	dust	150	22
65		1309	2	do	red leaf	170	18
68	Trewardena	1318	2	cb	pek sou	190	29
69		1321	4	do	fans	360	27
70		1324	2	do	dust	240	22
71		1327	2	do	sou	190	27
72		1330	4	do	bro pek	380	24
82	Agra Oya	1360	6	ch	dust	510	24
83		1363	6	do	fans	510	33
88	Ascot	1378	4	ch	or pek fans	400	27
89	G H O	1381	1	ch	dust	100	20
90		1384	5	do	sou	450	29
91		1387	2	do	fans	200	24
92		1390	2	do	bro mix	140	28
96	Cotswold	1402	3	ch	sou	249	27
97		1405	3	do	dust	255	23
100	St. Leonards-on Sea	1414	2	ch	bro pek No. 2	200	33
103		1423	2	do	dust	300	22
106	Ambalangoda	1432	3	cb	pek sou	285	38
107		1435	2	do	sou	190	32
108		1438	2	do	dust	210	24
109	K W D, in estate mark	1441	2	ch	dust	120	25
110		1444	6	hf-ch	bro pek fans	360	29
111		1447	1	ch	bro tea	85	32
112	Ookoowatte, No. 1	1450	1	ch	sou	100	30
113		1453	4	do	pek fans	360	33
114		1456	2	do	dust	220	21
121	Monkswood	1477	8	hf-ch	dust	600	25
122	K M	1480	3	do	bro pek	150	41
123		1483	4	cb	pek	360	41
124		1486	2	do	pek sou	160	35
126	O'Bedde	1492	7	ch	or pek	665	39
128		1498	4	do	pek sou	320	32
129		1501	1	do	dust	95	21
138	Springwood	1528	6	bf-ch	dust	420	22
139	Wyamita	1531	4	ch	bro pek	400	33
140		1534	5	do	pek	450	31
141		1537	5	do	pek sou	400	30
145	Ismalle	1549	6	ch	congou	516	26
150	Hornsey	1564	8	cb	pek sou	640	39
151		1567	8	do	fans	640	25
154	Vogan	1576	6	ch	pek sou	480	31
155		1579	5	do	dust	425	21
156		1582	4	do	bro pek fan	440	31
167	Holton	1615	3	ch	pek sou	240	31
168	B A	1618	4	cb	dust	320	21
169	Panmure	1621	3	ch	bro pek	330	33
170		1624	3	do	pek	315	31
171		1627	3	do	pek sou	285	30
172		1630	2	hf-ch	dust	170	25
176	C S G	1642	8	bf-ch	dust	640	25
180	Frogmore	1654	5	cb	or pek	225	46
181		1657	6	do	pek	480	40
182		1660	1	bf-ch	dust	80	32
186	Bargany	1672	2	hf-ch	dust	190	22
187	Yaha Ella	1675	3	do	bro or pek	210	39
191		1687	2	hf-ch	pek fans	150	33
192		1690	1	ch	dust	110	21
197	G	1705	7	ch	sou	560	28
198		1708	2	do	dust	270	22
201	Gallustain	1717	7	cb	pek sou	560	31
202	Preston	1720	3	bf-cb	unas	210	33
203	D	1723	4	cb	sou	360	27
206	Cooroondoowatte	1732	10	hf-ch	pek sou	500	34
207		1735	1	do	pek dust	86	23
208		1738	1	do	fans	69	29
209		1741	1	do	congou	54	29
213	D M V	1753	5	ch	fans	400	26
214		1756	4	do	bro tea	280	26
215		1759	3	do	dust	240	20
219	Scrubs	1771	6	ch	pek sou	480	38
220		1774	8	do	dust	680	24
223	Poyton	1783	5	ch	pek sou	450	31
224		1786	4	do	fans	640	24
236	St. Heliers	1822	5	ch	pek sou	475	33
237		1825	2	do	bro tea	220	24
238		1828	3	do	dust	219	23
245	Stafford	1849	4	ch	pek sou	360	40
246		1852	2	do	fans	160	30
247		1855	1	do	dust	95	23
259	Maha Uva	1891	2	hf-ch	pek fans	160	24
260		1894	3	do	dust	270	29
269	Pallagodda	1921	8	ch	sou	640	35
271		1927	1	do	bro or pek No. 2	105	39

Lot.		Box.	Pkgs.		Name.	lb.	c.
272		1930	1	ch	bro pek No 2	100	35
273		1933	1	do	or pek ,, 2	90	27
278	Ruanwella	1948	1	cb	congou	100	27
279		1951	7	do	dust	500	22
284	Dammeria	1966	5	ch	pek sou	500	38
285		1969	4	do	bro mix	400	23
286		1972	6	do	dust	540	23
298	Weoya	2003	2	ch	bro tea	110	23
305	Erracht	2029	3	do	pek dust	468	20
310	Clunes	2044	7	ch	sou	595	26
316	Dea Ella	2062	7	bf-cb	dust	518	23
319	Knavesmire	2071	5	ch	pek sou	350	20
320		2074	4	hf-ch	dust	320	21
332	OSS in est. mark	2110	4	ch	pek sou	320	32
333		2113	2	do	pek fans	180	25
334		2116	2	do	dust	200	21
335	G A M	2119	8	hf-ch	red leaf	448	18
336	N F	2122	1	do	sou	54	27
340	Harrington	2134	2	ch	pek B	200	35
341		2137	4	bf-ch	dust	320	23
343	Tavalamtenne	2143	6	ch	pek	540	32
344		2146	3	do	pek sou	223	31
345		2149	1	do	dust	95	21
346	K P W	2152	17	hf-ch	or pek	935	40
347		2155	13	do	bro pek	650	41
349		2161	9	do	pek sou	405	31
350		2164	1	do	dust	85	20
354	Middleston	2176	4	do	dust	320	28
361	Geragama	2197	6	do	fans	450	23
365	Waratenne	2209	6	ch	pek sou	480	30
366		2212	6	hf-ch	fans	450	24
367		2215	3	do	dust	255	22
371	Inverness	2227	6	do	fans	510	24
378	Dunkeld	2248	3	ch	pek sou	270	34
379		1	5	do	pek fans	650	32
382	S	10	2	do	sou	180	29
384	Letchemey	16	3	do	bro pek fans	390	29
385		19	4	do	pek fans	500	30
386		22	3	do	or pek	360	32
387	Seenagolla	25	4	hf-cb	bro or pek	248	82
389		31	4	ch	or pek	400	42
390		34	5	do	pek	500	28
391		37	4	do	pek sou	400	35
392		40	2	do	bro mix	190	33
393		43	2	bf-ch	dust	200	23
397	Aberdeen	55	9	cb	sou	648	30
398		58	4	bf-ch	br pk fans	260	24
401	D	67	1	ch	red leaf	95	27
405	Hatherleigh	79	5	do	bro mix	450	27
411	Great Valley, Ceylon in est. mark	97	4	do	sou	320	27
412		100	4	do	dust	340	23
443		103	1	do	fans	59	29
415	Ingrugalla	109	5	do	bro tea	600	21
416		112	3	do	sou	270	25
420	Pussella	124	6	do	bro tea	522	27
421	H E	127	8	hf-ch	or pek	440	38
423		133	2	ch	pek sou	180	32
428	Arapolakande	148	3	do	dust	330	22
434		166	5	do	or pek	550	40
438		178	3	do	dust	330	22
441	N W D	187	5	ch	fans	625	31
442		190	4	do	dust	624	20
443		193	2	do	bro tea	214	22
462	Irex	250	2	do	dust	168	22
463		253	1	do	red leaf	78	20
465	Knavesmire	259	10	do	pek sou	680	30 bid
472	Kelugas	280	4	do	sou	340	27
473		283	3	do	dust	345	26
474		286	2	bf-ch	red leaf	130	20
480	B & D	304	6	ch	sou	516	31
481		307	4	do	unast	440	33
487	B D	325	6	hf-ch	dust	450	22
492	Pansalatenne	340	4	cb	fans	488	23
493		343	4	do	dust	612	21
494		346	4	do	unast	368	27
499	D in est. mark	361	11	bf-ch	bro or pek	660	30
505	Pine Hill	379	3	do	dust	255	22
506		382	1	do	sou	85	23
507	Watte	385	3	ch	bro pek	300	39
508		388	4	do	pek	360	33
509		391	4	do	pek sou	320	30 bid
516	Lauderdale	412	7	do	dust	490	22
518	Blairgowrie	418	2	do	dust	350	20
520	Ellamulla	424	4	do	sou	380	32
533	Longford	463	1	do	dust	100	23
538	Carberry	478	4	do	pek sou	360	30
540		484	2	do	bro tea	180	28
541		487	4	do	dust	560	21
555	Bandara Eliya	529	9	hf-ch	bro pek fans	630	28
557		535	1	ch	red leaf	100	22
573	Matale	583	4	do	sou	440	29
576	Digdola	592	8	do	pek sou	640	27
577		595	1	do	dust	100	20
583	Glencorse	613	3	do	pek fans	630	72
584		616	2	do	bro tea	220	33
585		619	2	do	dust	330	21
588	W W	628	3	do	bro or pek	307	36
589		631	1	do	pek	73	33

Lot		Box.	Pkgs.	Name.	lb.	c.
595	Galapitakande	649	1 box	bro pek	21	41
596		652	1 ch	pek	84	35
597		655	1 do	pek sou	60	32

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
4	Ossington	277	1 ch	bro mix	123	21
5		280	1 do 1 hf-ch	dust	128	20
14	Illukettia	307	2 ch	sou	170	26
15	E S	310	1 ch	bro pek	110	32
16		313	1 do	pek	100	30
17		316	1 do	pek sou	100	28
21	Clove	328	1 hf ch	dust	50	21
22		331	2 do	fans	90	26
24	Nyanza	337	7 ch	or pek	630	41
26		343	5 ch	pek sou	4 0	34
27		346	2 do	dust	200	22
32	Havilland	361	4 hf-ch	dust	360	20 bid
33		364	4 ch	pek fans	400	24
34		367	4 do	sou	360	24
37	Theberton	376	1 ch	pek sou	90	32
38		379	1 do	pek fans	100	22
39	Dryburgh	382	6 hf-ch	bro or pek	360	41
40		385	8 do	or pek	416	44
42		391	8 do	pek sou	472	32
43		394	1 do	fans	72	27
47	Marigold	511	9 hf-ch	bro pek dust	675	25
48	Venture	514	3 ch	red leaf	285	25
49	F H	517	3 hf ch	red leaf	168	17
50	M	520	1 hf-ch	red leaf	56	17
61	Minna	553	2 hf-ch	fans	150	36
65	Charlie Hill	565	2 hf-ch	pek sou	100	29
66		568	2 do	dust	150	22
69	Mary Hill	577	6 ch	pek sou	570	33
70		580	1 do	bro mix	150	24
73	Arduthie	589	12 hf ch	pek sou	600	31
74		592	1 do	sou	50	25
75		595	5 do	dust	350	22
77	Wilpita	601	5 ch 1 hf ch	pek	545	32
78		604	4 do	pek sou	364	29
79		607	1 do	con	73	27
80		610	2 do	fans	214	24
81		613	1 do	dust	82	21
82	Mipitiakande	616	2 ch 1 hf-ch	pek	230	30
96	N I T	658	3 ch	dust	270	23
97		661	3 do	unas No. 1	300	28
107	Goonambil	691	5 ch	fans	370	31
108		694	4 do	bro mix	288	27
115	Barnagalla	715	7 hf-ch	dust	504	21
120	Castlemilk	730	7 hf-ch	dust	560	22
121		733	9 do	fans	675	25
122		736	3 do	bro mix	280	22
125	Berat	745	8 hf-ch	pek sou	488	36
126		748	1 do	dust	93	22
131	Weyweltalawa	763	5 hf-ch	dust	400	21
132		766	7 ch	pek fans	560	27
133	Rosawatte	769	1 hf-ch	bro pek	37	31
134		772	1 ch	pek	64	31
135		775	1 do 1 hf-ch	pek sou	120	29
136		778	1 ch	pek sou	88	28
137		781	1 do	pek fans	122	22
138	Danwela	784	1 hf-ch	pek sou	50	28
139	L	787	1 ch 2 hf-ch	dust	330	20 bid
140		790	3 do	dust a	300	20 bid
141	B F	793	6 ch	pek sou	526	20
142		796	2 do	bro mix	190	32
143		799	2 hf-ch	dust	594	21
145	I P	805	1 hf ch	dust	70	21
147	Allakolla	811	1 ch	red leaf	85	16
151	Romania	823	3 hf-ch 1 h fch	bro mix	355	21 bid
152	Kuralana	826	5 ch	pek	540	30
153	H B	829	6 hf-ch	dust	453	21
154		832	6 do	pek	570	31
158	Hapugasmulle	844	4 ch	unas	400	29
159		847	4 do	dust	600	21
165	R C T F, in estate mark	865	5 ch	bro pek	500	33
166		868	7 do	pek	595	30
168		874	5 do	bro pek fans	475	27
169		877	2 do	dust	230	21
174	Siriniwasa	892	4 ch	bro pek fans	400	26 bid
175		895	3 do	dust	420	20 bid
178	Welgampola	904	3 hf-ch	pek sou	171	28
179	D	907	3 ch	bro or pek	360	33 bid
184	Ferriby	922	5 ch	sou	425	28
185		925	6 hf-ch	fans	300	24
186		928	2 do	dust	150	20
187	D B G	931	3 ch	bro mix	300	19 bid
191	Killin	943	6 ch	pek	480	29
192		946	3 do	pek sou	225	27
193	K	949	3 ch	bro mix	240	23
194		952	2 hf-ch	dust	122	20
198	KGA, in est-mark	964	5 ch	bro tea	450	17
199	Wallasmulle	967	2 ch	bro pek	200	35
200		970	1 do	pek	90	31
201		973	1 do	pek sou	90	28
202		976	2 do	bro mix	200	23
203		979	2 do	dust	310	
204	M	982	6 ch	pek	642	
205	Faragahakande	985	5 ch	bro pek	500	
206		988	6 do	pek	540	
207		991	3 ch 1 hf-ch	pek sou	324	
208		994	3 ch	fans	255	
209		997	1 do	dust	110	
211	Ravenscraig	4	7 ch	or pek	595	
212		7	10 hf-ch	bro pek	550	
214		13	1 ch	pek sou	71	
215		16	2 do	bro mix	180	
216		19	2 hf ch	dust	160	
217	Piti Oya	22	3 ch	sou	240	
226	Weygalla	49	5 ch	sou	450	
227		52	4 do	dust	386	
228	S, in estatemark	55	3 ch	bro or pek	276	

[Mr. E. John.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	A A	859	1 ch	dust	100	20
2	L E L	862	2 do	pek sou	169	33
3		865	4 hf-ch	dust	300	22
7	Mei Villa	877	2 do	fans	104	25
8		880	2 do	dust	112	21
12	Loughton	892	10 do	dust	500	24
15	Perth	901	5 do	pek sou	180	33
16		904	1 do	pek dust	75	26
39	Nahavilla	973	7 do	pek fans	490	36
41		979	7 do	dust	560	25
45	R, in est. mark	991	1 ch	or pek	90	33
46		994	1 do	pekoe	90	31
47		997	1 do	pek sou	20	29
56	N D	24	5 do	pekoe	500	36
57		27	4 do	sou	400	33
62	Rondura	42	2 do	dust	184	22
65	Coslande	51	6 do	pek sou	600	34
66		54	2 do	fans	220	27
67		57	2 do	dust	250	22
68		60	3 do	congou	240	30
74	Cleveland	78	4 hf-ch	fans	320	
77	Koslande	87	6 ch	pek sou	600	32
78		90	2 do	fans	220	26
79		93	2 do	dust	250	22
80		96	3 do	congou	240	30
91	Glentilt	129	3 do 1 hf-ch	pek sou	309	35
94	Ben Nevis	138	10 do	or pek	450	37
96		144	5 ch	pek sou	410	38
97		147	2 hf-ch	dust	164	27
103	Glentilt	165	3 ch	pek sou	270	33
115	Chapelton	201	5 hf-ch	dust	450	22
116		204	8 ch	bro mix	640	28
117	C	207	6 do	fans	660	19
127	Claremont	237	4 do	red leaf	400	28
129	Ferndale	243	2 do	or pek	180	withd'n
130		246	1 do	or pek	95	withd'n
132	G	252	1 do	bro pek	55	32
134	Delpotonoya	258	3 do	sou	150	36
138	Agra Ouvah	270	7 do	pekoe	665	45
139	P P P	273	2 do	bro pek	224	36
140		276	3 do	pekoe	291	33
141		279	3 do	pek sou	255	30
142		282	1 do	dust	110	20
144	Farm	288	4 do	dust	360	21
147	Orange Field	297	4 do	pekoe	360	30
148		300	5 do	pek sou	475	28
149		303	6 do	fans	540	24
150		306	3 do	dust	360	21
151		309	5 do	mixed	475	20
153	W K	315	8 do	pekoe	632	33
154		318	2 do	bro mix	174	30
155		321	3 hf-ch	dust	255	22
159	Arncliff	333	7 do	pek fans	434	31
161	New Ella	339	2 ch	pek sou	128	29
162		342	1 do	fans	80	22
163		345	1 do	dust	80	20
167	Doonhinda	357	1 do	fans	110	35
168		360	2 do	dust	220	24
174	Dickapittiya	378	2 do	sou	200	31
175	W P	381	1 do	unas	61	34
176		384	1 do	sou	51	24
177		387	3 do	unas	270	32
178		390	1 do	sou	80	32
179	R L	393	2 do	red leaf	162	22
183	Suduganga	405	1 do	pek fans	105	22
184		408	8 do	sou	640	31
187	Galella	417	7 do	pekoe	630	34
189	N	423	7 hf-ch	dust	595	22
190		426	1 do	pek sou	40	23
191	Caleddonia	429	1 ch	bro mix	95	25
193	Bellongalla	435	6 hf-ch	bro pek fan	330	35
179	Elemane	447	4 ch	fans	400	24

NO. 29 COLOMBO, JULY 31, 1899. Price:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[599,061 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	W F, in estate mark	658	16	ch	congou	1440	28
2	Igalkande	661	30	ch	pek	2550	33
4	M P	667	16	ch	sou	1440	31
6		673	9	do	dust No. 1	1260	23
8	E D P	679	8	ch	fans	960	22
9		682	11	hf-ch	dust	880	23
10	Doranakande	685	11	ch	bro pek	1100	37
12		691	9	do	pek sou	810	33
22	Wewawatte	721	15	ch	bro pek	825	36
25	B, in estate mark	730	15	ch	pek sou	5100	33
27		736	5	do	dust	750	22
37	Avoca	766	25	ch	bro or pek	2750	50
38		769	16	do	or pek	1632	40
39		772	15	do	pek	1320	39
43	A, in estate mark	784	8	ch	pek	840	35
45	Galkande	790	13	ch	bro pek	1300	33 bid
46		793	8	do	pek	720	30
56	Deaculia	823	51	ch	bro pek	2805	44
57		826	38	do	pek	2660	39
58		829	22	do	pek sou	1540	34
59		832	20	do	dust	1600	26
60	Malvern	835	25	ch	bro pek	1375	49
61		838	19	do	pek	1330	39
62		841	20	do	pek sou	1400	36
64	G M, in estate mark	847	37	hf-ch	bro or pek	1924	38 bid
74	Gallawatte	877	13	ch	bro pek	1235	39
75		880	21	do	pek	1785	35
77		886	12	do	sou	960	29
81	W V R	898	9	hf-ch	dust	720	26
82	Clyde	901	34	ch	bro pek	3060	38 bid
83		904	41	do	pek	3690	33
84		907	15	do	pek sou	1350	31
86		913	9	do	bro or pek	900	36
88	Vathalana	919	12	ch	or pek	1020	36
92	Putupaula	931	21	hf-ch	bro or pek	1260	38
93		934	66	ch	bro pek	5940	38 bid
94		937	54	do	pek	4050	34
100	P	955	10	ch	bro pek	1000	36
106	Maha Uva	973	30	ch	bro pek	3000	34
107		976	24	do	pek	2280	32
108		979	20	do	pek sou	1800	30
110	Glendon	985	39	ch	bro pek	3900	37 bid
111		988	15	do	or pek	1200	35
112		991	37	do	pek	2960	33
113		994	33	do	pek sou	2640	32
114	G	997	8	ch	sou	720	29
135	C N	1060	7	ch	bro tea	700	26
140	Kirklees	1075	20	hf-ch	bro or pek	1200	46
141		1078	23	do	or pek	2300	48
142		1081	21	do	pek	1995	38
143		1084	10	do	pek sou	850	35
145		1090	6	do	pek fans	750	32
147	High Forest	1096	20	hf-ch	or pek	940	65
148		1099	23	do	bro or pek	1380	48 bid
149		1102	20	do	pek	840	47
150	Hayes	1105	14	ch	bro or pek	1400	59
151		1108	23	ch	bro pek	2185	43
152		1111	14	do	or pek	1190	42
153		1114	32	do	pek	3040	38
154		1117	14	do	pek sou	1260	32
156	Great valley, Ceylon in est. mark	1123	108	hf-ch	bro pek	5940	40
157	Dunbar	1126	27	do	bro or pek	1350	62
159		1132	14	ch	pek	1050	40
169	Udapolla	1162	45	ch	bro pek	4500	36 bid
170		1165	26	do	pek	2470	34
171		1168	13	do	pek sou	1170	32
176	Gampaha	1183	25	ch	bro or pek	2750	44
177		1186	18	do	or pek	1710	50
178		1189	25	do	pek	2125	45
179		1192	25	do	pek sou	2250	38
180	High Forest	1195	28	hf-ch	or pek No. 1	1456	79
181		1198	17	do	or pek	816	57
182		1201	21	do	pek	924	46
183	Hayes	1204	7	ch	bro or pek	700	58
184		1207	11	do	bro pek	1100	41
185		1210	10	do	or pek	900	41
186		1213	12	ch	pek	1140	38
187		1216	8	do	pek sou	760	32
200	Battawatte	1255	51	do	pekoe	4845	37
201		1258	20	do	pek sou	1600	33
202		1261	35	do	bro pek fan	3850	30
203		1264	10	do	dust	1000	23
204	Polatagama	1267	56	ch	bro pek	5040	36
205		1270	40	do	or pek	3400	34
206		1273	74	do	pek	6290	32
207		1276	94	do	pek sou	7050	29
208		1279	145	do	fans	12325	24
209		1282	10	do	dust	1500	20
210	Pallagodda	1285	12	ch	bro or pek	1200	37
211		1288	12	do	bro pek	1208	40
212		1291	14	do	or pek	1260	35
213		1294	12	do	pek	960	34
214		1297	13	do	pek sou	1170	33
222	Maha Uva	1321	40	hf-ch	bro or pek	2600	45
223		1324	22	ch	pek	2090	40
228	Battawatta	1339	24	ch	bro pek	2640	42
229		1342	40	do	pek	3600	38
230		1345	26	do	pek sou	2080	34
231	Seenagolla	1348	51	hf-ch	bro pek	3060	45
232		1351	12	do	or pek	1152	41
233		1354	10	do	pek	950	38
235	Killarney	1360	12	ch	or pek	1020	40
236		1363	9	do	pek	720	37
237	Ganapalla	1366	17	ch	or pek	1530	40
238		1369	29	do	bro or pek	2610	37
239		1372	38	do	pek	3040	33
240		1375	19	do	pek sou	1425	31
241		1378	8	do	bro pek fans	800	34
242		1381	9	hf-ch	dust	774	23
243	Penmyndd	1384	29	ch	bro or pek	3045	46
244		1387	28	do	or pek	2800	42
245		1390	18	do	pek	1620	38
246		1393	20	do	pek No. 2	1800	36
247		1396	16	do	pek sou	1140	34
248		1399	31	hf ch	pek fans	2790	22
251	Freds Ruhe	1408	70	ch	bro pek	7000	35
252		1411	54	do	pek	4860	32
253		1414	21	do	pek sou	1890	30
258	Angramally	1429	8	ch	bro pek	816	51
259		1432	11	do	pek	957	43
260		1435	8	do	pek sou	720	38
262	Palmerston	1441	21	hf-ch	bro pek	1092	52
263		1444	27	do	bro or pek	1359	69
264		1447	15	do	pek	1350	42 bid
268	Queensland	1459	7	ch	bro pek	700	41
269		1462	17	do	pek	1445	40 bid
270		1465	9	do	pek sou	810	37
272		1471	14	do	unas	1120	25
274	Theydon Bois	1477	13	ch	bro pek	1300	45
275		1480	22	do	pek	1760	38
278	Roseberry	1489	51	do	bro pek	5610	41
279		1492	58	do	pek	5568	38
280		1495	30	do	pek sou	2700	35
284	Middleton	1507	13	do	bro pek	1235	53
285		1510	19	do	pek	1615	41 bid
288	Yataderiya	1519	40	hf-ch	bro or pek	2200	39 bid
289		1522	30	ch	bro pek	2940	35
290		1525	8	do	or pek	720	34 bid
291		1528	45	do	pek	3600	32
292		1531	19	do	pek sou	1520	30
293	Matalawa	1534	102	do	pek	8160	32
294		1537	15	hf-ch	bro pek fans	1005	26
296	Castlereagh	1543	14	ch	bro pek	1330	37
297		1546	13	do	or pek	1105	39
298		1549	11	do	pek	880	37
302	Torwood	1561	12	do	bro or pek	1248	37
303		1564	24	do	bro pek	2064	40
304		1567	28	do	or pek	2296	35
305		1570	25	do	pek	1900	34
306		1573	17	do	pek sou	1292	32
307		1576	12	do	sou	900	30
313	Blairgowrie	1594	13	do	bro pek	1300	28
314		1597	10	do	pek	850	28
315		1600	22	do	sou	1760	22
317	Beausijour	1606	19	do	bro pek	1615	35
318		1609	22	do	pek	1760	31
322	Nakiadeniya	1621	9	do	bro pek	855	35
324		1627	12	do	pek sou	960	30
326		1633	9	do	dust	1350	21
328	Strathspey	1639	21	do	or pek	1218	38 bid
332		1651	11	do	fans	803	23
341	Woodend	1678	60	do	bro pek	6000	36
342		1681	22	do	pek sou	1870	30
343		1684	8	do	dust	1160	21
345	Yaha Ella	1690	14	do	pek	1260	35 bid
347	St. Andrews	1696	19	hf-ch	bro tea	1140	25
348	Digdola	1699	14	ch	bro pek	1260	36
349		1702	17	do	pek	1190	34

Lot		Box	Pkgs.	Name.	lb.	c.
351	Nugagalla	1708	29 bf-ch	hro pek	1450	42
352		1711	60 do	pek	3000	35
355	Waitalawa	1720	71 do	bro pek	3550	42
356		1723	79 do	pek	3950	35
357		1726	27 do	pek sou	1350	32
359	Vogan	1732	52 ch	bro pek	4940	39
360		1735	47 do	pek	3995	34
368	B D W P	1759	45 hf-ch	bro pek	4050	35 bid
379	H G M	1792	18 do	bro or pek	1134	49
381		1798	17 ch	hro pek	1700	37
382		1801	19 do	pek	1615	36
483		1804	10 do	pek sou	850	33
387	Waratenne	1816	12 do	bro pek	1030	34 bid
388		1819	9 do	pek	720	32
389	Geragama	1822	13 do	bro pek	1170	35
390		1825	11 do	pek	935	33
392	Mapitigama	1831	25 hf-ch	bro pek	1250	37
393		1834	42 do	pek	1890	35
394		1837	32 do	pek sou	1376	32
395	Ingrogalla	1840	11 ch	bro pek	1100	39
396		1843	14 do	pek	1190	35
397	C L	1846	35 do	fans	2205	28
398		1849	15 do	sou	1500	31
407	Mawaliganga-watte	1876	33 do	hro pek	3135	36
408		1870	29 do	pek sou	2320	32
410	High Forest	1885	16 hf-ch	bro or pek	960	47
411		1888	29 do	pek sou	1221	41
412		1891	11 do	pek dust	943	26
413	Gallustani	1894	18 do	bro pek	900	36 bid
416	Harrow	1903	26 do	bro or pek	1560	56
417		1906	24 ch	pek	2160	41
418		1909	9 do	pek sou	810	39
419	Melrose	1912	30 do	bro pek	3000	37 bid
420		1915	25 do	pek	2250	36
421		1918	24 do	pek sou	1920	33
423	Hunasgeria	1924	21 do	bro pek	2100	35
424		1927	32 do	or pek	3200	34
425		1930	20 do	pek	1900	32
426		1933	18 do	pek sou	1620	30
427	Sutton	1936	30 do	bro or pek	1680	62
428		1939	18 do	or pek	1800	48 bid
429		1942	16 do	pek	1200	42
430		1945	12 do	unast	1200	40
431	L G F in est. mark	1948	8 do	sou	800	30
432		1951	10 do	dust	800	21
445	Rowley	1990	33 hf-ch	bro pek	1650	46
446		1993	35 do	pek	1750	36
447		1996	15 do	pek sou	750	33
449	O S S in est. mark	2002	20 ch	bro or pek	1500	39
450		2005	21 do	bro pek	1470	36
451	Kirklees	2008	27 hf-ch	bro or pek	1620	43
452		2011	32 ch	or pek	3043	47
453		2014	40 do	pek	3800	38
454		2017	17 do	pek sou	1445	35
456		2023	10 bf-ch	pek fans	700	31
458	Kilkenny	2029	30 do	bro or pek	3000	withd'n
459		2032	18 do	pek sou	1170	30
460	Tonacombe	2035	35 do	or pek	3150	44
461		2038	35 do	bro pek	3500	44 bid
462		2041	40 do	pek	3600	38
463		2044	16 do	pek sou	1280	34
464		2047	9 do	dust	810	22
465	Coreen	2050	36 hf-ch	bro pek	2160	withd'n
466		2053	14 ch	or pek	1260	withd'n
467		2056	12 do	pek	1080	withd'n

[Messrs. Somerville & Co.—227,326 lb.]

Lot		Box	Pkgs.	Name.	lb.	c.
1	Wewatenne	58	12 ch	bro pek	1194	39
2		61	17 ch 1 hf-ch	pek	1495	32
3		64	24 do	pek sou	2160	31
5	St. Catherine	70	24 ch	bro or pek	2160	34
10	Meetiyagoda	85	7 ch	bro pek	700	32
22	Daluk Oya	121	14 hf-ch	or pek	700	35 bid
23		124	25 do	pek	1375	33
24	Nega	127	78 hf-ch	bro pek	990	34
29	Cairn-Mon-Earn	142	61 hf-ch	bro pek	3050	36
30		145	37 do	pek	1665	33
31	S L G	148	19 hf-ch	pek sou	855	30
34		157	13 do	bro pek fans	780	29
37	Panapitiya	166	13 ch	pek	1162	31
38		169	10 ch	pek sou	1050	26 bid
41	Rambodde	178	18 hf-ch	bro pek	990	35 bid
42	Citrus	190	29 ch	hro pek	2900	35
45		196	27 do	pek	2430	32
47		199	12 do	pek sou	1200	29
48		202	6 do	pek dust	900	22
49	Cakham	505	24 hf-ch	or pek	960	38 bid
50		208	23 do	bro pek	1380	42 bid
51		211	19 hf-ch	pek	1710	37

Lot.		Box.	Pkgs.	Name.	lb.	c.
54	Razeen	217	35 hf-ch	bro pek	1575	35
55		220	44 do	pek	1980	32
59		232	21 do	pek sou	480	31
60	L	235	9 ch	bro mix	855	27
92	Killin	241	8 ch	bro pek	800	32
70	Yspa	265	13 hf-ch	dust	1105	22
71	Gangwarily	268	53 cb	bro pek	4770	34
72		271	29 do	pek	2320	31
73		274	23 do	pek sou	1840	28 bid
74		277	19 do	sou	1330	25
75		280	18 do	red leaf	1260	22
78	Ambalawa	289	23 hf-ch	bro pek	1196	36
79		292	18 do	pek	810	32
80	Warakamure	295	37 ch	bro pek	3100	35 bid
81		298	30 do	pek	2700	31
82		301	18 do	pek sou	1620	28 bid
83	Eagles C	304	39 ch	pek sou	3120	26 bid
84		307	12 do	dust	1800	18
85		310	29 do	pek sou	2320	26 bid
87	Harangalla	316	10 ch	bro pek	950	36 bid
88		319	33 do	pek	2970	32 bid
89		322	8 do	pek sou	720	29 bid
91		328	16 hf ch	dust	1380	22
92	Havilland	331	80 do	bro or pek	4400	38
93		334	46 ch	or pek	4140	32 bid
94		337	40 do	pek	3400	30 bid
95		340	21 do	pek sou	1575	27 bid
99	Carney	352	36 hf-cb	bro pek	1800	36
100		355	64 do	pek	2880	32
101		358	53 do	pek sou	2600	29
104	Ranasingha-patna	367	100 hf-ch	or pek	5000	40
105		370	76 do	hro or pek	4560	38
106		373	37 ch	pek	3145	36
107		376	51 do	pek sou	3927	32
110	Honiton	385	30 ch	hro pek	2580	34
111		388	21 do	pek	1428	38
112		391	21 do	pek sou	3168	28
114	Sellwatte	937	10 ch	bro pek	1000	37
115		505	9 do	pek	855	31 bid
116		508	9 do	pek sou	900	29 bid
119	Weygalla	517	14 ch	pek	1260	34
121	D M R, in estate mark	523	16 ch	bro pek	1456	35 bid
122		526	41 do	pek	3280	33 bid
123		529	18 do	pek sou	1458	31 bid
124		532	10 bf cb	fans	820	23 bid
137	Warriatenne	571	21 ch	bro pek	2100	36 bid
138		574	10 do	pek	950	33 bid
139		577	10 do	pek sou	900	30
151	Nlllicolla-watte	583	18 bf-ch	bro pek	1008	35 bid
142		586	16 cb	or pek	1280	33 bid
143		580	14 do	pek	1260	32 bid
147	Bogahagoda watte	601	19 ch	bro pek	1805	34 bid
148		604	9 do	pek	810	32
152	G B	616	22 bf ch	dust	1100	22
157	Deniyaya	631	27 ch	or pek	2700	36 bid
158		634	38 do	bro pek	3800	38 bid
159		637	28 do	pek	2800	33 bid
160		640	11 do	pek sou	1100	30 bid
162	Neboda	646	17 ch	bro or pek	1700	34
163		649	41 do	bro pek	4100	35
164		652	16 do	pek	1440	33
165		655	10 do	pek sou	800	30
169	Wewadola	667	5 cb 1 hf cb	pek sou	1105	24 bid
170		670	9 ch	sou	828	23
171		673	8 do	dust	1280	15 bid
172	Kerenvilla	676	11 ch	bro pek	1100	32
173		679	11 do	pek	1045	29
176	Halilland	688	60 hf-cb	bro or pek	3600	37 bid
177		691	43 ch	or pek	3870	33
181	Orion	703	21 ch	bro or pek	2310	38
182		706	25 do	bro pek	2500	36
183		709	18 do	pek	1710	34
184		712	22 do	pek sou	1980	32
186		718	10 hf-ch	dust	800	20
189	Pinden Oya	727	15 cb	bro or pek	1500	35 bid
190		730	15 do	pek	1350	32
191		733	9 do	pek sou	795	31
192		736	10 do	sou	1000	29 bid
197	Mahatenne	751	31 ch	bro pek	3100	35 bid
198		754	12 do	pek	2076	33
191		759	14 do	pek sou	1330	30

[Mr. E. John.—217,037 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Theresia	453	7 ch	bro or pek	700	40
5	Akkara Totum	465	14 do	bro pek	1260	33
6		468	12 do	pekoe	1080	30
17	Mossend	501	18 hf-ch	or pek	900	37

Lot.		Box.	Pkgs.		Name	lb.	c.
21		513	11	hf-ch	fans	770	34
24	Rookwood	522	30	ch	pekoe	3060	36
25		525	22	do	or pek	1980	39
26	Mocha	528	30	do	bro or pek	3000	59
27		531	14	do	or pek	1260	46 bid
28		534	28	do	pekoe	2520	43 bid
29		537	12	do	pek sou	960	39
30		540	20	hf-ch	fans	1770	27
32	Eila	546	56	ch	bro or pek	5320	36 bid
33		549	56	do	bro pek	4480	35 bid
34		552	18	do	or pek	1260	33 bid
35		555	11	do	pekoe	935	32 bid
36		558	10	do	fans	1100	29
37		561	15	hf-ch	dust	1275	24
38	Bittacy	564	30	ch	bro pek	3000	38 bid
39		567	26	do	pekoe	2340	38
40	Mount Everest	570	23	hf-ch	bro pek	1265	64
41		573	33	do	or pek	1650	56
42		576	27	ch	pekoe	2700	43
43		579	12	do	pek sou	1080	39
44	Callander	582	20	hf-ch	or pek	1140	43
48	S W	594	16	ch	bro mix	1680	31
56	Templestowe	618	28	do	bro or pek	2660	39 bid
57		621	21	do	or pek	1890	37 bid
58		624	29	do	pekoe	2465	34 bid
60	Harisland	630	10	do	bro pek	970	36
62		636	12	do	pek sou	900	32
63	Rookwood	639	17	do	bro or pek	1700	37 bid
64		642	18	do	pekoe	1656	35 bid
65		645	29	do	pek sou	2407	33
66		648	32	do	sou	2240	31
68	W H G	654	16	do	pek sou	1600	37
74	Y	672	14	do	red leaf	1260	22
75	Kotuagedera	675	22	do	bro pek	2200	35
76		678	9	do	pekoe	855	32
78	Gangawatte	684	19	hf-ch	or pek	950	40
79		687	28	do	bro pek	1540	37
82		696	15	do	bro or pek	900	47
83	Mahanilu	699	41	do	bro pek	2460	41 bid
84		702	27	ch	pekoe	2700	38 bid
85		705	32	do	pek sou	3360	35
92	Glasgow	726	13	do	bro or pek	1105	65
93		729	20	do	bro pek	1560	53
94		732	15	do	or pek	975	49
95		735	9	do	pekoe	900	42
96	Myraganga	738	61	do	bro pek	5612	36 bid
97		741	23	hf-ch	bro or pek	1311	39
98		744	35	ch	pekoe	3045	36
99		747	23	do	pek sou	1656	33
102	Gampai	756	38	hf-ch	or pek	1900	35 bid
103		759	27	ch	pekoe	2160	32 bid
104		762	23	do	pek sou	1771	31
105		765	20	hf-ch	bro or pek	1240	37 bid
107	Sinna Dua	771	27	do	bro pek	1620	36 bid
108		774	18	ch	pekoe	1530	34
109		777	15	do	pek sou	1155	31
110	Mount Temple	780	22	do	pekoe	1738	32 bid
116	Sadamulle	798	8	do	bro pek	800	out
117		801	17	do	pekoe	1700	30
124	Poilakande	822	42	do	bro pek	4200	37
125		825	22	do	pekoe	1980	34
130	Eadella	840	10	do	bro pek	2310	36
131		843	20	do	pekoe	1800	34 bid
132		846	10	do	pek sou	900	32
138	Galella	864	11	do	or pek	935	42
139		867	17	do	bro or pek	1700	41
140		870	9	do	pekoe	810	36
144	Suduganga	882	26	hf ch	bro or pek	1560	40 bid
147	Bellongalla	891	20	do	bro pek	1000	45
148		894	40	do	bro pek	2000	36
149		897	20	ch	pekoe	1600	32
150	Evalgolla	900	41	hf-ch	bro pek	2050	37
151		903	36	ch	pekoe	1620	33
156	Y K	918	9	do	dust	1305	21
157	M T C L	921	37	hf-ch	fans	2590	32
158		924	8	ch	fans	960	
159		927	5	do	dust	750	24
160		930	12	hf-ch	dust	1080	
161	Maskeliya	933	15	do	bro or pek	750	65
162		936	8	ch	or pek No. 1	720	44
163		939	11	do	or pek No. 2	990	44
164		942	14	do	pekoe	1120	39
165		945	8	do	pek sou	720	35 bid
173	Glassaugh	969	18	hf-ch	or pek	936	65
174		972	18	do	bro or pek	1170	53
175		975	18	ch	pekoe	1620	43
176	Kadienlena	978	9	hf-ch	dust	765	22
177		981	19	do	br or pek dust	1520	22 bid
178		984	12	ch	congou	1140	24
186	Murraythwaite	8	15	do	bro pek	1425	withd'n
187		11	15	do	pekoe	1275	
188	Welicoda	14	10	do			
			1	hf-ch	bro tea	950	18
189	E K	17	11	ch	bro mix	1045	19
191	Maha Eliya	23	9	do	bro mix	900	24
192	Warleigh	26	12	hf ch	bro or pek	720	withd'n
193		29	27	ch	bro pek	2565	
194		32	20	do	pekoe	1700	

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.		Name.	lb.	c.
3	Igalkande	664	2	ch	pek	140	26
5	M P	670	4	ch	bro mix	440	27
7		676	1	do	dust No. 2	180	19
11	Doranakande	688	5	ch	pek	450	33
13	Hurstpier Point	694	3	ch	or pek	219	35
14		697	4	do	bro pek	300	32
15		700	4	do	pek	288	28
16		703	4	do	pek sou	300	26
17		706	2	do	bro pek dust	220	22
18		709	1	do	dust	80	23
19	Raglan	712	4	ch	bro pek	360	33
20		715	7	do	pek	604	32
21		718	1	do	dust	70	19
23	Wewawatte	724	13	ch	pek	650	32
24		727	2	do	fans	130	22
26	B, in estate mark	733	7	ch	sou	630	30
28	S K M	739	1	hf-ch	bro pek	62	33
29		742	1	do	pek	50	31
30		745	1	do	pek sou	55	28
31	Palmgarden	748	4	ch	bro pek	440	33
32		751	4	do	pek	400	31
33		754	3	do	pek sou	300	29
34		757	1	do	fans	111	25
35		760	1	do	sou	78	24
36		763	1	do	dust	108	19
40	Avoca	775	5	ch	pek sou	470	38
41		778	6	hf-ch	bro pek fans	480	30
42	A, in estate mark	781	6	ch	bro pek	660	36
44		787	2	hf-ch	bro pek fan	170	24
47	Galkanda	796	4	ch	pek sou	400	26
48		799	1	hf-ch	dust	85	20
49		802	1	do	bro mix	50	18
63	Malvern	844	4	ch	dust	320	24
69	C R D	862	4	ch	bro pek fans	400	27
70		865	4	do	bro mix	400	23
71		868	3	do	dust	300	22
72		871	2	do	red leaf	180	22
73		874	5	do	dust	500	23
76	Gallawatte	883	4	ch	pek sou	430	30
78		889	6	do	pek fans	420	31
79		892	2	do	bro mix	170	27
80		895	1	do	dust	85	21
85	Clyde	910	4	ch	dust	400	21
87	Vathalana	916	11	ch	bro or pek	660	37
89		922	8	do	pek	640	31
90		925	1	do	pek sou	95	29
91		928	5	do	dust	400	21
95	Putupaula	940	8	ch	pek sou	560	31
96	M F, in estate mark	943	2	ch	bro pek	180	34
97		946	1	do	pek	100	31
98		949	2	do	pek sou	140	28
99		952	4	do	dust	600	22
101	P	958	7	ch	pek	665	30
102		961	5	do	pek sou	450	27
103	New Galway	964	6	hf-ch	bro pek	360	60
104		967	8	do	pek	440	46
105		970	1	do	pek sou	50	39
109	Glendon	982	6	hf-ch	bro or pek	390	33
115	G	1000	4	ch	dust	540	21
116		1003	2	do	bro tea	200	26
117		1006	3	do	bro mix	255	26
118	Belgodde	1009	3	ch	bro or pek	300	36
119		1012	2	hf-ch	bro pek	100	36
120		1015	10	do	or pek	500	32
121		1918	13	do	pek	650	30
122		1021	2	ch			
			1	hf-ch	pek sou	235	28
123		1024	8	do	dust	60	22
124	Meemorakande	1027	8	ch	dust	640	22
125	Ugieside	1030	4	ch	dust	320	21
126		2033	3	do	congou	240	26
127		1036	3	do	bro mix	300	24
128	K G K	1039	1	ch	bro mix	77	35
129		1042	1	do	red leaf	79	22
130	Dromoland	1045	4	ch	bro or pek	400	withd'n
131		1048	4	ch			
			1	hf-ch	bro pek fans	465	28
132		1051	3	do	dust	240	22
133		1054	2	ch	red leaf	196	20
134		1057	1	do	sou	65	21
136	L G A	1063	1	ch	bro tea	400	29
137	P G A	1066	1	ch	bro mix	95	28
138	Kabragalla	1069	10	hf-ch	bro tea	500	23
139		1072	2	hf-ch	dust	170	21
144	Kirklees	1087	1	ch	congou	95	30
146		1093	6	do	dust	540	24
155	Hayes	1120	6	ch	dust	600	23
158	Dunbar	1129	14	hf-ch	or pek	672	47

Lot.		Box.	Pkgs.	Name.	lb.	c.
160	D B R	1135	7 hf-ch	bro pek fans	420	36
161		1138	1 do	dust	80	22
172	Udapolla	1171	2 hf-ch	dust	160	20
224	Maha Uva	1327	8 ch	pek sou	680	32
225		1330	1 hf-ch	pek fans	80	26
226		1333	1 ch	congou	112	25
227		1336	3 hf-ch	dust	270	27
234	Seenagolla	1357	3 ch	dust	300	22
249	W L	1402	1 do	pek sou	60	27
250		1405	1 do	sou	40	24
254	W A	1417	4 ch	dust	640	20
261	Angramal'y	1438	2 hf-ch	dust	160	22
265	Palmerston	1450	8 hf-ch	pek sou	640	37
266	Queensland	1453	8 hf-ch	bro or pek	400	61
267		1456	5 do	or pek	250	52
271		1468	8 ch	dust	640	22
273		1474	3 do	bro mix	264	23
276	Theydon Bois	1483	6 ch	pek sou	540	33
277		1486	2 do	dust	180	22
281	Roeberry	1498	5 do	dust	600	24
286	Pantiya	1513	1 ch	bro mix	100	24
287		1516	5 hf-ch	dust	560	22
295	Matalawa	1540	8 do	dust	680	21
299	Castlereagh	1552	2 ch	pek sou	160	32
300		1555	6 hf-ch	fans	420	33
301		1558	2 do	dust	160	24
308	Lochiel	1579	6 ch	dust	600	22
309	A G	1582	3 do	fans	300	34
310		1585	4 do	pek sou	400	31
311		1588	1 do	dust	150	21
312		1591	3 do	bro tea	300	28
316	Blairgowrie	1603	2 do	pek fans	200	22
319	Beausejour	1612	1 do	pek sou	80	24
320		1615	1 hf-ch	fans	60	24
321		1618	2 ch	dust	170	22
323	Nakiadenia	1624	5 do	pek	400	31
325		1630	7 do	bro pek fans	665	23
327		1636	1 do	red leaf	85	20
329	Strathspey	1642	8 hf-ch	pek sou	384	38 bid
330		1645	9 do	pek	468	34 bid
331		1648	9 do	sou	387	30
333		1654	2 do	congou	90	22
339	Poengalla	1672	5 do	dust	425	21
340		1675	1 ch	red leaf	80	18
344	W	1687	3 do	pek sou	255	28
346	Rajamallay	1693	4 hf-ch	bro tea	220	20
350	Digdola	1705	4 ch	pek sou	320	28
353	Nugagalla	1714	5 hf-ch	pek sou	350	29
354		1717	3 do	dust	270	22
358	Waitalawa	1729	7 do	dust	630	24
361	Vogan	1738	6 ch	pek sou	480	29
362		1741	5 do	dust	425	21
363		1744	4 do	bro pek fans	440	29
369	B D W P	1762	1 hf-ch	bro pek	90	24
370		1765	1 ch	pek No. 2	80	23
371		1768	4 hf-ch	dust	340	21
372	M	1771	1 ch	or pek	101	32
373		1774	1 do	pek sou	101	30
380	H G M	1795	4 ch 1 hf-ch	or pek	400	44
384		1807	10 do	bro pek fans	610	32
385		1810	3 do	dust	255	21
386		1813	3 ch	bro tea	255	18
391	Mapitigama	1828	11 hf-ch	bro or pek	605	38
399	C L	1852	6 ch	red leaf	570	25
400	U S A	1855	1 do	bro pek	95	30
401		1858	1 do	pek	85	25
402		1861	2 hf-ch	pek sou	195	23
403		1864	2 ch	bro mix	180	18
405	Mawaliganga-watte	1870	12 hf-ch	br or pek	660	45
406		1873	16 do	or pek	672	37
409		1882	3 do	dust	270	21
414	Gallustani	1897	4 ch	pek	320	29
415		1900	4 do	pek sou	320	27
440	Nella Oola	1975	1 do	dust	100	19
441		1773	1 do	red leaf	85	15 bid
442	Northcove	1981	3 do	sou	300	18
443	Melfort	1984	1 do	pek	78	36
444	M	1987	2 do	bro pek sou	200	20
448	Rowley	1999	6 hf-ch	dust	300	22
455	Kirklees	2020	2 ch	congou	160	28
457		2026	3 hf-ch	dust	270	25

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
4	Wewatenne	67	1 hf-ch	dust	75	22
6	St. Catherine	73	2 ch	pek	160	29
7		76	2 do	pek sou	130	27
8		79	2 hf-ch	dust	140	21
9		82	2 do	fans	120	21
11	Meetiyagoda	88	5 ch	pek	500	29
12		91	3 do	sou	300	26
13		94	1 do	fans	100	22

Lot		Box	Pkgs.	Name.	lb.	c.
14	Maligattenne	97	2 ch	bro pek	202	27
15		100	3 do	pek	251	22
16		103	7 do	pek sou	522	21
18		106	5 do	unas	388	19
18		109	5 do	bro sou	411	16
19		112	1 do	dust	95	2[illegible]
20	P	115	6 ch	unas	530	23
21	K B, in estate mark	118	1 ch	bro sou	110	23
25	Nega	130	11 hf-ch	pek	605	30
26		133	7 do	pek sou	385	28
27		136	2 do	dust	126	20
28		139	1 do	sou	62	24
32	S L G	151	9 hf ch	sou	405	27
33		154	6 do	dust	480	21
35		160	5 do	red leaf	275	20
36	Panapitiya	163	5 ch	bro pek	500	36
39		172	3 do	con	200	21
40	Rambodde	175	6 ch	bro or pek	360	45
42		181	10 hf ch	pek	500	32 bid
43		184	2 do	pek sou	100	29
44		187	1 do	fans	70	21
46	Citrus	193	3 ch	bro or pek	300	26
53	Oakham	214	6 ch	pek sou	570	32 bid
56	Razeen	223	3 hf-ch	pek fans	180	22
57		226	3 do	bro pek fans	180	27
58		229	6 do	bro tea	270	25
61	L	238	7 hf ch	dust	595	21
63	Killin	244	5 ch	pek	450	27
64		247	2 do	sou	170	24
65		250	1 do	bro mix	105	18
66	S	253	4 hf ch	dust	320	22
67		256	6 do	bro tea	300	24
68	A	259	2 hf ch	dust	160	23
69		262	5 do	bro tea	250	24
76	Gangwarily	283	6 hf-ch	dust	480	21
77		286	6 do	pek fans	360	22
86	Eagles Land G	313	4 ch	dust	600	19
90	Harangalla	325	5 ch	fans	500	27
96	Haviland	343	7 ch	sou	595	22
97		346	6 do	pek fans	600	23
98		349	4 hf-ch	dust	300	22
102	Carney	261	8 hf-ch	sou	400	26
103		264	4 do	dust	200	21
108	Ranasingha-patna	379	9 hf-ch	bro pek fans	630	25 bid
109		382	6 do	dust	540	22
113	Heniton	394	3 ch	dust	450	21
117	Sellwette	511	2 ch	sou	200	27
118		514	1 do	fans	130	24 bid
120	Weygalla	520	1 ch	dust	86	26
128	N	544	2 ch	bro pek	200	23
129		547	2 do	pek	160	22
140	W	580	6 hf-ch	dust	570	19
144	Nillicolla-watte	592	5 ch	pek sou	425	29 bid
145		595	1 hf ch	dust	75	22
146		598	1 do	fans	60	24
149	Bogahagoda-watte	607	4 ch	pek sou	400	26 bid
150		610	2 do	bro pek fans	240	25 bid
151	G B	613	5 hf ch	bro tea	200	24 bid
153	Paradise	619	4 hf ch	bro pek	200	58
154		622	6 do	pek	300	32
155		625	4 do	pek sou	200	32
156		628	2 do	dust	130	22
161	Scarborough	643	1 ch	con	75	23 bid
166	Neboda	658	3 ch	dust	240	22
167	N	661	1 ch	bro	112	22
168		664	1 do	pek	100	23
174	Kerenvilla	682	5 ch	pek sou	500	27
175		685	2 hf ch	pek dust	172	21
178	Havilland	694	4 hf ch	dust	360	21
179	L	697	1 ch 2 hf ch	dust	330	20
180		700	3 do	dust A	300	19
185	Orion	715	3 ch	fans	345	29
187		721	4 do	dust	560	22
188		724	5 do	bro mix	550	26
193	Pindeni Oya	739	1 ch	dust	120	21
194		742	1 do	b o pek fans	120	25
195		745	2 do	fans	270	23
196		748	7 de	bro tea	665	24 bid
200	Mahatenne	760	1 hf ch 1 do	dust	156	22
201		763	1 ch 1 hf ch	red leaf	156	21
202	W	766	1 ch	pek sou	88	36

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb	c.
2	Theresia	456	1 hf-ch	sou	55	34
3		459	4 do	dust	320	22
4		462	2 do	bro mix	150	33

Lot.		Box.	Pkgs	Name.	lb.	c.
7	Akkara Totum	471	5 ch	pek sou	400	21
8		474	1 do	fans	95	23
9		477	1 do	dust	110	21
10		480	1 do	bro mix	85	15
16	Mossend	498	10 hf-ch	bro or pek	550	41
18		501	14 do	pekoe	630	38
19		507	6 do	pek sou	270	32
20		510	17 do	sou	680	28
22		516	2 do	dust	160	25
23		519	3 do	red leaf	120	17
31	Mocha	543	2 ch	bro tea	200	22
45	Callander	585	11 hf-ch	pekoe	583	36
46		588	1 do	pek sou	42	32
47		591	1 do	fans	75	23
49	Ampettiakande	597	1 box	bro pek	26	38
59	Templestowe	627	5 ch	pek sou	450	31
61	Hatisland	633	9 do	pekoe	684	34
67	Ferndale	651	5 do	pek sou	450	34
69	W H G	657	3 hf-ch	dust	255	23
70		660	3 do	fans	210	25
71		663	2 ch	bro mix	180	31
72	M R	666	6 hf-ch	dust	528	23
73	Heatherly	669	10 do	bro mix	650	19
77	Kotuagedera	681	3 ch	pek sou	825	28
80	Gangawatte	690	3 hf-ch	pek fans	225	28
81		693	5 do	dust	450	24
86	Mahanilu	708	7 do	dust	639	23
87		711	1 ch	red leaf	87	14
100	Myraganga	750	3 hf-ch	dust	40	23
101		753	7 do	pek fans	448	27
105	Gampai	768	2 do	dust	180	21
111	Anchor, in est.					
112	mark	783	4 ch	unas	312	32
113		786	4 hf-ch	dust	345	22
114		789	1 ch	pekoe	75	33
115		792	1 do	unas	105	33
118		795	1 do	congou	70	23
119	Sadamulle	804	3 do	sou	300	23
120		807	1 do	dust	118	20
121		810	2 do	red leaf	200	15
122		813	2 do	unas	200	18
123		816	1 do	fans	100	20
126		819	1 do	congou	100	18
127	St. Paul's	828	1 do	bro pek	103	27
		831	6 hf-ch	dust	480	19
128	St. Peter	834	1 ch	bro pek	93	26
129		837	2 do	pekoe	162	23
135	M G	855	2 do	[illegible] pek	188	33
136		858	4 do	pek sou	552	24
137		861	4 hf-ch	fans	288	25
141	Galella	873	3 ch	sou	255	31
142		876	6 hf-ch	dust	540	22
143	Gangawatte	879	1 do	red leaf	58	16
145	S G	885	2 ch			
			3 hf-ch	unas	248	33
146		888	2 boxes	sou	51	29
152	Evalgolla	906	8 ch	pek sou	3[illegible]0	29
153		909	3 do	fans	195	24
154		912	2 hf ch	dust	180	21
155	F H	915	1 ch	red leaf	90	18
166	Maskeliya	948	4 hf-ch	fans	240	31
167		951	4 do	sou	400	31
168		954	2 ch	dust	180	22
169		957	4 do	unas	400	23
179	Kadienlena	987	2 ch	unas	220	24
180	C	990	4 do	bro or pek	350	33
181		993	6 do	bro pek	450	33
182		996	9 do			
			1 hf-ch	or pek	670	31
183		999	2 ch	pek sou	150	29
184		2	2 do	bro mix	220	23
185		5	1 do	pek	90	29
190	Kandaloy	20	6 hf-ch	bro tea	240	28

CEYLON COCOA SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, June 30

"Shropshire."—KK in estate mark, 3 bags sold at 53s.

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE July 7

"Duke of Norfolk."—Gowrakellie F, 1 barrel sold at 197s 6d; ditto 1, 1 cask and 1 barrel sold at 107s; ditto 2, 4 cases sold at 96s; ditto S, 1 tierce sold at 48s; ditto PB, 1 tierce sold at 96s; GKE T in estate mark, 1 barrel out; GKE 2, 1 tierce out; GKE PB, 1 barrel and 1 bag out; Niabedda 1, 1 barrel out; ditto 2, 2 casks sold at 86s; ditto S, 1 cask sold at 50s; ditto PB, 1 tierce out; NB T in estate mark, 1 barrel out; NB, 1 barrel and 1 bag out; Wiharagalla 1, 1 tierce sold at 81s; ditto 2, 1 cask sold at 61s; ditto S, 1 barrel sold at 34s; ditto PB, 1 barrel sold at 50s; WHG T in estate mark, 1 cask out; WHG, 1 tierce out; WHG P in estate mark, 1 tierce out.

CEYLON COCOA SALES IN LONDON.

"Clan McDonald."—Beredewelle COC Ex No. 1, 20 bags sold at 82s; 1 bag sold at 60s; sea damaged, ditto T, 2 bags sold at 42s 6d; ditto B, 1 bags sold at 38s.

"Sado Maru."—Hylton OO, 8 bags sold at 80s; 3 bags sold at 55s; sea damaged, ditto O, 1 bag sold at 47s; wormy, ditto S, 2 bags sold at 53s.

"Ava."—PBM, 7 bags sold at 38s.

"Tosa Maru."—Jak Tree Hill Estate 1, 25 bags out at 63s.

"Socotra."—Dea Ella 2, 3 bags sold at 48s 6d.

"Clan McNeill."—S in estate mark, 6 bags sold at 50s.

"Orissa."—O KK in estate mark, 1 bag sold at 47s, sea damaged and packed.

"Tosa Maru."—HMS & Co. in estate mark, 1 bag sold at 47s, sea damaged and packed.

"Duke of Portland."—KAS S Co., 1 bag sold at 45s.

"Tosa Maru."—KAS & Co., 16 bags sold at 54s, sea damaged bulked.

"Tamba Maru."—Yattawatte, 20 bags sold at 74s 6d; ditto 1, 54 bags sold at 75s 6d; ditto 2, 12 bags sold at 50s 6d; Broken, 1 bag sold at 51s; Monarakelle 1, 13 bags sold at 62s 6d; ditto 2, 1 bag sold at 46s; Broken ditto, 1 bag sold at 48s.

"Clan McDonald."—The Bandarapolla Ceylon Company Limited 1, 12 bags sold at 68s; ditto 2, 1 bag sold at 50s; ditto T, 2 bags sold at 46s 6d.

CEYLON CARDAMOMS SALES IN LONDON.

"Staffordshire."—JL Delugalla, Mysore 4, 6 cases sold at 1s 8d; 2 cases sold at 1s 7d.

"Dardanus."—Nicholoya Oya No. 2, 1 case out at 2s 3d.

"Clan Fraser."—Galaha B, 3 cases sold at 1s 8d without reserve.

Sold without reserve, Lots 91 to 115:—"Clan Chisholm."—HGA in estate mark, 14 cases sold at 1s 8d; 2 cases sold at 1s 7d; 2 cases sold at 1s 8d; 4 cases sold at 1s 7d. "Clan Cameron."—4 cases sold at 1s 8d; 2 cases sold at 1s 7d; 8 cases sold at 1s 8d; G ditto, 8 cases sold at 1s 7d; 2 cases sold at 1s 8d; 3 cases sold at 1s 7d.

"Oceanien."—A in estate mark, 13 cases sold at 1s 9d.

"Clan Matheson."—1 Hoolo Group, 2 cases sold at 2s 6d; 1 case sold at 2s 5d; 2 ditto, 2 cases sold at 1s 9d; Seed ditto, 1 case sold at 1s 9d.

OBSERVER PRINTING WORKS.

NO. 30 — COLOMBO, AUGUST 7, 1899. — PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[285,383 lb.]

Lot.		Box	Pkgs.		Name.	lb.	c.
4	Rockside	2068	6	do	dust	708	29
5		2071	5	ch	bro pek fans	780	35
6	Mansfield	2074	50	hf-ch	bro pek	3000	57
7		2077	24	ch	pek	2160	45
9	Nakiadeniya	2083	22	ch	bro pek	2200	36
0		2086	13	do	pek	1105	35
12	P C H Galla, in estate mark	2092	7	ch	bro pek	700	35
13		2095	9	do	pek	810	32
18	Bodawa, Invoice No. 10	2110	12	hf-ch	bro pek	708	40
19	Glencorse	2113	32	ch	bro pek	2560	35 bid
20		2116	14	do	bro or pek	1190	40
21		2119	21	do	pek	1575	33
22		2122	32	do	pek sou	2240	31
26	Uragalla	2134	12	ch	bro pek	1020	34
32	Nillomally O B C, in est. mark	2152	25	ch	bro pek	2500	41
33		2155	23	do	or pek	2024	38
34		2158	21	do	pek	1722	36
35		2161	10	do	pek sou	700	34
37		2167	26	hf-ch	bro or pek	1482	53
40	Udabage	2176	29	hf-ch	bro pek	1740	36
41		2179	25	do	pek	1375	35
42		2182	21	do	pek sou	1050	32
43	Cooroondoowatte	2185	18	hf-ch	bro pek	900	45
44		2188	23	do	pek	1150	37
45		2191	15	do	pek sou	750	33
48	Kincora	2200	50	hf-ch	bro pek	3000	40 bid
49		2203	9	ch	or pek	810	40
50		2206	19	do	pek	1615	37
51		2209	9	do	pek sou	765	34
54	Erlsmere	2218	17	hf-ch	bro or pek	952	51 bid
55		2221	27	ch	bro pek	2646	41 bid
56		2224	27	do	pek	2214	39
57		2227	9	do	pek sou	810	35
62	Monkswood	2242	16	hf-ch	bro pek	800	68
63		2245	18	do	or pek	810	79
64		2248	12	ch	pek	1140	49
65	Deaculla	1	40	hf-ch	bro pek	2200	46
66		4	30	ch	pek	2100	40
67	Gallawatte	7	10	ch	bro pek	950	38
68		10	10	do	pek	850	35
69	Middleton	13	15	ch	bro pek	1500	54
70		16	12	do	pek	1080	43
82	Bandara Eliya	52	91	hf-ch	bro or pek	5460	40
83		55	105	do	or pek	5250	39 bid
84		58	40	ch	pek	3400	37
85		61	49	do	pek sou	3773	34
86		64	10	hf-ch	bro pek fans	700	32
92	Monkton	82	27	hf-ch	bro pek	1512	38
93		85	8	ch	pekoe	720	36
94		88	9	do	pek sou	720	33
97	Patiagama	97	21	ch	bro or pek	1155	46 bid
98		100	11	do	pek	935	36
99		103	10	do	pek sou	800	33
100	Macaldeniya	106	12	hf-ch	bro pek	1155	46
101		109	17	do	pek	850	40
102		112	5	ch			
			1	hf-ch	pek sou	820	35
106	B, in estate mark	124	11	ch			
			1	hf-ch	unas	1164	30
107	High Forest	127	16	hf-ch	or pek No 1	832	69
108		130	15	do	or pek	720	54
109		133	12	do	bro or pek	720	46
114	High Forest	148	14	hf-ch	or pek	728	67
115		151	12	do	bro or pek	720	45 bid
116		154	17	do	pek	731	44
117	Clunes	157	15	ch	bro or pek	1425	37
118		160	16	do	bro pek	1360	37
119		163	34	do	pek	2720	32
120		166	12	do	pek sou	1020	31
121		169	10	do	sou	850	29
122	High Forest	172	14	hf-ch	or pek	728	70
123		175	17	do	or pek	816	54
124		178	25	do	pek	1150	40

Lot.		Box.	Pkgs		Name.	lb.	c.
126	Morankande	184	15	ch	or pek	1425	44
127		187	23	do	pek	1725	33
128		190	12	do	pek sou	1080	32
132	L	202	8	ch	pek	763	31
140	Great Valley Ceylon, in est. mark	226	19	hf-ch	or pek	950	41
141		229	21	do	bro pek	1155	53
142		232	14	ch	pek	1260	38
143		235	14	do	pek sou	1050	33
144	Dambagastalawa	238	26	ch	bro or pek	2860	44 bid
145		241	18	do	or pek	1872	38 bid
146		244	16	do	pek	1408	37
151	Erracht	259	15	ch	pek sou No. 2	1215	29
152	L H O	262	48	ch	pek sou	3840	50
154	Yataderia Invoice No. 1	268	29	ch	bro pek	2842	35
155		271	63	ch	pek	5040	31
157	Kennington	277	8	ch	fans	1040	29
163	Mudamana	295	13	hf-ch	dust	1170	21 bid
164	Ingurugalla	298	9	do	bro tea	765	20
166	Yataderia Invoice No. 2	304	13	ch	pek	975	31
167		307	10	do	pek sou	710	29
168		310	25	do	pek sou	2125	25
169	Glengariffe	313	14	hf-ch	bro or pek	868	44
170		316	22	do	bro pek	1210	40
171		319	35	do	or pek	1750	38
172	Glengariffe	322	14	ch	pek	1260	38
173		325	10	do	pek sou	800	33
175	Tymawr	331	21	hf-ch	or pek	1050	47 bid
176		334	19	do	bro or pek	1045	56
177		337	34	do	pek	1530	41
178		340	23	do	pek sou	1035	37
179	C R D	343	7	ch	dust	700	22
182	Ella Oya	352	20	do	bro pek	1900	41
183		355	9	do	pek	765	34
185	Maldeniya	361	14	do	bro or pek	1470	40
186		364	30	do	or pek	2700	35
187		367	36	do	pek	3060	34
188		370	26	do	pek sou	2158	31
191	Knavesmire	379	23	do	bro pek	2300	39
192		382	41	do	pek	3280	36
200	S S S	406	12	do	red leaf	984	23
201	Vogan	409	48	do	bro pek	4560	39
203		415	49	do	pek	4165	35
206	Digdola	424	11	do	bro pek	990	36
212	Stisted	442	61	hf-ch	bro or pek	3965	39 bid
213		445	18	do	or pek	1080	39
214		448	35	do	pek	2205	39
215		451	50	do	pek sou	2800	34
217	Hornsey	457	22	ch	or pek	2200	40
218	Blairgowrie	460	23	do	sou	1840	out
219	Doranakande	463	12	do	bro pek	1200	38
220		466	10	do	pek No. 2	900	34
222	Strathspey	472	21	hf-ch	or pek	1218	43
231	Sutton	499	18	do	or pek	1800	45
232	Watawella	502	17	hf-ch	pek fans	1190	34
233		505	8	do	pek dust	720	20
234	Yataderia	508	40	do	bro or pek	2200	37 bid
238	Bodawa	520	16	do	pek	704	36
239	Springwood	523	25	ch	bro pek	2250	38
240		526	19	do	pek	1425	34
241	Nabaveena	529	50	hf-ch	bro pek	2500	36 bid
242		532	30	ch	pek	2700	33
245	Stamford Hill	541	12	hf-ch	bro pek	720	63
247		547	12	ch	pek	1080	44
250	Maha Oya	556	24	do	pek	2280	33
251	Yataderia	559	45	do	pek	3600	32

[Messrs. Somerville & Co.—

115,848 lb.]

Lot		Box.	Pkgs.		Name.	lb.	c.
1	J M D M	769	14	ch	bro pek	1400	34
2		772	17	do	pek	1610	32
7	Marigold	787	35	hf-ch	bro pek	1960	45
8		790	15	do	pek	750	42
11	Dikmukalana	799	29	hf-ch	pek	1450	30
12		802	38	do	pek sou	1824	33
16	Dryburgh	814	16	hf-ch	pek	736	34
19	Minna	823	38	hf-ch	bro or pek	2160	48
21	Hangran Oya	829	43	hf-ch	bro pek	2150	38 bid
23		835	16	ch	pek	1360	34 bid
29	Tyspane	853	26	ch	bro pek	2600	40
30		856	31	do	pek	2480	35
31	Ahamad	859	14	hf-ch	bro pek	700	31
33		865	17	do	pek sou	850	24 bid

Lot		Box	Pkgs.		Name.	lb.	c.
36	Nugawella	874	41	hf-ch	bro pek	2378	38
37		877	39	do	pek	1950	36
42	Leana	892	19	hf-ch	bro or pek	1143	35
43		895	9	ch	or pek	945	36
44		898	6	do	bro pek	840	25
49		913	25	hf-ch	dust	2315	19 bid
52	G A Ceylon	922	23	ch	sou	1495	29
54	Craiglea	928	52	hf-ch	bro or pek	2912	38 bid
55		931	17	ch	bro pek	1445	35 bid
56		934	60	hf-ch	pek	3000	33 bid
57		937	18	do	pek sou	1425	29 bid
63	Castlemilk	955	18	ch	bro pek	1980	40
64		958	20	do	or pek	1800	37
65		961	28	do	pek	2660	36
66		964	18	do	pek sou	1440	32
67	Ovoca A I	967	26	ch	pek fans	2600	31
68		970	8	do	unas	800	30
71	Elchico	979	43	hf-ch	bro pek	2150	35 bid
72	Glenalla	982	27	ch	bro pek	2700	35
73		985	25	do	pek	2250	31
74		988	13	do	pek sou	1170	30
75		991	29	do	bro pek	2900	35
76		994	26	do	pek	2340	31
77		997	12	do	pek sou	1080	30
83	Oakham	16	24	ch	or pek	960	44
84		19	23	hf-ch	bro pek	1380	43
85	Ravana	22	24	hf ch	bro pek	1320	39
86		25	24	do	pek	1080	36
87		28	13	ch	pek sou	1040	33
88	Yarrow	31	37	hf ch	bro pek	2072	40
89		34	26	do	pek	1300	36
90	Y, in estate mark	37	22	hf ch	bro pek	1232	36 bid
91	Mossville	40	11	ch	bro pek fans	1100	31
92		43	19	h fch	dust	1615	23
94	Razeen	49	30	hf ch	bro pek	1500	36
95		52	32	do	pek	1440	32
96		55	37	do	pek sou	1480	31
97		58	14	do	pek fans	840	32
99	Kotigala	61	9	ch	bro pek	990	33
100		67	10	do	pek	1040	31
102	Narangoda	76	23	ch	bro pek	2300	36
104		79	15	do	pek	1425	34
105		82	11	do	pek sou	990	31
108	Nooranie	91	15	ch	pek	1275	25 bid

[Mr. E. John.—127,078 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
5	M T P, 3 4, in est. mark	53	9	ch	sou	900	28
8	Uda	62	9	do	bro pek	900	32
9		65	20	do	pekoe	1600	31
10		68	12	hf-ch	dust	1080	21
19	Osborne	95	21	ch	bro or pek	2100	38 bid
20		98	18	do	pekoe	1620	35
21	Galloola	101	36	do	bro pek	3600	45 bid
22		104	41	do	pekoe	4100	44
23		107	32	do	pek sou	3200	40 bid
29	St. John's	125	30	hf-ch	or pek	1560	65 bid
30		128	30	do	pekoe	1680	51
31		131	17	do	pek fans	1190	35 bid
32	Agra Ouvah	134	26	do	bro or pek No. 1	1664	67
33		137	28	do	bro or pek No. 2	1792	60
34		140	23	do	or pek	1242	48
36	Glasgow	146	10	ch	bro or pek	850	61 bid
37		149	17	do	bro pek	1326	58
38		152	14	do	or pek	910	48
39		155	10	do	pekoe	1000	40
43	G B	167	17	hf-ch	fans	1360	29
46	Kotuagedera	176	27	ch	bro pek	2700	35
47		179	9	do	pekoe	855	32
56	Syston	206	15	do	bro pek	1500	36
57		209	13	do	pekoe	1105	34
58		212	11	do	pek sou	880	32
61	Amunupure	221	7	do	bro pek	770	30 bid
64	Maligatenne	230	9	do	unas	721	out
70	Keenagaha Ella	248	11	ch	bro pek fans	1430	32
84	Brownlow	290	41	hf-ch	bro or pek	2255	45 bid
85		293	20	ch	or pek	1800	41
86		296	13	do	pekoe	1066	37
88	Mahanilu	302	41	hf-ch	bro pek	2460	43 bid
89	Little Valley	305	26	ch	bro pek	2600	36
90		308	33	do	pekoe	2805	34 bid
92	Kataboola	314	12	hf-ch	pek dust	1020	24
94	Whyddon	320	10	ch	or pek	1000	37 bid
9	G D B, in est. mark	323	22	do	bro or pek	2200	39 bid
96		326	28	do	pek sou	2525	30 bid
98	Myraganga	332	61	do	bro pek	5612	36
99	Uvakella	335	23	do	bro or pek	2530	withd'n
100		338	22	do	pekoe	2200	withd'n
101		341	14	do	pek sou	1400	withd'n

Lot.		Box.	Pkgs.		Name.	lb.	c.
103	Verelapatna	347	22	ch	bro pek	2420	57 bid
104		350	34	do	pekoe	3400	44 bid
105		353	14	do	pek sou	1330	40 bid
107	St. John's	359	28	hf-ch	bro or pek	1680	57 bid

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.		Name.	lb.	c.
1	M'Golla	2059	1	ch	fans	95	18
2	Rockside	2062	5	ch	sou	400	30
3		2065	1	do	bro mix	100	25
8	Mansfield	2080	8	ch	pek sou	680	41
11	Nakiadeniya	2089	7	ch	pek sou	560	30
14	P C H Galle, in estate mark	2098	7	ch	pek sou	560	30
15		2801	4	do	congou	320	26
16		2104	1	do	dust	75	21
17		2107	1	do	dust	60	21
23	Glencorse	2125	2	ch	dust	350	20
24		2128	1	do	bro tea	110	32
25		2131	1	do	pek fans	120	25
27	Uragala	2137	4	ch	pek	320	30
28		2140	3	do	pek sou	225	29
29		2143	4	do	bro mix	305	24
30		2146	1	do	unas	85	28
31		2149	2	do	dust	165	22
36	Nillomally O B E C, in est. mark	2164	8	ch	sou	560	31
38		2170	3	hf-ch	fans	210	26
39	K H L	2173	1	ch	bro mix	80	22
46	Cooroondoowatte	2194	1	hf-ch	fans	53	8
47		2197	1	do	pek dust	90	23
52	Opalgalla	2212	6	hf-ch	red leaf	390	15
53		2215	5	do	dust	360	19
71	Bargany	19	7	hf-ch	bro or pek	455	54 bid
72		22	5	ch	pek	504	42 bid
73		25	4	do	pek sou	350	37 bid
74		28	1	hf-ch	dust	95	22
75		31	1	box	silver tips	5	R7·00
87	D, in estate mark	67		hf-ch	bro or pek	240	26
88		70	2	do	fans	120	24
89		73	4	do	bro mix	240	15
90		76	4	do	dust	360	21
91		79	11	do	sou	550	28
95	Monkton	91	3	ch	pek sou No 2	240	30
96		94	2	hf-ch	dust	136	21
103	Macaldeniya	115	1	do	sou	55	30
104		118	4	do	dust	340	23
105		121	1	ch	bro tea	110	22
125	Morankande	181	10	hf-ch	bro or pek	560	39
129		193	3	do	bro or pek fans	210	30
130		196	1	do	dust	90	21
131	L	199	4	ch	bro pek	440	33
133		205	2	do	pek sou	159	28
138	Oondia	220	5	do	or pek	285	49
139		223	1	ch	dust	115	23
147	Dambagastalawa	247	5	ch	pek sou	465	35
148		250	6	hf-ch	bro pek fans	480	25
149	G O	253	2	hf-ch	fans	150	30
150		256	4	do	dust	340	22
153	L H O	265	4	ch	dust	660	19
156	Yataderia Invoice No. 1	274	3	ch	pek sou	285	26
158	Kennington	280	1	ch	fans	100	23
159		283	3	do	unas	318	28
160		286	1	do	bro tea	93	27
161		289	4	do	dust	664	21
162	M A	292	9	ch	sou	675	28
165	Ingurugalla	301	4	ch	red leaf	360	19
174	Glengariffe	328	8	hf-ch	dust	640	24
184	Ella Oya	358	6	do	pek sou	450	32
193	Knavesmire	385	6	do	pek No. 2	510	31
194		388	8	do	pek sou	560	30
195		391	2	do	pek sou No. 2	120	29
196		394	1	do	bro tea	80	18
197		397	2	hf ch	dust	160	22
202	Vogan	412	5	ch	bro or pek	550	26
204		418	6	do	pek sou	480	30
205		421	5	do	dust	425	21
207	Digdola	427	9	do	pek	630	32
208	Horagaskelle	430	9	hf-ch	bro pek	528	37
209		433	10	do	pek	488	33
210		436	10	do	pek sou	512	31
211		439	1	do	bro mix	62	22
216	Stisted	454	4	do	dust	320	21
221	Doranakande	469	3	ch	dust	390	2

Lot.		Box.	Pkgs.	Name.	lb.	c.
223	Strathspey	475	8 hf-ch	pek	384	40
224		478	9 do	pek sou	468	34
235	Wooleyfield	511	6 do	pek	570	28
236		514	1 do	bro mix	95	22
237		517	1 do	fans	125	20
243	Allerton	535	2 do	bro pek dust	240	21
244		538	1 do	pek dust	120	16
246	Stamford Hill	544	11 hf-ch	or pek	495	66
248		550	4 ch	pek sou	340	38
249		553	1 hf-ch	dust	85	25

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
3	J M D M	775	7 ch	pek sou	630	31
4		778	3 do	fans	246	26
5		781	1 do	con	76	26
6		784	1 do	dust	151	20
9	Marigold	793	6 hf-ch	pek sou	270	38
10		796	5 do	bro pek dust	375	26
13	Dikmukalana	805	11 hf-ch	dust	550	21
14	Dryburgh	808	4 hf-ch	bro or pek	240	40
15		811	5 do	or pek	260	42
17		817	4 ch	pek sou	268	32
18		820	1 hf-ch	fans	72	25
20	Minna	826	6 hf-ch	bro mix	540	22
22	Hangran Oya	832	7 hf ch	or pek	560	40
24		838	8 ch	pek sou	560	32
25	Jak Tree Hill	841	12 hf ch	pek sou	480	31
26		844	3 do	fans	195	22
27		847	2 do	dust	160	21
28	T C A, in estate mark	850	2 hf ch	red leaf	110	19
32	Ahamad	862	12 hf ch	pek	600	27
34		868	3 do	fans	191	19 bid
35		871	5 do	red leaf	260	15
38	Nugawella	880	3 ch	pek sou	225	32
39		883	3 do	sou	255	31
40		886	2 do	bro mix	170	20
41		889	3 hf-ch	dust	255	22
45	Leana	901	2 hf-ch	bro pek No. 1	130	28
46		904	5 ch	pek	640	30
47		907	5 do	pek sou	550	21 bid
48		910	5 do	red leaf	425	14 bid
50	Killin	916	6 ch	bro pek	600	34
51		919	3 do	pek	270	32
53	G A Ceylon	925	6 hf-ch	dust	492	18
58	D B R, in estate mark	940	2 boxes	bro pek	70	36
59		943	1 hf ch	pek	57	30
60		946	2 do	pek sou	101	28
61		949	1 ch	dust	102	20
62	C L P, in estate mark	952	5 hf-ch	pek	305	30
69	Ovoca A I	973	7 hf ch	bro pek dust	630	21
70		976	5 do	dust	475	21
78	Glenalla	1	2 ch 1 hf ch	dust	380	20
79		4	1 ch	fans	95	18
80		7	3 do	bro mix	285	20 bid
81		10	3 hf ch	con	150	23
82	H	13	3 ch	dust	510	20
93	Mossville	46	4 ch	red leaf	360	17
98	Razeen	61	5 hf ch	dust	375	21
101	Kotigalla	70	4 ch	pek sou	400	28
1 2		73	3 do	fans	300	18
106	Narangoda	85	8 ch	dust	680	21
107	Nooranie	98	7 ch	bro pek	665	26 bid
109		94	7 do	pek sou	595	22
110		97	2 do	con	168	out
111		100	1 do	mix	1[illegible]0	18 bid
112	Wewetenne	103	9 hf-ch	bro pek	540	36
113		106	7 do	pek	378	32
114		109	7 do	pek sou	350	31
115	O S T	112	1 ch	bro pek	100	33
116		115	1 do	pek	90	30
117		118	1 do	pek sou	80	23
118		121	1 hf-ch	pek dust	63	21
119	Ratuville	124	1 ch	bro pek	75	23
120		127	1 do	pek sou	85	21
121		130	2 do 1 hf-ch	con	191	15
122	S, in estate mark	133	1 ch	bro pek	105	37
123		136	1 do	pek	100	33
124		139	3 do	pek sou	260	26
125		142	1 do	dust	160	19
126	Welgampola	145	1 hf-ch	bro pek	55	33
127	Polduwa	148	5 ch	bro pek	500	35
128		151	5 do	pek	500	32
129		154	2 do	pek sou	200	29
130		157	2 do	fans	200	23
131		160	1 do	mix tea	90	16

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb	c.
1	O'Linda	41	1 ch 1 hf-ch	bro or pek	146	31
2		44	1 ch	pekoe	110	30
3		47	1 do	pek sou	95	30
4		50	1 hf-ch	dust	88	21
6	M T P, 34, in est. mark	56	3 ch	dust	300	21
7	L P	59	2 do	bro mix	160	19
24	Galloola	110	5 hf-ch	dust	400	22
35	Agra Ouvah	143	7 ch	pekoe	665	44
40	G B	158	8 hf-ch	bro pek	480	33
41		161	5 ch	pekoe	400	31
42		164	6 hf ch	dust	480	22
44		170	4 ch	sou	340	31
45		173	4 hf-ch	bro mix	320	18
48	Kotuagedera	182	2 ch	pek sou	190	30
49		185	1 do	dust	90	21
50		188	5 hf-ch	bro pek fans	375	27
51	W H	191	1 do	bro pek	62	38
52		194	1 do	pekoe	50	35
53		197	2 do	pek sou	124	33
54		200	2 do	dust	168	27
55		205	2 do	fans	142	31
59	Syston	215	3 ch	unas	267	18
60		218	2 do	dust	286	23
62	Amunupure	224	4 do	pekoe	400	30
63		227	3 do	pek sou	270	29
71	Keenagaha Ella	251	1 do	fans	120	26
72		254	2 do	congou	170	20
73		257	1 do	dust	190	20
74	Yahalakelle	260	4 do	bro pek	360	43
75		263	3 do	pekoe	225	36
76		266	2 do	pek sou	120	35
77	Ferndale	269	3 do	pekoe	257	35
78		272	1 do	pek sou	90	31
79		275	1 do	dust	155	23
80		278	1 hf-ch	fans	45	30
81	K T	281	2 ch	sou	200	19
83	Knavesmire	284	10 do	pek sou	680	31 bid
87	Brownlow	299	8 hf-ch	bro pek fans	584	28
91	Little Valley	311	3 do	dust	255	21
93	K B	317	5 ch	red leaf	400	21
97	W H R	329	4 do	dust	400	21
106	Verelapatna	356	3 do	dust	300	24 bid

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE July 14

"Clan Macintosh."—Gowerakellie F, 1 tierce sold at 114s; ditto 1, 4 casks sold at 111s 6d; ditto 2, 5 casks sold at 101s 6d; 2 casks and 1 tierce sold at 108s; ditto S, 1 cask sold at 75s; ditto PB, 1 cask and 1 barrel 136s; GKET in estate mark, 1 cask sold at 41s; GKE, 1 tierce sold at 38s; ditto, 1 bag out ovtkr.

"Tamba Maru."—Size OO Roehampton, 1 barrel sold at 101s; O ditto, 1 cask and 1 barrel sold at 102s; 1 ditto, 4 casks and 1 barrel sold at 93s 6d; 2 ditto, 1 barrel sold at 45s; PB ditto, 1 cask sold at 90s.

"Clan Macintosh."—Kahagalla 1, 1 cask out; ditto S, 1 barrel sold at 80s.

"Tamba Maru."—Size 1 Thotulagalla, 1 cask and 1 barrel sold at 104s; Size 2 ditto, 4 casks sold at 96s 6d; Size 3, 1 barrel sold at 50s; PB ditto, 1 tierce sold at 95s.

CEYLON COCOA SALES IN LONDON.

"Clan Stuart."—OOA MK in estate mark, Estate Cocoa, 3 bags sold at 52s 6d, sea damaged and repacked.

"Clan McNeil."—Kaduwella, 45 bags sold at 64s.

"Ava."—No 1 AMK EF in estate mark, 7 bags sold at 55s, sea damaged and bulked; M in estate mark, 19 bags sold at 58s; C in estate mark, 10 bags sold at 55s, sea damaged bulked; ditto C, 4 bags sold at 47s.

"Kamakura Maru."—MM in estate mark, 58 bags sold at 61s; MLM in estate mark, 1 bag sold at 54s; No Mark, 1 bag sold at 42s.

"Clan Matheson."—Maria 2, 1 bag sold at 32s.

"Clan McDonald."—Meegama A, 22 bags sold at 82s 6d.

NO. 31 COLOMBO, AUGUST 14, 1899. PRICE:—12½ cents each 3 copies 30 cents ; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[372,577 lb.]

Lot.		Box	Pkgs.		Name.	lb.	c.
1	A M B	562	29	ch	bro pek soa	2378	25
4	Cooroondoowatte	571	15	hf-ch	pek	750	37
11	Walton	607	38	ch	bro pek	4256	41
67		610	69	do	pek	6900	35
18		613	26	do	pek sou	2430	33
21	Udabage	622	21	hf-ch	bro pek	1260	37
22		625	17	do	pek	935	34
23		628	16	do	pek sou	800	32
28	Rowley	643	16	ch	bro pek	800	43
29		646	16	do	pek	800	38
32	Gonapatiya	655	19	hf-ch	bro pek	950	54
33		658	18	do	or pek	846	55
34		661	65	do	pek	3250	42
35		664	33	do	pek sou	1551	36
39	Hayes	676	14	ch	pek	1330	36
42	Massena	685	42	hf-ch	bro pek	2100	41
43		688	17	do	pek	850	35
48	Woodend	703	109	ch	pek	9940	32 bid
49	Gampaha	706	37	ch	bro pek	4070	43
50		709	41	do	pek	3485	43
51		712	14	do	pek sou	1260	38
52		715	15	do	fans	1425	23
62	Bodawa, Invoice No. 12	745	16	hf-ch	pek sou	704	33
63	Maha Oya	748	20	ch	bro or pek	2000	38
64		751	29	do	bro pek	2900	35
65		754	30	do	pekoe	2850	33
66	Maha Uva	757	77	hf-ch	bro or pek	5005	44
67		760	43	do	pek	4085	41
68		763	12	do	pek sou	1020	35
71	Battawatte	772	11	ch	bro pek	1210	44
73		778	10	do	dust	1000	22
74		781	7	do	bro pek fans	770	27
75	Erracht	784	25	ch	pek sou	1750	30
78	High Forest	793	21	hf-ch	or pek No. 1	1113	66
79		796	19	do	or pek	912	54
80		799	24	do	bro or pek	1440	43 bid
81	Pallegodde	802	14	ch	bro or pek	1400	37
82		805	14	do	bro pek	1400	43
83		808	12	do	or pek	1080	36
84		811	16	do	pek	1280	34
85		814	13	do	pek sou	1170	33
90	Polatagama	829	38	ch	bro pek	3800	43
91		832	24	ch	or pek	2040	36
92		835	39	do	pek	3510	34
93		838	17	do	pek sou	1445	32
94	Weoya	841	38	ch	bro or pek	3800	37
95		844	36	do	or pek	3600	35
96		847	29	do	pek	2755	33
97		850	30	do	pek sou	2700	31
99	Bloomfield	856	26	ch	bro pek	2730	48
100		859	17	do	pek	1615	43
101		862	9	do	pek sou	855	40
103	Ganapalla	868	17	ch	or pek	1530	41
104		871	29	do	bro or pek	2610	36
105		874	41	do	pek	3280	32
106		877	19	do	pek sou	1425	29
107		880	10	do	bro pek fan	1000	33
108		883	9	hf-ch	dust	774	22
109	Inverness	886	45	hf-ch	bro pek	2475	47
110		889	20	do	pek	1900	41
111	Non Pariel	892	19	hf-ch	bro pek	1064	43 bid
112		895	14	do	pek	700	38 bid
113		898	18	do	pek sou	768	36
117	Tonacombe	910	22	ch	or pek	2200	45
118		913	27	do	bro pek	2700	45
110		916	30	do	pek	2700	42
120		919	9	do	pek sou	810	36
121	Pansalatenne	922	13	ch	bro or pek	1300	47
122		925	27	do	bro pek	2430	38
123		928	16	do	pek	1280	33
124		931	15	do	pek sou	1200	30
9	Ascot	946	20	ch	bro pek	2000	38
130		949	24	do	or pek	2160	35
131		952	11	do	pek	990	34
132		955	8	do	pek sou	720	33
133		958	13	do	or pek fans	1300	31
135	M	964	12	hf-ch	bro pek	708	44
136		967	19	do	pek	1520	36
137	Ingrogalla	970	9	ch	bro pek	900	40
138		973	13	do	pek	1105	38
139	Ettapolla	976	22	hf-ch	bro pek	1232	36
149	Munukattia Ceylon, in est. mark	1006	21	hf-ch	or pek	945	44
150		1009	37	do	bro pek	2035	51
151		1012	17	ch	pek	1360	38
152		1015	9	do	pek sou	810	34
159	Kakiriskande	1036	10	ch	pek	950	33
161	Dea Ella	1042	21	hf-ch	bro or pek	1260	47
162		1045	46	do	or pek	2530	37 bid
163		1048	40	do	pek	2000	36
164		1051	16	do	pek sou	800	33
167	Morankande	1060	9	ch	or pek	855	41
169		1066	13	do	pek	975	36
170		1069	8	do	pek sou	720	33
174	Roeberry	1081	12	ch	or pek	1176	47
175		1084	18	do	pek	1728	41
176		1087	8	do	pek sou	720	36
177	Battalgalla	1090	12	ch	pek sou	960	35
178	K P W	1093	30	hf-ch	or pek	1650	43
179		1096	29	do	bro pek	1450	40
180		1099	82	do	pek	3690	35
133	Vogan	1108	41	ch	bro pek	3895	40
185		1114	50	do	pek	4250	35
188	Castlereagh	1123	14	ch	bro pek	1400	55
189		1123	13	do	or pek	1105	36 bid
190		1129	11	do	pek	880	37
194	Yataderia	1141	63	ch	pek	5040	33
195	Matalawa	1144	27	ch	pek sou	2295	19 bid
196		1147	47	do	pek	3760	32 bid
197	Chsterford	1150	54	ch	bro pek	5400	38 bid
198		1153	47	do	pek	4700	35
199		1156	39	do	pek sou	3900	33
200	Geragama	1159	14	ch	bro pek	1260	35 bid
201		1162	11	ch	pek	880	33
202	Waratenne	1165	14	ch	bro pek	1260	35
203		1168	9	do	pek	720	33
205	Arapolakande	1174	75	ch	bro pek	6750	37 bid
206		1177	49	do	pek	3920	35
207		1180	9	do	pek sou	810	33
212	Kirrimettia	1195	8	do	bro mix	800	30
219	Patiagama	1216	10	do	or pek	850	40
220		1219	9	do	pek	765	37
221		1222	16	do	pek sou	1280	32
222		1225	9	do	dust	765	20
223	G M in estate mark	1228	55	hf-ch	bro or pek	2970	42
224		1231	56	do	pek	2800	39
225		1234	18	do	pek sou	846	35
226	Middleton	1237	19	do	bro or pek	1045	96
227		1240	19	ch	bro pek	1900	53
228		1243	11	do	pek	990	41
229	Naseby	1246	28	hf-ch	bro or pek	1624	58
230		1249	38	do	or pek	1748	53 bid
231		1252	14	do	pek	700	46
232		1255	10	do	fans	700	33
233		1258	8	do	dust	720	25
235	Dammeria	1264	10	ch	pek	900	36
236	Seenagolla	1267	11	do	bro pek	715	53
239	Nahalma	1276	25	do	sou	2500	29
242	Pambagama	1285	19	do	sou	1615	28
243		1288	7	do	bro pek fans	735	25
245		1294	15	do	sou	1200	28
249	Bandara Eliya	1306	50	hf-ch	bro or pek	3100	42
250		1309	71	do	or pek	3692	40
251		1312	31	ch	pek	2635	38
252		1315	34	do	pek sou	2618	33
257	Blairgowrie	1330	14	do	sou	1120	13 bid
261	Putupaula	1342	15	hf-ch	bro or pek	900	39
262		1345	40	do	bro pek	3600	40 bid
263		1348	35	do	pek	2625	36
264		1351	12	do	pek sou	840	33
265	Tunisgalla	1354	24	do	bro pek	1200	38 bid
266		1357	17	do	pek	1360	33 bid
267		1360	11	do	pek sou	880	31 bid
268	L B K	1363	14	ch	red leaf	1330	19 bid
275	Clyde	1384	50	do	bro pek	5000	38 bid
276		1387	36	do	pek	3240	33 bid
277		1390	8	do	pek sou	720	30 bid
279		1396	10	do	bro or pek	1000	31 bid
285	S F in estate mark	1414	8	do	pek sou	800	32
287	Knavesmire	1420	16	hf-ch	or pek	800	40
288		1423	20	ch	bro pek	2000	40
289		1426	37	do	pek	2960	36
292	Middlesdale	1435	20	do	or pek	1883	out
296	Battawatte	1447	14	do	pek	1260	35
302	M B A	1465	26	do	fans	2340	27

[Messrs. Somerville & Co.—251,884 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Romania	163	10 ch	bro pek	1000	36
2		166	11 do	pek	1100	31
9	S R K	187	7 ch	dust	1050	21
10	Warakamure	190	36 ch	bro pek	3600	35 bid
11		193	31 do	pek	2945	32
12		196	25 do	pek sou	2250	30
14	Kurulugalla	202	10 ch	bro pek	1000	35
15		205	11 do	pek	990	30
18	Marigold	214	13 hf-ch	bro pek	702	57
21	Harangalla	223	24 ch	bro pek	2280	40
22		226	37 do	pek	3330	34
23		229	12 do	sou	1080	30
25		235	13 hf ch	dust	975	22
27	Hatdowa	241	23 ch	bro pek	2185	37
28		244	21 do	pek	1575	32
29		247	18 do	pek sou	1350	30
42		256	7 do	p k fans	700	31
35	Lower Dickoya	265	15 ch	bro pek	1590	34 bid
36		268	8 do	pek	768	32
37	Corfu	271	45 hf ch	or pek	2475	33 bid
38		274	18 do	bro pek	1080	36 bid
42	Park Hill	286	10 ch	bro pek	950	38
44		292	13 do	pek sou	780	29 bid
45	Bollagalla	295	38 ch	bro pek	3610	37 bid
46		298	25 do	pek	2000	35
47		301	14 do	pek sou	1120	31
48		304	9 do	pek fans	900	28
55	Krualana	325	11 ch	unas	1100	19 bid
62	Dartry A	346	16 hf ch	fans	1248	24
64		352	11 do	bro tea	990	29
65	Doragalla	355	17 ch	bro or pek	1700	45
66		358	17 do	bro pek	1530	37 bid
67		361	38 do	pek	2850	34
68		364	10 do	pek sou	950	23
69	Castlemilk	367	26 ch	bro pek	2860	41 bid
70		370	18 do	or pek	1620	39
71		373	43 do	pek	4085	37
72		376	25 do	pek sou	2000	33
73	Dedugalla	379	47 ch	bro pek	4700	36 bid
74		382	45 do	pek	4050	33 bid
75		385	30 do	pek sou	2550	31
76		388	24 do	bro mix	2040	26 bid
77		391	17 hf ch	dust	1445	21
78		394	36 do	fans	2340	26 bid
79	Morahilla	397	48 hf ch	bro pek	2640	41
80		505	27 do	pek	1755	36
81		508	18 do	pek sou	1080	33
83	Rayigam	514	52 ch	bro pek	4630	35 bid
84		517	33 ch	or pek	2475	34
85		520	29 do	pek	2320	33
86		523	9 do	pek sou	765	31
87	Annandale	526	17 hf ch	bro or pek	884	66
88		529	14 do	or pek	728	57
89		532	16 do	pek	768	42
90		535	13 do	pek sou	715	38
93	Rayigam	544	48 ch	bro pek	4560	35
94		547	38 do	or pek	2964	34
95		550	36 do	pek	2880	33
96		553	9 do	pek sou	810	31
97	Lyndhurst	556	66 hf-ch	bro pek	3630	35
98		559	81 do	pek	4050	32
99		562	56 do	pek sou	2525	29
100		565	11 do	dust	935	20
101	Kelani	568	51 ch	bro pek	4080	37
102		571	42 do	bro or pek	4200	38
103		574	30 do	pek	2550	34
104		577	25 do	pek sou	2125	30
106	Kahatagalla	583	8 ch	bro pek	720	38
112	Tiddydale	601	10 ch	pek	900	31
115	California	610	9 ch	pek	855	31
118	M A	617	44 hf-ch	bro or pek	2640	38 bid
119		622	11 ch	or pek	1392	38 bid
120		625	19 do	pek	1425	35
121		628	31 do	pek sou	2384	32
122		633	14 hf-ch	fans	1008	26
123		634	8 do	dust	736	20 bid
124	Ingeriy	637	46 hf ch	bro pek	2208	35
125		640	35 do	pek	1680	32
126		643	41 do	pek sou	1886	30
127		646	13 do	bro pek fans	780	33
128	W M	649	9 ch	bro pek fans	900	22 bid
129		652	5 do	pek fans	730	20 bid
130		655	14 hf-ch	dust	1358	18 bid
131	Orion	658	18 ch	bro or pek	1980	38
132		661	63 do	bro pek	6300	36 bid
133		664	29 ch	pek	2755	35
134		667	18 do	pek sou	1620	33
135	Blinkbonnie	670	23 hf ch	bro pek	1380	59
136		673	28 ch	pek	2380	41
137		676	12 do	pek sou	1020	38
138	Neboda	679	15 ch	bro or pek	1500	37 bid
139		682	41 do	bro pek	4100	36
140		685	16 do	pek	1440	34
141		688	11 do	pek sou	880	32

Lot		Box	Pkgs.	Name.	lb.	c
143	Woodthorpe	694	9 ch	bro pek	900	43
144		697	14 do	pek	1190	35
145		700	14 do	pek sou	1092	34
149	Inverness	712	14 ch	pek sou	1330	34 bid
153	Ravenscraig	724	9 ch	or pek	765	36
154		727	26 hf ch	bro pek	1430	39
155		730	17 ch	pek	1530	35
157	I P	736	19 ch	pek sou	1672	32
160	L	745	25 hf-ch	dust	2315	17 bid
161	Carney	748	36 hf ch	bro pek	1800	36
162		751	49 do	pek	2205	32
163		754	38 do	pek sou	190	31
166	F	763	18 ch	s	216	17 bid
167		766	24 do	b m	2659	14 bid
			12 hf-ch			
169	Galphele	772	20 ch	bro or pek	2000	36 bid
170		775	18 do	bro pek	1710	35 bid
171		778	12 do	pek No. 1	1200	34 bid
172		781	17 do	pek No. 2	1615	34
176	Charlie Hill	793	19 hf-ch	bro pek	1045	35
177		796	14 do	pek	770	32
180	Neuchatel	805	49 ch	bro pek	4655	38
181		808	8 ch	bro or pek	1000	34
182		811	19 do	pek	1615	35
183		814	24 do	pek sou	2040	33
185	Eagles Land G	820	13 ch	sou	1040	28
186		823	12 ch	sou	960	27
187	Honiton	826	25 ch	bro pek	2300	35
188		829	20 do	pek	1420	32
189		832	19 do	pek sou	1292	28 bid

[Mr. E. John.—165,521 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Gangawatte	371	14 hf-ch	or pek	700	40
5		374	16 do	bro pek	880	37
6	Rondura	377	12 ch	or pek	1080	37 bid
7		380	27 do	bro pek	2700	39
8		383	21 ch	pekoe	1890	33
9		386	13 do	pek sou	1170	30
11	Agra Ouvah	392	31 hf-ch	bro or pek No. 1	1984	68
12		395	39 do	bro or pek No. 2	2496	56
13		398	26 do	or pek	1404	50
14		401	9 ch	pekoe	855	44
15	Callander	404	27 hf-ch	bro or pek	1620	49
20	Loughton	419	36 do	bro pek	1980	39
21		422	66 do	pekoe	3300	37
22		425	34 do	pek sou	1700	33
24	Glentilt	431	62 do	bro pek	3100	47
25		434	22 do	pekoe	1100	40
26	Glasgow	437	10 ch	bro or pek	850	64
27		440	18 do	bro pek	1404	54
28		443	14 do	or pek	910	47
29		446	9 do	pekoe	900	41
30	Kanangama	449	16 do	bro or pek	1520	27 bid
31		452	20 do	bro pek	1700	27
32		455	48 do	pekoe	3360	25
33		458	14 do	fans	1050	19 bid
34		461	30 do	pek sou	2100	25
35		464	30 do	pek fans	2850	18
36		467	10 hf-ch	dust	800	19
37	Mocha	470	18 ch	bro or pek	1800	63
38		473	14 do	or pek	1260	53
39		476	14 do	pekoe	1260	46
40	G P	479	44 hf-ch	bro or pek	2890	31 bid
41	Ury	482	22 ch	or pek	1980	45
42		485	37 do	bro or pek	3700	41 bid
43		488	36 do	pekoe	3060	40 bid
44		491	11 do	pek sou	880	34 bid
46	Glentilt	497	74 hf-ch	bro pek	4070	48
47		500	33 do	pekoe	1650	41
48	Ferndale	503	12 ch	bro or pek	1200	48
49		506	12 do	bro or pek	1200	46
50		509	12 do	pekoe	1080	36
57	Ankada	530	30 ch	bro pek	3000	39
58		533	40 do	pekoe	3600	34
59		536	22 do	pek sou	1980	32
61		542	6 do	dust	840	21
68	N B	563	11 hf-ch	dust	935	22 bid
69		566	9 ch	unas	900	35
71	Eadela	572	23 do	bro pek	2300	38
72		575	21 do	pekoe	1890	34
73		578	8 do	pek sou	720	32
74	Claremont	581	32 hf-ch	bro or pek	1760	37
75		584	9 ch	pekoe	810	33
76		587	9 do	pek sou	720	30
82	Sefton	605	50 boxes	bro or pek	1000	59
83		608	45 ch	bro pek	4590	43 b
84		611	29 hf-ch	or pek	1740	40 b
85		614	20 ch	pekoe	2000	39 b
86	Kotuageaera	617	25 do	bro pek	2500	38
87		620	11 do	pekoe	1045	33
91	Nahavilla	632	20 do	bro or pek	2000	67 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
92		635	15 ch	or pek	1500	49 bid
93		638	17 do	pekoe	1700	43
98	Yapame	653	25 do	bro pek	3080	47
99		656	20 do	pekoe	1900	41
100		659	14 do	pek sou	1330	37
101	Tebuana	662	21 do	bro pek	1890	35
102		665	31 do	pekoe	2325	33
103		668	23 do	pekoe No. 2	2070	30
104	A L	671	37 do	bro or pek	3330	36 bid
105		674	33 do	bro pek	2640	35 bid
106		677	16 do	pekoe	1280	34 bid
111	Murraythwaite	692	14 do	bro pek	1330	40
112		695	15 do	pekoe	1275	34
116	Torrington	707	35 do	bro pek	3220	37
117		710	30 do	pekoe	2580	34
118	Myraganga	713	14 do	bro pek	1260	37
119		716	12 do	pek sou	960	35
120	Rookwood	719	35 do	pek sou	2520	31
121	Warleigh	722	27 do	bro pek	2565	42 bid

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
2	E D P	565	3 ch	dust	300	18
3		568	1 do	fans	120	23
5	Cooroondoowatte	574	7 hf-ch	pek sou	350	33
6	St. H	577	3 ch	bro pek	280	33
7		580	3 do	pek	270	32
8	B F, in est. mark	583	3 ch	bro pek	174	35
9		586	6 do	pek	264	32
10		589	1 hf-ch	pek No 2	32	29
11		592	7 do	pek sou	287	29
12		595	3 do	bro pek fans	150	22
13		598	1 do	dust	36	23
19	Walton	616	4 ch	fans	520	31
20		619	2 do	dust	300	25
36	Hayes	667	3 do	bro or pek	300	71
37		670	6 do	bro pek	600	42
38		673	4 do	or pek	340	36
40		679	5 do	pek sou	475	33
41		682	4 do	dust	400	21
44	Massena	691	8 hf-ch	pek sou	300	32
45		694	2 do	fans	120	23
53	Udapolla	718	3 ch	bro pek	300	34
54		721	3 do	pek	285	33
55		724	1 do	pek sou	90	31
56		727	2 do	sou	112	29
57	Richmond	730	9 hf-ch	bro pek	585	67
58		733	8 do	or pek	440	63
59		736	11 do	pek	550	52
60		739	3 do	pek sou	135	46
61		742	1 do	fans	90	27
69	Maha Uva	766	2 hf-ch	pek fans	160	26
70		769	6 do	dust	540	25
72	Battawatte	775	9 ch	pek sou	697	33
76	Erracht	787	6 ch	bro mix	600	21
77		799	2 do	pek dust	344	20
86	Pallegodde	817	1 ch	bro pek No. 2	100	39
87		820	1 do	or pek No. 2	85	37
88		823	1 do	pek No. 2	75	45
89		826	1 do	pek sou No. 2	90	33
98	Weoya	853	3 ch	dust	450	21
103	Bloomfield	865	4 ch	pek fans	280	25
114	Non Pariel	901	5 hf-ch	bro pek fans	275	37
115		904	1 do 1 box	bro pek dust	106	25
116	B W D	907	8 hf-ch	dust	600	23
134	Ascot	961	2 ch	dust	200	21
140	Ettapolla	979	6 hf-ch	pek	336	32
141		982	5 do	sou	280	27
142		985	1 do	dust	72	21
143	Dunbar	988	9 hf-ch	bro or pek	450	60
144		991	8 do	or pek	384	46
145		994	7 ch	pek	525	39
146	D B R	997	3 hf-ch	bro pek fans	174	39
147		1000	1 ch	pek sou	75	34
148		1003	1 hf-ch	dust	75	23
153	D G F	1018	5 hf-ch	bro pek	250	33
154		1021	7 do	pek	350	31
155		1024	6 do	pek sou	270	29
156		1027	1 do	red leaf	41	17
157		1030	1 do	dust	58	19
158	Kakiriskande	1033	3 ch	bro pek	300	39
160		1039	3 do	pek sou	285	30
165	W L	1054	6 hf-ch	bro pek	454	44
166		1057	7 do	pek	519	32
168	Morankande	1063	11 hf-ch	bro or pek	616	40
171		1072	2 do	bro or pek fans	150	30
		1075	1 hf-ch	dust	90	23
173	Roeberry	1078	6 ch	bro pek	600	47
181	K P W	1102	14 hf-ch	pek sou	630	31
182		1105	3 do	dust	255	21
184	Vogan	1111	5 ch	bro or pek	550	33
186		1117	7 do	pek sou	560	33
187		1120	5 do	dust	425	22
191	Castlereagh	1132	2 ch	pek sou	160	32
192		1135	5 hf-ch	fans	350	34
193		1138	2 do	dust	160	22
204	Arapolakande	1171	5 ch	bro or pek	550	38
208		1183	3 do	dust	330	25
209	Doomba	1186	3 do	congou	300	31
210	K'Dola	1189	2 do	fans	260	33
211		1192	1 do	dust	150	22
213	Kirrimettia	1198	4 do	fans	400	27
214		1201	4 do	dust	480	22
215		1204	2 do	unast	180	33
216	B B in est. mark	1207	2 do	bro pek	200	23
217		1210	1 do	pek	80	26
218		1213	1 hf-ch	dust	70	22
234	L L	1261	1 ch	bro or pek	92	44
238	Nahalma	1273	7 hf-ch	dust	532	21
240		1279	8 do	bro pek fans	512	30
241		1282	5 do	fans	300	23
244	Pambagama	1291	1 do	dust	105	21
246		1297	5 ch	br pk fans	525	25
247		1300	1 hf-ch	dust	105	20
248	Sunnycroft	1303	2 ch	bro tea	280	20
253	Bandara Eliya	1318	6 hf-ch	bro pek fans	420	27
254		1321	4 do	dust	360	24
255		1324	1 ch	red leaf	100	20
256	Blairgowrie	1327	2 do	pek sou	180	24
278	Clyde	1393	5 do	dust	450	21
284	S F in est. mark	1411	4 do	bro pek	400	33
286		1417	3 hf-ch	fans	195	23
290	Knavesmire	1429	3 do	dust	255	21
291	D D D	1432	2 ch	sou	160	24
293	Pambagama	1438	1 hf-ch	dust	105	25
294		1441	1 do	dust	105	27
295	Battawatte	1444	5 ch	bro pek	500	38
297		1450	7 do	pek sou	630	32
298		1453	2 do	fans	200	23
299		1456	3 do	dust	300	22
300	Bargany	1459	5 do	or pek	504	42
301		1462	4 do	pek	350	38

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
3	Romania	169	4 ch	pek sou	400	29
4	Killin	172	6 ch	bro pek	600	35
5		175	5 do	pek	450	32
6		178	1 do	sou	90	29
7	S K K	181	1 ch	sou	100	29
8		184	1 do	bro tea	100	21
13	Warakamure	199	7 ch	sou	630	27
16	Kurulugalla	208	2 ch	pek sou	200	28
17	K G A, in estate mark	211	1 ch	bro tea	100	16
19	Marigold	217	5 hf-ch	pek	250	44
20		220	4 do	pek sou	200	39
24	Harangalla	232	5 ch	fans	475	31
26	Oolapane	238	6 hf-ch	dust	540	20
30	Hatdowa	250	1 ch	sou	75	27
31		253	2 do	dust	320	20
33		259	3 do	fans	360	26
34	Lower Dickoya	262	11 hf ch	bro or pek	583	36
39	Corfu	277	6 hf ch	pek sou	300	31
40		280	3 do	fans	225	27
41		283	8 do	bro tea	440	18 bid
43	Park Hill	289	8 ch	pek	600	34
49	Bollagalla	307	4 ch	bro tea	440	21
50		310	3 hf ch	dust	270	20
51		313	1 do	red leaf	60	14
52	Salawe	316	3 ch	bro pek	300	39
53		319	3 do	pek	264	35
54		322	2 do	pek sou	186	32
57	R K P	331	5 ch	bro pek	450	35
58		334	1 do	bro or pek	100	25
59		337	3 do	pek	255	32
60		349	6 do	pek sou	510	30
61		343	1 do	dust	120	20
63	Dartry A	349	2 hf ch	dust	180	19
82	Morahilla	511	1 ch	fans	95	27
91	Annandale	537	11 hf ch	bro pek	682	35 bid
92		541	13 do	sou	598	32
105	Kelani	580	5 ch	dust	550	21
107	Kahatagalla	586	2 ch	bro or pek	200	32
108		589	5 do	pek	425	31
109		592	5 ch	pek sou	425	29
110		595	1 do	dust	120	19
111	Tiddydale	598	8 hf-ch	bro pek	400	34
113		604	6 ch	pek sou	540	26

Lot.		Box	Pkgs.	Name	lb.	c.
114	California	607	5 ch	hro pek	470	34
116		613	5 do 1 hf-ch	pek sou	551	28
117		616	2 ch	red leaf	172	15
142	Nehoda	691	3 hf-ch	dust	350	20
146	Woodthorpe	703	2 ch	sou	148	30
147		706	1 hf-ch	dust	80	20
148		709	1 do	red leaf	30	17
150	S, in estate mark	715	3 ch	fans	195	out
151		718	6 hf-ch	dust	480	18
152		721	3 ch	bro mix	243	9
156	Ravenscraig	733	5 hf-ch	fans	400	22
158	L	739	5 ch	pek sou	550	20 bid
159		742	5 do	red leaf	425	12 bid
164	Carney	757	11 do	sou	550	28
165		760	5 do	dust	250	21
168	F	769	4 ch	hro pek fans	440	21
173	Galphele	784	4 ch	pek sou	400	31
174		787	1 do	sou	90	29
175		790	2 do	fans	230	22
178	Charlie Hill	799	1 hf ch	pek sou	55	26
179		802	2 do	pek fans	150	20
184	Neuchatel	817	4 ch	dust	660	20
190	Honiton	835	2 ch	dust	300	20

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb	c.
1	G L	362	4 ch	sou	400	28
2		365	7 hf-ch	dust	595	21
3		368	4 do	hro pek fans	292	31
10	Rondura	389	3 ch	dust	390	20
16	Callander	407	10 hf-ch	pekoe	530	40
17		410	1 do	pek sou	46	33
18		413	1 do	fans	75	23
19		416	1 do	dust	85	20
23	Loughton	428	8 do	dust	400	22
45	Ury	494	3 do	dust	240	22
60	Ankade	539	2 do	sou	200	28
70	N B	569	5 do	sou	500	37
77	Claremont	590	2 hf-ch	pek dust	180	22
78	Hiralouvah	593	2 do	dust	170	21
79	Hunugalla	596	1 do	hro pek	53	35
80		599	4 do	pek sou	351	30
81		602	4 do	dust	600	22
88	Kotuagedera	623	2 do	pek sou	190	31
89		626	1 hf-ch	dust	65	24
90		629	4 do	bro pek fans	300	28
94	Nahavilla	641	2 do	pek fans	140	29
95		644	4 ch	sou	360	33
96		647	3 hf-ch	dust	240	25
97		650	1 ch	red leaf	100	22
113	Murraythwaite	698	8 do	pek sou	610	31
114		701	3 do	bro pek fans	360	27
115		704	2 hf-ch	dust	180	19
122	Warleigh	725	2 do	dust	170	27

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE July 21

"Clan MacIntosh."—Mousagalla A, 1 cask out, bid 99s, and refused; ditto B, 4 casks out, bid 89s, and refused; 4 casks and 1 tierce out; ditto C, 1 cask and 1 barrel out, bid 45s, and refused; ditto PB, 1 cask out; ditto T, 2 casks out.

"Algeria."—GA Ouvah O, 1 barrel sold at 86s; ditto 1, 2 casks sold at 80s; ditto 2, 4 casks sold at 70s; ditto 3, 1 cask sold at 38s; ditto PB, 1 cask sold at 76s; ditto Triage, 1 cask sold at 31s.

CEYLON COCOA SALES IN LONDON.

"Clan Stuart."—D MP in estate mark, Estate Cocoa, 5 bags sold at 50s, sea damaged and repacked; RA ditto, 6 bags sold at 51s 6d, sea damaged and repacked; O ditto, 24 bags sold at 70s; ditto, bag sold at 57s, sea damaged and repacked.

"Prometheus."—DMA & Co. in estate mark, 5 bags sold at 61s 6d; ditto, 7 bags sold at 65s; RA in estate mark, 9 bags sold at 50s 6d.

"Clan McGregor."—AMK in estate mark, 24 bags sold at 49s 6d, sea damaged and repacked; AK in estate mark, 12 bags sold at 48s 6d, sea damaged and repacked; AM in estate mark, 2 bags sold at 48s 6d, sea damaged and repacked; ditto, 7 bags sold at 55s.

"Dardanus."—O AM in estate mark, Estate Cocoa, 1 bag sold at 53s, sea damaged and repacked.

"Tonkin."—SR in estate mark, 7 bags sold at 48s.

"Clan Stuart."—HT & Co. in estate mark, 5 bags sold at 46s 6d, sea damaged and repacked; Wariagalla, 18 bags sold at 69s; ditto, 1 bag sold at 54s.

"Manora."—CG in estate mark, 1A, 24 bags sold at 75s; ditto 2A, 20 bags sold at 75s.

CEYLON CARDAMOMS SALES IN LONDON.

"Clan Ranald."—AL 1L, 7 cases sold at 1s 3d; ditto 2L, 3 cases sold at 1s 3d; ditto 3L, 1 case sold at 1s 1d; ditto 1 Seeds, 2 cases sold at 2s 3d; ditto 2 Seeds, 1 case sold at 1s 8d.

"Clan Stuart."—Gavatenne Mysore O, 5 cases sold at 2s 9d; ditto 1, 12 cases sold at 2s 4d; ditto 2, 2 cases sold at 1s 9d; ditto S, 1 case sold at 1s 6d; Gavatenne Malabar 1, 1 case sold at 2s 4d; ditto 2, 1 case sold at 1s 6d; Wariagalla Mysore A, 8 cases sold at 2s 6d; ditto B, 4 cases sold at 2s; ditto C, 1 case sold at 1s 8d; ditto D, 4 cases sold at 1s 6d; Seed, 1 case sold at 2s 1d; Nella Olla O, 5 cases sold at 2s 11d; ditto 2, 1 case sold at 1s 5d; ditto B & S, 1 case sold at 1s 5d; ditto Seed, 1 case sold at 2s; ditto AA, 4 cases sold at 2s 9d; ditto A, 4 cases sold at 2s 5d; ditto B, 6 cases sold at 1s 7d; ditto C, 1 case sold at 2s 5d; Gallantenne Cardamoms A, 3 cases sold at 3s 4d; ditto B, 8 cases sold at 2s 8d; ditto C, 1 case sold at 2s 6d; ditto D, 6 cases sold at 2s 2d; ditto E, 4 cases sold at 2s 3d; Altwood Ceylon Cardamoms, 4 cases sold at 2s 6d; ditto, 1 case sold at 1s 6d, half case; Nichola Oya No. 2, 5 cases sold at 2s 4d.

"City of Sparta."—Gavatenne 1, 6 cases sold at 2s 2d; Kobo Mysore Seed, 2 cases sold at 2s 5d; ditto, 1 case sold at 2s 4d.

"Clan Ranald."—MS in estate mark, Mysore, 2 cases sold at 1s 4d; ditto, 5 cases sold at 1s 6d.

"Elphinstone."—JA in estate mark, Malabar, 6 cases sold at 2s.

"Nestor."—W C S in estate mark, 3 cases sold at 3s, lots 96 and 97 without reserve.

"Clan Stuart."—Cottanga Ex, 1 case sold at 3s; Cottanga AA, 2 cases sold at 2s 7d; ditto AA, 1 case sold at 2s 6d; ditto A, 7 cases sold at 2s 2d; ditto B, 2 cases sold at 1s 7d; ditto B, 1 case sold at 1s 6d; Midlands O, 10 cases sold at 3s; ditto, 2 cases sold at 2s 11d; ditto 1, 8 cases sold at 2s 4d; ditto 1, 9 cases sold at 2s 5d; ditto 2, 2 cases sold at 1s 10d; ditto B & S, 1 case sold at 1s 10d; ditto Seed, 1 case sold at 2s; Elkadua O, 2 cases sold at 2s 11d; ditto O, 2 cases sold at 2s 10d; ditto 1, 10 cases sold at 2s 3d; ditto 2, 2 cases sold at 1s 10d: ditto 2, 1 case sold at 1s 9d; ditto B & S, 1 case sold at 1s 5d; Seed, 2 cases sold at 1s 9d; 1 case sold at 1s 8d.

"Clan Matheson."—Pitakande Group No. 1, 1 case sold at 1s 6d.

"Clan Stuart."—Peru, 2 cases sold at 1s 10d; ditto Seed, 1 bag sold at 1s 1d.

"Tamba Maru."—Gallaheria A, 4 bags sold at 1s 8d; ditto B, 1 bag sold at 1s 6d.

"Clan Stuart."—Tonacombe 3, 1 case sold at 1s 10d; Dryburgh B, 1 case sold at 1s 9d.

"Arabia."—MMM in estate mark, 2 cases sold at 2s 6d; 1 case sold at 2s 8d; 1 case sold at 2s 7d; 1 case sold at 2s 2d; 1 case sold at 1s 8d; 2 cases sold at 2s 3d; CT in estate mark, 4 cases sold at 2s 7d.

"Hakata Maru."—PBM, 3 cases sold at 1s 10d.

"Oceanien."—A in estate mark, 7 cases sold at 1s 8½d.

OBSERVER PRINTING WORKS.

NO. 32 COLOMBO, AUGUST 21, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[490,735 lb.]

Lot.		Box	Pkgs.	Name.	lb.	c.
9	Nakiadeniya	1492	16 ch	bro pek	1520	36 bid
10		1495	15 do	pek	1275	33
22	New Peacock	1531	9 cb	pek [illegible]	810	33
24		1537	15 do	pek fans	1125	24
32	Holton	1561	19 ch	bro pek	1805	36
33		1564	12 do	pek	960	33
34		1567	9 do	pek sou	720	31
35	Shrubs Hill	1570	31 ch	or pek	2790	37 bid
36		1573	20 do	pek	1700	34
39	Derby	1582	16 hf-ch	pek	832	33
41	Agra Elbedde	1588	15 hf-ch	or pek	750	48 bid
42		1591	18 do	bro pek	1080	51
43		1594	33 do	pek	1815	39
44		1597	17 do	pek sou	850	34
52	D M V	1621	23 ch	bro pek	2070	33 bid
53		1624	29 do	pek	2320	31
58	Grange Garden	1639	11 ch	bro or pek	1100	44
62	Torwood	1651	10 do	bro or pek	1040	34 bid
63		1654	43 do	bro pek	3612	37 bid
64		1657	27 do	pek	1944	31
65		1660	19 do	pek sou	1482	32
72	Errollwood	1681	20 hf-ch	bro or pek	900	59
73		1684	11 ch	or pek	935	46
74		1687	17 do	pek	1445	38
75	Farnham	1690	54 hf-ch	bro pek	2700	36
76		1693	57 do	pek	2565	34
77		1696	34 do	pek sou	1360	31
83	Kitulgalla	1714	24 hf-ch	or pek	1320	39
84		1717	13 do	bro or pek	780	37
85		1720	25 ch	pekoe	1875	35
88	Monkswood	1729	17 hf-ch	bro pek	850	61
89		1732	38 do	or pek	1260	65
90		1735	16 cb	pek	1600	45
91		1738	12 do	pek sou	1020	41
92		1741	17 hf-ch	fans	952	37
96	M K	1753	7 ch	pek	700	42
98	Gallawatte	1759	16 ch	bro pek	1520	36
99		1762	17 do	pek	1445	35
100	Carendon	1765	8 ch	bro pek	880	34
106	Ismalle	1783	25 ch	sou	1955	29
112	Woodend	1801	39 ch	bro pek	3705	36
113		1804	39 do	pek	3510	32
114		1807	12 do	pek sou	1020	29
116	Ismalle	1813	22 ch	sou	1826	29
119		1822	9 do	dust	1215	21
120	Matale	1825	44 hf-ch	bro pek	2640	42
121		1828	20 ch	pek	1800	38
122		1831	12 do	pek sou	1080	36
123	Rickarton	1834	10 hf-ch	bro or pek	700	81
124		1837	22 do	or pek	1320	45 bid
125		1840	7 ch	pek	770	41
126		1843	10 do	pek sou	1000	29
129	Ruanwella	1852	23 ch	or pek	1955	39
130		1855	12 do	bro pek	1200	35
131		1858	29 do	pek	2610	34
132		1861	8 do	pek sou	720	31
134	Gampaha	1867	27 ch	bro or pek	2970	43
135		1870	25 do	pek	2250	43
136		1873	25 do	pek sou	2250	37
137	Battawatte	1876	20 ch	bro pek	2200	42 bid
138		1879	30 do	pek	2850	38 bid
139		1882	10 do	pek sou	800	34
140	High Forest	1885	25 hf-ch	or pek No. 1	1325	63
141		1888	15 do	or pek	750	47
142		1891	23 do	pek	1081	41
150	Erracht	1915	22 ch	bro or pek	2090	37
151		1918	27 do	bro pek	2160	36
152		1921	46 do	pek	3220	32
153		1924	13 do	pek sou	1040	26
154		1927	22 do	pek fans	2200	30
165	Great Valley Ceylon, in est. mark	1960	14 ch	pek	1260	41
166		1963	33 do	bro pek	1815	47
167		1966	19 do	pek	1710	38
168		1969	18 do	pek sou	1360	34
171	Ambragala	1978	136 hf-ch	or pek	6800	37
172		1981	76 do	bro or pek	4560	39
173		1984	35 do	pek	2975	33 bid
174		1987	70 ch	pek sou	5390	31 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
176	Deaculla	1993	50 hf-ch	bro pek	2750	45
177		1996	34 do	pek	2480	39
178		1999	16 do	pek sou	1120	34
183	Middleton	2014	21 do	bro pek	2100	45
184		2017	19 do	pek	1710	41
186	Ganapalla	2023	18 ch	or pek	1620	39
187		2026	11 do	bro or pek	990	41
188		2029	21 do	bro pek	1890	37
189		2032	40 do	pek	3200	32
190		2035	21 do	pek sou	1575	29
191	Seenagolla	2038	24 hf-ch	bro or pek	1357	48 bid
195	Lovat	2250	38 ch	bro or pek	3914	46 bid
196		2053	21 do	pek	1953	40
201	Beaumont	2068	13 ch	bro pek	1300	38
202		2071	29 ch	or pek	2755	37
204	Yoxford	2077	23 hf-ch	bro pek fans	1495	34
205		2080	10 ch	pek sou	850	34 bid
206		2083	2[illegible] hf-ch	dust	1680	24
208	Weyungawatte	2089	36 hf-ch	bro or pek	2160	40
209		2092	44 ch	bro pek	4180	37
210		2095	41 do	pek	3485	33
213	Yataderia	2104	44 ch	pek	3422	32 bid
214		2107	14 do	pek sou	1050	29
218	Errollwood	2119	10 hf-cb	dust	700	20
219	Cotswold	2122	12 ch	bro pek	1200	47
220		2125	15 do	pek	1350	37
230	Cooroondoowatte	2155	19 hf-ch	pek	950	36
232	Freds Ruhe	2161	50 cb	bro pek	50 0	36
233		2164	47 do	pek	4230	32
234		2167	16 do	pek sou	1140	28 bid
236	N	2173	23 ch	bro tea	2990	19
237		3176	14 do	unas	1260	32
242	Hornsey	2191	15 hf-ch	bro or pek	750	62
243		2194	25 ch	or pek	2375	44
244		2197	20 hf-cb	bro pek	1200	35
245		2200	14 ch	pek	1260	40
246	Knavesmire	2203	15 hf-ch	or pek	750	41
247		2206	23 ch	bro pek	2300	41
248		2209	30 do	pek	2550	34
249		2212	11 do	pek sou	770	32
251		2218	18 hf-ch	pek	1260	33
255	Theydon Bois	2230	11 ch	bro pek	1100	44
256		2233	20 do	pek	1600	37
259	Roeberry	2242	8 do	or pek	768	44
260		2245	13 do	pek	1248	41
262	Pine Hill	1	23 hf-ch	bro or pek	1334	55
263		4	43 do	or pek	2408	44
264		7	38 ch	pek	3230	36
283	C S S in estate mark	64	31 do	bro or pek	2325	40 bid
284		67	37 do	pek	2960	35 bid
289	Matalawa	82	27 do	pek sou	2295	24
290	Blairgowrie	85	14 do	sou	1120	15 bid
291	Carberry	88	25 do	bro pek	2250	38
292		91	21 do	pek	1890	34
298	G K	109	5 do	dust	700	20
299	A M B	112	37 do	bro pek sou	3145	27
300		115	7 do	dust	924	20
301	Penrhos	118	34 hf-cb	bro or pek	1802	55
302		121	30 do	or pek	1350	43
303		124	45 ch	pek	3825	36
306	K P W	133	20 hf-ch	or pek	1100	41
308		139	56 do	pek	2520	34
316	B D W P	163	71 do	bro pek	6390	36
318	Hyson	169	18 do	pek	1620	20 bid
336	Drayton	193	30 do	or pek	2700	52
327		196	40 do	pek	3400	41
328		199	15 do	pek sou	1275	36
335	L B K	220	14 do	red leaf	1330	16 bid
336	Tunisgalla	223	45 hf-ch	bro pek	2225	39 bid
337		226	18 do	pek	1480	33 bid
338		229	11 do	pek sou	880	30 bid
342	Hatherleigh	241	42 do	bro or pek	4200	37
343		244	35 do	pek	3325	32
344		247	20 do	pek sou	1900	27
345		250	11 do	bro mix	990	25
348	Hunasgeria	259	19 do	bro or pek	1900	38
349		262	43 do	bro pek	4300	35
350		265	30 do	pek	2850	32
351		268	26 do	pek sou	2340	30
352		271	8 do	sou	720	27
353		274	10 hf-cb	dust	800	20
354	Hornsey	277	15 ch	pek sou	1200	36
355	Talgaswell	280	13 do	bro or pek	1430	36
356		283	11 do	bro pek	990	40
357		286	30 do	or pek	2550	36
358		289	7 do	bro pek No 2	700	31
359		292	18 do	pek	1530	33

Lot		Box	Pkgs.	Name.	lb.	c.
360		293	16 ch	pek sou	1360	32
366	Ingrugalla	313	15 do	pek sou	1350	32
367	Stafford	316	10 do	hro or pek	700	53
368		319	8 do	or pek	600	50
369		322	12 do	pek	1140	41
380	Amhlakande	355	20 do	hro pek	2000	33
381		358	26 do	pek	2210	34
382		361	12 do	pek sou	960	31
383		364	9 do	dust	900	20
384	Carlaheck	367	9 do	pek sou	864	37
385		370	9 hf-ch	bro pek fans	720	26 bid
387	C B	376	11 ch	pek	1133	30 hid
388	Erlsmere	377	27 do	bro pek	2616	40 bid
389	Maha Oya	382	16 do	hro or pek	1600	40
390		385	28 do	bro pek	2800	35
391		388	33 do	pek	3135	33
392		391	25 do	pek sou	2430	32
393	Maha Oya	394	10 do	sou	900	25
394		397	9 do	pek dust	900	21
398	Doranakande	409	9 do	pek	855	33
399		412	10 do	pek sou	900	31
401	Glencorse	418	38 do	pek	3040	33
402		421	62 do	bro or pek	4960	42
403		424	42 do	bro pek	3570	35 hid
404		427	17 do	pek sou	1275	30
406		433	7 do	pek fans	805	25
412	Woodend	451	109 do	pek	9940	32
413	Harrow	454	17 hf-ch	bro or pek	1020	56
414		457	19 ch	pek	1710	41 hid
417	Digdola	466	9 do	bro pek	810	35
418		459	16 do	pek	1120	31
419	Passara	472	16 do	hro or pek	1600	48
420		475	12 do	or pek	1080	44
421		478	19 do	pek	1710	40
425	Irex	490	29 do	hro pek	2900	37
426		493	13 do	pek	1170	34
427		496	10 do	pek sou	800	32
429	Pallagodda	502	9 do	bro or pek	900	35
430		505	12 do	bro pek	1200	43
431		508	9 do	or pek	810	38
432		511	10 do	pek	800	33
433		514	11 do	pek sou	990	33
434		517	13 do	dust	1105	20
440	Killarney	535	28 hf-ch	hro or pek	1680	50
441		538	16 ch	pek sou	1600	37
442		541	18 hf-ch	dust	1440	20
444	Galpitakande	547	14 ch	hro pek	1400	41
445		550	11 do	pek	1100	37

[Messrs. Somerville & Co.—164,967 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
2	P, in estate mark	841	24 ch	unas	2400	29
5	Handrokande	850	15 hf-ch	bro pek	900	35
6		853	16 do	pek	800	31
9	Tyspane	862	41 ch	bro pek	4100	40 bid
10		865	51 do	pek	4335	36
11	Florida	868	8 ch	hro pek	8 0	34
12		871	12 do	pek	1200	31
29	T S N	922	17 hf ch	pek	850	41
33	Yarrow	934	38 hf-ch	bro pek	2128	36 bid
34		937	25 do	pek	1250	35
35	Y, in eatate mark	940	37 hf ch	hro pek	2075	35 bid
37	Deniyaya	946	46 ch	hro pek	4600	37 hid
38	Mount Vernon	949	32 hf ch	hro flowy. pek	1760	R1·05
39		952	27 do	bro or pek	1674	57
40		955	30 do	bro pek	1830	41
41		958	31 ch	or pek	3100	50
42		961	39 do	pek	3432	41
43		964	22 do	pek A	1980	39
44		967	14 do	pek sou	1302	35
45		970	9 hf ch	dust	738	22
48	W G	979	15 hf ch	hro pek fans	1425	22
49	Forest Hill	982	22 ch	bro pek	2112	35 bid
50		985	13 hf-ch	bro or pek	741	37 bid
51		988	17 ch	pek	1598	32 hid
52		991	16 do	pek	1504	32 bid
53		994	10 hf-ch	fans	750	27
54	K, in estate mark	997	15 ch	fans	1425	22
57	New Valley	7	23 ch	bro or pek	2300	50
58		10	15 do	or pek	1350	41
59		13	19 do	pek	1900	39
60		16	15 do	pek sou	1350	38
63	Bogahagodawatte	25	18 ch	bro pek	1710	32
70	Monrovia	46	26 ch	bro pek	2600	35
72		52	26 do	pek	2470	33
73		55	10 do	pek sou	1000	31
80	Bantravalle	76	50 hf-ch	bro pek	2500	40

Lot.		Box	Pkgs.	Name	lb.	c.
81	Yspa	79	15 ch	pek sou	1200	31
82		82	10 hf ch	dust	800	23
83	R C T F, in estate mark	85	9 ch	bro pek	900	37
84		88	10 do	pek	900	32
85		91	15 do	pek sou	1275	30
90	Harangalla	106	21 ch	bro pek	1995	bid
91		109	39 do	pek	3510	34
94	Amhalawa	118	25 hf-ch	bro pek	1300	36
95		121	20 do	pek	900	33
97	Rayigam	127	35 ch	bro pek	3430	34 bid
98		130	25 do	or pek	2000	33 hid
99		133	25 do	pek	2125	32
100		136	8 do	pek sou	720	30
101	Corfu	139	18 hf ch	bro pek	1080	37 bid
102	Marigold	142	104 hf ch	bro pek	5824	41 bid
103		145	31 do	pek	1550	36 bid
104		148	33 do	pek sou	1650	35
106	Hapugasmulle	154	20 ch	bro pek	2200	35
107		157	20 do	pek	1900	32
108	D B G	160	8 ch	bro mix	800	18 bid
109		163	15 hf-ch	dust	1200	21
111	G J G	162	46 ch	hro pek	4232	33 bid
112		172	45 do	pek sou	3780	28 bid
113	St. Catherine	175	23 ch	bro or pek	2070	35
117	C B	187	17 hf-ch	fans	1309	25
118	Siriniwasa	190	21 ch	bro pek	2100	38
119		193	25 do	pek	2500	34
120		196	23 do	pek sou	2070	32
124	K G	208	19 hf-ch	fans	1250	26 bid
133	Dryhurgh	235	12 ch	pek	984	34
136	Labugama	244	30 hf-ch	bro pek	1500	37
137		247	10 ch	pek	950	32
141	D M K	259	8 ch	bro pok	770	20 bid
143		265	8 do	pek sou	750	out
146		274	5 do	dust	850	out
147	Eilandhu	277	8 ch	hro pek	800	55
148		280	9 do	pek	855	32
149	Inverness	283	14 ch	pek sou	1330	35 bid

[Mr. E. John.—133,476 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Coslande	737	13 ch	pekoe	1170	39
9	Poilakande	752	57 do 1 hf-ch	bro pek	5750	35 bid
10		755	37 ch 1 hf-ch	pekoe	3780	34
13	Agra Ouvah	764	12 ch	pek fans	996	29
18	Maiyland	782	7 do	hro pek	700	34
19		785	8 do	pekoe	760	31
20	Maskeliya	788	18 hf ch	hro or pek	900	60 bid
21		791	11 ch	or pek	990	41 bid
22		794	12 do	pekoe	960	38
24	St. John's	800	25 hf-ch	hro or pek	1500	61
25		803	30 do	or pek	1560	64
26		806	30 do	pekoe	1680	53
27		809	38 do	pek sou	1512	45
32	Glasgow	824	16 ch	hro or pek	1360	59
33		827	20 do	bro pek	1600	47 bid
34		830	19 do	or pek	1235	45
35		833	13 do	hro pek dust	1300	41
38	Ben Nevis	842	11 do	pekoe	990	41
41	Morahela	851	65 do	bro pek	6760	35
42		854	22 do	pekoe	2112	32
46	Gonavy	866	64 hf-ch	bro pek	3200	37 hid
47		869	20 do	pekoe	1500	34 hid
49	Lamiliere	875	35 do	hro pek	1960	48
50		878	20 ch	pekoe	1800	39
51		881	11 do	pek sou	825	34
53	Uda	887	12 do	bro pek	1200	24 bid
54		890	22 do	pekoe	1760	30
59	Koslande	905	12 do	bro pek	720	45
60		908	13 do	pekoe	1170	39
65	Bellongalla	923	38 hf-ch	bro pek	1900	38
66		926	13 do	bro pek fans	845	32
67		929	40 ch	pekoe	3200	33
69	Callander	935	25 hf-ch	or pek	1425	39
70	Troup	938	8 ch	sou	720	33
71		941	10 do	bro mix	1000	31
72	Corfe	944	48 do	bro or pek	4800	40 bid
80	Glassaugh	968	16 hf-ch	or pek	832	55 bid
81		971	18 do	bro or pek	1170	52
82		974	16 ch	pekoe	1520	44
84	Brownlow	980	27 hf-ch	hro or pek	1539	51
85		983	30 do	or pek	1500	42
86		986	17 ch	pek sou	1564	40
87		989	11 do	pek sou	935	33
88	Iona	992	25 hf-ch	bro or pek	1375	61 bid
89		995	13 ch	or pek	1300	46 bid
95	Glentilt	13	34 do	bro pek	3400	44
96		16	14 do	pekoe	1400	40
97		19	13 hf-ch	fans	1040	25
99	Elkaduwa	25	11 ch	pekoe	990	29
104	Ferndale	40	17 do	or pek	1530	40
105	Perth	43	90 hf-ch	bro or pek	4500	39

Lot.		Box.	Pkgs.	Name.	lb.	c.
108	Gallella	52	14 ch	or pek	1190	40 bid
109		55	22 do	bro or pek	2200	40 bid
110		58	10 do	or pek	2200	38
114	Yapame	70	9 hf-ch	fans	720	26
116	Mersthan	76	41 do	or pek	2050	42 bid
117	Perth	79	44 ch	bro or pek	4180	37 bid
123	Kolapatna	97	11 do	bro pek	1210	40 bid
124		100	19 do	or pek	1710	42
125		103	11 do	pekoe	935	39

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	Tennehena	1468	1 ch	bro pek	100	34
2		1471	2 do	pek	237	30
3	M'Golla	1474	1 ch	red leaf fans	95	17
4	Yatiyana	1477	4 ch	or pek	218	36
5		1480	10 hf-ch	bro pek	480	36
6		1483	6 do	do No. 2	312	31
7		1486	12 do	pek	624	32
8		1489	6 do	pek sou	336	29
11	Nakiadeniya	1498	7 ch	pek sou	560	30
12		150	2 do	fans	220	26
13		1504	2 do	dust	300	22
23	New Peacock	1534	6 hf-ch	bro mix	300	26
25	G P Gama	1540	6 ch	bro pek	630	32
26		1543	6 do	pek	540	29
27		1546	6 do	pek sou	510	25
28		1549	3 do	pek fans	270	22
29		1552	1 do	pek dust	124	20
30		1555	1 do	fans	85	17
31		1558	1 do	sou	85	20
37	Derby	1576	9 hf-ch	or pek	504	38
38		1579	8 do	bro pek	416	35
40		1585	7 do	pek sou	357	31
45	X X	1600	3 do	fans	210	27
46		1603	4 do	dust	320	22
54	D M V	1627	8 ch	pek sou	640	29
55		1630	4 do	fans	340	22
56		1633	3 do	bro tea	210	26
57		1636	1 do	dust	140	20
59	Grange Garden	1642	6 ch	pek	600	38
60		1645	1 hf-ch	dust	85	23
61		1648	1 ch	pek sou	100	32
78	Farnham	1699	9 hf-ch	bro tea	360	26
79		1702	4 do	pek fans	240	23
80		1705	1 do	dust	75	20
86	Kitulgala	1723	2 hf-ch	pek sou	100	31
87		1726	2 ch	dust	240	21
93	Monkswood	1744	4 hf-ch	dust	320	24
94	M K	1747	8 hf-ch	bro pek	440	48
95		1750	10 do	or pek	450	48
97		1756	4 ch	pek sou	360	38
101	Carendon	1768	6 ch	pek	595	30
102	Uguressa	1771	2 ch	bro pek	83	30
103		1774	2 do	pek	84	25
104	Udawera	1777	7 hf-ch	dust	560	22
105		1780	4 do	sou	300	21
107	Ismalle	1786	5 ch	congou	400	25
108		1789	4 do	fans	520	25
109		1792	4 do	dust	580	20
110	Ugieside	1795	4 ch	dust	320	20
111		1798	4 do	bro mix	420	24
115	Woodend	1810	4 ch	dust	580	20
117	Isamale	1816	5 ch	fans	575	25
118		1819	1 do	congou	80	24
127	Rickarton	1846	2 hf-ch	bro tea	130	36
128		1849	5 do	dust	415	25
133	Ruanwella	1864	5 hf-ch	dust	400	22
161	Rickarton	1948	1 ch	bro tea No. 2	62	18
169	Great Valley Ceylon, in est. mark	1972	4 ch	sou	300	25
170		1975	6 do	dust	610	23
175	Ambragalla	1990	9 hf-ch	bro pek fans	630	21
185	Middleton	2020	4 ch	dust	320	24
192	Seenagolla	2041	5 do	or pek	480	42
193		2044	5 do	pek	475	39
194		2047	1 hf-ch	fans	77	25
203	Beaumont	2074	4 hf-ch	fans	344	25
207	P G A	2086	2 ch	bro mix	190	32
211	Weyungawatte	2098	3 ch	pek sou	255	32
212		2101	5 hf-ch	dust	425	20
215	Yataderia	2110	5 do	bro pek fans	340	23
216		2113	7 do	dust	595	20
217	Matalawa	2116	4 ch	pek sou	450	24
221	Cotswold	2128	7 do	pek sou	525	32

Lot.		Box.	Pkgs.	Name	lb.	c.
222		2131	1 ch	sou	66	30
223		2134	2 do	dust	150	21
224	B D W G	2137	2 hf-ch	dust	180	23
225	B D W P	2140	1 ch	bro pek No. 2	85	20
226		2143	1 do	pek No. 2	75	18
227		2146	7 hf-ch	dust	595	21
228		2149	1 ch	dust No. 2	75	19
229		2152	3 do	mixed tea	210	29
231	Cooroondoowatte	2158	10 hf-ch	pek sou	500	33
235	W A	2170	2 ch	dust	320	20
238	Bodawa Invoice No. 13	2179	7 hf-ch	bro pek	406	40
239		2182	5 do	pek	220	35
240		2185	3 do	pek sou	135	32
241		2188	2 do	dust	150	22
250	Knavesmire	2215	4 do	dust	340	22
352	Kelvin	2221	8 ch	sou	680	3
153	R A W in est. mark	2224	3 ch	pek sou	240	32
254		2227	3 hf-ch	dust	131	21
257	Theydon Bois	2236	8 ch	pek sou	680	34
258	Roeberry	2239	6 ch	bro pek	600	50
261		2248	7 do	pek sou	630	35
265	Pine Hill	10	6 do	pek sou	510	32
285	O S S in est. mark	70	6 ch	pek sou	480	31
286		73	2 do	sou	160	30
287		76	2 do	dust	200	22
288		79	3 hf-ch	pek fans	240	28
293	Carberry	94	7 ch	pek sou	630	32
294		97	5 do	bro or pek	550	36
295		100	3 do	bro tea	270	31
296		103	1 do	dust	140	20
297	G K	106	3 do	bro tea No. 2	270	29
304	Penrhos	127	8 ch	pek sou	640	34
305		130	4 hf-ch	pek dust	320	21
307	K P W	136	11 do	bro pek	550	40
309		142	9 do	pek sou	405	30
310		145	1 do	pek dust	85	21
317	Hyson	166	7 ch	bro pek	690	27
319		172	6 do	pek sou	480	23
320		175	2 do	red leaf	153	18
327	Drayton	202	1 do	sou	80	31
346	Hatherleigh	253	3 do	dust	450	20
347		256	1 box	pek	20	31
370	Stafford	325	4 ch	pek sou	360	40
371		328	1 hf-ch	fans	80	28
372		331	1 ch	dust	100	26
386	C B	373	6 do	bro pek	660	33
400	Doranakande	415	6 do	pek No. 2	540	32
405	Glencorse	430	1 do	dust	170	20
407		446	5 do	bro tea	500	35
408	Augusta	439	4 do	dust	600	19
409	Relugas	442	2 hf-ch	sou	120	25
410		445	2 do	dust	270	27
411	D W	448	6 ch	pek fans	455	18 bid
415	Harrow	460	7 do	pek sou	630	36 bid
416	H in est. mark	463	2 hf-ch	dust	180	22 bid
422	Passara	481	6 ch	pek sou	600	36
423		484	1 do	fans	75	30
424		487	3 do	dust	270	22
428	Lauderdale	499	3 do	red leaf	255	15
435	Pallagodda	520	4 do	br or pk No. 2	400	34
436		523	5 do	bro pek No. 2	500	42
437		526	5 do	or pek No. 2	450	38
438		529	5 do	pek No. 2	400	33
439		532	5 do	pek sou No. 2	450	32
443	Galpitakan le	544	5 do	or pek	475	42
446		553	5 do	pek sou	500	33
447		556	2 do	dust	150	24
448	W L	559	4 hf-ch	bro pek	245	41

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Tientsin	838	2 ch	dust	260	20
3	P, in estate mark	844	2 ch 1 hf-ch	bro mix	265	18
4		847	6 do	dust	420	22
7	Handrokande	856	3 hf ch	pek sou	165	27
8		859	2 do	dust	130	22
13	Florida	874	5 ch	pek sou	500	27
14		877	1 do	bro tea	100	19
15		880	1 do	dust	130	20
16	Katukitula	883	5 hf-ch	bro pek	250	33
17		886	6 do	pek	300	31
18	Primrose	889	10 hf ch	bro pek	520	39
19		892	8 ch	pek	680	34
20		895	8 do	pek	604	32
21		898	2 do	sou	148	31
22		901	1 hf-ch	dust	65	20

Lot.		Box.	Pkgs	Name.	lb.	c,
23	Ravenoya	904	7 hf-ch	bro pek	364	40
24		907	10 do	pek	456	34
25		910	12 do	pek sou	480	32
26		913	3 do	sou	120	30
27		916	1 do	dust	32	20
28	T S N	919	4 hf-ch	bro pek	200	47 bid
30		925	2 do	pek sou	100	32 bid
31		928	4 do	fans No. 1	200	24 bid
32		931	5 do	fans No. 2	250	28 bid
36		943	3 do	dust	240	20
46	Mount Vernon	973	2 ch	bro mix	180	24
47	W G	976	14 hf ch	pek sou	630	30
55	F, in estate mark	1	3 ch	sou	213	33
56	'	4	6 do	dust	420	22
61	N I T	19	2 ch	unas	200	23
62		22	7 do	unas No. 2	630	22 bid
64	Bogahagoda-watte	28	5 ch	pek sou	500	29
71	Monrovia	49	4 ch	bro or pek	452	32
74	R O	58	2 ch	bro tea	186	25
75		61	1 do	pek dust	153	20
86	R C T F, in estate mark	94	3 ch	pek No. 2	2 5	31
87		97	5 do	bro pek fans	500	29
88		100	3 do	red leaf dust	300	14
89		103	1 do	dust	115	18
92	Harangalla	112	6 ch	sou	540	29
93		115	6 hf-ch	dust	450	22
96	Ambalawa	124	5 hf-ch	pek fans	295	25
105	Marigold	151	8 hf ch	bro pek dust	600	25
110	D B G	166	2 ch	fans	200	25
114	St. Catherine	178	2 ch	pek	160	32
115		181	1 do	pek sou	82	31
116		184	2 hf ch	dust	100	22
121	Siriniwasa	199	3 ch	bro pek fans	300	29
122		202	2 do	dust	300	20
123		205	1 do	sou	70	22
125	Kosgahawella	211	3 ch	bro pek	300	33
126		214	5 do	pek	495	30
127		217	2 do	pek sou No. 2	250	26
128		220	1 hf ch 2 ch 1 hf ch	fans	250	20
131	Dryburgh	229	5 hf-ch	bro or pek	300	40
132		232	3 ch	or pek	276	40
134		238	8 do	pek sou	536	31
135		241	2 hf ch	fans	148	25
138	Labugama	250	6 ch	pek sou	510	32
139		253	2 do	bro pek fans	240	26
140	D M R	256	6 ch	bro or pek	630	29
142		262	5 do 1 hf-ch	pek	550	26
144		268	6 ch	bro tea	450	14 bid
145		271	4 hf-ch	fans	320	12 bid

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	L E L	728	3 ch	pek sou	261	33
2		731	7 do	bro pek dust	560	20
3	Coslande	734	11 hf-ch	bro pek	660	45
5		740	3 ch	pek sou	300	34
6		743	1 do	dust	125	20
7		746	1 do	fans	110	28
8		749	1 do	congou	90	29
11	Poilakande	758	6 do	or pek fans	480	18
12	Agra Ouvah	761	6 do	pek sou	540	35
14		767	3 do	dust	300	21
23	Maskeliya	797	3 do	unas	300	32
36	Ben Nevis	836	10 hf-ch	bro pek	600	57
37		839	9 do	or pek	405	55
39		845	3 ch	pek sou	255	37
40		848	1 hf-ch	dust	85	22
43	Morahela	857	2 ch	bro pek fans	244	23
44		860	2 do	sou	175	29
45		863	6 hf-ch	dust	480	20
48	Gonavy	872	5 ch	pek sou	450	34
52	Lamiliere	884	5 do	pek fans	380	27
61	Koslande	911	3 do	pek sou	300	34
62		914	1 do	fans	110	29
63		917	1 do	dust	125	22
64		920	1 do	congou	90	29
68	Callander	932	7 hf-ch	bro or pek	420	45
83	Glassaugh	977	3 ch	bro mix	300	27
91	Iona	1	3 do	pek sou	270	37
92		4	4 hf-ch	bro or pek fans	260	37
93		7	2 do	dust	160	26
94	E E E	10	1 ch	red leaf	90	18
95	Eladuwa	22	6 do	bro pek	600	33
100		28	4 do	pek sou	360	27

Lot		Box	Pkgs.	Name.	lb.	c
101		31	2 ch	dust	264	19
102		34	2 do	mixed	210	19
103	Farm	37	3 do	dust	255	22
106	Perth	46	4 do	pekoe	320	35
107		49	2 do	pek sou	150	32
111	Gallella	61	4 do	pek sou	360	34
112	M G	64	6 hf-ch	fans	480	29
113	Yapame	67	5 do	dust	450	20
115	N	73	5 do	dust	425	19
118	Perth	82	4 ch	pekoe	320	36
119		85	1 do	pek sou	75	32
120		88	3 hf-ch	dust	225	22
121	Oakwell	91	1 ch	pekoe	111	
122		94	1 hf-ch	pek No. 2	36	32
126	Kolapatna	106	5 ch	pek sou	425	33
127		109	1 hf-ch	pek dust	85	21

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, July 28.

" Kawachi Maru."—Gonamotava F, 1 cask sold at 109s ; ditto 1, 3 casks and 1 barrel sold at 104s ; ditto 2, 4 casks and 1 barrel sold at 85s 6d ; ditto S, 1 tierce out ; ditto PB, 1 tierce sold at 93s ; GMT T in estate mark, 1 cask sold at 36s ; Gonamotava, 1 bag sold at 95s.

" Clan McKinnon."—JJA & Co., in estate mark, Panagala OO, 1 barrel out ; O, 1 cask and 1 tierce out at 40s ; 1, 3 casks out at 55s ; 2, 1 tierce out at 40s ; PB, 1 tierce out ; T, 1 cask and 1 barrel out at 30s ; T, 1 bag out, ovtk.

" Clan McArthur."—MAF, 2 bags sold at 20s 6d.

CEYLON COCOA SALES IN LONDON.

" Clan McArthur."—Annawatte, 8 bags sold at 47s 6d ; AK in estate mark, Estate Cocoa, 94 bags out at 65s ; ditto, 14 bags sold at 48 6d ; O MA in estate mark, Estate Cocoa, 4 bags sold at 50s 6d ; 1 M in estate mark, Estate Cocoa, 11 bags out at 64s ; ditto, 4 bags sold at 50s 6d ; 1 MN in estate mark, Estate Cocoa, 90 bags out at 64s ; 1 NN in estate mark, Estate Cocoa, 6 bags sold at 50s 6d ; AS in estate mark, Estate Cocoa, 11 bags sold at 50s 6d ; SR in estate mark, 6 bags sold at 50s ; SRM in estate mark, 4 bags sold at 50s ; S in estate mark, 1 bag sold at 50s ; SM in estate mark, 2 bags sold at 51s.

" Clan Matheson."—M in estate mark, O, 5 bags sold at 53s 6d.

" Clan Chisholm."—A MAK in estate mark, Estate Cocoa, 24 bags sold at 65s ; C in estate mark, 15 bags sold at 59s.

Clan McArthur."—TH & Co. in estate mark, 44 bags sold at 60s.

" Clan Stuart."—Warriapolla, 6 bags sold at 85s ; ditto, 28 bags sold at 83s ; ditto, 2 bags sold at 60s ; ditto, 10 bags sold at 60s 6d ; ditto, 7 bags sold at 54s 6d ; ditto, 15 bags sold at 50s 6d ; ditto, 1 bag sold at 41s ; ditto, 4 bags sold at 56s.

" Sado Maru."—Cocoa Pathregalla A, 20 bags sold at 60s ; ditto, 14 bags sold at 61s 6d.

" Clan Chisholm."—2 Palli, 6 bags sold at 40s 6d ; A 2 ditto, 3 bags sold at 40s 6d.

" Clan Stuart."—Gungarouwa 1, 15 bags sold at 82s 6d ; Wiharagama 1, 17 bags out at 70s ; ditto 2, 2 bags sold at 40s.

OBSERVER PRINTING WORKS.

NO. 33 COLOMBO, AUGUST 28, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[484,511 lb.]

Lot.		Box	Pkgs.		Name.	lb.	c.
9	Mousakellie	586	13	ch	bro or pek	1300	47
17	Wewawatte	610	17	hf-ch	bro pek	935	39
18		613	14	do	pek	700	33
25	Gingran Oya	634	31	hf-ch	bro or pek	1550	45
26		637	21	ch	pekoe	1890	39
27		640	24	hf-ch	bro pek	1440	42
34	Rockside	661	9	ch	scu	720	31
36		667	7	do	dust	945	24
37		670	5	do	dust No. 2	850	19
38		673	7	do	bro pek fan	840	34
41	Holton	679	13	ch	bro pek	1235	42
42		682	10	do	pek	800	34
45	Strathspey	691	10	ch	bro or pek	1000	67
46		694	11	do	pek	1056	44
47		697	14	do	pek sou	1190	37 bid
49	Beverley	703	16	ch	pek sou	800	31
50		706	18	ch	dust	1566	25
53	Glendon	715	50	ch	bro pek	4750	43
54		718	55	do	pek	4400	35
55		721	25	do	pek sou	2125	32
58	Tonacombe	730	18	ch	or pek	1800	49
59		733	19	do	bro or pek	1900	53
60		736	14	do	bro pek	1400	41
61		739	31	do	pek	2790	42
62		742	9	do	pek sou	810	38
66	Anningkande	754	11	ch	bro pek	1100	38
67		757	9	do	pek	855	33
68		760	14	do	pek sou	1260	32
73	Anningkande	775	15	ch	bro pek	1500	45
74		770	18	do	pek	1620	36
80	Thedden	796	25	ch	bro pek	2500	39
88	C S G	820	37	hf-ch	bro pek	1850	48
89		823	28	ch	pek	2240	38
90		826	9	do	pek sou	720	32
93	Mawiliganga-watte	835	16	hf-ch	bro or pek	880	51
94		838	26	do	or pek	1092	35 bid
95		841	62	do	bro pek	5200	36
96		844	53	do	pek sou	4240	32
98	Queensland	850	7	ch	bro or pek	700	70
99		853	15	do	pek	1350	43
102	Palmerston	862	30	hf-ch	bro pek	1560	53
103		865	20	do	pek	1800	42
104		868	10	do	pek sou	730	28
105	Clunes	871	15	ch	bro or pek	1425	36
106		874	18	do	bro pek	1530	36
107		877	43	do	pek	3440	32
108		880	19	do	pek sou	1710	30
109		883	9	do	dust	810	20
111	Fairlawn	889	19	hf-ch	bro pek	950	60
112		892	12	ch	or pek	960	45
113		895	21	do	pek	1890	40
114		898	17	hf-ch	pek sou	765	37
117	Scrubs	907	14	hf-ch	bro or pek	770	51
118		910	13	do	bro pek	715	44
119		913	16	do	pek	736	40
121	Kirklees	919	18	hf-ch	bro or pek	1080	47
122		922	26	ch	or pek	2600	42
123		925	18	do	pek	1620	40
124		928	13	do	pek sou	1105	37
125	High Forest	931	18	hf-ch	bro or pek	954	71
126		934	15	do	or pek	750	53
127		937	22	do	pek	1034	45
130	St. Leonards-on Sea	946	6	ch	bro pek	750	36
137	Galkadua	967	17	ch	bro pek	1870	34 bid
138		970	20	do	pek	2000	32
139		973	13	do	pek sou	1300	31
145	Agra Oya	991	16	ch	pek	1440	36
146		994	22	do	bro pek	2200	46
147		997	8	do	pek sou	720	37
148		1000	16	do	or pek	1360	37
160	Patiagama	1036	11	ch	pek sou	935	29
162	Vogan	1042	36	ch	bro pek	3600	44
163		1045	32	do	pek	3040	36
164		1048	25	do	pek sou	2250	32
168	Digdola	1060	18	ch	pek	1260	33
169	Tavalam-tenne	1063	11	ch	bro or pek	1100	42
172	Hentleys	1072	20	hf-ch	bro pek	1060	44
173		1075	16	do	or pek	704	41
174		1078	21	ch	pek	1785	34
177	Silverkandy	1087	26	do	bro or pek	2704	70

Lot.		Box	Pkgs.		Name	lb.	c.
178		1090	19	ch	or pek	1710	60
179		1093	13	do	pek	1066	49
180	Warwick	1096	21	ch	bro or pek	2205	60
181		1099	29	do	pek	2610	46
182		1102	21	do	pek sou	1590	43
185	Geragama Inv. No. 45	1111	13	hf-ch	bro or pek	715	38
186		1114	12	do	bro pek	1020	35
187		1117	12	do	pek	1020	33
188	Waratenne Inv. No. 45	1120	13	hf-ch	bro or pek	715	33
189		1123	11	ch	bro pek	880	36
190		1126	13	do	pek	1040	33
191	Geragama Inv. No. 47	1129	13	ch	bro pek	1235	36
192		1132	16	do	pek	1360	33
197	Kilkenny	1147	25	ch	bro pek	2400	37
203	Middleton	1165	16	ch	bro pek	1600	49
204		1168	13	do	pek	1170	43
205		1171	12	do	pek sou	1080	40
210	Lyegrove	1186	9	ch	bro or pek	990	39
211		1189	8	do	pek	720	37
212	Gallawatte	1192	10	ch	bro pek	950	37
213		1195	12	do	pek	1020	35
214		1198	9	do	pek sou	765	38
220	Weoya	1216	38	ch	bro or pek	3800	37
221		1219	39	do	or pek	3900	38
222		1222	49	do	pek	4410	34
223		1225	38	do	pek sou	3230	30
226	High Forest	1234	28	hf-ch	bro or pek	1484	70
227		1237	22	do	or pek	1056	51
228		1240	27	do	pek	1242	43
235	Maha Uva	1261	68	hf-ch	bro or pek	4420	45
236		1264	19	do	or pek	1140	43
237		1267	54	do	pek	5130	41
238		1270	17	do	pek sou	1445	34
241	Erracht	1279	13	ch	bro pek	1235	37
212		1282	11	do	do	880	40
223		1285	16	do	pek	1200	32
244		1288	15	do	pek sou	1050	31
247	Ganapalla	1297	13	ch	or pek	1170	38
248		1300	10	do	bro or pek	900	41
249		1303	23	do	bro pek	2070	35
250		1306	47	do	pek	3760	33
251		1309	20	do	pek sou	1500	30
352	Dunkeld	1312	37	ch	bro pek	4070	47
153		1315	13	do	or pek	1235	42
254		1318	24	do	pek	2400	38
255	Aberdeen	1321	32	ch	bro pek	3040	37
256		1324	31	do	pek	2480	34
257		1327	18	hf-ch	bro pek fans	1260	28
258	Seenagolla	1330	17	hf-ch	bro pek	1105	53
271	A	1369	11	ch	pek sou	990	out
272		1372	9	do	bro mix	855	out
476	Ragalla	1384	12	hf-ch	fans	960	29
278	Carfax	1390	18	ch	bro or pek	1800	55
279		1393	19	do	or pek	1710	45
280		1396	20	do	pek	1800	40
290	Hayss	1426	14	ch	pek sou	1260	32
291	Hunasgeria	1429	34	do	bro pek	3400	35 bid
292	Nillomally	1432	29	do	bro pek	2900	45
293		1435	11	do	or pek	1045 }	41
			16	do	or pek	900 }	
294		1438	18	do	pek	1476	38
296	Nakia Deniya	1444	12	do	pek sou	9060	31
297	Castlereagh	1447	16	do	bro pek	1600	54
298		1450	14	do	or pek	1190	43
299		1453	11	do	pek	880	39
304	Arapolakande	1468	50	do	bro pek	4500	45
305		1471	33	do	pek	2640	36
308	Tillyrie	1480	29	hf-ch	fans	1740	33 bid
311	Kennington	1489	6	ch	fans	780	30
315	Ella Oya	1501	24	do	bro or pek	2280	40
316		1504	10	do	bro pek	900	36
319	Maragalla	1513	21	do	bro pek	2352	45
320		1516	44	do	pek	4400	38
321		1519	28	do	pek sou	2520	33
331		1549	24	hf-ch	bro or pek	1440	59
332		1552	38	do	or pek	2182	43
333		1555	45	do	pek	3825	40
337	A M B	1567	41	ch	bro pek sou	3362	27
344	M	1588	16	hf ch	bro pek	960	48
345		1591	16	ch	pek	1504	34
347	Cooroondoo-watte	1597	15	hf-ch	bro pek	825	40
359	Hatton	1633	19	ch	bro pek	1995	63
360		1636	27	do	pek	2295	45
365	Clyde	1651	40	do	bro pek	4000	40
366		1654	24	do	pek	2160	33
369	Glenorchy	1663	42	hf-ch	bro pek	2520	57
370		1666	34	do	pek	1570	46

Lot.		Box.	Pkgs.	Name	lb.	c.
373	Middlesdale	1675	20 ch	or pek	1883	38 bid
384	Pambagama	1708	21 do	sou	1680	27
387	Huanuco	1717	20 hf-ch	bro pek	1200	37 bid
388		1720	47 do	pek	2350	33 bid
389		1723	30 do	pek sou	1350	21 bid
391	Bandara Eliya	1729	82 do	bro or pek	5080	44
392		1732	52 do	or pek	6396	40 bid
393		1735	17 ch	pek	1445	37
394		1738	20 do	pek sou	1540	34
395	H G M	1741	7 do	bro or pek	700	53
396		1744	19 do	bro pek	1900	39
397		1747	22 do	pek	1870	36
398		1750	10 do	pek sou	850	34
399		1753	8 do	br pk fans	800	33
400	Queensland	1756	14 hf-ch	bro pek	700	50
402		1762	16 ch	pek	1440	43
414	Erlsmere	1798	27 ch	bro pek	2646	41 bid
415		1801	15 hf-ch	bro or pek	840	55
416		1804	23 ch	bro pek	2139	41 bid
417		1807	22 do	pek	1804	39
418		1810	11 do	pek sou	990	34
420	Shrubs Hill	1816	41 do	or pek	3960	43
421		1819	51 hf-ch	bro pek	3162	40
422		1822	23 ch	pek	2070	36
424		1828	11 hf-ch	bro pek fans	880	25
425	Drayton	1834	59 do	or pek	2980	48
426		1837	55 ch	pek	4675	41
427		1840	17 do	pek sou	1445	38
429	Patiagama	1843	17 do	bro or pek	935	55
430		4846	12 do	or pek	2080	43
431		1849	31 do	pek	2625	36
432		1852	24 do	pek sou	1920	33
433	Ireby	1855	26 do	bro pek	2860	55
434		1858	17 do	pek	1530	43
435		1861	10 do	pek sou	900	39
441	B D W P	1879	34 do	bro pek	3069	36
443	Harrow	1885	19 do	pek	1710	42

[Messrs. Somerville & Co.—246,588 lb.

Lot		Box.	Pkgs.	Name.	lb.	c.
3	Bloom Park	292	9 ch	pek	850	30
11	Eagles Land	316	9 ch	dust	1260	19
12	Hangranoya	319	32 hf ch	bro pek	1760	39
14		325	13 ch	pek	1300	36
16	Rambodde	331	16 hf-ch	bro or pek	960	45
17		334	37 do	bro pek	2035	37
18		337	19 do	pek	950	34
22	Mary Hill	349	12 ch	bro pek	1200	42
23		352	9 do	pek	855	34
26	Nyanza	361	11 ch	bro pek	1100	48
27		364	15 do	or pek	1425	44
28		367	20 do	pek	1700	38
30	Killin	373	8 ch	bro pek	800	34
33	Nillicollay-watte	382	14 hf ch	bro pek	784	37
34		385	12 ch	or pek	960	34
35		388	12 do	pek	1116	33
41	Theberton	511	13 ch	bro pek	1235	36
42		514	10 do	pek	900	35
45	Oakham	523	27 hf ch	or pek	1080	39
46		526	28 do	bro pek	1680	40 bid
47	Columbia	529	38 hf-ch	or pek	1824	49
48		532	29 do	pek	1305	43
54	P T, in estate mark	550	27 hf-ch	pek sou	1350	26
55	Horagoda	553	9 ch	bro or pek	900	37
56		556	20 do	or pek	850	36
57		559	22 do	pek	1980	35
58		562	14 do	pek sou	1190	31
60	Henegama	568	18 ch	bro pek fans	1800	33
61		571	8 do	bro mix	800	24
62	O'Kande	577	13 hf ch	dust	1105	22
63	F F, in estate mark	586	18 hf-ch	bro pek	990	33
72	H J S	604	14 hf-ch	pek sou	840	31
81	Mount Vernon	631	31 hf ch	bro or pek	1922	54
82		634	21 do	or pek	2100	50
83		637	50 do	pek	4250	43
84	Corfu	640	15 hf ch	bro pek	900	38
85		643	18 do	bro pek	1080	38
86		646	15 do	pek	825	33
90	Warakamure	658	52 ch	bro pek	5200	34
91		661	48 do	pek	4560	32
92		664	27 do	pek sou	2430	28
93	Wavena	667	13 ch	bro pek	1300	43
94		670	13 do	pek	1105	35
97	Wilpitia	679	8 ch	bro pek	750	34
103	Gangwarily	697	36 ch	bro or pek	3240	39
104		700	39 do	or pek	2730	35
105		703	19 do	pek	1520	32
106		706	17 do	pek sou	1360	31
111	Haviland	721	70 hf-ch	bro or pek	3850	38
112		724	44 ch	or pek	3740	
113		727	37 ch	pek	3145	32
114		730	10 do	sou	900	22
118	Mausakande	742	23 do	bro pek	2300	35
119		745	31 do	pek	2821	34
120		748	10 hf-ch	fans	780	27
126	Orion	766	15 ch	bro or pek	1500	39
127		769	35 do	bro pek	3300	37
128		772	18 do	pek sou	1620	32
129		776	33 do	pek No. 1	3300	36
134		790	6 do	unas	600	26
140	Monte Christo	808	21 ch	bro pek	2100	41
142	F A, in estate mark	814	15 hf ch	dust	1320	24
145	Kuralana	823	11 ch	pek	1100	30
146		826	11 do	pek sou	1100	28
147		829	11 do	unas	1100	22
151	Roseneath	841	23 ch	bro pek	2415	38
152		844	12 do	pek	1080	35
153		847	30 do	pek sou	2550	32
156	Kosgahahena	856	9 ch	bro pek	940	31
157		859	12 do	pek	1200	28
161	G J G	871	46 ch	bro pek	4232	33 bid
162		874	45 do	pek sou	3780	29
163	Hapugasmulle	877	7 ch	bro pek	770	34
166	Marigold	886	52 hf-ch	bro pek	2912	41
166		886	52 do	bro pek	2912	41
167	Y, in estate mark	889	37 hf ch	bro pek	2072	34 bid
168	Nugawella	892	33 hf ch	bro pek	1914	37
169		895	61 do	pek	3050	34
170		898	9 ch	pek sou	765	32
173	D R	907	36 ch	pek sou	3240	23 bid
175	I P	913	10 hf ch	dust	860	22
176	Deniyaya	916	46 ch	bro pek	4600	37 bid
177	Depedene	919	67 hf-ch	bro pek	3685	36
178		922	62 do	pek	3100	35
179		925	51 do	pek sou	2550	32
183	Rayigam	937	35 ch	bro pek	3430	35
184	Dikmukalana	940	24 hf-ch	or pek	1200	39
185		943	26 do	bro pek	1430	45
186		946	18 do	pek	900	34
187		949	18 do	pek No. 2	900	35
188		952	18 do	pek sou	864	32
189		955	66 do	bro pek fans	3630	34
190	Rayigam	958	37 hf-ch	dust	2812	24
194	Harangalla	970	21 ch	bro pek	1395	37 bid
195	Neboda	973	13 ch	bro or pek	1300	35
196		976	36 do	bro pek	3600	35
197		979	15 do	pek	1350	33
198		982	10 do	pek sou	800	32
201	R	991	8 ch	sou	750	17
202		994	8 do	fans	770	18
208	Romania	13	30 hf-ch	bro or pek	1800	37
209		16	10 ch	bro pek	1000	34
210		19	12 do	pek	1200	30
213	E G L	28	11 ch	pek sou	880	26
214	D	31	9 ch	bro pek	900	34
220	Welgampola	49	74 hf ch	bro pek	4070	31 bid
221		52	38 do	pek	2128	29
222		55	19 do	pek sou	1083	27

[Mr. E. John.—168,900 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
14	Vincit	151	18 ch	bro pek	1620	34 bid
15		154	11 do	pekoe	990	30
19	Agra Ouvah	166	31 hf-ch	bro or pek No. 1	1984	61
20		169	41 do	bro or pek No. 2	2542	51 bid
21		172	30 do	or pek	1620	48
22		175	11 ch	pekoe	1045	45
23	Ottery	178	36 do	bro or pek	3600	49
24		181	14 do	or pek	1260	43
25		184	18 do	pekoe	1710	40
27	H F, in estate mark	190	11 do 1 hf-ch	bro pek	1141	37 bid
28	Rondura	193	15 ch	or pek	1350	39
29		196	38 do	bro pek	3800	36
30		199	34 do	pekoe	3060	34
31		202	15 do	pek sou	1250	30
33	Agra Ouvah	208	37 hf-ch	bro or pek No. 1	2294	64
34		211	46 do	bro or pek No. 2	2944	53
35		214	30 do	or pek	1620	49
36		217	10 ch	pekoe	950	45
37	Glasgow	220	13 do	bro or pek	1105	57
38		223	19 do	bro pek	1520	47
39		226	20 do	or pek	1300	45
40		229	12 do	pekoe	1200	44
41		232	10 do	fans	1000	26
42	Cleveland	235	28 hf-ch	flow or pe	1512	62
43		238	33 do	pekoe	1650	43

Lot.		Box.	Pkgs.	Name.	lb.	c.
46	C R A	247	11 ch	bro pek	1166	33 bid
47		250	38 do	pekoe	3420	26 bid
48		253	15 do	ι ek sou	1215	24 bid
49		256	14 do	bro pek sou	1050	10 bid
51	Kanangama	262	12 do	bro pek	1140	37
52		265	13 do	pekoe	1105	22 bid
53		268	50 do	sou	3500	21
54		271	7 do	bro pek fans	700	26
55		274	10 hf-ch	fans	950	23
56		277	16 do	dust	1280	17
57	Eila	280	43 ch	bro pek	3440	35
58		283	51 do	bro or pek	4845	36
59		286	11 do	or pek	770	33
60		289	27 do	pekoe	2160	33
61		292	22 do	pek sou	1760	29 bid
62		295	7 do	fans	770	31
63		298	10 do	dust	800	21
64	Templestowe	301	26 do	bro or pek	2600	46
65		304	22 do	or pek	1980	42
66		307	30 do	pekoe	2550	38
68	Ottery	313	34 do	bro or pek	3400	46 bid
69		316	11 do	or pek	990	41
70		319	10 do	pekoe	950	40
73	Rookwood	328	35 do	pek sou	2520	30
74	Gangawatte	331	19 hf-ch	or pek	950	43
75		334	19 ch	bro pek	1805	38
76		337	23 do	bro or pek	1380	50
77	Kotuagedera	340	15 do	bro pek	1500	35
78		343	8 do	pekoe	760	33
84	Glassaugh	361	27 hf-ch	or pek	1404	68
85		364	26 do	bro or pek	1690	53
86		367	24 ch	pekoe	2280	46
88	Eadella	373	10 do	bro pek	1000	36
89		376	10 do	pekoe	900	34
92	Morahela	385	80 do	bro pek	8230	36
93		388	25 do	pekoe	2400	33
96	Myraganga	397	19 do	bro pek	1786	37
97		400	14 hf-ch	bro or pek	840	40
98		403	17 ch	pekoe	1428	35
99		406	24 do	pek sou	1728	32
101		412	11 hf-ch	fans	726	33
102	M W, in estate mark	415	19 ch	bro pek	1622	42 bid
103	Akkara Totum	418	10 do	bro pek	900	32
104		421	10 do	pekoe	900	29
108	Keenagaha Ella	433	16 do	sou	1200	30 bid
111	Hiralouvah	442	30 do	bro pek	1500	40
112		445	25 do	pekoe	2250	36
113		448	17 do	pek sou	1445	32
122	Gonavy	475	64 hf-ch	bro pek	3200	39
123		478	20 ch	pekoe	1500	36
126	Little Valley	481	23 do	bro pek	2300	35 bid
127		484	26 do	pekoe	2210	35
129	Gonavy	490	73 hf-ch	bro pek	3650	39
130		493	27 ch	pekoe	2025	36
135	Maskeliya	508	18 hf-ch	bro or pek	1512	t0 bid
136	Uda	511	12 ch	bro pek	1200	24

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	K D A	562	1 ch	bro pek	110	34
2		565	1 hf-ch	do	60	34
3		568	1 ch	pek	100	31
4		571	1 hf-ch	pek	55	31
5		574	1 ch	pek sou	105	29
6	Maldeniya	577	7 ch	sou	505	28
7		580	3 do	fans	375	28
8		583	2 do	dust	290	20
10	Mousakelle	589	6 ch	or pek	600	39
11		592	6 do	pek	600	35
12		595	1 do	sou	100	31
13		598	2 hf-ch	dust	170	24
14	Palm Garden	601	5 ch	bro pek	550	34
15		604	4 do	pek	400	30
16		607	2 do	pek sou	200	29
19	Wewawatte	616	1 hf-ch	fans	66	21
20	O H S	619	5 ch	bro pek	540	35
21		622	6 do	pek	565	30
22		625	2 do	pek sou	185	28
23		628	3 do	fans	330	20
24		631	1 do	red leaf	111	14
28	Gingran Oya	634	6 ch	pek sou	540	33
29		646	2 hf-ch	fans	160	24
35	Rockside	664	2 ch	bro mix	180	23
39	D	676	3 ch	sou	285	25
40			1 do	sou	70	
43	Holton	685	8 ch	pek sou	640	32
44	B A	686	4 ch	dust	320	21
48	Strathspea	700	1 do	dust	110	23
51	Beverley	709	3 ch	fans	195	32
52	Glendon	712	6 ch	bro or pek	390	37
56		724	5 do	sou	450	30
57		727	2 do	dust	270	20
63	Tonacombe	745	4 hf-ch	dust	360	21
69	St. Leonards-on Sea	763	2 ch	bro pek	190	33
70		766	1 do	pek	90	30
71		769	1 do	bro mix	115	20
72		772	1 do	dust	150	19
81	Thedden	799	5 ch	pek	450	36
82		802	3 do	pek sou	270	32
83		805	1 do	dust	150	27
91	C S G	829	2 ch	bro mix	200	20
92		832	4 hf-ch	dust	320	23
97	Mawiliganga-watte	847	8 hf-ch	dust	600	22
100	Queensland	856	2 ch	bro mix	200	23
101		859	1 hf-ch	dust	75	23
110	Clunes	886	9 ch	pek fans	585	22
115	Fairlawn	901	3 hf-ch	dust	255	23
116	F L in estate mark	904	3 ch	bro mix	300	18
120	Scrubs	916	10 do	pek sou	460	37
128	St. Leonards-on-Sea	940	5 ch	bro pek	475	33
129		943	1 do	or pek No 2	100	25
131		949	7 do	pek	595	28
132		952	1 do	dust	100	18
133		955	1 do	bro mix	150	26
134	St. Leonards-on-Sea	958	5 ch	bro pek	475	34
135		961	6 ch	pek	508	29
136	Galkadua	964	3 ch	bro or pek	360	34
140		976	1 do	fans	120	22
141		979	1 do	sou	110	22
142		982	1 do	dust	133	19
143	S	985	4 ch	pek sou	320	31
144		988	3 do	sou	246	29
152	New Galway	1012	10 hf-ch	bro pek	600	60
153		1015	8 do	pek	440	45
154	Macaldeniya	1018	11 hf-ch	bro pek	605	43
155		1021	11 do	pek	550	39
156		1024	11 do	pek sou	550	33
157		1027	2 do	dust	150	22
158	Patiagama	1030	7 ch	bro pek	595	34
159		1033	2 do	or pek	180	41
161	V P	1039	6 ch	bro mix	540	22
165	Vogan	1051	5 ch	dust	425	22
166		1054	3 do	bro or pek	330	28
167	Digdolla	1057	6 ch	bro pek	540	38
170	Tavalamtenne	1066	6 do	pek	540	35
171		1069	2 do	pek sou	170	32
175	Hentleys	1081	4 ch	pek sou	296	27
176		1084	3 hf-ch	fans	216	22
183	Warwick	1105	8 do	pek fans	560	40
184		1108	4 do	dust	340	24
193	Angra Mally	1134	3 ch	bro pek	300	48
194		1138	4 do	pek	352	44
195		1141	1 do	pek sou	90	35
196		1144	1 hf-ch	dust	86	22
224	Weoya	1228	5 do	sou	450	27
225		1231	4 do	dust	600	21
239	Maha Uva	1273	2 hf-ch	pek dust	160	27
240		1276	7 do	dust	630	22
245	Erracht	1291	6 ch	bro pek fan	600	32
246		1294	1 do	pek dust	175	20
259	Seenagolla	1333	6 do	or pek	600	42
260		1336	3 do	pek	300	36
273	Cottaganga	1375	4 do	pek sou	360	27
274	Pingarawa	1378	4 ch	pek sou	400	35
275		1381	2 hf-ch	dust	200	22
277	Ragalla	1387	5 ch	dust	500	22
281	M V	1399	3 ch	sou	300	23
282		1402	3 do	bro mix	300	15
283		1405	2 do	fans	240	27
284	Daphne	1408	6 ch	bro or pek	600	37
285		1411	4 do	pek	340	29
286		1414	3 do	pek sou	240	31
287		1417	1 do	fans	96	32
288		1420	1 hf-ch	dust	83	20
289	St. Andrews	1423	5 ch	bro tea	648	18
295	Nillomally	1441	2 hf-ch	dust	200	20
300	Castlereagh	1456	2 ch	pek sou	160	32
301		1459	6 hf-ch	fans	420	34
302		1462	2 do	dust	160	22
303	Arapolakande	1465	3 ch	bro or pek	330	34
306		1474	7 do	pek sou	630	32
307		1477	1 do	dust	110	22
312	Kennington	1492	5 do	unast	500	26
313		1495	4 do	dust	600	21
314		1498	2 do	bro tea	200	25
317	Ella Oya	1507	5 do	pek	425	33
318		1510	5 do	pek sou	375	27
322	Maragalla	1522	2 do	fans	260	24
323		1525	1 do	dust	150	19

Lot.		Box.	Pkgs	Name.	lb.	c.
324	A G	1528	6 ch	pek sou	600	31
325		1531	2 do	fans	220	27
326		1534	1 do	dust	125	21
327		1537	4 do	bro tea	360	27
328	L G A	1540	3 do	red leaf	300	24
329	C N	1543	5 do	bro tea	500	24
330	Blairgowrie	1546	4 do	pek sou	360	21
334	Pine Hill	1558	8 hf-ch	pek sou	680	33
335		1561	5 do	dust	380	19
336		1564	1 ch	sou	85	20
346	M	1594	7 do	pek sou	630	28
348	Cooroondoowatte	1600	12 hf-ch	pek	600	35
349		1603	6 do	pek sou	300	33
350	Hurst Pierpoint	1606	2 ch	or pek	200	33
351		1609	4 do	bro pek	312	27
352		1612	3 do	pek	228	24
353		1615	3 do	pek sou	234	22
354		1618	2 do	bro pek dust	176	18
355		1621	1 do	dust	103	18
356	Maligatenne	1624	3 do	bro pek	310	35
357		1627	2 do	pek	168	31
358		1630	1 do	pek sou	95	27
361	Hatton	1639	4 do	pek sou	320	38
362	Matalawa	1642	5 do	pek sou	570	27
363		1645	8 hf-ch	bro pek fans	528	23
364		1648	7 do	dust	574	20
367	Clyde	1657	6 ch	bro or pek	600	34
368		1660	6 do	dust	600	20
371	Glenorchy	1669	2 hf-ch	pek sou	100	37
372		1672	2 do	dust	[illegible]	23
376	Kalupahana	1684	2 hf ch	bro or pek	116	43
377		1687	5 do	bro pek	250	37
378		1690	5 do	or pek	225	33
379		1693	6 do	pek	300	30
380		1696	6 do	pek sou	282	29
381		1699	4 do	bro mix	376	24
382		1702	1 do	bro mix	48	24
383		1705	1 do	dust	80	21
385	Pambagama	1711	6 ch	bro pek fans	660	23
386		1714	2 do	dust	200	19
390	Huanuco	1726	3 hf-ch	fans	219	21
401	Queensland	1759	6 do	or pek	570	47
403		1765	6 ch	pek sou	540	37
409	Meemorakande	1783	5 hf-ch	dust	400	21
410	Poengalla	1786	3 do	dust	255	21
411	D W	1789	5 ch 1 hf-ch	dust	455	22
419	Erlsmere	1813	4 do	dust	344	20
423	Shrubs Hill	1825	6 do	pek sou	528	31
428	Drayton	1840	1 do	sou	80	31
436	Ireby	1864	4 hf-ch	dust	320	22
437		1867	4 do	fans	280	32
438	St. Leonards-on Sea	1870	3 ch	pek	255	28
439	B & D	1873	1 do	sou	100	29
440		1876	3 do	unast	330	30
442	B D W P	1882	3 do	dust	300	21
444	Harrow	1888	7 do	pek sou	630	38
445	H in est. mark	1891	2 hf-ch	dust	180	20

[Messrs. Somerville & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Donsido	286	5 hf-ch	dust	[illegible]	21
2	Bloom Park	289	3 ch	bro pek	300	35
4		295	5 do	pek sou	525	28
5		298	3 do	con	192	21
6	Patulpana	301	10 hf ch	bro pek	550	34
7		304	10 do	pek	500	30
8		307	8 do	pek sou	400	28
9		310	7 do	bro mix	100	22
10	Welimaluwa	313	5 hf-ch	pek	250	29
13	Hangranoya	322	13 hf ch	or pek	585	37
15		328	6 ch	pek sou	510	31
29	Ramboda	340	2 hf-ch	pek sou	100	39
10		343	1 do	dust	90	20
21		346	1 do	fans	70	23
24	Mary Hill	355	5 ch	pek sou	475	32
25		358	2 do	bro mix	280	21
29	Nyanza	370	5 ch	pek sou	500	33
21	Killin	376	6 ch	pek	540	31
32		379	1 do	bro mix	90	20
36	Nillicollaywatte	391	3 ch	pek sou	255	31
37	S	394	2 hf-ch	dust	160	20
38		397	4 do	bro tea	200	24
39	A	505	1 hf-ch	dust	80	20
40		508	3 do	bro tea	150	24
43	Theberton	517	1 ch	pek sou	90	31
44		520	1 do	sou	100	17
59	Horpegoda	565	2 hf ch	dust	200	21
62	Henegama	574	8 hf-ch	dust	640	20
64	M	580	3 hf-ch	bro mix	318	13
65	W	583	1 hf-ch	bro or pek	55	32
67	',inestate	589	12 hf-ch	bro pek	600	31
68		592	8 do	pek sou	360	30
69		595	2 do	bro pek fans	120	21
70	J S	598	8 hf-ch	bro pek	480	36
71		601	8 do	pek	480	33
77	L F	619	2 hf-ch	bro pek	100	30
78		622	3 do	pek	144	27
79		625	2 do	pek sou	87	24
80		628	1 do	sou	62	21
87	Corfu	649	2 hf-ch	pek sou	100	30
88		652	2 do	bro pek fans	150	25
89		655	1 do	bro tea	60	20
95	Wavena	673	1 ch	pek sou	80	32
96		676	1 do	dust	80	21
98	Walpita	682	6 ch	pek	600	30
99		685	5 do	pek sou	500	29
100		688	1 hf ch	sou	50	22
101		691	2 ch	fans	220	22
102		694	1 do	dust	90	21
107	Gangwarily	709	3 ch	dust	240	21
108		712	3 do	fans	210	22
109		715	6 do	sou	240	26
110		718	5 do	red leaf	350	18
115	Havilland	733	4 hf ch	dust	360	21
116		736	4 ch	fans	400	23
117	Mousakande	739	10 hf-ch	bro or pek	570	40
130	Orion	778	8 ch	pek No. 2	190	32
131		781	2 hf-ch	dust No. 1	640	21
132		784	1 ch 1 hf-ch	dust No. 2	360	20
133		787	3 ch	fans	345	27
136	Pussetenne	796	1 hf-ch	fans	70	24
137		799	2 ch	dust	170	21
138		802	3 do	bro pek fans	210	27
139		805	1 ch 1 hf-ch	bro mix	120	28
141	Monte Christo	811	4 ch	sou	340	32
143	F A, in estate mark	817	4 ch	red leaf	216	18
144	Kuralana	820	5 ch	bro pek	500	30 bid
148		832	5 ch	fans	350	22
149		835	1 do	dust	125	20
150	H B	838	1 hf ch	dust	82	19
154	Roseneath	850	1 ch	dust	155	20
155		853	1 do	bro mix	85	24
158	Kosgahahena	862	3 ch	pek sou	300	22
159		865	4 hf-ch	sou	200	20
160		868	1 do	pek	80	19
164	Hapngasmulle	880	6 do	pek	570	32
165		883	7 do	sou	630	27
171	Nugawella	901	5 ch	sou	425	29
172		904	4 hf-ch	dust	340	22
174	G B	910	13 hf-ch	dust	650	20
180	Depedene	928	5 hf ch	bro pek fans	325	32
181		931	2 do	bro mix	130	18
182		934	5 do	dust	400	22
191	Killin	961	6 ch	bro pek	600	34
192		964	4 do	pek	360	30
193		967	1 do	sou	90	25
199	Neboda	985	4 hf ch	dust	320	20
200	R	988	5 ch 1 hf-ch	pek sou	750	24
211	Romania	22	5 ch	pek sou	500	25
212		25	6 do	bro mix	665	19
215	D	34	6 do	pek	570	30
216		37	4 ch	pek sou	360	27
217		40	1 do	bro pek dust	95	20
218	Welgampola	43	3 hf ch	pek	168	30
219		46	9 do	pek sou	513	27
223	M	58	4 hf ch	fans	320	12
224		61	6 ch	bro tea	450	12

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Theresia	112	6 ch	bro pek fans	600	42
2		115	3 hf-ch	dust	240	22
3		118	1 do	sou	40	23
4	Nutbourne	121	7 do	bro or pek	455	46
5		124	5 do	or pek	260	53
6		127	3 do	pek	138	38
7		130	1 do	pek fans	68	31
8		133	2 do	pek sou	84	35
9		136	3 do	pek fans	225	31
10		139	1 do	dust	90	22
13	St. Julia	148	10 do	pek sou	500	28
16	Vincit	157	5 ch	pek sou	450	28
17		160	4 do	fans	440	27
18		163	1 do	dust	135	19
26	Ottery	187	2 do	dust	340	23
32	Rondura	205	3 do	dust	330	24
44	Cleveland	241	12 hf-ch	pek sou	576	

Lot		Box.	Pkgs.	Name.	lb.	c.
45		244	3 ch	fans	216	30
50	C R A	259	5 hf-ch	pek fans	350	23
67	Templestowe	310	6 ch	pek sou	600	20
71	Ottery	322	1 do	dust	170	23
72	R, in estate mark	325	5 hf-ch	unas	305	20
79	Arabia	346	1 ch	bro pek	109	33
80		349	2 do	bro mix	165	12
81		352	2 do	bro mix	136	12
82		355	7 do	fans	490	12
83		358	3 do	dust	285	14
87	Glassaugh	370	7 hf-ch	dust	630	28
90	Eadella	379	4 ch	pek sou	360	31
91		382	4 do	dust	520	20
94	Morahela	391	3 do	bro pek fans	348	30
95		394	2 do	sou	182	26
100	Myraganga	409	6 hf-ch	dust	510	21
105	Akkara Totum	424	6 ch	pek sou	480	23
106		424	2 do	fans	200	21
107		430	2 do	bro mix	180	12
109	Keenagaha Ella	436	2 do	bro pek fans	260	29
110		439	2 do	fans	115	25
114	Hiralouvah	451	5 ch	bro pek No. 1	300	36
115		454	2 hf-ch	fans	130	29
116		457	2 do	dust	160	21
117		460	1 ch	sou	90	17
128	Little Valley	487	1 hf-ch	dust	85	19
131	Gonavy	496	5 ch	pek sou	450	33
132		499	6 hf-ch	fans	480	25
133		502	4 ch	dust	320	23
134		505	2 do	congou	160	19

CEYLON COCOA SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, August 4.

"Umballa."—Polwatta A, 34 bags sold at 84s, 12 bags sold at 71s 6d, sea damaged bulked; ditto B, 9 bags sold at 61s 6d; 1 bag sold at 51s; sea damaged bulked; ditto C, 3 bags sold at 51s sea damaged bulked.

"Clan Stuart."—D in estate mark, 1 bag sold at 46s 6d, sea damaged and repacked; Sundry marks, 1 bag sold at 46s 6d, sweepings; HT & Co., in estate mark, 1 bag sold at 46s 6d, sweepings.

"Bingo Maru."—1 Yattawatte, 80 bags sold at 80s; 2 ditto, 20 bags sold at 60s; Broken ditto, 2 bags sold at 57s; 1 ditto, 2 bags sold at 58s 6d, sea damaged; 2 ditto, 2 bags sold at 50s; Asgeria A, 36 bags sold at 84 6d.

"Kawachi Maru."—Ross 1, 33 bags sold 84s; ditto 2, 10 bags sold at 56s; Kepitigalla, 43 bags out at 75s, 70s refused; Coodugalla, 5 bags sold at 62s 6d.

Clan Stuart."—KK in estate mark, 152 bags out at 67s; ditto, 18 bags sold at 49s 6d, sea damaged repacked; 1 MAK in estate mark, 108 bags out at 67s; ditto, 7 bags sold at 49s 6d, sea damaged repacked; Warriagalla, 1 bag sold at 48s 6d, sweepings; No Mark, 1 bag sold at 48s 6d, sweepings; ditto, 1 bag sold at 10s, sweepings.

OBSERVER PRINTING WORKS.

NO. 34 COLOMBO, SEPTEMBER 4, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. E. Benham & Co.

[91,933 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Meddakande	1	13 ch	bro or pek	1300	49
2		4	35 do	bro pek	3500	39
3		7	48 do	pek	4560	35
4		10	19 do	pek sou	1710	32
5	Halgolle	13	24 ch	bro pek	2400	42
6		16	22 do	or pek	2090	37
7		19	23 do	pek	2070	34
8		22	15 do	pek sou	1275	32
11	Mandara Newera	31	48 hf-ch	bro pek	2880	60
12		34	33 do	pek	1650	44
13		37	22 do	pek sou	990	39
14	New Rassagalla	40	20 ch	bro or pek	2000	51
15		43	33 do	bro pek	3300	40
16		46	40 do	pek	3800	36
17		49	23 do	pek sou	2070	32
23	Hornsey	67	24 hf-ch	fans	1920	24
24	R D W	70	31 ch	bro pek	3100	35 bid
25		73	15 do	pek	1275	34
26		76	10 do	pek sou	750	28
27	M C	79	20 do	bro pek	1900	33 bid
28		82	8 do	pek sou	800	29 bid
29		85	16 do	pek fans	1520	30
30	Manickwatte	88	23 hf-ch	or pek	1150	38
31		91	16 do	pek	1280	34
35	Orpington	103	55 ch	bro pek	5170	38
36		106	15 hf-ch	bro or pek	900	41
37		109	47 ch	pek	3948	36
38		112	32 do	pek sou	2240	32
39	Hornsey	115	26 hf-ch	bro or pek	1300	54
40		118	26 ch	or pek	2470	44
41		121	18 do	pek	1620	40
42	Sapitiyagoda	124	82 hf-ch	or pek	4264	37 bid
43		127	30 ch	pek	2550	34 bid
44		130	38 do	pek sou	2926	32
45		133	50 hf-ch	br or pek	3000	40

Messrs. Forbes & Walker.

[413,048 lb.]

Lot.		Box	Pkgs.	Name.	lb.	c.
1	B, in estate mark	1894	8 ch	sou	720	31
2		1897	7 do	dust	1050	23
3	Andradeniya	1900	26 ch	bro pek	2600	36 bid
4		1903	16 do	pek	1600	33
8	Galkande	1915	8 ch	bro pek	800	55
14	Great Valley Ceylon, in est. mark	1933	17 ch	or pek	1530	44
15		1936	31 hf-ch	bro pek	1705	54
16		1939	19 ch	pek	1710	40
17		1942	26 do	pek sou	1950	36
19	Cooroondoowatte	1948	16 hf-ch	pek	800	36
21	Holton	1954	18 ch	bro pek	1710	43
22		1957	12 do	pek	960	36
25	Caledonia	1966	19 hf-ch	bro pek	1045	37
26		1969	17 do	pek	935	32
34	Nakiadeniya	1993	10 ch	bro pek fan	1100	36
35		1996	6 do	dust	900	22
37	Mansfield	2002	40 ch	bro pek	2400	64
38		2005	23 do	pek	2070	46
40		2011	10 hf-ch	dust	900	24
41	Kincora	2014	64 do	bro pek	3840	48
42		2017	35 ch	pek	2975	39
43		2020	9 do	pek No. 2	810	34
44	Sirikandura	2023	14 ch	bro pek	1400	37 bid
45		2026	13 do	pek	1105	32 bid
50	Kelaniya and Braemar	2041	19 ch	bor or pek	1900	55
51		2044	16 do	or pek	1600	42
52		2047	13 do	pek	1300	37
55	Harrington	2056	26 hf-ch	bro or pek	1404	75
56		2059	24 ch	or pek	2280	46
57		2062	24 do	pek	2160	42
58		2065	19 hf-ch	or pek fans	1140	38
62	Tymawr	2077	23 hf-ch	or pek	1150	50
63		2080	20 do	bro or pek	1100	58
64		2083	26 do	pek	1170	42
65		2086	25 do	pek sou	1120	39
66	Gonapatiya	2089	16 hf-ch	bro pek	800	60
67		2092	19 hf-ch	or pek	912	56
68		2095	60 do	pek	2880	44
69		2098	18 do	pek sou	810	41
70		2101	11 do	fans	704	35
74	Anningkande	2113	11 ch	pek	1045	33
75		2116	11 do	pek sou	990	32
76		2119	15 do	dust	1140	23
77	Gallawatte	2122	10 ch	bro pek	950	38
78		2125	11 do	pek	935	34
79		2128	10 do	pek fans	700	31
80	Devonford	2131	20 hf-ch	bro or pek	1100	84
81		2134	11 ch	or pek	990	60 bid
82		2137	12 do	pek	1020	49
83	Monkswood	2140	21 hf-ch	bro pek	1050	56
84		2143	31 do	or pek	1395	58
85		2146	18 ch	pek	1800	48
86		2149	9 do	pek sou	810	42
90	Rowley	2161	21 hf-ch	bro pek	1050	48
91		2164	21 do	pek	1050	39
92	Ascot	2167	17 ch	bro pek	1700	38
93		2170	24 do	or pek	2160	36
96		2179	10 do	or pek fans	1000	30
98	Monkswood	2185	28 hf-ch	bro pek	1400	63
99		2188	33 do	or pek	1485	63
100		2191	23 ch	pek	2300	48
101		2194	30 hf-ch	fans	1680	39
102	Dehiowita	2197	7 ch	bro pek	700	33
103		2200	9 do	pek	855	30
104		2203	9 do	pek sou	720	28
105	malle	2206	9 ch	pek sou	765	22
106		2209	11 do	sou	880	28
110	D, in estate mark	2221	12 hf-ch	bro or pek	720	36
111		2224	24 do	sou	1200	29
115	Bargany	2236	16 do	pek	1040	45
126	Dammeria	19	6 ch	bro or pek	720	45
127		22	22 do	or pek	2200	50
128		25	17 do	bro pek	1700	45
129		28	14 do	pek	1400	42
132	St. Heliers	37	70 hf-ch	bro or pek	3780	43
133		40	28 ch	pek	2408	38
134	Roberry	43	10 ch	bro or pek	960	53
136		49	16 do	pek	1536	45
145	Malvern	76	40 ch	bro pek	2200	49
146		79	20 do	pek	1400	41
147	Middleton	82	19 hf-ch	bro or pek	1045	92
148		85	24 ch	bro pek	2400	58
149		88	23 do	pek	2070	44
157	Waratenne Inv. No. 50	112	24 ch	bro pek	2160	36
158		115	27 do	pek	2160	33
159		118	10 do	pek sou	850	31
161	Lynsted	124	81 hf-ch	bro pek	4860	46 bid
162		127	27 do	or pek	1350	45
163		130	49 do	pek sou	2205	40
166	Chesterford	139	41 ch	bro pek	4100	44
167		142	44 do	pek	4400	36
168		145	39 do	pek sou	3900	33
169	Geragama	148	14 ch	bro pek	1330	36
170		151	14 do	pek	1190	33
171		154	9 do	pek sou	765	30
173	Waratenne Inv. No. 48	160	12 ch	bro pek	1080	37
174		163	12 do	pek	1020	34
176	Hayes	169	10 ch	bro pek	1000	45
178		175	10 do	pek	1000	37
181	Polatagama	184	44 ch	bro pek	4400	45
182		187	25 do	or pek	2250	38
183		190	43 do	pek	3870	35
184		193	14 do	pek sou	1260	32
185		196	16 do	fans	1600	30
186	High Forest	199	41 hf-ch	bro or pek	2460	41 bid
187		202	20 do	or pk No. 1	1060	67
188		205	17 do	or pek	816	50
189	Pallagoda	208	8 ch	bro or pek	800	39
190		211	12 do	bro pek	1200	47
191		214	11 do	or pek	990	39
192		217	10 do	pek	800	36
193		220	9 do	pek sou	810	33
199	Clunes	238	13 ch	bro or pek	1235	38
200		241	14 do	bro pek	1190	33 bid
201		244	30 do	pekoe	2400	34
202		247	16 do	pek sou	1440	31
205	Morankande	256	11 ch	or pek	1045	43
207		262	18 do	pek	1620	37
208		265	8 do	pek sou	720	33
209	Inverness	268	61 hf-ch	bro pek	3355	45 bid
210		271	50 ch	pek sou	2850	43
211		274	1 do	pek	1235	39
212	Ganapalla	277	22 do	pek sou	1980	41
213		280	23 do	bro or pek	2070	42
214		283	37 do	bro pek	3330	37

Lot		Box	Pkgs.		Name.	lb.	c
215		286	64	ch	pek	5120	33
216		289	30	do	pek sou	2250	30
217		292	15	do	br pk fans	1500	30
218		295	12	hf-ch	dust	1032	23
219	Penrhos	298	20	do	bro or pek	1060	32
220		301	22	do	or pek	990	54
221		304	37	ch	pek	3145	44
232	K P W	337	21	hf-ch	or pek	1155	37
233		340	14	do	bro pek	700	45
234		343	60	do	pek	2700	38
237	Drayton	352	58	do	or pek	2900	36
238		355	46	ch	pek	3910	48
239		358	16	do	pek sou	1360	41
241	Dunbar	364	37	hf-ch	bro pek	1850	38
242		367	22	do	pek	1056	58
243		370	15	ch	pek sou	1200	47
245	Ingrogalla	376	21	do	bro pek	2100	41
246		379	27	do	pek	2295	39
247	Dea Ella	382	19	hf-ch	bro or pek	1140	36
248		385	43	do	or pek	2365	49
249		388	30	do	pek	1500	41
250		391	14	do	pek sou	700	37
251	Ruanwella	394	24	ch	or pek	2040	33
252		397	10	do	bro pek	1000	39
253		400	22	do	pek	1980	36 bid
254		403	9	do	pek sou	810	35
256	Erracht	409	14	do	bro or pek	1260	31
257		412	16	do	bro pek	1280	38
258		415	32	do	pek	2400	45
259		418	11	do	pek sou	800	36
		421	9	do	bro pek fans	900	32
267	A M B	442	20	do	bro pek sou	1680	33
268	Torwood	445	8	do	bro or pek	832	27
269		448	26	do	bro pek	2236	38
270		451	16	do	pek	1216	42 bid
271		454	13	do	pek sou	1014	35
273	Bandara Eliya	460	54	hf-ch	bro or pek	3348	38
274		463	181	do	or pek	9412	42 bid
275		466	17	ch	pek	1445	41 bid
276		469	21	do	pek sou	1617	38
279	Beausejour	478	16	do	bro pek	1328	34
280		481	18	do	pek	1440	38
284	Pussella	493	13	do	bro pek	1339	53
285		496	18	do	or pek	1440	43
286		499	30	do	pek	2370	39
287	Weyungawatte	502	25	hf-ch	bro or pek	1500	34
288		505	32	ch	bro pek	3040	41
289		508	25	do	pek	2125	39
292	Mawaliganga-watte	517	15	hf-ch	bro or pek	855	55
293		520	17	do	or pek	714	37
294		523	40	ch	bro pek	4000	37
295		526	39	do	pek sou	3120	32
298	Hopton	535	41	do	bro pek	4100	51
299		538	37	do	pek	3515	43
300		541	14	do	pek sou	1330	41
303	Woodend	550	43	do	bro pek	4085	37
304		553	69	do	pek	5400	33
308	Parsloes	565	19	do	bro pek	1900	43
309		568	13	do	pek	1300	39
310		571	10	do	pek sou	900	35
314	Longford	583	21	do	pek	2100	39
323	R W	610	44	hf ch	bro or pek	2880	31 bid
324		613	11	ch	bro pek	1100	35 bid
325		616	11	do	pek	1133	30 bid
326	Knavesmire	619	15	hf-ch	or pek	750	45
327		622	20	ch	bro pek	2100	42
328		625	31	do	pek	2635	38
329		628	10	do	pek sou	700	32
331		634	21	do	pek	1575	37
332	K in est. mark	637	34	do	bro mix	3400	21 bid
333	Stamford Hill	640	22	hf-ch	bro pek	1320	62
334		643	16	do	or pek	720	60
335		646	20	ch	pek	1800	44
339	Clunes	658	19	do	pek sou	1710	30

Lot.		Box.	Pkgs		Name.	lb.	c.
29		148	46	ch	pek	2300	45
30		151	44	do	pek sou	2200	41
31		154	17	do	bro pek dust	1275	28
32	Mount Vernon	157	30	hf-ch	bro or pek	1860	59
33		160	18	ch	or pek	1782	53
34		163	47	do	pek	3995	42
35		166	24	do	pek a	2136	40
37	Aberfoyle	172	24	hf-ch	bro or pek	1200	39
42	Moragalla	187	13	ch	pek	1300	33
43		190	13	do	pek sou	1300	31
46	Harangalla	199	20	ch	bro pek	1980	33
47		202	23	do	pek	2970	34
49	Kelani	208	40	ch	bro pek	3300	41
50		211	35	do	bro or pek	3500	40
51		214	42	do	pek	3570	35
52		217	23	do	pek sou	2070	32
53		220	10	do	sou	850	31
55	Agarsland	226	36	hf ch	bro or pek	1980	38
56		229	31	do	bro pek	1705	36
57		232	85	do	pek	4250	33
58		236	71	do	pek sou	3550	30
59		238	41	do	bro pek fans	2255	35
60		241	17	do	dust	1020	23
61	Hopewell	244	48	hf-ch	bro or pek	2400	40
62		247	33	do	bro pek	1920	37
63		250	52	ch	pek	5200	33 bid
64		253	48	do	pek sou	4320	30 bid
65		256	55	hf-ch	bro pek fans	2750	31
67	Ravana	262	35	hf-ch	bro pek	1925	39
68		265	35	do	pek	1575	36
69		268	40	do	pek sou	1800	33
74	K G	283	25	ch	pek sou	1750	20
75	Annandale	286	19	hf ch	or pek	1045	48 bid
76		289	21	ch	pek	1050	43 bid
77		292	20	do	pek sou	1120	38
79	Deniyaya	298	23	ch	or pek	2300	37
80		301	41	ch	bro pek	4100	39
81		304	13	do	pek	1300	34
82		307	10	do	pek sou	1000	31
84		313	9	do	dust	1350	24
85	K L in estate mark	316	25	ch	pek sou	1750	17 bid
86	Ossington	319	9	ch	bro pek	900	39
87		322	14	do	pek	1400	33
90	Elchico	331	56	hf ch	bro pek	3080	37
91	Hangranoya	334	45	hf-ch	bro pek	2475	43
93		340	9	ch	pek	855	36
98	G A Ceylon	355	31	ch	bro mix	[illegible]	13
99	M G	358	10	ch	dust	[illegible]	20
100	Mahatenne	361	33	ch	bro pek	3300	38
101		364	15	do	pek	1425	34
102		367	8	do	pek sou	720	30
107	N K	382	12	ch	pek sou	960	29 bid
108	Lower Dickoya	385	13	hf-ch	bro or pek	728	37
109		388	17	ch	bro pek	1751	35
110		391	10	do	pek	1040	32
112	I P	397	18	ch	pek sou	1656	30
117	Galphele	517	15	ch	bro or pek	1500	40
118		520	15	do	bro pek	1350	37
119		523	15	do	pek	1350	34
121	S E A	529	5	ch	pek sou	1105	out
			11	hf ch			
122		532	9	ch	sou	828	out
123	Ferriby	535	32	hf-ch	bro pek	1440	26 bid
124		538	20	ch	pek	1700	32
125		541	21	do	pek sou	1600	30
129	Comillah	553	12	ch	bro pek	1200	36
130		556	7	do	pek	700	30
132	Doragalla	562	26	ch	bro or pek	2600	42
133		565	32	do	bro pek	3200	38 bid
134		568	86	do	pek	7310	35
135		571	22	hf ch	bro mix	1540	30
136	Kurulugalla	574	14	ch	bro pek	1400	37
137		577	12	do	pek	1080	36
138		580	7	do	pek sou	700	28
145	Fairfield	601	9	ch	bro pek	900	42
147		607	18	hf-ch	dust	1620	24

[Messrs. Somerville & Co.—191,234 lb.

Lot		Box.	Pkgs.		Name.	lb.	c.
1	Citrus	64	27	ch	bro pek	2700	38
2		67	27	do	pek	2430	32
3		70	13	do	pek sou	1300	28
6	Carney	82	17	hf-ch	bro pek	850	38
8		85	26	do	pek	1170	34
9		88	16	do	pek sou	800	30
15	Nega	106	24	hf ch	bro pek	1200	34
19	Daluk Oya	118	15	hf ch	bro or pek	900	48
20		121	16	do	or pek	880	38
21		124	19	do	pek	1045	34
23	Minna	130	29	hf-ch	bro or pek	1740	56
24		133	21	ch	or pek	1785	43
25		136	9	do	pek	810	41
26		139	9	do	pek sou	720	36
28	Marigold	145	72	hf ch	bro pek	4032	49

[Mr. E. John.—135 272 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	Harrisland	514	13	ch	bro pek	1300	39
3		520	11	do	pek sou	880	32
4	Kandaloya	523	66	hf ch	bro pek	2970	42
5		526	24	do	or pek	960	40
6		529	93	do	pekoe	3720	36
10	St. Julia	541	25	do	bro pek	1375	35
11		544	20	do	pekoe	1000	29
13	Poilakande	550	50	ch	bro pek	5000	38
14		553	25	do	pekoe	2250	36
15	Mocha	556	18	do	bro or pek	1800	66
16		559	15	do	or pek	1350	56
17		562	19	do	pekoe	1805	47
18			10	do	pek sou	800	41
19	Glentilt	568	26	do	bro pek	2600	48
20		571	10	do	pekoe	1000	41

Lot.		Box.	Pkgs.	Name.	lb.	c.
22	St. John's	577	30 hf-ch	bro or pek	1860	75
23		580	30 do	or pek	1560	68
24		583	30 do	pekoe	1680	48
25		586	19 do	pek fans	1330	42
26	Mocha	589	28 ch	bro or pek	2400	62
27		592	12 do	or pek	1080	56
28		595	24 do	pekoe	2280	47
29		595	12 hf-ch	fans	900	33
33	Birnam	610	23 do	pek sou	1426	34
36	Bittacy	619	28 do	bro pek	1540	46
37		622	23 do	pekoe	1150	38
38	Agra Ouvah	625	31 do	bro or pek No. 1	1984	67
39		628	39 do	bro or pek No. 2	2457	57
40		631	26 do	or pek	1404	47
41		634	9 ch	pekoe	855	45
42	Glasgow	637	18 do	bro or pek	1530	63
43		640	25 do	bro pek	2000	54
44		643	20 do	or pek	1300	47
45		646	11 do	pekoe	1100	44
46	Callander	649	32 hf ch	bro or pek	1920	47 bid
47	Ottery	652	53 ch	bro or pek	3300	49
48		655	10 do	or pek	900	44
49		658	10 do	pekoe	950	41
52	Myraganga	667	47 do	bro pek	4512	38
53		670	51 do	bro pek	4896	38
54		673	38 do	pekoe	3230	38
55	Brownlow	676	40 hf-ch	bro or pek	2320	47 bid
56		679	21 ch	or pek	1995	43 bid
57		682	25 do	pekoe	2500	40
60	Osborne	691	38 do	bro or pek	3800	41
61		694	18 do	pekoe	1710	40
64	Bellongalla	703	30 hf-ch	bro pek	1500	38
65		706	30 ch	pekoe	2400	34
68	Ferndale	715	18 do	bro or pek	1800	45
69		718	13 do	pekoe	1170	40
73	M D N	730	19 do	bro or pek	1850	39 bid
80	Mabanilu	751	40 hf-ch	bro pek	2230	52
81		754	22 ch	pekoe	2200	43
82		757	24 do	pek sou	2160	39
83	Heatherley	760	11 do	bro mix	1100	27
84	Warleigh	763	12 hf-ch	bro or pek	720	96
85		766	29 ch	bro pek	2755	45
86		769	20 do	pekoe	1700	41
88	Gonavy	775	60 hf-ch	bro pek	3300	40
89		778	44 do	pekoe	1760	38
91	Mount Temple	784	100 do	bro pek	5000	34 bid

SMALL LOTS.

[Messrs. E Benham & Co.]

Lot.		Box.	Pkgs.	Name	lb.	c.
9	Halgolle	25	3 ch	fans	360	33
10		28	2 do	dust	300	22
18	New Rassagalla	52	6 hf-ch	bro pek fans	390	26
19		55	5 do	dust	400	22
32	Manickwatte	94	9 ch	pek sou	693	31
33		97	11 hf-ch	bro or pek	682	35 bid
34		100	2 do	dust	180	23

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
5	Andradeniya	1906	5 ch	pek sou	450	31
6		1909	6 do	sou	300	29
7		1912	3 do	dust	240	24
9	Galkande	1918	4 ch	pek	360	30
10		1921	1 do	pek sou	100	27
11		1924	1 hf-ch	dust	80	23
12	Vathalana	1927	7 ch	pek sou	665	32
13		1930	6 do	dust	480	23
18	Cooroondoowatte	1945	11 hf-ch	bro pek	605	44
20		1951	10 do	pek sou	500	33
23	Holton	1960	8 ch	pek sou	640	33
24	B A	1963	2 ch	dust	160	23
27	Caledonia	1972	6 ch	pek sou	600	30
28		1975	1 do	sou	85	27
29		1978	1 do	pek dust	125	23
30		1981	2 do	bro tea	210	13
31	Nakiadeniya	1984	3 ch	bro pek	300	40
32		1987	8 do	pek	680	34
33		1990	5 do	pek sou	400	31
36		1999	7 do	red leaf	560	19
39	Maasfield	2008	8 ch	pek sou	680	41
46	Sirikandura	2029	8 ch	pek sou	640	32
47	S in astate mark	2032	2 ch	fans	250	29
48		2035	1 do	bro tea	74	25
49		2038	1 do	bro tea	48	26

Lot.		Box.	Pkgs.	Name.	lb.	c.
53	Kelaniya and Braemar	2050	4 hf-ch	dust	320	24
84		2053	2 ch	sou	200	32
87	Ookoowatte	2152	1 ch	sou No. 2	90	29
88		2155	5 do	pek fans	450	26
89		2158	2 do	dust	200	23
94	Ascot	2173	6 ch	pek	540	34
95		2176	6 do	pek sou	540	31
97		2182	2 do	dust	240	22
107	Ismalle	2212	3 ch	congou	225	20
108		2215	5 do	fans	625	25
109		2218	2 do	dust	190	23
112	D, in estate mark	2227	4 hf-ch	fans	240	25
113		2230	4 do	dust	360	23
114	Bargany	2233	6 hf-ch	bro or pek	390	56
116		2239	6 ch	pek sou	600	38
117		2242	1 box	silver tips	2	RS·00
118		2245	1 do	tips	2	7·50
119	Ugieside	2248	7 ch	bro mix	665	24
120		1	3 do	fans	300	24
130	Dammeria	31	5 ch	pek sou	500	35
131		34	4 do	dust	360	23
135	Roeberry	46	6 ch	bro pek	600	49
137		52	6 do	pek sou	540	41
138	Kalupahana	55	3 hf-ch	bro pek	150	40
139		58	5 do	or pek	225	36
140		61	6 do	pek	295	33
141		64	3 ch	pek sou	252	30
142		67	2 do	bro mix	200	26
143		70	1 do	sou	78	27
144		73	1 hf-ch	dust	75	23
150	B F	91	4 do	bro pek	180	37
151		94	4 do	pek	162	33
152		97	2 do	pek No. 2	64	31
153		100	6 do	pek sou	240	28
154		103	2 do	bro pek fans	86	36
155		106	1 do	dust	40	21
156		109	2 do	bro mix	134	14
160	Waratenne	121	7 do	pek fans	560	24
164	Lynsted	133	4 do	fans	200	39
165		136	3 do	dust	240	23
172	Geragama	147	7 do	pek fans	525	23
175	Hayes	166	3 ch	bro or pek	300	69
177		172	6 do	or pek	510	45
179		178	5 do	pek sou	475	32
180		181	1 do	dust	100	24
194	S in est mark	223	3 do	bro or pek	200	36
195		226	5 do	bro pek	500	39
196		229	4 do	or pek	360	37
197		232	5 do	pek sou	400	34
198		235	4 do	pek fans	390	33
203	Clunes	250	5 do	dust	270	23
204		253	3 do	pek fans	225	25
206	Morankande	259	9 hf-ch	bro or pek	504	44
222	Penrhos	307	8 ch	pek sou	640	34
223		310	2 do	bro mix	210	30
224		313	5 hf-ch	fans	284	34
235	K P W	346	10 do	pek sou	450	31
236		349	2 do	dust	170	23
240	Drayton	361	1 ch	sou	80	29
244	D B R	373	7 hf-ch	bro pek fans	420	33
255	Ruanwella	406	3 ch	dust	240	23
261	Erracht	424	1 do	pek dust	177	22
272	Torwood	457	9 do	dust	630	23
281	Beausejour	484	2 ch	pek sou	160	27
282		487	1 do	fans	60	28
283		490	1 do	dust	85	23
290	Weyungawatte	511	2 do	pek sou	170	32
291		514	3 hf-ch	dust	255	23
296	Mawaliganga-watte	529	4 do	dust	360	23
297	New Peradeniya	532	3 ch	red leaf	114	18
301	Hopton	544	6 do	sou	570	34
302		547	5 do	dust	500	26
305	Blairgowrie	556	2 do	pek sou	180	23
306		559	2 do	pek fans	270	23
307		562	3 do	dust	510	27
311	Longford	574	3 do	bro or pek	300	63
312		577	5 do	bro pek	500	40
313		580	5 do	or pek	425	45
315		586	7 do	pek sou	665	32
316		589	1 do	dust	100	23
330	Knavesmire	631	3 hf ch	dust	255	23
336	Stamford Hill	649	8 ch	pek sou	680	39
337		652	2 hf-ch	dust	175	26
338	W W	655	1 ch	pek	100	34

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
4	Citrus	73	4 ch	pek dust	600	21
5	H A	76	2 ch	fans	200	12 bid
6	Oolapane	79	5 hf-ch	dust	450	23
10	Carney	91	3 do	sou	150	26

Lot		Box	Pkgs.	Name.	lb.	c.
11		94	1 hf-ch	dust	50	22
12	A B, in estate mark	97	2 ch	bro pek	203	29
13		100	2 hf-ch	pek	115	31
14		103	1 ch	pek sou	71	29
16	Nega	109	9 hf ch	pek	450	30
17		112	9 do	pek sou	450	28
18		115	1 do	dust	64	23
22	Daluk Oya	127	5 hf ch	pek sou	250	30
27	Minna	142	5 hf-ch	dust	500	22
36	A A	169	4 hf-ch	bro tea	180	14 bid
38	Aberfoyle	175	7 ch	pek	665	35
39		178	3 do	pek sou	285	29
40		181	3 hf-ch	bro pek fans	195	29
41	Maragalla	184	6 ch	bro pek	600	35
44		193	1 do	bro tea	100	18
45		196	1 do	bro pek fans	150	18
48	Harangalla	205	5 ch	sou	450	31
54	Kelani	223	5 ch	dust	550	24
66	Hopewell	259	9 hf-ch	dust	585	23
70	B B R, in estate mark	271	1 hf-ch	bro pek	46	36
71		274	1 do	pek	64	27
72		277	2 do	pek sou	122	23
73		280	1 do	dust	89	22
78	G T	295	3 ch 1 hf-ch	pek	301	35
83	Deniyaya	310	4 ch	sou	400	27
88	Ossington	325	6 ch	pek sou	600	29
89		328	1 do	bro mix	117	17
92	Hangranoya	337	12 hf-ch	or pek	540	43
94		343	4 ch	pek sou	320	33
95		346	7 hf-ch	fans	490	27
96		349	6 do	dust	510	24
97	G A Ceylon	352	1 ch	dust	130	19
103	Mahatenne	370	2 ch	dust	200	24
104	Killin	373	6 ch	bro pek	600	35
105		376	4 do	pek	360	33
106		379	1 do	sou	80	29
111	Lower Dickoya	394	2 hf-ch	dust	180	23
113	Paragahakande	505	4 ch	bro pek	380	39
		508	7 do	pek	680	31
114			1 hf-ch			
115		511	2 ch	fans	180	22
116		514	1 hf ch	dust	70	20
120	S E A	526	3 ch	fans	300	31
126	Ferriby	544	2 ch	sou	160	25
127		547	5 hf-ch	fans	250	28
128		550	3 do	dust	225	23
131	Comillah	559	4 ch	pek sou	400	28
143	Kurauana	595	5 ch	bro pek	500	31
144	P H, in estate mark	598	8 ch	pek	680	33 bid
146	Fairfield	604	4 ch	pek	400	34
148	C T	610	3 ch	dust	300	14
149	A B A	613	5 hf ch	bro pek fans	295	25
150	S C	616	2 hf-ch	dust	100	22
151	K G	619	2 ch 1 hf ch	fans	250	23

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Harrisland	517	8 ch	pekoe	656	35
7	Kandaloya	532	11 hf-ch	pek sou	440	33

Lot.		Box.	Pkgs.	Name.	lb	c.
8		535	6 hf-ch	fans	300	27
9		538	5 do	dust	250	23
12	St. Julia	547	10 do	pek sou	500	25
21	Glentilt	574	7 ch	pek sou	630	37
34	Elston	613	2 ch	congou	200	17
35	E K, in estate mark	616	3 do	bro mix	285	21
50	Ottery	661	1 do	dust	170	24
51	X X X	664	47 (5lb. boxes)	or pek	235	37
58	Nanu Oya	685	1 hf-ch	dust	73	23
59		688	5 ch	sou	390	26
66	Evalgolla	709	3 hf-ch	fans	195	28
67		712	1 do	dust	80	23
87	Warleigh	772	4 ch	pek sou	320	38
90	Gonavy	781	5 do	pek sou	450	35

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, August 11.

"Bingo Maru."—A Wiharagalla F, 1 cask out at 101s; ditto 1, 3 casks out at 95s; ditto 2, 4 casks and 1 tierce out at 90s; ditto S, 1 barrel out; ditto PB, 1 cask sold at 117s; A WHG T in estate mark, 1 barrel out; Wiharagalla, 1 bag out, overtakers; Gowerakelle F, 1 barrel sold at 103s; ditto 1, 2 casks and 1 barrel sold at 101s; ditto 2, 5 casks and 1 barrel out at 88s 6d, bid refused; ditto S, 1 tierce out; ditto PB, 1 cask sold at 115s; QKE T in estate mark, 1 cask out; GKE 1 tierce out; Gowerakelle, 1 bag out, overtaker; Gonakelle F, 1 tierce out at 92s, bid refused; ditto 1, 1 cask and 1 barrel out; ditto 2, 2 casks out; ditto S, 1 barrel out; ditto PB, 1 barrel out; GK T in estate mark, 1 tierce out; GK, 1 barrel out; GK P in estate mark, 1 barrel out; Nyabedda F, 1 barrel out; ditto 1, 1 cask out; ditto 2, 1 barrel and 1 cask out; ditto S, 1 barrel out; ditto PB, 1 barrel out; NB T in estate mark, 1 barrel out; Kahagalla F, 1 barrel sold at 101s; ditto 1, 2 casks sold at 101s; ditto 2, 4 casks and 1 barrel sold at 93s; ditto S, 1 cask sold at 60s; ditto PB, 1 barrel sold at 86s; KG T in estate mark, 1 tierce sold at 31s; Kahagalla, 1 bag out, overtaker; Pita Ratmalie F, 1 barrel out at 85s, bid refused; ditto 1, 1 cask out at 80s, bid refused; ditto 2, 3 barrels and 1 cask out at 65s, 75s refused; ditto S, 1 tierce out; ditto PB, 1 barrel out; PRM T in estate mark 1 barrel out.

OBSERVER PRINTING WORKS.

TEA, COFFEE, CINCHONA, COCOA, AND CARDAMOM SALES.

NO. 35 COLOMBO, SEPTEMBER 11, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. E. Benham & Co.

[42,796 lb.]

Lot		Box.	Pkgs.	Name.	lb	c.
1	Sapitiyagoda	2	127 hf-ch	or pek	6350	39
2		5	36 ch	pek	2550	34
3		8	67 do	pek sou	5159	32
4		11	44 hf-ch	bro or pek	2640	40
5	H L	14	48 ch	bro or pek	4800	39 bid
6		17	19 do	pek	1900	28 bid
7		20	23 do	pek sou	2070	36 bid
8	Battalgalla	23	20 ch	pek sou	1600	37
9	R D W	26	31 ch	bro pek	3100	39 bid
10	M C	29	20 ch	bro pek	1900	37 bid
11	Bandara Eliya	32	50 hf-ch	or pek	2500	41
12	Galkadua	35	17 ch	bro pek	1870	37
13	Castlereagh	38	13 ch	or pek	1.05	37 bid
14	Y, in estate mark	41	44 hf-ch	bro or pek	2640	39 bid
16		47	21 do	pek fans	1932	26 bid

Messrs. Forbes & Walker.

[323,106 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	I K	667	12 ch	pek fans	1440	25
4	Palawatte	670	18 ch	bro pek	1800	39
5		673	10 do	pek	1000	33
9	Kelaneiya and Braemar	685	12 ch	bro or pek	1200	55
10		688	9 do	or pek	900	42
11		691	8 do	pek	800	37
13	Graceland	697	15 hf-ch	pek	750	33
17	T'Villa	709	11 ch 1 hf-ch	bor or pek	1150	36
19		715	28 do	pek	2520	32
20		718	8 do	pek sou	720	30
21		721	18 do	sou	1440	27
27	B, in estate mark	739	5 ch	dust	750	23
28	Tymawr	742	17 hf-ch	bro or pek	1105	56
29		745	20 do	or pek	1100	46
30		748	37 do	pek	1665	42
31		751	20 do	pek sou	1000	39
34	Ella Oya	760	24 ch	bro pek	2280	43
35		763	10 do	pek	900	37
39	G M in estate mark	775	36 hf-ch	bro pek	1800	52
40		778	35 do	pek	1680	42
44	Nugagalla	790	32 hf-ch	bro pek	1600	43
45		793	61 do	pek	3050	36
47	Waitalawa	791	50 hf-ch	bro pek	2500	45 bid
48		802	52 do	pek	2600	37
49		805	27 do	pek sou	1350	33
51	Theydon Bois	811	7 ch	bro or pek	700	67
52		814	7 do	bro pek	700	49
53		817	20 do	pek	1600	39
54		820	9 do	pek sou	765	35
62	Tonacombe	844	16 ch	bro or pek	1600	55
63		847	19 do	or pek	1000	46 bid
64		850	16 do	bro pek	1600	47
65		853	43 do	pek	3870	43
66	Maldenia	856	13 ch	bro or pek	1365	44
67		859	31 do	or pek	2635	38
68		862	37 do	pek	3330	35
69		865	24 do	pek sou	2160	32
70	Nillomally	868	20 ch	bro pek	2000	47
71		871	18 do	bro or pek	1980	54
72		874	17 do	or pek	1530	43
73		877	18 do	pek sou	1260	39
74	Nakiadeniya	880	20 ch	bro pek	2000	46
75		883	18 do	pek	1530	35
77	Naseby	889	42 hf-ch	or pek	2016	57
78		892	72 do	bro pek	4176	54 bid
79		895	19 do	pek	988	46
80	D H in estate mark	898	11 ch	bro mix	1265	35
81	Monkton	901	25 hf-ch	bro pek	1400	39
86	Middleton	916	20 ch	bro pek	2000	53
87		919	16 do	pek	1440	44
93	Matale	937	35 hf-ch	bro pek	1925	43
94		940	15 ch	pek	1350	40
95		943	9 do	pek sou	810	35
98	High Forest	952	29 hf-ch	or pk No. 1	1537	61 bid
99		955	19 do	or pek	912	49
100		958	24 hf-ch	pek	1104	43
105	Maha Uva	973	47 do	bro or pek	3055	44
106		976	29 do	or pek	1740	44
107		979	48 ch	pek	4560	43
108		982	13 do	pek sou	1105	39
114	Dunkeld	1000	31 ch	bro pek	3720	48
115		1003	11 do	or pek	1155	42
117		1006	24 do	pek	2280	38
123	Massena	1027	51 hf-ch	bro pek	2550	40
124		1030	17 do	pek	850	34
127	Farnham	1039	37 hf-ch	bro pek	1850	41
128		1042	63 do	pek	3150	35
129		1045	37 do	pek sou	1480	33
138	Dambagastalawa	1072	30 ch	bro or pek	3300	48
139		1075	24 do	or pek	2520	42
140		1078	19 do	pek	1786	39
144	Kilkenny	1090	37 ch	bro pek	3700	35 bid
145		1093	37 do	pek	2738	32
147	Patiagama	1099	20 hf-ch	fans	1300	30
148	Palmerston	1102	30 hf-ch	bro or pek	1620	61
149		1105	18 ch	pek	1620	44
152	St. Heliers	1114	20 hf-ch	bro or pek	1080	44
153		1117	14 ch	pek	1204	37
155	Knavesmire	1123	14 hf-ch	or pek	700	43
156		1126	21 ch	bro pek	2100	43
157		1129	24 do	pek	2160	37
158		1132	13 do	pek	1040	35
161	C	1141	15 ch	sou	1425	30
162	Kelburne	1141	8 hf-ch	fans	800	26
166	Castlere gh	1156	18 ch	bro pek	1800	54
167		1159	17 do	or pek	1445	43 bid
168		1162	14 do	pek	1120	41
172	Forres	1174	7 ch	pek sou	700	38
174	Radella	1180	10 ch	bro pek fans	1120	36
175		1183	15 hf-ch	dust	1200	23
176	Ingurugalla	1186	12 ch	bro tea	1020	21
178	V O A	1192	16 ch	bro tea	1600	19
179	Dewalakande	1195	15 ch	bro tea	1050	29
180		1198	14 hf-ch	dust	1120	21
183	Silver Kandy	1207	27 ch	bro or pek	2889	68
184		1210	22 do	or pek	1914	61
185		1213	20 do	pekoe	1520	46
186		1216	16 hf-ch	pek fans	1120	47
187	Geragama Inv. No. 51	1219	10 ch	bro pek	1000	37
188		1222	13 do	pek	1105	34
189	Geragama Inv. No. 52	1225	10 do	bro pek	050	37
190		1228	15 do	pek	1275	34
196	Vogan	1246	38 ch	bro pek	3800	45
197		1249	41 do	pek	3895	37
198		1252	20 do	pek sou	1800	34
201	Pine Hill	1261	31 do	bro or pek	2015	56
202		1264	30 do	or pek	1680	43
203		1267	30 do	pek	2550	38
204		1270	10 do	pek sou	850	35
205	K D W	1273	35 do	pek	3500	37
211	Cottaganga	1291	17 hf-ch	dust	1360	24
212	Stisted	1294	28 do	bro or pek	1820	45
215		1303	28 do	pek sou	1540	37
217	B D W G	1309	44 do	bro pek	2200	42
218		1312	39 do	pek	1950	37
221	Agra Oya	1321	16 ch	bro pek	1600	43
222		1324	15 do	or pek	1275	40
223		1327	21 do	pek	1890	37
227	Kotagal Oya	1339	21 do	bro pek	1785	35
228		1342	9 do	pek sou	720	33
233	Ingrogalla	1357	11 do	bro pek	1100	39
234		1360	14 do	pek	1190	36
235	Cooroondoowatte	1363	15 hf-ch	pek	750	37
236	Waratenne	1366	13 ch	bro pek	1300	38
237		1369	15 do	pek	1275	35
239	M'Coombra	1375	20 do	bro or pek	2000	47
240	Nonpareil	1378	19 hf-ch	bro pek	1064	45
241	Queensland	1381	7 ch	bro or pek	700	61
242		1384	16 do	pek	1440	44
243		1387	9 do	unast	810	31
247	A M B	1399	27 do	bro pek sou	2376	27
248	Errollwood	1402	22 hf-ch	bro or pek	990	55
249		1405	14 ch	or pek	1260	44
250		1408	18 do	pek	1620	37
251		1411	14 do	pek sou	1190	34
253	H G M	1417	14 do	bro pek	1400	40
254		1420	20 do	pek	1700	38
255		1423	9 do	pek sou	765	35
256		1426	8 do	bro pek fans	720	34
258	O S S in est. mark	1432	29 do	bro or pek	2175	39

Lot.		Box.	Pkgs.	Name.	lb.	c.
259		1435	20 hf-ch	pek	1600	35
260		1438	11 do	pek B	889	35
265	L G F n est. mark	1453	25 do	pek sou	2500	33
266		1456	18 do	sou	1800	31
267		1459	25 do	dust	2000	25
268	Doranakande	1462	21 do	bro pek	2109	59
283	Putupaula	1507	33 do	bro pek	2970	42
284		1510	30 do	pek	2250	36
285		1513	12 do	pek sou	840	33

[Messrs. Somerville & Co.— 175,122 lb.

Lot		Box.	Pkgs.	Name.	lb.	c.
4	Mahagoda	631	8 ch	pek	800	27
5	L	634	11 hf-ch	dust	935	24
6		637	7 ch	bro mix	700	25
7	Mipitiakande Ceylon	640	44 ch 1 hf ch	pek sou	3571	29 bid
		643	18 ch	pek fans	1440	23
9	Nyanza	646	11 ch	bro pek	1100	49
10		649	14 do	or pek	1330	5
11		652	16 do	pek	1360	39
13	Ravenscraig	658	12 ch	or pek	1020	41
15		664	23 do	pek	2070	36
17	Jak Tree Hill	670	20 hf ch	bro pek	1000	48
18		673	33 do	pek	1485	35
22	Warakamure	685	47 ch	bro pek	4700	35
23		688	34 do	pek	3230	34
24		691	13 do	pek sou	1170	29
25	New Valley	694	20 ch	bro or pek	2000	56
23		697	15 do	or pek	1350	45
27		700	20 do	pek	2000	41
28		703	14 do	pek sou	1260	39
31	Bayigam	712	47 ch	bro pek	4700	37
32		715	35 do	or pek	2975	36
33		718	28 do	pek	2380	34
34		721	9 do	pek sou	810	33
38	Rothes	733	17 hf-ch	bro or pek	952	65
39		736	15 do	or pek	750	44
40		739	16 do	pek	720	40
43	Yarrow	748	47 hf-ch	bro pek	2632	38 bid
44		751	66 do	pek	3300	38
45	Mount Vernon	754	43 hf ch	bro flowy. pek	2494	96
46		757	26 do	bro or pek	1638	59
47		760	32 ch	pek	2656	44
48	Harangalla	763	13 ch	bro pek	1235	37 bid
49		766	28 do	pek	2520	34
50		769	10 hf ch	dust	800	23
51	Hatdowa	772	25 ch	bro pek	2375	36
52		775	24 do	pek	1800	33
53		778	19 do	pek sou	1425	31
63	Kosgama	808	16 ch	bro pek	1680	40
64		811	12 do	pek	1020	36
78	Glenalla	853	26 ch	bro pek	2600	36
79		856	24 do	pek	2160	32
80		859	12 do	pek sou	1080	30
81		862	27 do	bro pek	2700	36
82		865	22 do	pek	1980	32
83		868	11 do	pek sou	990	30
85	Tiddydale	874	11 ch	pek	990	31
86		877	9 do	pek sou	810	29
87	Ingeriya	880	55 hf-ch	bro pek	2750	37
88		883	49 do	pek	2352	34
89		886	35 do	pek sou	1610	31
90		889	25 do	bro pek fans	1500	35
91		892	11 do	dust	880	23
92	Hopewell	895	38 do	bro pek	1900	39
93	Amblawa	898	20 hf-ch	bro pek	1100	38
94		901	19 do	pek	855	37
95		904	20 do	pek sou	800	24
99	Neuchatel	916	57 ch	bro pek	5415	39
100		919	15 do	pek	1275	36
101		922	26 do	pek sou	2210	32
106	P, in estate mark	937	16 ch 1 hf ch	unas	1650	32
108	Salawe	943	18 ch	bro pek	1890	3
109		946	12 do	pek	1140	35
110		949	14 do	pek sou	1190	32
113	Handrookande	958	13 hf-ch	bro pek	715	39
114		961	15 do	pek	750	33
117	D M R, in estate mark	970	22 ch	bro pek	2112	38 bid
118		973	12 do	pek	1080	35
119		976	25 do	pek sou	1875	29 bid
120	Pindeni Oya	979	15 ch	bro pek	1350	37
121		982	12 do	pek	960	35
122		985	9 do	pek sou	720	31
125		994	8 ch	red leaf	720	26
126	A & G	997	29 ch	pek sou	2465	31
127		1	31 ch	red leaf	3100	23
128		4	15 hf-ch	dust	1330	19 bid

Lot		Box	Pkgs.	Name.	lb.	c.
129	B G, in estate mark	7	46 ch	bro pek	4232	34 bi
130	Neboda	10	10 ch	bro or pek	1000	37
131		13	30 do	bro pek	3000	38

[Mr. E. John.—123,726 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
10	G E	814	10 ch	pekoe	950	33 bid
12	Galloola	820	29 do	bro pek	2900	50 bid
13		823	35 do	pekoe	3500	46
14		826	23 do	pek sou	2300	41
16	Claremont	832	23 do	bro or pek	2300	40
17		835	12 do	pekoe	1080	36
19	Killin	841	7 do	bro pek	700	36
21	Glentilt	847	31 do	bro pek	3100	49
22		850	13 do	pekoe	1300	41
23	Agra Ouvah	853	33 hf ch	bro or pek No. 1	2048	65
24		856	40 do	bro or pek No. 2	2480	58
25		859	31 do	or pek	1643	45
26		862	10 ch	pekoe	950	46
27	Rondura	865	11 do	or pek	990	40
28		868	24 do	bro pek	2400	38
29		871	29 do	pekoe	2610	35
30		874	14 do	pek sou	1260	33
32	Eadella	880	29 do	bro pek	2900	38
33		883	24 do	pekoe	2400	35
34		886	10 do	pek sou	900	32
36	Mount Temple	892	105 hf-ch	bro pek	5250	35 bid
37	Gangawatte	895	23 do	bro or pek	1380	49
38		898	24 do	or pek	1320	44
39		901	20 ch	pekoe	1700	39
40		904	11 do	pek sou No.1	990	35
45	Glasgow	919	17 do	bro or pek	1445	59
46		922	22 do	bro pek	1760	55
47		925	22 do	or pek	1430	48
48		928	12 do	pekoe	1200	43
49	Templestowe	931	28 do	bro or pek	2800	46
50		934	23 do	or pek	2070	44
51		937	27 do	pekoe	2430	40
52		940	18 do	dust	1440	25
60	Ottery	964	29 ch	bro or pek	2900	45 bid
61		967	10 do	or pek	900	40 bid
62		970	11 do	pekoe	1045	40
65	O H	979	18 do	pek sou	1710	withd'n
66	Talakande	982	22 do 1 hf-ch	or pek	2250	38
67	B G	985	9 ch 1 hf-ch	pekoe	950	32
71	Kadienlena	997	10 do	dust	800	25
72		1000	7 ch	congou	700	20
74	Agarameldenia	6	20 hf-ch	pek fans	1625	26
75		9	20 do	dust	1600	20
76	B K	12	12 ch	dust	1104	25
77	Ferndale	15	12 do	bro or pek	1200	47
78		18	18 do	pekoe	1620	38
81	Maskeliya	27	16 hf-ch	bro or pek	800	62
82		30	16 ch	or pek	1440	43
83		33	12 do	pekoe	1080	36
84		36	10 do	pek sou	900	35
89	Agarameldenia	51	7 do	bro pek	710	35
92	Yapame	60	22 do	bro pek	2420	50
93		63	15 do	pekoe	1525	45
94		64	11 do	pek sou	1045	43
95	Glassaugh	69	37 hf-ch	or pek	1924	60 bid
96		72	33 do	bro or pek	2145	53
97		75	32 ch	pekoe	3040	43 bid
89		78	8 do	pek sou	760	41

SMALL LOTS.

[Messrs. E Benham & Co.]

Lot.		Box.	Pkgs.	Name	lb.	c.
15	Y, in estate mark	44	10 hf-ch	red leaf -ans	685	35 bid

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	M'Golla	661	3 ch	bro mix	286	17
2	I K V	664	1 ch	bro mix	112	25
6	Palawatte	676	4 ch	pek sou	360	32
7		679	4 hf-ch	sou	200	30
8		682	2 do	dust	160	24
	Grace Land	694	12 do	bro pek	660	37
14		700	11 do	pek sou	495	31
		703	1 do	congou	41	27
		706	1 do	red leaf	45	16

Lot.		Box	Pkgs.	Name.	lb.	c.
18	T Villa	712	5 ch	hro pek	500	35
22		724	3 do	fans	399	23
23		727	1 do	red leaf	80	16
24	Munukettia Ceylon, in est. mark	730	1 ch	sou	100	34
25		733	6 do	dust	480	26
26	B, in est. mark	736	6 ch	sou	540	31
32	Tymawr	751	6 hf-ch	dust	510	25
33		757	5 do	fans	325	33
36	Ella Oya	766	5 ch	pek sou	425	33
37		769	4 do	hro pek fans	300	30
38		772	2 do	dust	180	23
41	Gonapitiya	781	5 hf-ch	dust	400	26
42	B B, in estate mark	784	2 ch	hro pek	180	26
43		787	1 do	pek	85	25
46	Nugagalla	796	8 hf-ch	pek sou	400	32
50	Waitalawa	808	3 do	dust	270	30
55	Theydon Bois	823	4 ch	dust	280	24
56	T B in estate mark	826	3 ch	fans	180	30
76	Nakiadeniya	886	4 do	pek sou	320	31
82	Monkton	904	7 ch	pek	658	36
83		907	8 do	pek sou	656	35
84		910	3 do	pek sou No. 2	246	32
85		913	2 hf-ch	dust	148	24
96	Matale	946	3 do	fans	210	34
97		949	5 do	dust	400	24
109	Maha Uva	985	2 hf-ch	pek fans	160	29
110		988	4 do	dust	360	24
122	B P C	1024	3 ch	red leaf	240	14
125	Massena	1033	7 hf-ch	pek sou	350	31
126		1036	2 do	fans	140	23
130	Farnham	1048	8 do	pek fans	480	29
131		1051	3 do	dust	225	23
132		1054	1 do	bro tea	40	25
134	Opalgalla	1060	7 do	dust	574	27
135	D G F, in estate mark	1063	2 hf-ch	bro pek	100	37
136		1066	4 do	pek	200	33
137		1069	3 do	pek sou	155	31
141	Damhagas-talawa	1081	6 ch	pek sou	576	35
142		1084	7 hf-ch	hro pek fans	574	30
146	Patiagama	1096	4 ch	sou	420	17
150	Palmerston	1108	8 do	pek sou	600	39
151		1111	3 hf-ch	br or pek fans	195	35
154	St. Heliers	1120	5 hf-ch	dust	450	25
159	Knavesmire	1135	3 do	dust	255	24
160		1138	2 ch	bro tea	140	13
163	Kelvin	1147	5 do	bro mix	450	20
164		1150	3 hf-ch	dust	180	24
165	Pingarawa	1153	5 do	dust	500	24
169	Castlereagh	1165	3 ch	pek sou	240	37
170		1168	7 hf-ch	fans	490	35
171		1171	4 do	dust	320	24
173	Forres	1177	7 do	dust	630	26
177	Ingurugalla	1189	7 ch	red leaf	630	22
181	C, in estate mark	1201	4 ch	hrro tea	364	20
182	L, in estate mark	1204	5 do	hro tea	455	21
191	Geragama Inv. No. 52	1231	4 ch	pek sou	360	31
192	Bodawa	1234	8 hf-ch	bro pek	464	42
193		1237	6 do	pek	264	35
199	Vogan	1255	5 do	dust	425	28
200		1258	3 ch	hro or pek	330	33
206	Kabragalla	1276	4 hf-ch	bro tea	220	20
207		1279	2 do	dust	170	23
208	Cottaganga	1282	2 ch	bro pek	210	34
209		1285	1 do	pek	75	31
210		1288	1 hf-ch	pek sou	38	29
213	Stisted	1297	6 do	or pek	360	42
214		1300	8 do	pek	496	38
216		1306	3 do	dust	240	25
219	B D W G	1315	13 do	pek sou	650	33
220		1318	2 do	dust	180	27
224	Agra Oya	1330	6 ch	pek sou	540	32
225		1333	4 hf-ch	dust	349	29
226		1336	7 do	fans	520	34
238	Waratenne	1372	8 do	dust	600	28
244	Queensland	1390	2 ch	bro mix	220	21
245		1393	1 hf-ch	dust	80	23
246		1396	1 do	fans	62	32
25	Errollwood	1414	2 do	dust	140	14
257	H G M	1429	5 do	dust	425	23
261	O S S in est. mark	1441	4 ch	pek sou	320	31
262		1444	1 do	sou	80	29
263		1447	3 do	pek fans	240	29
264		1450	3 do	dust	300	24
269	Doranakande	1465	6 do	pek	570	35
270		1468	7 do	pek No. 2	630	33
271		1471	7 do	pek sou	630	31
272		1474	3 do	dust	366	23

[Messrs. Somerville & Co.

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Clontarf	622	7 hf-ch	dust	560	23
2		625	3 ch	red leaf	200	15
3	Mahagoda	628	3 ch	bro pek	300	31
12	Nyanza	655	6 ch	pek sou	570	34
14	Ravenscraig	661	12 hf-ch	bro pek	660	41
16		667	4 ch	pek sou	380	32
19	Jak Tree Hill	676	5 hf ch		209	39
20		679	5 do	fans	540	27
21		682	1 do	dust	200	24
29	N I T	706	2 ch	unas No. 1	80	27
30		709	6 do	unas No. 2	80	24
35	Sengaly Toppoe	724	1 hf-ch	bro pek	55	19
36		727	2 do	pek dust	1	
37		730	1 ch	red leaf	60	34
41	R, in estate mark	742	9 hf-ch	pek sou	80	24
					30	22
42		745	2 do	dust	10	29
54	Hatdowa	781	1 ch	dust	145	26
55		784	6 do	fans	600	31
56		787	1 do	sou		33
65	Kosgama	814	2 ch	pek sou	160	33
66	M	817	1 ch	bro pek	119	31
67		820	2 do	pek	248	37
73	Park Hill	838	7 hf-ch	hro or pek	490	36
74		841	7 ch	bro pek	609	24
75		844	7 do	pek	574	29
76		847	9 do	pek sou	603	31
77		850	1 do	dust	120	15
84	Tiddydale	871	10 hf-ch	hro pek	500	28
96	San Cio	907	6 hf-ch	bro mix	283	28
97		910	6 do	sou	240	28
98	A B C	913	3 hf ch	hro pek	192	
101	A, in estate mark	925	2 hf ch	bro pek	115	35
103		928	1 ch	pek	105	32
104		931	3 do	bro pek	300	28
105		934	1 do	dust	210	20
			1 hf-ch			
107	P, in estate mark	940	5 hf-ch	dust	440	21
111	Salawe	952	7 ch	unas	665	31
112		955	4 do	dust	620	23
115	Handrookande	964	4 hf-ch	pek sou	200	30
116		967	1 do	dust	80	23
123	Pindeni Oya	988	7 ch	sou	560	29
124		991	2 do	dust	224	24
132	Neboda	16	7 hf-ch	pek	630	34
133		19	8 ch	pek sou	640	32
134		22	2 hf-ch	dust	160	23

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Battaluwatte	787	3 ch	bro pek	150	3
2		790	1 do	bro mix	71	14
3	Wadhurst	793	6 do	hro pek	600	45
4		796	6 do	pekoe	540	39
5		799	4 do	pek sou	360	33
6	Woodlands	802	3 do	bro pek	300	55
7		805	3 do	pekoe	285	36
8		808	3 do	pek sou	270	31
9	G E	811	4 hf-ch	bro or pek	220	53
11		817	2 do	pek fans	160	25
15	Galloola	829	2 ch	dust	200	24
18	Claremont	838	5 do	red leaf	475	20
20	Killin	844	4 do	pekoe	360	32
31	Rondura	877	2 do	dust	180	21
35	B P S	889	2 do	pekoe	200	25 bid
41	Gangawatte	907	2 do	pek sou No. 2	180	32
42		910	5 hf-ch	pek fans	350	31
43		913	5 do	dust	425	22
44	W H R	916	3 ch	dust	300	23
63	Ottery	973	1 do	dust	170	31
64	O P G	976	6 hf-ch	red leaf	390	15
68	B G	988	1 ch	pek sou	85	27
69	Nelun	991	4 hf-ch	pek fans	224	20
70		994	1 do	dust	85	19
73	W M	3	1 ch	bro pek	63	39
79	Yahalakelle	21	4 do	sou	300	23
80		24	4 do	dust	600	23
85	Maskeliya	39	5 do	sou	500	34
86		42	8 hf-ch	fans	480	34
87		45	2 do	dust	180	23
88		48	2 ch	unas	200	32
90	X X X	54	40 (5lb. hoxes)	or pek	200	38
91	M G	57	5 hf-ch	fans	400	32

Not arrived lots are omitted.

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, August 18.

"Sanuki Maru."—Poonagalla A, 1 barrel out at 100s; ditto B, 5 casks out; ditto C, 2 barrels sold at 60s 6d; ditto PB, 1 barrel sold at 114s; ditto T, 1 barrel sold at 30s; Poonagalla, 1 bag sold at 79s, overtaker.

CEYLON COCOA SALES IN LONDON.

"Clan Stuart."—Weharagama, 17 bags sold at 66s.

"Clan McLean."—Ambetale, 66 bags out at 74s; DC in estate mark, 48 bags out at 63s; GA in estate mark, 50 bags out at 63s; OO MA in estate mark, estate cocoa, 62 bags out at 66s; 1 MAK in estate mark, 61 bags sold at 61s; S ditto, 2 bags sold at 22s.

"Bingo Maru."—Beredewelle COC Ex. No. 1, 25 bags out at 77s, 70s 6d refused: ditto T, 3 bags sold at 46s; ditto B, 2 bags sold at 40s.

"Kawachi Maru."—Hylton OO, 20 bags sold at 87s; ditto, 20 bags sold at 89s 6d; ditto, 26 bags sold at 86s 6d; ditto, 4 bags sold at 66s, sea damaged; ditto O, 6 bags sold at 65s 6d.

"Bingo Maru."—Marakona 1, 22 bags sold at 70s; ditto 2, 4 bags sold at 55s; North Matale, 71 bags out at 85s; ditto, 9 bags sold at 56s 6d, SDC 3.

"Ceylon."—North Matale, 87 bags sold at 58s; ditto, 9 bags sold at 50s, SDC 3.

"Sanuki Maru."—Allooweharie AA, 33 bags out at 90s.

"Shropshire."—Meegama A, 28 bags out at 77s, 74s 6d refused; ditto A1, 1 bag sold at 56s; ditto 1, 17 bags sold at 64s; 1 bag sold at 53s; ditto B, 1 bag sold at 53s; ditto B1, 1 bag sold at 44s.

"Ceylon."—C, 2 bags out at 45s.

"Ava."—O MAK in estate mark, 62 bags out at 67s; ditto, 1 bag out at 48s 6d; M in estate mark, 47 bags sold at 62s 6d; ditto 2 bags sold at 48s 6d.

"Bingo Maru."—Bandarapola 1, 12 bags sold at 68s; ditto 2, 3 bags sold at 58s; ditto T, 2 bags sold at 47s 6d.

"Craftsman."—Yattawatte 1, 25 bags out at 83s, 72s refused; ditto 2, 10 bags sold at 66s Broken, 1 bag sold at 57s; ditto 1, 19 bags sold at 58s; ditto 2, 2 bags sold at 42s 6d.

"Kawachi Maru."—Ross 1, 1 bag sold at 72s.

"Clan McLean."—FM in estate mark, 44 bags sold at 78s 6d.

"Umballa."—OBEC in estate mark, Kondesalle OF, 46 bags sold at 84s 6d; ditto, 139 bags sold at 75s 6d; ditto, 1 bag sold at 56s 6d, sea damaged, second class; ditto 1F, 7 bags sold at 58s; 16 bags sold at 55s; ditto O, 20 bags sold at 77s; 20 bags sold at 76s; OBEC in estate mark, Kondesalle OF, 34 bags sold at 75s; ditto, 3 bags sold at 56s; ditto 1, 20 bags sold at 55s; 9 bags sold at 58s.

"Bingo Maru."—OBEC in estate mark, Kondesalle Ceylon OF, 46 bags sold at 73s 6d; ditto 1 F, 20 bags sold at 55s; 17 bags sold at 57s; ditto 1, 6 bags sold at 56s 6d; ditto D, 5 bags sold at 57s 6d; ditto G, 11 bags out, 2s refused.

CEYLON CARDAMOMS SALES LONDON.

"Bingo Maru."—Duckwari A1, 3 cases sold at 3s 10d; ditto B1, 7 cases sold at 3s 6d; ditto C1, 8 cases sold at 2s 9d; ditto D1, 2 cases sold at 2s; ditto splits, 1 case sold at 3s 3d; ditto, 2 cases sold at 2s 9d; 4 cases sold at 2s 9d; 1 case sold at 1s 7d; ditto seed, 2 cases sold at 2s 5d.

"Umballa."—St. Martins No. 1, 10 cases sold at 2s 9d; ditto No. 2, 2 cases sold at 2s 4d; 2 cases sold at 2s 3d; 2 cases sold at 2s 4d; ditto 2 cases sold at 2s 3d; 2 cases sold at 2s 4d; 2 cases sold at 2s 3d; No. 3, 1 case sold at 1s 6d; No. 4, 1 case sold at 1s 6d; No. 5, 2 cases sold at 1s 6d.

"Sanuki Maru."—St Martins No. 1, 2 cases sold at 2s 10d; ditto No. 2, 10 cases sold at 2s 4d; ditto No. 3, 1 case sold at 1s 6d; ditto No. 4, 1 case sold at 1s 6d; ditto No. 5, 2 cases sold at 1s 6d; Nawanagala 1, 2 cases sold at 3s 2d; ditto 2, 6 cases sold at 2s 7d; ditto No. 4, 7 cases sold at 1s 9d.

"Kawache Maru."—Nawanagala 1, 2 cases sold at 3s 2d; ditto 2, 2 cases sold at 2s 8d; 4 cases sold at 2s 7d; 2 cases sold at 2s 9d; 1 case sold at 2s 8d; ditto 3, 1 case sold at 1s 8d; ditto seeds, 1 case sold at 2s 2d.

"Umballa."—OBEC in estate mark, Naranghena AAA, 12 cases sold at 2s 8d; ditto AA, 8 cases sold at 2s 4d; ditto C, 3 cases sold at 1s 5d; ditto R, 1 case sold at 2s 2d; OBEC in estate mark, Dangkande, 2 cases sold at 2s 8d; 1 case sold at 1s 7d; OBEC in estate mark, Nilloomally, 1 case sold at 2s 3d; 4 cases sold at 2s 3d; ditto seed, 1 case sold at 1s 9d.

"Bingo Maru."—OBEC in estate mark, Dangkande, 3 cases sold at 2s 10d; 1 case sold at 1s 10d.

"Sanuki Maru."—Wariagalla Mysore A, 7 cases sold at 2s 6d; ditto B, 4 cases sold at 2s 1d; ditto C, 1 case sold at 1s 8d; ditto D, 2 cases sold at 1s 6d; 2 cases sold at 1s 5d; ditto seed, 1 case sold at 2s 4d.

"Bingo Maru."—Delpotonoya, 2 cases sold at 3s; 1 case sold at 3s; 1 case sold at 2s 10d; 2 cases sold at 2s 9d; 3 cases sold at 2s 5d; 3 cases sold at 2s 3d; 1 case sold at 1s 6d.

"Sado Maru."—Hentimalie Seed, 5 cases sold at 2s 5d.

"Clan Stuart."—Gavatenne Mysore B, 6 cases out at 2s 2d.

OBSERVER PRINTING WORKS.

NO. 36 COLOMBO, SEPTEMBER 18, 1899. PRICE :—12½ cents each 3 copies 30 cents ; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. E. Benham & Co.

[7,145 lb.]

Lot.		Box.	Pkgs.	Name.	lb	c.
3	Hornsey	9	31 bf-ch	bro pek	1860	42
4		12	25 ch	or pek	2375	46
5		15	21 do	pek	1890	42

Messrs. Forbes & Walker.

[403,315 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Bickley	1516	29 hf-ch	pek sou	1798	32
2	N	1519	10 ch	bro tea	900	26
3		1522	14 hf-ch	unas	770	34
4	Sirikandura	1525	12 ch	bro pek	1200	38
6		1531	10 do	pek	850	34
18	Holton	1567	20 ch	bro pek	1900	42
19		1570	15 do	pek	1200	37
20		1573	10 do	pek sou	800	33
26	Yellatenne	1591	20 hf-ch	bro or pek	1200	54
27		1594	17 ch	or pek	969	46
28		1597	15 do	pek	795	45
32	Cooroondoo-watte	1609	17 hf-ch	bro pek	935	55
33		1612	14 do	pek	700	39
34		1615	16 do	pek sou	800	34
39	Glengariffe	1630	61 hf-ch	bro pek	3355	46
40		1633	34 do	or pek	1530	41
41		1636	21 ch	pek	1890	38
42		1639	13 do	pek sou	1040	35
43		1642	10 hf-cb	dust	800	28
44	Sutton	1645	15 ch	fans	1050	34
54	Glencorse	1675	36 ch	bro or pek	3240	47
55		1678	22 do	bro pek	1980	39
56		1681	13 do	bro pek	1040	39
57		1684	24 do	pek	2040	36
58		1687	15 do	pek sou	2000	32
62	Dunbar	1699	32 bf-ch	bro or pek	1600	55 bid
64		1705	12 ch	pek	960	43
73	St. Edwards	1732	15 bf-ch	bro pek	825	38
74		1735	17 do	pek	935	35
83	Tymawr	1762	33 bf-ch	or pek	1760	46
84		1765	19 do	bro or pek	1235	52
85		1768	32 do	pek	1600	41
86	Gallawatte	1771	16 ch	bro pek	1520	42
87		1774	16 do	pek	1360	37
88	Rowley	1777	16 hf-ch	bro pek	800	49
89		1780	17 do	pek	850	41
90	High Forest	1783	30 hf-ch	or pek No 1	1590	69
91		1786	21 ch	bro or pek	1302	50
92		1789	22 do	pek	1012	47
94	Hayes	1795	10 do	bro pek	1000	49
95		1798	16 do	or pek	1360	45
96		1801	20 do	pek	2000	40
97		1804	15 do	pek sou	1350	35
107	Kirklees	1834	18 hf-ch	bro or pek	1080	50
108		1837	24 ch	or pek	2400	44
109		1840	21 do	pek	1995	40
113	High Forest	1852	32 hf-ch	or pek No 1	1696	66
114		1855	20 do	bro or pek	1240	49
115		1858	20 do	pek	920	47
116	Maba Uva	1861	25 hf-ch	bro or pek	1625	44
117		1864	20 do	or pek	1200	46
118		1867	24 ch	pek	2280	43
122	Pallagodde	1879	12 ch	bro or pek	1200	39
123		1882	16 do	bro pek	1600	47
124		1885	15 do	or pek	1275	46
125		1888	15 do	pek	1200	38
126		1891	12 do	pek sou	1080	34
127	Polatagama	1894	40 ch	bro pek	4000	48
128		1897	27 do	or pek	2295	41
129		1900	42 do	pek	3990	37
130		1903	26 do	pek sou	2470	33
137	Killarney	1924	45 hf-ch	bro or pek	2475	52
138		1927	26 cb	pek sou	2470	43
139	Bloomfield	1930	59 ch	bro pek	6490	53
140		1933	35 do	pek	3500	45
141		1936	15 do	pek sou	1425	42
143	Great Valley Ceylon, in est. mark	1942	20 ch	or pek	1800	45
144		1945	31 hf-ch	bro pek	1705	57
145		1948	21 ch	pek	1890	43
146		1951	33 ch	pek sou	2475	35
148		1957	9 do	dust	765	27
149	Nakiadeniya	1960	8 do	bro pek	760	44
151		1966	16 do	pek sou	1280	35
152		1969	12 do	bro pek fans	1320	37
161	P C H Galle, in estate mark	1996	8 ch	pek	720	34
163	Penrhos	2002	33 hf-ch	bro or pek	1749	56
164		2005	29 do	or pek	1305	47
165		2008	45 ch	pek	3825	40
166		2011	10 do	pek sou	800	35
168	Hentleys	2017	18 hf-ch	bro pek	954	44
170		2023	21 ch	pek	1785	37
176	New Peacock	2041	22 ch	pek fans	1650	30
178	Dyakulla	2047	39 ch	bro pek	2145	52
179		2050	30 do	pekoe	2100	41
180		2053	19 do	pek sou	1330	38
181	B D W P	2056	35 ch	bro pek	3150	41
185	Gonapattiya	2068	28 hf-cb	bro pek	1372	65
186		2071	33 do	or pek	1518	61
187		2074	87 do	or pek	4089	48
188		2077	25 do	pek	1550	45
189	Middleton	2080	18 hf-ch	bro or pek	990	R1·03
190		2083	33 ch	bro pek	3300	54
191		2086	27 do	pek	2430	46
192	Palmerston	2089	16 hf-ch	bro or pek	800	61
193		2092	9 ch	pek	765	44
207	Rockside	2134	9 ch	sou	720	33
209		2140	8 do	dust	1030	28
210		2143	7 do	bro pek fans	840	37
211	Walpita	2146	35 ch	bro pek	3500	38
212		2149	25 do	pek	2500	37
213		2152	14 do	pek sou	1120	28
221	Munukattia, Ceylon in est. mark	2176	25 hf-ch	or pek	1250	49
222		2179	46 do	bro pek	2530	52
223		2182	21 do	pek	1680	44
224		2185	10 do	pek sou	900	38
225	Freds Ruhe	2188	40 ch	bro pek	4000	39
226		2191	45 do	pek	4050	35
227		2194	16 do	pek sou	1440	33
243	Augusta	2242	5 ch	dust	750	24
245	Yaha Ella	2248	12 do	bro pek	1200	38
246		1	19 do	pek	1710	35
251	Torwood	16	8 do	bro or pek	832	41
252		19	35 do	bro pek	3010	42
253		22	20 do	pek	1520	36
254		25	14 do	pek sou	1120	34
261	Arapolakande	46	50 do	bro pek	4500	46
262		49	31 do	pek	2480	37
265	Sembawatta	58	28 do	bro or pek	2800	40
266		61	32 do	bro pek	2880	37
267		64	38 do	pek	2660	35
268		67	15 do	pek sou	975	13
269	Beaumont	70	13 do	bro pek	1300	45
270		73	33 do	or pek	3036	39
272	Kirrimettia	79	11 do	bro mix	1100	33
273		82	8 do	fans	800	34
274		85	6 do	dust	720	25
275		88	8 do	unast	720	33
281	Udapolla	106	23 do	bro pek	2300	43
282		109	20 do	pek	1800	38
283		112	8 do	pek sou	720	34
288	M	127	14 ch	bro pek	1374	41 bid
289		130	13 do	pek	1105	36
297	Pine Hill	154	23 hf-cb	or pek	1288	44
298		157	32 ch	pek	2720	40
299		160	16 hf-ch	bro or pek	1040	60
300		163	31 do	or pek	1736	45
301		166	25 ch	pek	2125	41
320	A M B	223	31 do	bro pek sou	2728	33
321		226	9 do	dust	1188	24
322	Maha Oya	229	9 do	sou	810	28
323		232	12 do	pek dust	1200	26
324	Coreen	235	50 box	bro or pek	1100	65
325		238	61 hf-cb	bro pek	3660	46
326		241	26 ch	or pek	2340	46
327		244	29 do	pek	2610	41
329		250	10 bf-ch	dust	800	26
330	Vogan	253	28 cb	bro pek	2800	46
331		256	39 do	pek	3510	37
332		259	10 do	pek sou	850	33
335	Digdola	268	13 do	bro pek	1170	40
336		271	16 do	pek	1120	35
338	Drayton	277	50 do	pek	4250	43
339		280	14 do	pek sou	1190	39
344	Blairgowrie	295	20 do	sou	1600	20

Lot.		Box.	Pkgs.	Name.	lb.	c.
346	Mahawiligauga-watte	301	21 hf-ch	or pek	882	40
347		304	75 do	bro pek	4125	39
348		307	37 ch	pek sou	2960	33
354	Amhlakande	325	29 do	bro pek	2900	41
355		328	33 do	pek	2805	36
356		331	12 do	pek sou	960	33

[Messrs. Somerville & Co.—187,068 lb.

Lot		Box.	Pkgs.	Name.	lb.	c.
5	Glenalmond	37	9 ch	pek sou	720	31
9	J M D M	49	13 ch	bro pek	1300	36
10		52	20 do	pek	1900	34
11		55	9 do	pek sou	855	31
15	Honiton	67	14 ch	bro pek	1274	40
16		70	10 do	pek	820	36
17		73	12 do	pek sou	960	31
20	Woodthorpe	82	9 ch	bro pek	900	45
21		85	15 do	pek	1275	37
22		88	17 do	pek sou	1326	33
30	Hanagama	112	36 ch	bro pek	3600	38
31		115	56 do	pek	5320	35
32		118	15 do	pek sou	1350	31
38	Clova	136	23 hf ch	bro pek	1150	38
39		139	14 do	pek	700	33
42	Mount Vernon	148	26 hf-ch	bro or pek	1560	66
43		151	39 do	bro pek	2418	44
44		154	29 ch	or pek	2342	56
45		157	33 do	pek	2739	43
46		160	33 ch	pek a	2805	42
47		163	18 do	pek sou	1692	39
48		166	11 hf-ch	dust	946	26
49	D A L	169	19 ch	bro pek	1900	37
50		172	15 do	pek	1425	33
51		175	11 do	pek sou	1045	28
55	Oakham	187	32 hf-ch	bro pek	1920	47
56		190	34 do	or pek	1360	45
57		193	12 ch	pek	1080	39
60	Kambodde	202	19 hf ch	bro or pek	1045	48
61		205	44 do	bro pek	2420	40
62		208	21 do	pek	1050	36
65	Killin	217	7 ch	bro pek	700	36
69	H B	229	16 ch	bro pek	1600	out
70	Nugawella	232	32 hf-ch	bro pek	1856	43
71		235	52 do	pek	2600	38
76	Haviland	250	58 hf ch	bro or pek	3480	43
77		253	40 ch	or pek	3600	38
78		256	36 do	pek	3240	35
79		259	8 do	sou	760	25
81		265	7 do	fans	700	32
82	Ukuwela	268	8 cb	bro tea	720	18
83	Annandale	271	19 hf-ch	bro or pek	1026	67
84		274	17 do	or pek	918	55
85		277	22 do	pek	1100	43
86		280	26 do	pek sou	1430	40
87		283	10 do	dust	760	25
88	Rayigam	286	41 ch	bro pek	4100	37
89		289	32 do	or pek	2656	37
90		292	33 do	pek	2640	35
91		295	10 do	pek sou	850	32
93	Ranasinghapatna	301	133 hf-ch	or pek	6916	42 bid
94		304	41 do	bro or pek	2512	44 bid
95		307	30 ch	pek	2550	39 bid
96		310	47 do	pek sou	3619	35
98	Narangalla	316	22 cb	bro pek	1980	37 bid
99		319	36 ch	pek	3240	33
100		322	8 do	fans	800	33
101	Bogahagodawatta	325	15 ch	bro pek	1500	37
102		328	11 do	pek	1100	33
103		331	7 do	pek sou	700	30
105	Depedene	337	52 hf-ch	bro pek	2860	39
106		340	55 do	pek	2750	36
107		343	47 do	pek sou	2350	32
108		346	11 do	bro pek fans	715	36
115	Wevatenne	367	11 ch	pek	921	35
116		370	14 do	pek sou	1250	32
118	K G	376	30 hf-ch	bro pek	1515	40 bid
121	California	385	8 ch	pek	760	33
124	Monrovia	394	30 ch	bro pek	3000	41
126		505	29 do	pek	2755	37
127		508	16 do	pek sou	1000	32
130	Illukettia	517	15 ch	bro pek	1650	35 bid
131		520	15 do	pek	1500	32
135	Florida	532	8 ch, 1 hf-ch	bro pek	856	34
136		535	13 ch	pek	1300	31
140	R T, in estate mark	547	14 ch	bro mix	1400	29 bid
141		550	10 hf-ch	dust	800	22
142	Orion	553	12 ch	bro or pek	1200	42
143		556	37 ch	bro pek	3700	40
144		559	18 do	pek No. 1	1800	37
145		562	18 do	pek No. 2	1710	37
146		565	21 do	pek sou	1890	34
150	Mora Elliya	577	33 hf-ch	bro or pek	1914	41
151		580	34 do	pek	2210	37
152		583	26 ch	pek sou	1950	34
153	Ferriby	586	5 ch, 24 hf-ch	bro pek	1530	34 bid
154		589	18 ch	pek	1530	33
155		592	20 do	pek sou	1600	30
160	R C T F, in estate mark	607	10 ch	bro pek	1000	38
163		616	15 do	pek sou	1275	30
166	D	625	7 ch	pek	710	31

[Mr. E. John.—167,826 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	N D	81	14 ch	bro pek	1120	42
2		84	8 do	pekoe	760	38
3	Callander	87	19 hf-ch	or pek	1083	46
8	Glasgow	102	20 ch	bro or pek	1700	58
9		105	34 do	bro pek	2720	54
10		108	24 do	or pek	1560	46
11		111	15 do	pekoe	1425	44
12		114	10 do	pek sou	1000	40
13	Agra Ouvah	117	33 hf ch	bro or pek No. 1	2112	65
14		120	39 do	bro or pek No. 2	2418	58
15		123	27 do	or pek	1431	51
16		126	10 ch	pekoe	950	47
17		129	9 do	pek sou	810	40
18		132	23 hf-ch	pek fans	1955	32
20	Mount Everest	138	14 do	bro pek	770	89
21		141	20 do	or pek	1000	58
22		144	18 cb	pekoe	1800	48
23		147	8 do	pek sou	720	43
24		150	14 hf ch	bro pek fans	980	33
27	Eila	159	51 cb	bro or pek	5100	39
28		162	42 do	bro pek	3570	38
29		165	13 do	or pek	975	35
30		168	20 do	pekoe	1700	34
31		171	16 do	pek sou	1280	32
32		174	6 do	fans	720	34
33		177	9 hf cb	dust	765	25
34	Uda	180	8 cb	bro pek	800	31
35		183	12 do	pekoe	1020	33
36		186	14 do	pek dust	1260	26
37	St. John's	189	25 hf-ch	bro or pek	1500	78
38		192	25 do	or pek	1300	70
39		195	25 do	pekoe	1400	52
40		198	25 do	pek sou	1350	44
41	Glentilt	201	36 ch	bro pek	3600	50
42		204	15 do	pekoe	1500	39
43	Woodstock	207	19 do	bro or pek	1900	42 bid
44		210	15 do	pekoe	1680	36 bid
45	Kandaloya	213	37 hf-ch	bro pek	1665	44
46		216	72 do	pekoe	2880	36
48	Little Valley	222	23 ch	bro pek	2300	44
49		225	30 do	pekoe	2550	38
51	Dickapittia	231	34 do	bro pek	3400	47
52		234	41 do	pekoe	4100	41
53	Brownlow	237	25 hf-ch	bro or pek	1500	53
54		240	29 ch	or pek	2813	43
55		243	27 do	pekoe	2430	41
57	Galella	249	18 do	or pek	1530	42
58		252	27 do	bro or pek	2700	45
59		255	13 do	pekoe	1170	38
62	Troup	264	11 do	bro mix	1100	32
71	Talakande	291	8 do	bro pek	800	31 bid
72	Iona	294	53 hf-ch	bro or pek	2915	70
73		297	28 ch	or pek	2800	49
77	Bellongalla	309	20 do	pekoe	1600	35
78		312	18 do	pek sou	1260	31
79	Gampola	315	26 do	pek sou	2340	26 bid
80	Cleveland	318	38 hf-ch	flowy or pek	2052	69
81		321	47 do	pekoe	2350	46
88	Ferndale	342	14 ch	or pek	1260	49
89		345	16 do	pekoe	1440	37
90	Claremont	348	20 do	bro or pek	2000	42
91		351	10 do	pekoe	900	36
93	A M	357	7 do	bro pek	770	34
98	Sheen Hill	372	8 do	pekoe	800	37
99	V'Patna	375	50 hf-ch	bro or pek	3000	37 bid
100		378	23 ch	bro pek	2323	35 bid
101	Gonavy	381	62 hf-ch	bro pek	3410	44
102		384	36 do	pekoe	1520	39
104	Poilakanoe	390	44 ch	bro pek	4400	42
105		393	28 do, 1 hf-ch	pekoe	2560	36
112	Mulberry Hill	414	10 ch	pek sou	850	33 bid
113	Lamiliere	417	51 hf-ch	bro pek	2860	56
114		420	31 ch	pekoe	2790	41
115		423	18 do	pek sou	1350	36

Lot		Box	Pkgs.		Name.	lb.	c.
117	Murraythwaite	429	12	ch	bro pek	1140	43
118		432	13	do	pekoe	1105	36
122	Ratwatte	444	31	do	bro pek	3100	40
123		447	29	do	pekoe	2610	35
124		450	13	do	pek sou	1040	31 bid
128	Kotuagedera	462	21	do	bro pek	2100	40
129		465	11	do	pekoe	1045	35
132	Woodstock	474	15	hf-ch	bro or pek	750	41 bid

SMALL LOTS.

[Messrs. E Benham & Co]

Lot.		Box.	Pkgs.		Name	lb.	c.
1	Coodagalla	3	6	hf-ch	dust	420	25
2	Hornsey	6	30	box	bro or pek	600	6)

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.		Name.	lb.	c.
5	Sirikandura	1528	1	ch	bro pek	70	38
7		1531	4	do	pek sou	340	32
8		1537	1	do	fans	130	26
9		1540	1	do	fans	80	26
10		1543	2	do	pek sou	160	30
11	Attempettia	1546	6	ch	bro pek	660	46
12		1549	5	do	pek	500	39
13		1552	2	do	pek sou	180	36
14	Horagaskelle	1555	8	hf-ch	bro pek	488	38
15		1558	7	do	pek	370	34
16		1561	9	ch	pek sou	506	31
17		1564	1	do	dust	88	23
21	B A	1576	2	ch	dust	160	25
22		1579	3	do	red leaf	270	18
23	St. John's	1582	10	hf-ch	bro pek	550	43
24		1585	8	do	pek	360	38
25		1588	7	do	pek sou	315	34
29	Yellatenne	1600	4	do	pek sou	184	39
30		1603	1	do	fans	75	32
31		1606	1	do	dust	80	26
45	Sutton	1648	6	ch	dust	450	25
46	J S	1651	1	do	unas	100	39
47		1654	1	do	red leaf No. 1	115	32
48		1657	1	do	do ,, 2	80	28
59	Glencorse	1690	1	ch	dust	173	25
60		1693	1	do	bro tea	110	35
61		1696	1	do	pek fans	125	31
63	Dunbar	1702	12	hf-ch	or pek	576	52
65	D B R	1708	5	do	bro pek fans	300	41
66		1711	1	do	dust	80	24
67	Mount Pleasant, C E S Din estate mark	1714	4	hf-ch	bro pek	240	38
68		1717	4	do	pek	200	35
69		1720	3	do	pek sou	150	32
70		1723	1	do	unas	50	31
71		1726	1	do	fans	60	28
72	St. Edwards	1729	11	hf-ch	or pek	616	41
75		1738	7	do	pek sou	399	32
76		1741	1	do	bro pek fans	55	36
93	Hayes	1792	4	ch	bro or pek	400	65
102	Bambragalla	1819	6	hf-ch	bro or pek	360	46
103		1822	7	hf-ch	or pek	350	39
104		1825	6	do	pek	300	38
105		1828	3	do	pek sou	150	34
106		1831	1	do	sou	50	31
110	Kirklees	1843	5	ch	pek sou	425	36
111		1846	5	do	pek fans	550	36
112		1849	5	do	dust	450	27
119	Maha Uva	1870	6	ch	pek sou	540	38
120		1873	1	hf-ch	pek fans	80	33
121		1876	4	do	dust	360	26
131	P, in estate mark	1906	7	hf-ch	pek sou	385	39
142	Bloomfield	1939	6	ch	pek fans	510	20
147	Great Valley Ceylon, in estate mark	1954	9	ch	sou	675	27
150	Nakiadenia	1963	6	ch	pek	510	36
153	Downside	1972	2	box	bro pek	300	40
154		1975	4	ch	do	400	40
155		1978	12	box	pek	300	36
156		1981	1	ch	pek	98	35
157		1984	4	do	pek sou	360	32
158		1987	3	do	congou	270	28
159		1990	4	hf-ch	dust	300	26
160	P C H Galle in estate mark	1993	5	ch	bro pek	500	37
162		1999	7	do	pek sou	560	31
167	Penrhos	2014	5	hf-ch	pek dust	420	26
169	Hentleys	2020	12	do	or pek	528	40
171		2026	4	ch	pek sou	320	32
172		2029	2	ch	bro mix	150	23
173		2032	3	hf-ch	fans	216	27
174	New Peacock	2035	7	ch	pek sou	620	37
175		2038	4	hf-ch	bro mix	200	23
182	B D W P	2059	2	ch	dust	260	25
183	Ookoowatte	2062	5	hf-ch	pek fans	450	31
184		2065	2	ch	dust	220	25
194	Palmerston	2095	3	do	pek sou	210	30
195	Kalupahana	2098	3	ch	or pek	270	35
196		2101	4	do	pek	388	33
197		2104	5	do	pek sou	442	31
198		2107	2	ch	sou	170	28
199		2110	5	do	bro mix	500	28
200		2113	1	do	bro tea	100	25
201		2116	1	hf-ch	dust	80	25
208	Rockside	2137	2	ch	bro mix	180	26
214	Walpita	2155	2	ch	sou	180	29
215		2158	1	do	fans	100	27
228	W A	2197	5	ch	bro pek	500	36
229		2200	4	do	pek	360	33
230		2203	1	do	bro mix	100	23
231		2206	2	do	dust	260	25
241	Katooloya	2236	1	ch	bro pek	100	38
242	Augusta	2239	1	do	sou	114	26
244	Yaha Ella	2245	2	hf-ch	bro or pek	140	38
247		4	4	ch	pek sou	360	32
248		7	2	hf ch	pek fans	170	31
249		10	2	do	red leaf	165	20
250		13	1	ch	sou	55	27
245	Dremoland	28	7	hf-ch	bro pek fans	490	35
256		31	4	ch	dust	352	25
257		34	3	do	red leaf	258	20
258		37	1	do	sou	48	21
259	P G A	40	1	do	bro mix	95	35
260	Arapolakande	43	4	do	bro or pek	440	39
263		52	5	do	pek sou	450	32
264		55	1	do	dust	110	26
271	Beaumont	76	5	do	fans	480	31
284	Udapolla	115	1	do	dust	130	25
295	Glendevon	148	1	do	pek	107	43
296	Bon Accord	151	1	do	bro pek	110	46
202	Pine Hill	169	4	hf-ch	dust	340	26
303	Macaldeniya	172	9	do	bro pek	495	46
304		175	8	do	pek	400	43
305		178	7	do			
			1	ch	pek sou	405	34
303		181	1	do	dust	57	25
310	Frogmore	193	4	hf-ch	or pek	180	49
311		196	5	do	bro pek	300	52
312		199	4	ch	pek	320	40
328	Coreen	247	5	do	pek sou	450	34
333	Vogan	262	5	hf c	dust	425	25
334		265	3	ch	bro or pek	330	35
337	Digdola	274	8	do	pek sou	640	32
340	Drayton	283	1	do	sou	80	35
342	Blairgowrie	289	5	do	pek	460	27
343		292	4	do	pek sou	360	24
345	Mawaliganga-watte	298	12	hf-ch	bro or pek	684	48
349		310	5	do	pek dust	375	25

[Messrs. Somerville & Co.

Lot		Box.	Pkgs.		Name.	lb.	c.
1	Glenalmond	25	8	ch	pek sou	640	32
2		28	1	do	sou	87	30
3		31	2	hf ch	fans	140	29
4		34	2	do	dust	160	25
6		40	1	ch	sou	75	29
7		43	1	hf-ch	fans	70	28
8		46	2	do	dust	140	25
12	J M D M	58	2	ch	fans	230	26
13		61	1	do	dust	155	25
14		64	1	do	con	105	29
18	Honiton	76	2	ch	dust	218	26
19		79	1	do	bro tea	74	23
23	Woodthorpe	91	2	ch	sou	148	31
24		94	1	hf-ch	dust	62	25
25	Primrose	97	3	hf ch	bro pek	156	44
26		100	5	ch	pek	425	36
27		103	2	do	pek sou	156	32
2		106	2	do	sou	148	30
2		109	1	hf-ch	dust	52	25
33	Hanagama	121	3	ch	sou	243	30
34		124	3	do	fans	298	30
40	Clova	142	11	hf-ch	pek sou	495	31
41		145	3	do	fans	135	34
52	D A L	178	4	ch	bro mix	360	23
53		181	1	do	dust	148	22
54	Oakham	184	24	boxes	bro or pek	480	81 bid
58		196	4	ch	pek sou	380	34
59		199	5	hf-ch	pek fans	375	33
63	Rambodde	211	3	hf-ch	pek sou	150	32
64		214	2	do	fans	150	31

1

Lot.		Box.	Pkgs.	Name	lb.	c.
66	Killin	220	5 ch	pek	450	33
67		223	1 do	sou	90	30
6		226	1 do	bro mix	100	18
72	Nugawella	238	4 ch	pek sou	340	33
73		241	8 do	sou	680	31
74		244	4 hf ch	dust	340	26
75		247	2 ch	bro mix	255	23
80	Havilland	262	4 ch	dust	340	25
92	D M	298	3 hf ch	bro mix	170	19
97	Ranasinghapatna	313	7 hf-ch	bro pek fans	490	32 bid
104	B G	334	3 ch	pek	270	33
109	Depedene	349	5 hf-ch	dust	400	25
110	Selvawatte	352	7 ch	bro pek	665	38
111		355	7 do	pek	630	35
112		358	2 do	pek sou	220	31
113		361	1 do	fans	130	26
114	Wevatenne	364	5 ch 1hf-ch	bro pek	550	46
117		373	1 do	pek dust	115	25
120	California	382	6 ch	bro pek	547	36
122		388	5 ch	pek sou	500	27
123		391	2 do	pek dust	212	25
125	Monrovia	397	5 ch	bro or pek	545	37
128		511	1 ch	bro tea	100	21
129		514	1 do	dust	150	25
132	Dlukettia	523	7 ch	pek sou	690	29
133	E S	526	2 do	sou	165	25
134		529	1 do	bro mix	120	22
137	Florida	538	4 ch	pek sou	400	27
138		541	2 do	bro tea	200	18
139		544	1 do	dust	130	25
147	Orion	568	2 ch	fans	220	33
148		571	4 hf-ch	dust No 1	320	26
149		574	4 do	dust No. 2	320	26
156	Ferriby	595	1 ch	sou	90	27
157		598	4 do	fans	400	33
158		601	2 do	dust	270	25
159	R C T F, in estate mark	604	3 ch	or pek	285	37
161		610	5 ch	pek	450	35
162		613	4 do	pek No. 2	360	34
164		619	5 do	bro pek fans	525	35
165		602	1 oo	dust	115	23
167	Mousa Eliya	628	2 ch	pek sou	190	30
168		631	3 do	dust	480	23

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Callander	90	13 hf-ch	pekoe	689	42
5		93	5 do	pek sou	230	37
6		96	2 do	fans	150	33
7		99	2 do	dust	160	26
19	Agra Ouvah	135	5 do	dust	500	26
25	Mount Everest	153	2 do	dust	200	25
26		156	1 do	bro mix	55	22
47	Kandaloya	219	8 do	pek sou	320	33
50	Little Valley	228	3 do	dust	255	25
56	Brownlow	246	7 do	bro pek fans	497	32
60	Galella	258	7 ch	pek sou	630	35
61	Troup	261	5 do	sou	450	34
63	Chapelton	267	6 hf-ch	dust	540	25
64		270	5 ch	bro mix	400	25
65	G B	273	9 hf-ch	bro pek	540	35
66		276	6 ch	pekoe	480	33
67	R W	279	1 do	bro pek	64	37
68		282	1 do	pekoe	54	33
69		285	1 do	pek sou	75	31
70		288	1 do	dust	80	26
74	Iona	300	3 do	pek sou	240	43
75		303	7 hf-ch	bro or pek fans	455	43
76		306	5 do	dust	400	29
82	Cleveland	324	12 do	pek sou	576	42
83		327	4 do	fans	308	26
92	Claremont	354	3 do	dust	270	25
94	O'Linda	360	1 ch	bro or pek	104	35
95		363	2 hf-ch	pekoe	76	33
96		366	1 do	pek sou	70	28
97		369	1 do	dust	83	25
103	Gonavy	387	6 ch	pek sou	570	36
106	Poilakande	396	7 hf-ch	dust	540	25
107	P	399	4hf-ch	pek fans	220	24
116	Lamiliere	426	7 do	pek fans	532	29
119	Murraythwaite	435	4 ch	pek sou	329	32
120		438	1 ch	bro pek fans	130	35
121		441	1 hf-ch	dust	90	25
125	Wyaunta	453	3 ch	bro pek	300	37
126		456	4 do	pekoe	360	31
127		459	4 do	pek sou	320	30
130	Kotuagedera	468	5 do	pek sou	475	32
131		471	5 hf-ch	bro pek fans	350	34
133	Woodstock	477	2 do	dust	150	26
134		480	1 ch	bro mix	80	26

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, August 25.

"Asia."—Size O Thobulagalla, 1 barrel sold at 105s; Size 1 ditto, 3 casks sold at 105s; Size 2 ditto, 15 casks sold at 96s; Size 3 ditto, 2 casks sold at 67s; PB ditto, 2 casks sold at 22s 6d; ditto, 2 casks sold at 30s 6d.

"Sanuke Maru."—Blackwood OO, 1 barrel sold at 101s; ditto O, 4 casks sold at 103s 6d; ditto 1, 1 cask and 1 tierce sold at 82s 6d; ditto 2, 1 tierce sold at 53s; ditto PB, 1 barrel sold at 99s; ditto O, 3 casks sold at 104s; ditto EF, 2 tierce and 1 barrel sold at 96s 6d; ditto E, 1 cask sold at 63s; ditto PB, 1 barrel sold at 99s.

"Clan Fraser."—O Leangawella, 1 barrel sold at 80s; 1 ditto, 2 casks and 1 barrel sold at 79s; 2 ditto, 5 casks out at 65s; PB ditto, 1 tierce sold at 71s; T ditto, 1 cask sold at 27s; 1 Haputale, 1 tierce sold at 56s; 2 ditto, 3 casks and 1 barrel sold at 49s; PB ditto, 1 tierce sold at 50s; T ditto, 1 barrel sold at 24s.

CEYLON COCOA SALES IN LONDON.

"Bingo Maru."—KAS & Co., 98 bags out at 61s; Kaduwella, 22 bags out.

"Orient."—Rockhill AA, 20 bags out, 69s 6d refused; ditto B, 6 bags sold at 40s 6d; Maowsava AA, 7 bags sold at 74s; ditto C, 3 bags sold at 58s; ditto B, 4 bags sold at 46 s 6d.

"Bingo Maru."—Suduganga, 26 bags sold at 91s; 5 bags sold at 70s 6d; 5 bags sold at 70s 6d; 2 bags sold at 59s 6d; 15 bags out at 55s; Warriapolla, 28 bags sold at 90s 6d; 38 bags out at 70s; 5 bags sold at 63s; 1 bag sold at 62s; 10 bags sold at 57s 6d; 8 bags sold at 50s.

"Orissa."—Warriapola, 2 bags sold at 49s 6d; 1 bag sold at 21s; 2 bags sold at 56s 6d; 15 bags sold at 57s; 12 bags sold at 48s; 2 bags sold at 42s 6d; Suduganga, 49 bags sold at 89s; 2 bags sold at 63s 6d; 5 bags sold at 50s 6d; 15 bags sold at 50s.

"Sanuke Maru."—OBEC in estate mark, Kondesalle Ceylon OF, 82 bags sold at 74s; ditto 1F, 24 bags sold at 54s; ditto 1, 18 bags out at 60s; ditto D2, 11 bags sold at 56s 6d; ditto G, 9 bags sold at 31s; Palli, 76 bags sold at 69s 6d; 66 bags sold at 69s 6d; 2 bags sold at 57s 6d; 2 ditto, 16 bags sold at 47s; A ditto, 40 bags sold at 81s; 1 Pathregalla, 34 bags sold at 66s; 28 bags sold at 67s 6d; 4 bags sold at 57s 6d; 2 ditto, 2 bags sold at 52s 6d; 1 Keeuekelle, 15 bags sold at 63s; 2 ditto, 8 bags sold at 48s; 7 bags sold at 45s; DJ, 10 bags sold at 54s; 26 bags sold at 38s.

"Ceylon."—Battagalla A, 32 bags out; ditto B, 14 bags sold at 54s 6d.

"Sanuke Maru."—Alloowharie B, 8 bags sold at 55s.

"Bingo Maru."—North Matale, 1 bag sold at 62.

NO. 37 COLOMBO, SEPTEMBER 25, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. E. Benham & Co.

[27,404 lb.]

Lot.		Box.	Pkgs.	Name.	lb	c.
3	Manickwatte	10	10 ch	pek	800	34 bid
7	Battalgalla	22	20 ch	pek sou	1600	36
8	Maddakande	25	18 ch	bro or pek	1800	46
9		28	42 do	bro pek	4200	41
10		31	58 do	pek	5510	37
11		34	36 do	pek sou	3240	34
12	Mapitigama	37	15 hf-ch	bro or pek	825	45
13		40	17 ch	bro pek	1615	41
14		43	28 do	pek	2464	36 bid
15		46	33 do	pek sou	2640	34
16		49	9 do	sou	720	32

Messrs. Forbes & Walker.

[573,597 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Igalkande	334	13 ch	pek	1170	38
5	C S G	346	77 hf-ch	bro pek	3850	50
6		349	64 ch	pek	5120	40
7		352	20 do	pek sou	1600	36
8		355	9 hf-ch	dust	720	28
16	Uragalla	379	11 ch	bro pek	990	37
22	Grange Garden	397	32 ch	bro or pek	3200	44
23		400	17 do	pek	1700	39
26	D M V	409	15 ch	bro pek	1350	37
27		412	17 do	pek	1394	34
32	Mousakelle	427	33 ch	bro or pek	3300	47
33		430	15 do	or pek	1500	39
34		433	13 do	pek	1300	37
37	Carberry	442	18 ch	bro pek	1620	43
39		448	17 do	pek	1530	35
44	G K	463	8 ch	dust	1120	25
45	Strathspey	466	16 ch	bro or pek	1680	51
46		469	17 do	pek	1700	42
47		472	12 do	pek sou	1080	38
49	Shrubs Hill	478	32 ch	bro or pek	3040	50
50		481	37 do	bro pek	3515	46
51		484	43 do	or pek	3870	44
52		487	47 do	pek	4230	37
54	Kincora	493	45 ch	bro pek	2700	48
55		496	32 do	pek	2720	39
62		499	12 do	pek No. 2	960	36
56	Thedden	502	27 ch	bro pek	2700	42
75	Ewhurst	517	27 ch	bro pek	2484	39
63		520	38 do	pek	3420	37
65		526	12 hf-ch	fans	840	32
66	Kelaneiya and Braemar	529	24 ch	bro or pek	2400	53
67		532	21 do	or pek	2100	41
68		535	21 do	pek	2100	39
73	D, in estate mark	550	16 hf-ch	bro pek	960	35
74		553	17 do	sou	850	30
78	Pambagama	565	25 ch	sou (Venesta)	2500	30
81	Nahalma	574	14 ch	son (Venesta)	1456	31
84	Passara Group	583	9 ch	bro or pek	900	60
89	Irex	598	25 ch	bro pek	2500	44
90		601	19 do	pek	1710	37
91		604	15 do	pek sou	1200	34
94		613	34 ch	bro pek	3264	38
95		616	29 do	pek	2320	36
96	Tymawr	619	20 hf-ch	or pek	1100	48
97		622	31 do	pek	1550	44
98		625	36 do	pek sou	1300	40
99	Anningkande	628	13 ch	bro pek	1300	44
100		631	12 do	pek	1140	39
101		634	8 do	pek sou	720	35
104	Gallawatte	643	11 ch	bro pek	1045	42
105		646	12 do	pek	1020	35
106	Monkswood	649	35 hf-ch	bro pek	1750	65
107		652	58 do	or pek	2610	59
108		655	32 ch	pek	3200	47
109		658	11 do	pek sou	935	44
110		661	19 hf-ch	fans	1064	44
111		664	11 do	dust	825	26
114	K M	673	8 ch	pek	800	43
115		676	11 do	pek sou	935	42
116	Devonford	679	23 hf-ch	bro or pek	1265	70 bid
117		682	10 ch	or pek	900	57
118		685	13 do	pek sou	1040	43
119	Ambalangoda	688	20 ch	bro pek	2000	49
120		691	18 do	pek	1710	41
124	O'Bode	703	11 ch	bro pek	1265	59
125		706	11 do	or pek	1100	44
126		709	12 do	pek	1140	40
128	Cotswold	715	12 ch	bro pek	1200	53
129		718	15 do	pek	1350	40
130		721	10 do	pek sou	750	35
133	G M, in estate mark	730	32 hf-ch	bro or pek	1600	52 bid
134		733	31 do	pek	1488	45
135		736	19 do	pek sou	893	43
142	Galapitakande	757	14 ch	bro pek	1400	55
143		760	10 do	pek	1000	46
146	Agra Elbedda	769	33 hf-ch	bro or pek	1980	54
147		772	32 do	or pek	1606	48
148		775	30 do	pek	1650	43
149		778	36 do	pek sou	1800	41
152	G M R, in estate mark	787	14 ch	dust	1422	26
153	M S	790	9 ch	dust	882	26
154	Fairlawn	793	31 hf-ch	bro pek	1550	63
155		796	23 ch	or pek	1840	46
156		799	28 do	pek	2520	43
157		802	22 hf-ch	pek sou	990	40
165	Hetherleigh	826	32 ch	bro or pek	3200	37
166		829	25 do	pek	2375	34
167		832	20 do	pek son	1900	31
171	Lochiel	844	25 ch	bro or pek	2700	48
172		847	28 do	or pek	2800	41
173		850	11 do	pek	1045	38
174		853	8 do	pek sou	736	35
175	St. Heliers	856	8 ch	bro or pek	760	56
176		859	23 do	bro pek	2185	43
177		862	20 do	pek	1720	37
187	Nakiadenia	892	13 ch	bro pek	1235	45
188		895	14 do	pek	1190	37
191		904	6 ch	dust	840	26
193	Nilloomally, O B E C, in est. mark	910	22 ch	or pek	1980	42
194		913	13 do	bro or pek	1378	53
195		916	22 do	bro pek	2200	48
196		919	21 do	pek	1722	39
198	Harrington	925	16 hf-ch	bro or pek	832	73
199		928	12 ch	or pek	1140	48
200		931	12 do	pek	1140	43
207	M R	952	21 ch	bro pek	2160	38
208		955	11 hf-ch	fans	880	29
209		958	15 do	dust	1330	22
210		961	9 ch	bro tea	846	20
213	Middleton	970	19 ch	bro pek	1900	58
214		973	16 do	pek	1440	46
215		976	9 hf-ch	dust	720	31
218	K P W	985	39 do	or pek	2340	46
219		988	41 do	bro pek	2255	44
220		991	105 do	pek	5250	37
221		994	29 do	pek sou	1305	34
223	Tavalamtenne	1000	17 ch	bro or pek	1700	45
224		1003	11 do	pekoe	990	38
227	E D P	1012	17 hf-ch	dust	1275	26
233	Weoya	1030	35 hf-ch	bro pek	3500	40
234		1033	28 ch	or pek	2800	41
235		1036	36 do	pek	3240	36
236		1039	34 do	pek sou	2390	32
238	High Forest	1045	33 hf-ch	or pek	1650	58
239		1048	24 ch	bro or pek	1488	51
240		1051	24 do	pek	1104	47
241	Erracht	1054	7 ch	bro or pek	700	44
242		1057	18 do	bro pek	1440	44
243		1060	30 do	pek	2250	37
244		1063	16 do	pek sou	1280	34
245		1066	9 do	bro pek fans	900	37
247	Pallegodde	1072	8 ch	bro or pek	800	42
248		1075	13 do	bro pek	1300	48
249		1078	10 do	or pek	900	44
250		1081	12 do	pek	960	38
251		1084	10 do	pek sou	900	35
252		1087	8 do	sou	720	32
253		1090	13 do	dust	1105	27
254	Clunes	1093	14 ch	bro or pek	1330	42
255		1096	27 do	bro pek	2295	42
256		1099	45 do	pek	3600	36
257		1102	15 do	pek sou	1359	33
261	Maha Uva	1114	25 hf-ch	bro or pek	1625	47
262		1117	14 do	or pek	840	47
263		1120	21 ch	pek	1995	44

Lot.		Box.	Pkgs.		Name	lb.	c.
274	Galkadua	1153	14	ch	bro pek	1540	37
275		1156	17	do	pek	1700	35
276		1159	10	do	pek sou	1000	33
280	Killarney	1171	15	do	or pek	1275	52
281		1174	15	do	pek	1275	45
282	Morankande	1177	14	do	or pek	1330	44 bid
283		1180	14	hf-ch	bro or pek	784	47
284		1183	24	ch	pek	2160	39
285		1186	11	do	pek sou	990	35
288	Inverness	1195	54	hf-ch	bro pek	2970	52
289		1198	25	do	pek	2375	42
295	Dunkeld	1216	64	hf-ch	bro pek	3840	49
296		1219	15	ch	or pek	1500	44
297		1222	21	do	pek	1995	39
298	Doorooma-della	1225	20	hf-ch	bro pek	1000	46
299		1228	18	ch	pek	1710	35
302	Glendon	1237	35	ch	bro pek	3500	44
303		1240	43	do	pek	3440	37
304		1243	16	do	pek sou	1360	34
314	Avoca	1273	8	do	pek sou	752	41
323	Abbotsleigh	1300	18	do	bro or pek	1800	82
324		1303	49	do	pek	4312	48
325		1306	25	do	pek sou	2125	44
326		1309	18	do	br or pk fans	1980	54
327	Harrow	1312	23	hf-ch	bro or pek	1820	56 bid
328		1315	40	ch	pek	3600	42
329		1318	11	do	pek sou	990	40
331	Knavesmire	1324	14	hf-ch	or pek	700	44
332		1327	23	ch	bro pek	2300	45
333		1330	31	do	pek	2635	39
334		1333	15	do	pek sou	1050	35
335		1336	20	do	pek	1500	37
344	Ascott	1363	11	do	bro or pek	1100	41
345		1366	23	do	bro pek	2300	42
346		1369	21	do	or pek	1890	38
347		1372	9	do	pek	810	35
348		1375	9	do	pek sou	810	34
350	Tunisgalla	1381	11	do	pek sou	880	33
356	Theydon Bois	1399	11	do	bro pek	1100	48
357		1402	22	do	pek	1760	39 bid
358		1405	9	do	pek sou	765	36 bid
360	Ragalla	1411	8	hf-ch	dust	720	28
361	Chesterford	1414	22	ch	fans	1980	37
364		1423	20	hf-ch	dust	1600	26
369	Geragama	1438	14	ch	bro pek	1260	38
370		1441	12	do	pek	1020	35
371	Waratene	1444	24	do	bro pek	2040	38
372		1447	15	do	pek	1200	35
373	Geragama	1450	16	hf-ch	bro or pek	880	42
374		1453	10	do	bro pek	850	38
375		1456	19	ch	pek	1520	35
376	Naseby	1459	33	hf-ch	bro or pek	1904	63
377		1462	22	do	or pek	1056	53
378		1465	26	do	pek	1300	46
379		1468	19	do	pek sou	1045	43
380		1471	12	do	fans	912	36
381	A M B	1474	34	ch	br pk fans	2788	30
383	Yataderiya	1480	14	hf-ch	fans	896	32
384		1483	12	do	dust	1032	26
386	Castlereagh	1489	27	do	bro pek	2565	50 bid
387		1492	20	do	or pek	1700	43
388		1495	23	do	pek	1840	39
392	Maragal	1507	7	ch	bro pek	784	49
394		1513	25	do	pek	2500	38
395		1516	12	do	pek sou	1800	35
402	Kilkenny We	1537	41	do	bro or pek	2460	45
403		1540	44	ch	bro pek	4180	38
404		1543	56	do	pek	3060	36
407	Marriawatte	1552	18	do	pek sou	1620	33
408		1555	26	hf-ch	dust	2340	26
409	C B	1558	15	ch	bro pek	1590	37
410		1561	16	do	pek	1568	35
414	Palmerston	1572	14	hf-ch	bro or pek	742	71
415		1576	14	do	bro pek	742	52
416		1579	8	ch	pek	720	45
429	St. H	1618	10	do	pek	920	35
432	Wilton	1627	21	hf-ch	pek	1050	29
440	Ugieside	1651	10	ch	fans	1000	28
446	Bargany	1669	31	hf-ch	bro or pek	2015	56
447		1672	15	ch	bro pek	1575	44
448		1675	9	do	pek	900	43
452	Tonacombe	1687	11	do	bro or pek	1100	56
453		1690	18	do	bro pek	1800	48
454		1693	26	do	or pek	2600	47
455		1696	38	do	pek	3420	43
456		1699	12	do	pek sou	1080	41
458	Beausijour	1705	17	do	bro pek	1411	38
459		1708	17	do	pek	1360	34
460	Queensland	1711	14	hf-ch	bro or pek	700	72
461		1714	8	ch	or pek	760	48
462		1717	7	do	bro pek	700	51
463		1720	20	do	pek	1700	44
466	Clyde	1729	23	do	bro or pek	2300	38
467		1732	48	do	bro pek	4800	38
468		1735	25	do	pek	2250	34
470		1741	18	do	bro or pek	1800	38

Lot.		Box.	Pkgs.		Name.	lb.	c.
471		1744	37	ch	or pek	3700	38
472		1747	14	do	pek	1260	34
474	B and D	1753	10	do	unast	920	33
477	Drayton	1762	49	do	pek	4165	42
478		1765	20	do	pek sou	1700	39
479	H G M	1768	15	do	bro or pek	1275	54
480		1771	8	do	or pek	720	43 bid
481		1774	21	do	bro pek	2100	39
482		1777	22	do	pek	1870	39
483		1780	9	do	pek sou	765	35
484		1783	8	do	bro pek fans	720	36
486	D K	1789	17	hf-ch	bro fans	1190	34
487		1792	10	do	dust	900	27
488	Penrhos	1795	23	do	bro or pek	1219	62
489		1798	17	do	or pek	765	48
490		1801	30	ch	pek	2550	42

[Messrs. Somerville & Co.—
240,759 lb.

Lot		Box.	Pkgs.		Name.	lb.	c.
1	Choughleigh	634	13	ch	bro or pek	1202	44
2		637	12	do	pek	1167	36
			1	hf-ch			
5	Daluk Oya	646	14	hf-ch	bro or pek	840	49
6		649	20	do	or pek	1100	39
7		652	25	do	pek	1375	36
9	Mary Hill	658	20	ch	bro pek	1900	42
10		661	15	do	pek	1425	37
11		664	10	do	pek sou	950	34
13	Auburn	670	13	ch	bro or pek	1170	42
14		673	7	do	bro pek	714	43
15		676	10	do	pek	820	38
16		679	11	do	pek sou No. 1	825	34
21	Blinkbonnie	694	17	hf ch	bro pek	1020	73
22		697	27	ch	pek	2376	46
24	Kelani	703	40	ch	bro pek	3200	40
25		706	24	do	bro or pek	2400	43
26		709	25	do	pek	2125	36
27		712	12	do	pek sou	1020	34
31	Glen Morgan	724	20	ch	pek	1600	45
32		727	21	hf-ch	pek sou	1365	38
34	Columbia	733	18	hf-ch	bro or pek	900	53
35		736	34	do	or pek	1530	50
36		739	32	do	pek	1440	45
38	Lyndhurst	745	44	hf-ch	bro pek	2420	40
39		748	36	do	pek	1800	36
40		751	18	do	pek sou	810	33
42	P T N, in estate mark	757	18	hf-ch	sou	900	30
47	Yarrow	772	65	hf ch	bro pek	3640	42
48	St. Catherine	775	29	ch	bro or pek	2755	40
52	Gwernet	787	24	ch	bro pek	2400	41
53		790	13	do	pek	1235	38
55		796	11	do	bro or pek	1210	44
57	Ravana	802	35	hf-ch	bro pek	1925	46
58		805	35	do	pek	1575	38
59		808	23	do	pek sou	1480	34
63	Lonach	820	132	hf-ch	bro pek	7260	41
64		823	49	ch	pek	4165	36
65		826	23	do	pek sou	1955	34
72	Bollagalla	847	37	ch	bro pek	3700	41
73		850	34	do	pek	2720	6
74		853	15	do	pek sou	1200	33
79	Maddagedera	868	20	ch	bro pek	2100	44
80		871	30	do	or pek	3000	38
81		874	28	do	pek	2800	36
82		877	20	do	pek sou	2000	33
83	Henegama	880	42	ch	bro pek fans	4200	36
84		883	27	do	bro mix	2 00	32
85		886	13	hf-ch	dust	1170	25
86	Chetnole	889	21	ch	bro or pek	2100	51
87		892	31	do	bro pek	3100	43
88		895	41	do	pek	3895	39
89		898	28	do	pek sou	2520	35
90	Hopewell	901	48	hf-ch	bro or pek	2640	40
91		904	38	do	bro pek	2090	41
92	Doragalla	907	24	ch	bro or pek	2400	45
93		910	22	do	bro pek	2090	42
94		913	86	do	pek	6880	36
95		916	7	do	bro mix	840	24
96	Nillicollay-watte	919	17	hf ch	bro pek	952	40
97		922	12	ch	or pek	960	38
98		925	14	do	pek	1260	35
102	Corfu	937	27	hf-ch	bro pek	1755	45
103		940	36	do	pek	1980	39
106	Mahatenne	949	31	ch	bro pek	3100	40
107		952	22	do	pek	2200	35
108		955	9	do	pek sou	855	33
111	Ahertoyle	964	20	hf ch	bro or pek	1000	43
112		967	7	ch	pek	700	35
115	Siriniwasa	976	21	ch	bro pek	2100	42
116		979	26	do	pek	2680	37
117		982	20	do	pek sou	1800	34

Lot.		Box	Pkgs.	Name	lb.	c.
125	Mount Vernon	7	26 hf-ch	bro or pek	1612	70
126		10	18 ch	or pek	1782	58
127		13	36 do	pek	2952	44
128	Neboda	16	16 ch	bro or pek	1600	39
129		19	36 ch	bro pek	3600	39
130		22	9 do	pek	810	36
133	Warakamure	31	32 ch	bro pek	3200	36
134		34	29 do	pek	2755	34
135		37	10 do	pek sou	900	31
136		40	9 hf-ch	dust	810	26
137	N R L	43	27 ch	bro tea	2420	25
138	Hangranoya	46	34 hf-ch	bro pek	1870	40
139		49	18 do	or pek	810	41
140		52	17 ch	pek	1530	38
141		55	11 do	pek sou	880	35
142	Kuralana	58	7 ch 1 hf ch	bro pek	755	33
143		61	21 do	sou	2070	22 bid
144		64	11 ch	pek fans	770	27
156	Dryburgh	100	13 hf-ch	bro or pek	7*0	47
157		103	8 ch	or pek	752	45
158		106	27 do	pek	2214	39
159		109	17 do	pek sou	1139	35
166	Theberton	130	13 ch	bro pek	1300	39 bid
167		133	22 do	pek	1980	36
174	Salawe	154	19 ch	bro pek	1995	41
175		157	13 do	pek	1300	37
176		160	16 do	pek sou	1520	34
178	Kelani	166	20 ch	bro pek	1600	41
179		169	12 do	bro or pek	1200	43
180		172	13 do	pek	1105	36
181		175	11 do	pek sou	935	33
185	Ravenscraig	187	15 ch	or pek	1275	44
186		190	34 hf-ch	bro pek	2040	46
187		193	16 ch	pek	1440	39
189	Romania	199	10 ch	bro pek	1016	37
190		202	15 do	pek	1522	35
194	Harangalla	214	8 ch	bro pek	760	40
195		217	13 do	pek	1170	37
196		220	16 do	sou	1440	33
197		223	10 hf ch	dust	750	27
198	Bidbury	226	15 ch	bro or pek	1500	47
199		229	17 do	bro pek	1530	46
200		232	12 do	pek	1020	38

[Mr. E. John.—188,708 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
6	L E L	498	9 hf-ch	dust	765	28
7	Polduwa	501	15 ch	bro pek	1500	35
8		504	23 do	pekoe	2300	33
14	Rookwood	522	42 do	pek sou	3024	35
20	Gonavy	540	55 hf-ch	bro pek	2750	45
21		543	18 ch	pekoe	1350	40
26	Ottery	558	38 do	bro or pek	3800	50
27		561	13 do	or pek	1170	44 bid
28		564	17 do	pekoe	1530	40 bid
30	Theresia	570	9 do	bro pek fans	900	43
33	Eladuwa	579	8 do	bro pek	800	37
34		582	12 do	pekoe	1080	34
45	St. John's	615	24 hf-ch	bro or pek	1440	82
46		618	25 do	or pek	1300	70
47		621	25 do	pekoe	1400	48 bid
48		624	16 do	pek fans	1120	45
49	Glentilt	627	41 ch	bro pek	4100	50
50		630	20 do	pekoe	2000	41
52		636	16 hf-ch	fans	1280	29
53	S W	639	6 ch 3 hf-ch	bro mix	834	26
55	Dalhouse	645	29 do	bro pek	1740	56
56		648	47 do	pekoe No. 1	2115	44
57		651	28 do	pekoe No. 2	1120	40
59	Rondura	657	8 ch	or pek	720	41
60		660	25 do	bro pek	2500	42
61		663	27 do	pekoe	2430	36
62		666	18 do	pek sou	1620	33
64	Agra Ouvah	672	29 hf ch	bro or pek No. 1	1856	65
65		675	35 do	bro or pek No. 2	2170	52 bid
66		678	24 do	or pek	1272	48
67		681	8 ch	pekoe	760	43
68	Vincit	684	12 do	bro pek	1080	40
69		687	10 do	pekoe	900	35
72	Bowhill	696	22 do	bro pek	2200	45
73		699	10 do	pekoe	900	38
74		702	8 do	pek sou	720	35
80	Arabia	720	10 do	bro mix	900	out
83	Glasgow	729	18 do	bro or pek	1530	60
84		732	33 do	bro pek	2640	52
85		735	26 do	or pek	1690	46
86		738	22 do	pekoe	2200	42
87		741	13 do	fans	1300	30
5	Gangawatte	765	29 hf-ch	or pek	1595	44 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
96		768	24 ch	pekoe	2040	41
98		774	22 hf-ch	bro or pek	1320	54
99	Nahavilla	777	20 ch	bro or pek	2000	71
100		780	15 do	or pek	1500	62
101		783	14 do	pekoe	1400	51
105	N	795	9 hf-ch	dust	765	28
106	Warriapolla	798	9 ch	or pek	810	41
107		801	19 hf-ch	bro or pek	1140	47
108		804	11 ch	pek sou	935	38
110	Galella	810	14 do	or pek	1190	46
111		813	18 do	bro or pek	1800	46
112		816	11 do	pekoe	990	40
114	Choughleigh	822	18 hf-ch	bro pek	1008	46
118	Hiralouvah	834	33 do	bro pek	1650	43
120		840	27 ch	pekoe	2430	38
121		843	22 do	pek sou	1870	35
123	Ferndale	849	16 do	bro or pek	1600	48 bid
128	Orange Field	864	14 do 11 hf-ch	bro pek	1950	35
129		867	34 do	pekoe	1700	34
134	I—A	882	16 ch	pek dust	2373	27
135	Y	885	20 do	bro pek	2100	42 bid
136	Bellongalla	888	41 hf-ch	bro pek	2050	41
137		891	13 ch	pekoe	1040	36
139		897	10 hf-ch	bro pek fans	700	35
140		900	9 do	dust	765	27
141	H	903	19 ch	bro or pek	1900	48 bid
142	Kotuagedera	906	40 do	bro pek	4000	40
143		909	7 do	pekoe	700	35
144	Mount Everest	912	24 hf-ch	bro pek	1320	69 bid
145		915	35 do	or pek	1750	54 bid
146		918	32 ch	pekoe	3200	46
147		921	20 do	pek sou	900	41
152	H	936	9 do	bro mix	900	26
153	Brownlow	939	26 hf-ch	bro or pek	1456	51
154		942	28 ch	or pek	2660	44
155		945	28 do	pekoe	2520	41
156		948	17 do	pek sou	1445	38
158	Galella	954	8 hf-ch	dust	720	27
160	Keenagaha Ella	960	20 ch	or pek	2000	47
161		963	26 do	pekoe	2340	40
162		966	17 do	pek sou	1445	37
163		969	18 do	sou	1350	35
164	Ferndale	972	14 do	pek sou	1260	35

SMALL LOTS.

[Messrs. E Benham & Co.]

Lot.		Box.	Pkgs.	Name	lb.	c.
1	Manickwatte	4	13 hf-ch	or pek	650	39 bid
2		7	5 do	bro or pek	310	41 bid
4		13	5 ch	pek sou	385	33
5		16	1 hf-ch	dust	90	25
6		19	1 ch	red leaf	100	28
17	Mapitigama	52	7 hf-ch	Bro or pek fans	455	36

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
2	S K M	337	1 hf-ch	bro pek	65	38
3		340	1 ch	pek	85	35
4		343	1 hf-ch	pek sou	65	32
9	Karowkettia	358	3 ch	bro pek	300	39
10		361	4 do	pek	382	34
11	Bodawa Inv. No. 15	364	4 hf-ch	bro pek	232	42
12		367	8 do	pek	352	37
13		370	11 do	pek sou	495	34
14		373	2 do	red leaf	82	21
15		376	5 do	pek dust	375	31
17	Uragalla	382	4 ch	pek	320	34
18		385	3 do	pek sou	240	32
19		388	1 hf-ch	pek sou	40	32
20		391	1 ch	red leaf	80	30
21		394	1 do	dust	130	26
24	Grange Garden	403	1 ch	pek sou	100	35
25		406	3 hf-ch	dust	255	28
28	D M V	415	5 ch	pek son	425	32
35	Mousakelle	436	3 ch	sou	300	34
36		439	3 hf-ch	dust	255	27
38	Carbery	445	5 ch	bro or pek	550	37
40		451	6 do	pek sou	540	33
41		454	1 do	bro tea	90	32
42		457	1 do	dust	140	27
43	G K	460	6 ch	bro pek	540	31
48	Strathspey	475	2 ch	dust	280	27
53	Shrubs Hill	490	5 ch	pek sou	450	35
58	Thedden	505	7 ch	pek	630	37
59		508	6 do	pek sou	540	34
60		511	2 do	dust	300	27
61	Ewhurst	514	12 hf-ch	bro or pek	636	45

Lot		Box	Pkgs.	Name.	lb.	c.
64		532	7 ch	pek sou	616	33
69	Kelaneiya and Bademare	538	3 hf-ch	dust	240	27
70		541	2 ch	sou	200	34
71	Carandon	544	6 ch	bro pek	660	38
72	•	547	4 do	pek	400	35
75	D, in estate mark	556	6 hf-ch	fans	360	34
76		559	4 do	dust	360	27
77		562	6 do	bro mix	540	24
79	Pambagama	568	5 ch	bro pek fans	550	31
80		571	2 do	dust	200	26
80	Nahalma	577	6 hf-ch	bro pek fans	420	36
83		580	5 do	dust	470	27
85	Passara Group	586	6 ch	or pek	540	50
86		589	7 do	pek	630	45
87		592	4 do	pek sou	400	41
88		595	1 do	fans	70	32
92	Irex	607	2 ch	dust	200	27
93		610	1 do	bro tea	90	29
102	H	637	1 ch	dust	70	27
103		640	4 do	pek sou	340	32
112	K M	667	9 hf-ch	bro pek	450	47
113		670	15 do	or pek	675	47
121	Ambalangoda	694	5 ch	pek sou	475	36
122		697	2 do	sou	190	33
123		700	3 do	dust	315	27
127	O'Bode	712	4 ch	pek sou	340	35
131	Cotswold	724	2 ch	sou	150	31
132		727	2 do	dust	170	27
141	Galapitakande	754	5 ch	or pek	475	51
144		763	3 do	pek sou	300	41
145		766	1 do	dust	75	28
150	X X	781	5 ch	pek fans	350	31
151		784	7 do	pek dust	560	27
158	Fairlawn	805	4 hf-ch	dust	340	27
159	F L, in estate mark	808	2 ch	bro mix	200	28
164	D	823	3 ch 1 hf-ch	sou	320	27
168	Hatherleigh	835	6 ch	bro mix	540	27
169		838	2 do	dust	300	27
170	C N	841	4 ch	bro tea	400	28
189	Nakiadenia	898	4 ch	pek sou	320	33
190		901	2 do	bro pek fans	220	36
192		907	3 do	red leaf	240	23
197	O B E C in est. mark	922	3 hf-ch	fans	210	33
201	Harrington	934	5 ch	pek	450	39
202		937	4 do	or pek fans	448	38
203		940	3 do	dust	480	27
204	Cooroondoowatte	943	10 hf-ch	bro pek	550	48
205		946	13 do	pek	650	40
206		949	10 do	pek sou	500	35
216	Wewawatte	979	9 do	bro pek	495	41
217		982	8 do	pek	400	37
222	K P W	997	2 do	dust	170	27
225	Tavalamtenne	1006	4 ch	pek sou	340	34
226		1009	1 do	dust	150	27
237	Weoya	1042	4 ch	dust	600	27
246	Erracht	1069	3 ch	pek dust	480	26
258	Clunes	1105	4 ch	bro or pek fans	280	35
259		1108	4 do	dust	360	26
260		1111	3 do	pek fans	195	35
264	Maha Uva	1123	7 ch	pek sou	630	39
265		1126	1 do	pek fans	80	31
266		1129	4 do	dust	360	27
273	Galkadua	1150	3 do	bro or pek	360	43
277		1162	1 do	fans	120	30
278		1165	1 do	sou	120	25
279		1168	1 do	dust	130	26
286	W W	1189	1 do	or pek	95	42
287	B W D	1192	3 do	red leaf	270	27
290	Inverness	1201	7 hf-ch	dust	560	27
300	Dooroomadella	1231	6 ch	pek sou	540	35
301	Glendon	1234	5 do	bro or pek	325	42
305	G	1246	4 do	sou	360	33
306		1249	2 do	dust	270	26
315	Avoca	1276	8 do	bro pek fans	656	30
316	A	1279	3 do	bro pek	159	30
317		1282	5 ch 1 hf-ch	pek	531	27
318		1285	5 do	pek sou	250	24
319		1288	8 do	bro pek fans	496	28
320		1291	2 do	pek fans	120	26
321		1294	5 do	dust	450	26
322		1297	6 ch	bro mix	513	17

Lot.		Box.	Pkgs.	Name.	lb.	c.
330	Harrow	1321	2 hf-ch	dust	180	26
336	B	1339	1 ch	pek sou	95	35
349	Ascot	1378	3 do	dust	360	26
351	Tunisgalla	1384	5 hf-ch	dust	400	26
359	T B in est mark	1408	1 ch	congou	85	31
362	Chesterford	1417	2 do	congou	180	31
363		1420	3 do	bro tea	270	36
365	Angramallay	1426	4 do	bro pek	400	50
366		1429	5 do	pek	440	44
367		1432	3 do	pek sou	270	40
368		1435	1 hf-ch	dust	86	27
382	Yataderia	1477	4 ch	pek sou	456	29
385	T T	1436	2 hf-ch	red leaf	224	19
389	Castlereagh	1498	5 do	pek sou	400	36
390		1501	9 do	fans	630	36
391		1504	3 do	dust	240	27
393	Marragalla	1510	6 ch	or pek	600	47
396	A G	1519	6 do	pek sou	600	32
397		1522	1 do	or fans	128	32
398		1525	2 do	dust	260	29
399		1528	1 do	bro tea	100	33
405	Weyungawatte	1546	4 do	pek sou	340	34
406		1549	5 hf-ch	dust	425	26
411	C B	1564	- do	bro pek fans	560	31
412	East Holyrood	1567	1 ch	or pek	108	48
413	Waverley	1570	1 do	bro pek	94	51
417	Palmerston	1582	3 do	pek sou	210	40
418	A B F	1585	3 hf-ch	bro pek	150	40
419		1588	8 do	pek	400	34
420		1591	4 do	pek sou	200	32
421		1594	1 do	congou	50	28
422		1597	1 do	dust	70	19
430	St. H	1621	1 ch	dust	100	26
431	Wilton	1624	12 hf-ch	bro pek	660	32
433		1630	5 do	pek sou	225	28
438	Ugieside	1645	8 ch	dust	640	26
439		1648	3 do	bro mix	270	27
441	Peakshadow	1654	1 ch	bro pek	100	35
442		1657	1 do	pek	90	34
443		1660	1 do	bro mix	90	31
444		1663	2 do	dust	260	27
445		1666	3 do	fans	300	31
449	G in est. mark	1678	3 do	dust	300	26
450		1681	1 hf-ch	red leaf	47	26
451		1684	1 ch	red leaf	36	20
457	Tonacombe	1702	7 hf-ch	dust	630	27
464	Queensland	1723	1 ch	bro mix	87	24
465		1726	2 hf-ch	fans	124	34
469	Clyde	1738	5 ch	dust	500	27
477		1750	6 do	dust	600	27
485	O G A	1786	5 do	pek dust	525	23
491	Penrhos	1804	8 do	pek sou	640	35
492		1807	4 hf-ch	pek fans	268	34

[Messrs. Somerville & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
3	N W	640	1 ch	pek sou	93	32
4		643	1 do 1 hf-ch	dust	205	26
8	X Z	655	4 ch	sou	380	29
12	Mary Hill	667	2 ch	bro mix	300	25
17	Auburn	682	1 ch	pek sou No. 2	85	32
18		685	3 do	dust	228	27
19		688	3 do	fans	210	34
20		691	3 do	bro tea	228	31
23	Blinkbonnie	700	3 ch	pek sou	246	41
28		715	6 hf-ch	fans	390	38
29		718	4 do	dust	332	28
	Glen Morgan Nilgris	721	5 ch	or pek	575	53
33	Columbia	730	11 hf-ch	bro pek	693	40
37	Mousakande	742	6 ch	pek sou	528	33
41	P T N, in estate mark	754	8 hf ch	bro tea	448	33
43		760	1 do	fans	56	26
44	Ravenoya	763	8 hf ch	bro pek	480	44
45		766	11 do	pek	550	37
46		769	1 ch	pek sou	70	33
49	St. Catherine	778	2 ch	pek	134	34
50		781	1 do	pek sou	77	33
51		784	3 hf-ch	dust	225	26
54	Gwernet	793	6 ch	pek sou	540	33
56		799	4 do	dust	440	26
60	R A, in estate mark	811	5 hf ch	bro fans	300	31
61		814	1 do	dust	85	27
62		817	1 do	dust a	85	26
75	Bollagalla	856	3 ch	pek fans	330	34
76		859	1 do	bro tea	110	26
77		862	1 hf ch	dust	85	26
78	Donside	865	4 ch	dust	340	26
99	Nillicollay-					

Lot.		Box.	Pkgs.	Name.	lb.	c.
	watte	928	3 ch	pek sou	255	38
100		931	3 hf-ch	dust	225	26
101		934	2 do	fans	150	29
104	Corfu	944	5 hf-ch	pek sou	*250	35
105		946	3 do	bro pek fans	210	32
109	Mahatenne	958	2 ch	dust	200	27
110		961	1 do	red leaf	71	22
113	Aberfoyle	970	3 ch	pek sou	300	33
114		973	3 hf-ch	bro pek fans	210	38
118	Siriniwasa	985	3 ch	bro pek fans	300	34
119		988	2 do	dust	300	26
120	F A, in estate mark	991	7 ch	pek sou	567	35
121		994	4 hf-ch	dust	352	27
122		997	4 do	fans	280	36
123	F, in estate mark	1	2 ch	sou	144	36
124		4	6 hf-ch	dust	402	27
131	Neboda	25	5 ch	pek sou	400	33
132		28	4 hf ch	dust	320	26
145	Kuralana	67	3 hf-ch	dust	255	22
146	Park Hill	70	2 ch	bro pek	223	38
			1 hf-ch			
147		73	2 ch	pek	120	34
148		76	3 do	pek sou	165	32
149	Maligatenne	79	2 ch	bro pek	170	28
150		82	5 do	pek	431	28
151		85	2 do	unas	190	26
152		88	7 do	pek sou	558	25
153		91	3 do	bro sou	242	19
154		94	1 do	dust	100	26
155	P	97	5 ch	unas	510	26
160	Dryburgh	112	3 hf-ch	fans	228	33
161	Killin	115	6 ch	bro pek	600	33
162		118	4 do	pek	360	34
163		121	1 do	pek sou	90	31
164	Charlie Hill	124	12 hf ch	bro pek	660	38
165		127	8 do	pek	440	34
168	Theberton	136	1 ch	pek sou	90	32
169		139	1 do	fans	100	26
170	Marigold	142	10 hf ch	bro pek	550	58
171		145	6 do	pek	300	46
172		148	4 do	pek sou	188	43
173		151	1 ch	pek dust	175	32
177	Salawe	163	2 ch	pek dust	320	27
182	J P E	178	4 ch	bro pek	360	39
183		181	3 do	pek	255	35
184		184	3 do	pek sou	255	32
188	Ravenscraig	196	8 hf-ch	fans	640	28
191	Romania	205	6 ch	pek sou	600	30
192		208	5 do	bro mix	550	20
193		211	1 hf-ch	bro tea	54	25
201	S	235	6 hf-ch	dust	480	27
202		238	5 do	bro tea	250	27
203	A	241	3 hf ch	dust	340	27
204		244	3 do	bro tea	150	27
Lot.		Box	Pkgs.	Name.	lb.	c.

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	P P P	483	2 ch	bro pek	210	39
2		486	4 do	pekoe	360	35
3		489	3 do	pek sou	285	32
4		492	1 do	dust	120	26
5	L E L	495	4 do	pek sou	340	37
9	Polduwa	507	4 do	sou	400	29
10		510	1 do	fans	100	28
11		513	4 do	unas	400	25
12		516	1 do	congou	100	25
13		519	3 do	red leaf	300	25
22	Gonavy	546	5 do	pek sou	475	40
23		549	5 hf-ch	fans	400	28
24		552	4 do	dust	320	26
25		555	2 ch	congou	160	33
29	Ottery	567	1 do	dust	170	28
31	Theresia	573	5 hf-ch	dust	400	27
82		576	1 do	sou	55	36
35	Eladuwa	585	3 ch	sou	270	32
36		588	1 do	dust	100	27
51	Glentilt	633	6 do	pek sou	570	39
54	Dalhouse	642	13 hf-ch	or pek	585	61
58		654	4 do	dust	280	34
63	Rondura	669	2 ch	dust	200	28
70	Vincit	690	6 do	pek sou	540	35
71		693	1 do	fans	130	33
75	Bowhill	705	1 do	dust	150	29
76		708	1 do	red leaf	100	23
81	Arabia	723	2 do	bro mix	170	20
82		726	3 hf-ch	dust	210	18
93	X Y Z	759	6 do	pek dust	540	28
94		762	2 do	sou	86	34
97	Gangawatte	771	7 ch	pek sou	630	37
102	Nahavilla	786	3 hf-ch	pek fans	210	38
103		789	4 ch	sou	260	41
104		792	3 hf-ch	dust	240	29
109	Warriapolla	807	4 ch	sou	320	34

Lot.		Box.	Pkgs.	Name.	lb.	c.
113	Galella	819	7 ch	pek sou	630	38
115	Choughleigh	825	8 do	pekoe	680	38 bid
116		828	3 do	pek sou	240	34
117	The Farm	831	2 hf-ch	fans	180	28
119	Hiralouvah	837	7 do	bro pek No.1	455	43
122		846	2 do	fans	130	34
130	Orange Field	870	2 ch			
			1 hf-ch	pek sou	255	29
131		873	1 ch	pek fans	100	27
132		876	1 do	dust	125	26
133		879	2 do	bro mix	190	19
138	Fellongalla	894	5 do	pek sou	300	33
157	Alplakande	951	5 do	sou	460	32
159	Galella	937	2 do	sou	180	32
165	Bellongalla	975	1 hf ch	bro pek fans	70	32

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, September 1.

"Asia."—Roehampton O, 3 casks out at 108s, 103s refused; ditto 1, 5 casks out at 93s, 100s refused; 3 barrels and 1 cask out; ditto 2, 4 casks out at 70s; ditto PB, 1 cask sold at 105s.

"Tamba Maru."—Roehampton, 1 bag out.

"Clan Mackintosh."—Kahagalla 1, 1 cask sold at 80s; ditto 2, 2 casks sold at 70s 6d; ditto, 1 bag out.

"Bingo Maru."—Kahagalla, 1 bag out.

"Ceylon."—CSCA, in estate mark, 5 casks out at 65s; ditto 1, 5 casks out at 67s 6d; ditto 2, 3 casks and 1 tierce out at 67s; ditto PB, 1 cask and 1 barrel out at 70s; ditto O, 61 packages sold at 56s; 13 packages sold at 46s; 83 packages out at 53s; CSCA in estate mark, 18 bags out at 32s, 35s refused.

"Staffordshire."—Mousagalla A, 1 barrel sold at 101s; ditto B, 5 casks sold at 93s 6d; 2 casks sold at 93s 6d; ditto C, 2 casks 66s; ditto PB, 1 tierce 100s; ditto A, 1 barrel 99s; ditto B, 5 casks 91s 6d; 1 cask and 1 barrel at 91s 6d; ditto C, 2 casks 66s; ditto PB, 1 tierce 95s; East Gowerakelle A, 1 tierce 106s; ditto B, 5 casks 95s; 1 cask and 1 barrel 95s; ditto C, 1 cask and 1 barrel at 96s; ditto PB, 1 tierce at 93s.

"Hakata Maru."—DC OO in estate mark, 1 barrel at 95s; ditto O, 6 casks at 90s; ditto 1, 3 casks and 1 tierce 77s; ditto 2, 1 cask at 50s; ditto P, 1 tierce and 1 barrel 85s.

"Staffordshire."—Size 1, Ampitia Kande, 1 tierce at 101s; size 2 ditto, 4 casks sold at 94s 6d; size 3 ditto, 1 barrel 53s; PB ditto, 1 barrel at 95s.

"Hakata Maru."—OBEC in estate mark, Delmar OO, 1 barrel at 100s; ditto O, 1 cask and 1 barrel 103s; ditto 1, 5 casks at 93s; ditto 2, 1 cask and 1 barrel at 65s; ditto PB, 1 tierce at 96s.

"Staffordshire."—Gonamatava F, 1 cask and 1 barrel at 103s; ditto S, 1 cask sold at 63s; ditto PB, 1 cask sold at 63s; 1 cask sold at 95s.

"Clan Fraser."—Needwood F, 1 tierce at 77s; Large size Broughton, 2 casks at 103s 6d; 1 ditto, 8 casks at 93s; 2 ditto, 1 cask at 70s; PB ditto; 1 barrel at 90s; ditto P, 1 tierce and 1 barrel at 75s. Ellawatte 1, 1 tierce 75s; ditto 2, 1 tierce at 60s; ditto B, 1 barrel at 35s; ditto 1 PB, 1 barrel at 65s; Ellawatte 1, 1 bag at 75s; ditto 1, 1 cask and 1 tierce at 81s 6d; ditto 2, 3 casks 74s; ditto 3, 1 barrel at 35s; ditto 1 PB, 1 barrel at 70s.

CEYLON COCOA SALES IN LONDON.

"Japan."—OBEC in estate mark, Kondesalle Ceylon OF, 145 bags out at 80s; ditto 1F, 33 bags sold at 55s; ditto O, 14 bags out at 80s; ditto 19 bags sold at 56s; ditto 2FD, 16 bags sold at 60s 6d; ditto G, 9 bags sold at 40s 6d.

"Hakata Maru."—HK1, 4 bags sold at 65s 6d; ditto 2, 1 bag sold at 50s; ditto T, 1 bag sold at 55s.

"Clan Fraser."—RA in estate mark, 100 bags out at 65s; ditto SA in estate mark, 72 bags out at 65s; HGA in estate mark, 28 bags out at 65s.

"Clan Stuart."—KK in estate mark, 152 bags out at 68s; ditto M in estate mark, 29 bags sold at 63s; ditto A in estate mark, 16 bags sold at 60s.

"Ava."—OMAK in estate, 62 bags out at 65s; S in estate mark, 56 bags out.

"Orient."—Bandarapola 1, 5 bags out at 74s.

"Clan Alpine."—DB & Co., 390 in estate mark, 20 bags out at 69s.

CEYLON CARDAMOMS SALES IN LONDON.

"Ceylon"—MMB in estate mark, Kobo, Mysore, O, 3c sold at 3s; ditto 1, 7c sold at 2s 6d; ditto 2, 2c sold at 2s; ditto 4492 in estate mark, 2c sold at 3s 1d; ditto 4493 in estate mark, 4c 2s 6d; Ditto, seeds, 4493 in estate mark, 1c sold at 2s 2d.

"Clan Stuart"—MMB in estate mark, Kobo, Mysore, O, 2c 3s; ditto 1, 5c 2s 6d; ditto 2, 1c 1s 11d; ditto 3, 1c 1s 7d; ditto B, 1c 1s 8d; ditto S, 3c 1s 8d.

"Clan Matheson"—MB in estate mark, Kobo, Mysore, O, 4c 3s 1d; ditto 1, 2c 2s 6d; ditto 1, 10c 2s 7d; ditto 2, 3c 2s.

"Hakata Maru"—AMK in estate mark, 1c 2s 1d.

"Clan Ross"—WHD&Co., Nawanagalla, N O O, 6c 3s; 6c out at 3s 6d; No. 1, 3c out at 2s 9d; Dehigolla OO, 5 sold at 2s 11d; ditto O, 22c out.

"Orient"—Katooloya, EX, pile 1, 3s; pile 2, 5c 2s 8d to 2s 9d; pile 3, 6c 2s 2d; pile 4, 10c 1s 6d to 1s 7d; pile 5, 2c 2s 5d; NN, 2c 1s 7d.

"Clan Alpine"—Needlands, O, pile 1, 7c 3s; ditto 1, pile 2, 2c at 2s 5d; 10c at 2s 6d; 2c at 2s 7d; 3c 2s 6d; ditto 2, pile 3, 3c 1s 8d; ditto B&S, pile 4, 2c 1s 6d; Elkadua, pile 1, 2c at 3s; ditto 1, pile 2, 5c at 2s 6d; ditto 2, pile 3, 2c at 1s 9d; ditto B & S,' pile 4, 1c at 1s 4d.

"Hakata Maru."—Pitakande Group No. 1, pile 1, 3c at 2s 6d; ditto No. 2, pile 2, 2c at 2s; ditto No. 3, pile 3, 1c at 2s.

"Clan Alpine."—Nagala O, pile 1, 5c at 2s 8d; ditto 1, pile 2, 2c at 2s 2d; ditto 2, pile 3, 1c at 2s 2d; pile 4, 1c at 1s 7d; ditto B & S, pile 5, 1c at 1s; ditto seed, pile 1, at 2s; pile 4, 1c at 2s.

"Staffordshire."—Kulugama 1, pile 1, 2c at 2s 4d; pile 1, 2c sold at 2s 3d; pile 2, 1c at 1s 9d.

"Hakata Maru."—Delpotonoya, pile 1, 4c at 3s 2d; pile 2, 6c at 2s 10d; pile 3, 5c at 2s 6d.

"Staffordshire."—Delpotonoya 1, pile 2, 14c at 2s 6d.

"Hakata Maru."—Vicarton A, pile 1, 1c at 2s 7d; ditto B, pile 2, 3c sold at 2s 3d; ditto C, pile 3, 1c sold at 1s 7d; ditto D, pile 4, 1c at 1s 5d.

"Clan Fraser."—SV in estate mark, Mysore, pile 1, 6c at 1s 7d, and 2c sold at 1s 8d; SS in estate mark, ditto, pile 2, 9c at 1s 8d.

"Clan Ross."—SV in estate mark, London, 6c at 1s 5d; ditto, 12c at 1s 5d.

"Japan."—London E, pile 6, 2c at 2s 3d; 1c at 2s 5d.

"Staffordshire."—London S, pile 6, 5c at 1s 9d; ditto seed, pile 7, 1c at 2s 4d.

"Orient."—Vedehette Cardamoms AA, pile 7, 4c at 2s 9d; ditto A, pile 8, 5c at 2s 3d; ditto B, pile 9, 5c at 1s 6d; ditto C, pile 10, 1c at 2s 4d.

"Sanuki Maru."—Nicholaoya No. 1, pile 1, 2c at 2s 3d; ditto No. 2, pile 2, 4c at 2s 3d; ditto No. 4, pile 3, 1c at 1s 5d.

"Wakasa Maru."—Knuckles Group A, pile 1, 2c at 2s 7d; 2c at 2s 6d; ditto B, pile 2, 6c at 1s 11d; ditto C, pile 3, 5c at 1s 6d.

"Umballa."—Knuckles Group, Madulkelle Mysore A, 4c at 2s 7d; ditto B, pile 2, 3c at 1s 11d; 1c at 2s; 3c at 1s 11d; 5c at 1s 6d; ditto seed, 1c at 1s 8d.

"Sanuki Maru."—Lebanon Group, Mysore A, pile 9, 3c at 2s 5d; ditto C, pile 11, 1c at 1s 5d; ditto seed, 1c at 2s.

NO. 38 COLOMBO, OCTOBER 2, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. E. Benham & Co.

[16,429 lb.]

Lot.		Box.	Pkgs.	Name.	lb	c.
1	W	5	8 ch			
			1 hf-ch	bro or pek	1098	23
2		8	8 ch	pek	925	21
3		11	9 do	pek sou	941	18
4	Hornsey	14	14 ch	pek sou	1120	37 bid
5	Hornsey	17	16 hf-ch	bro pek	960	41
6		20	24 do	or pek	2280	45 bid
7		23	18 do	pek	1620	40 bid
8	Gonakelle	26	95 hf-ch	bro pek	5035	withd'n.
9		29	24 do	pek	1848	withd'n.

Messrs. Forbes & Walker.

[462,822 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	B, in estate mark	1316	8 ch	sou	720	33
4		1819	6 do	dust	900	27
9	Ingrogalla	1834	13 ch	bro pek	1300	45
10		1837	17 do	pek	1445	40
11	Kosgalla	1840	37 hf-ch	bro pek	1850	39
13		1846	33 do	pekoe	1485	35
14		1849	24 do	pek sou	1200	33
17	T A B	1858	15 do	bro tea	750	31
21	Ketadola	1870	8 ch	pek	738	35
27	Yatiyana	1888	15 hf-ch	pek	780	36
29	T'Villa	1894	12 ch	bro or pek	1200	41
30		1897	8 do	bro pek	800	38
31		1900	22 do	pek	1980	34
33		1006	9 do	pek sou	720	31
34		1909	10 do	sou	800	28
36	Kincora	1915	18 hf-ch	bro pek	1080	49
39	Galkanda	1924	11 ch	bro pek	1100	34 bid
47	Mansfield	1948	46 hf-ch	bro pek	2760	68
48		1951	24 do	pek	2160	52
50	Kitulgala	1957	29 hf-ch	or pek	1595	44
51		1960	14 do	bro pek	910	43
52		1963	28 ch	pek	2095	36
56	Errolwood	1975	23 hf-ch	bro or pek	1035	59
57		1978	12 ch	or pek	1080	45
58		1981	23 do	pek	1955	39
59		1984	10 do	pek sou	850	36
60	Rowley	1987	20 hf-ch	bro pek	1000	50
61		1990	21 do	pek	1050	41
62	Ella Oya	1993	27 ch	bro pek	2565	41
63		1996	17 do	pek	1445	37
66	Agra Oya	2005	18 do	bro pek	1800	46
67		2008	20 do	pek	1800	36
68	Ireby	2011	31 ch	bro pek	34 0	61
69		2014	22 do	pek	1980	45
70		2017	12 do	pek sou	1080	39
71	Kilkenny	2020	35 hf-ch	bro or pek	1890	41
72		2023	33 ch	bro pek	3102	38
73		2026	23 do	pek	1933	35
74		2039	12 do	sou	900	32
75	Carfax	2032	7 ch	bro or pek	700	56
76		2035	16 do	or pek	1410	50
77	Mayfair	2038	17 ch	sou	1700	31
79	Dammeria	2044	21 ch	or pek	2310	49 bid
80		2047	18 do	bro pek	1800	47
81		2250	19 do	pek	1900	44
84	Hayes	2059	7 ch	bro or pek	700	66
85		2062	15 do	bro pek	1500	50
86		2065	10 do	or pek	900	48
87		2068	20 do	pek	2000	40
88		2071	15 do	pek sou	1350	36
89	Aberdeen	2074	37 ch	bro pek	3700	42
90		2077	24 do	or pek	1848	43
91		2080	39 do	pek	3120	37
92		2083	11 hf-ch	pek fans	748	33
101	Woodend	2110	33 ch	bro pek	3300	42
102		2113	57 do	pek	5415	36
103		2116	28 do	pek sou	2280	33
104		2119	6 do	dust	870	27
105	St. Heliers	2122	27 hf-ch	bro or pek	1458	44
106		2125	17 ch	pek	1462	37
107	Patiagama	2128	38 hf-ch	bro or pek	2090	55
109		2134	25 ch	pek	2125	39
110		2137	14 do	pek sou	1190	36
111	Killarney	2140	38 hf-ch	bro or pek	2090	54
112		2143	17 ch	pek sou	1615	43
113	Ruanwella	2146	32 do	or pek	2720	42
114		2149	21 do	bro pek	2100	41
115		2152	45 do	pek	4050	36
116		2155	12 do	pek sou	1080	34
121	Great Valley Ceylon in est mark	2170	13 ch	or pek	1170	48
122		2173	17 do	bro pek	935	69
123		2176	14 do	pek	1260	41 bid
124		2179	12 do	pek sou	900	37
125	Frogmore	2182	13 hf-ch	bro pek	715	51
127		2188	9 ch	pek	720	41 bid
134	Ganapatiya	2209	25 hf-ch	bro pek	1225	62
135		2212	32 do	or pek	1408	58
136		2215	63 do	pek	2835	46
137		2218	23 do	pek sou	1035	43
138	St. Leonards	2221	9 ch	bro or pek	945	41
139		2224	9 do	or pek	855	39
140		2227	12 do	pek	1020	36
143	Putupaula	2236	13 hf-ch	bro or pek	845	43
144		2239	32 do	bro pek	2880	49
145		2242	28 do	pek	2100	39
146		2245	12 do	pek sou	840	34
149	Roeberry	4	13 ch	bro pek	1200	56
150		7	17 do	or pek	1632	56
151		10	29 do	pek	2784	45
152		13	13 do	pek sou	1170	43
153		16	7 do	fans	700	30
154	Patiagama	19	9 ch	pek sou	720	34
156	Kakiriskande	25	15 ch	pek	1425	35
159	Cooroondoo-watte	34	13 hf-ch	bro pek	715	54
160		37	17 do	pek	850	43
164	Harrington	49	12 ch	or pek	1080	48
165		52	11 do	pek	1045	42
167	Erlsmere	58	30 hf-ch	bro or pek	1680	65
168		61	55 ch	bro pek	5060	45 bid
169		64	53 do	pek	4028	41
170		67	19 do	pek sou	1672	40
172	Tymawr	73	20 hf-ch	or pek	1000	47 bid
173		76	21 do	bro or pek	1155	54
174		79	33 do	pek	1650	41
175		82	27 do	pek sou	1215	38
176	Deaculla	85	50 do	bro pek	2750	54
177		88	34 do	pek	2330	44
178		91	18 do	pek sou	1260	40
179	B D W P	94	33 ch	bro pek	2970	44
186	B M	115	18 hf-ch			
			1 box	fans	1375	28
187	Middleton	118	26 ch	bro pek	2600	52
188		121	22 do	pek	1980	47
189	Talgaswela	124	10 ch	bro or pek	1100	43
190		127	15 do	bro pek	1425	46
191		130	31 do	or pek	2790	37
192		133	23 do	pek	2070	36
193		136	25 do	pek sou	2125	34
194		139	9 do	bro pek No. 2	900	36
207	Bloomfiled	178	50 ch	bro pek	5250	50
208		181	30 do	pek	2850	42
209		184	10 do	pek sou	920	41
216	Pallegodde	205	16 ch	bro or pek	1600	42
217		208	22 do	bro pek	2400	49
218		211	18 do	or pek	1530	46
219		214	21 do	pek	1680	39
220		217	14 do	pek sou	1260	35
223	Pusella	226	9 do	bro pek	891	46
224		229	13 do	or pek	1040	41
225		232	21 do	pek	1659	36
226	Scrubs	235	28 hf-ch	bro or pek	1568	56
227		238	13 do	bro pek	728	45
228		241	16 do	pek	704	44
226		244	15 do	pek sou	705	41
237	Kirimettia	268	6 ch	unast	810	34
239	Ingurugalla	274	11 do	pek sou	990	33
245	S S S	292	15 do	red leaf	1145	27
248	Mawaliganga-watte	304	15 hf-ch	bro or pek	875	59
249		307	17 do	or pek	714	40
250		310	37 ch	bro pek	3700	40
251		313	37 do	pek sou	2900	34
253	Hunasgeria	316	8 do	sou	720	30
255	Glencorse	322	16 do	bro or pek	1520	55
256		325	22 do	bro pek	1980	42
257		328	15 do	pek	1200	38
263	Naseby	346	32 hf-ch	bro or pek	1856	67
264		349	14 do	pek	728	57
265		352	10 do	dust	970	33
267	Knavesmire	358	21 do	bro pek	1994	50
268		361	24 ch	pek	2160	40
269		364	14 do	pek sou	980	36

Lot.		Box.	Pkgs.	Name	lb.	c.
271		370	17 ch	pek	1275	37
279	Waratenne	394	22 do	bro or pek	1210	45
280		397	18 do	bro pek	1530	39
281		400	22 do	pek	1760	35
282		403	9 do	pek sou	720	33
283	Farnham	406	31 hf-ch	bro pek	1550	49
284		409	16 do	or pek	720	43
285		412	35 do	pek	1750	37
291	Hopton	430	20 ch	bro pek	2000	53
292		433	18 do	pek	1710	44
296	Parsloes	445	20 do	bro pek	2000	49
297		448	13 do	pek	1300	41
299	Digdola	454	30 do	bro pek	2700	41
300		457	30 do	pek	2100	35
301		460	13 do	pek sou	1040	32
302	Vogan	463	54 do	bro pek	5400	53
303		466	65 do	pek	5850	38
304		469	18 do	pek sou	1530	35
306		475	10 do	dust	850	28
308	K P W	481	15 hf-ch	or pek	900	49
309		484	22 do	bro pek	1210	44
310		487	30 do	pek	1500	37
313	Doranakande	496	9 ch	bro pek	900	43
317	Beverley	508	50 boxes	bro or pek	1100	64
318		511	80 hf-ch	bro pek	4400	46
319		514	34 do	pek	1700	41
322	Halwatura	523	29 ch	bro pek	2900	42
323		526	57 do	or pek	5415	40
324		529	53 do	pek	4505	38
325		532	36 do	pek sou	2880	35
337	Monkswood	568	20 hf-ch	bro pek	1000	64
338		571	35 do	or pek	1575	60
339		574	21 ch	pek	1890	49
340		577	10 do	pek sou	850	45
341	B F B	580	21 hf-ch	dust	1575	27
366	Pine Hill	655	25 hf-ch	bro or pek	1625	67
367		658	42 do	or pek	2352	50
368		661	44 ch	pek	3740	42 bid
369		664	10 do	pek sou	850	38 bid
381	Torwood	700	7 do	bro or pek	728	42
382		703	27 do	bro pek	2370	47
383		706	19 do	pek	1482	36
384		709	18 do	pek sou	1440	34
385		712	18 do	sou	1440	32
386	O S S in est. mark	715	27 do	bro or pek	2025	44
387		718	29 do	pek	2320	37
402	A M B	763	46 do	bro pek sou	4048	30
403	Dunkeld	766	71 hf-ch	bro pek	4260	49
404		769	18 ch	or pek	1710	44
405		772	28 do	pek	2660	42

[Messrs. Somerville & Co.—179,493 lb.

Lot		Box.	Pkgs.	Name.	lb.	c.
2	S R K	250	7 ch	dust	1050	26
6	Ahamad	262	15 hf ch	pek sou	750	30
9	Y S P A	271	25 ch	pek sou	2125	34
10		274	21 hf-ch	dust	1785	27
11	Nyanza	277	7 ch	bro or pek	700	60
12		280	11 do	bro pek	1100	47
13		283	12 do	or pek	1140	45
14		286	19 do	pek	1805	40
15		289	8 do	pek sou	720	36
17	Citrus	295	29 ch	bro pek	2852	39
18		298	31 do	pek	2790	35
19		301	14 do	pek sou	1400	33
23	Kurulugalla	313	13 ch	bro pek	1300	45
24		316	10 do	pek	900	36
28	Lonach	328	61 hf ch	bro pek	3355	44
29		331	27 ch	pek	2160	37
30		334	13 do	pek sou	1040	34
31	Mount Vernon	337	26 hf-ch	bro flwy. pek	1560	85 bid
32		340	37 ch	pek	3071	45
33	Glanrhos	343	13 ch	sou	1200	29
34	Jak Tree Hill	346	24 hf-ch	bro pek	1200	48
35		349	39 do	pek	1755	37
42	Rambodde	370	14 hf-ch	bro or pek	770	49
43		373	29 do	bro pek	1595	40
44		376	20 do	pek	1000	37
51	Ovoca A I	397	27 hf-ch	pek fans	1890	34
52		505	7 ch	unas	700	32
53		508	8 hf ch	dust	760	30
55	Weyweltalawa	514	11 hf-ch	pek fans	770	35
56	Monte Christo	517	30 ch	bro pek	3000	49
59	Rayigam	526	26 hf ch	dust	2028	25
60	New Valley	529	27 ch	bro or pek	2700	53
61		532	17 do	or pek	1530	46
62		535	22 do	pek	2200	42
63		538	20 do	pek sou	1800	40
65	N I T	544	10 ch	unas No. 2	900	30
67	G'watte	550	13 ch	bro pek	1300	40
68		553	8 ch	pek	760	37
69		556	9 do	pek sou	810	34

Lot.		Box.	Pkgs	Name.	lb.	c.
72	Elchico	565	15 hf-ch	bro pek	825	40
73		568	70 do	pek	3500	36
74		571	15 ch	pek	1425	26
76		577	12 do	fans	1200	30
78	W V Y	583	9 ch	pek	900	36
79	Dikmukalana	586	50 hf-ch	bro pek fans	2750	38
80		589	30 hf ch	pek	1500	37
81		592	18 do	dust	900	26
82	Marigold	595	70 hf ch	bropek	[illegible]	57
83		598	40 do	pek	2000	48
84		601	30 do	pek sou	1500	45
86	W G	607	8 ch 1 hf-ch	bro pek	856	36
90	Annandale	619	14 hf ch	bro or pek	728	58 bid
91		622	21 hf-ch	or pek	1092	54
92		625	25 do	pek	1175	45
93		628	22 do	pek sou	1210	41
94		631	19 do	sou	874	38
96	Galphele	637	27 ch	bro or pek	2700	42
97		640	9 do	bro pek	900	39
98		643	25 do	pek	2250	36
99		646	12 do	pek sou	1200	34
102	Y H A	655	12 ch	bro pek	1200	39
104	Welgampola	661	23 hf-ch	bro pek	1265	37
105		664	30 do	pek	1680	34
107	Kerenvilla	670	9 ch	bro pek	900	36
108		673	10 do	pek	950	33
113	Roseneath	688	30 ch	bro pek	3300	45
114		691	18 do	pek	1620	38
115		694	20 do	pek sou	1700	35
119	Forest Hill	706	17 ch	bro pek	1805	38 bid
120		709	29 do	pek	2494	36
127	G B	730	27 bf-ch	dust	1350	27
128	I P	733	24 ch	pek sou	2160	33
129		736	25 hf-ch	dust	2125	28
130	K T G	736	8 ch	bro pek	800	35
131		742	8 do	pek	800	31 bid
132		745	9 do	sou	855	27 bid
135		754	15 hf ch	bro pek dust	1350	27
137	K L	760	21 ch	sou	2070	24 bid
138	Glenalla	763	33 ch	bro pek	3300	39
139		766	18 do	pek	1620	38
140		769	9 do	pek sou	810	33
145	Yarrow	784	75 hf-ch	pek	3750	39
147	B D I	790	34 ch	bro tea	2747	21
148	Neuchatel	793	21 ch	bro pek	2100	47
150		799	16 do	pek	1280	38
151		802	10 ch	pek sou	850	35
153	Polgahakande	808	33 ch	bro pek	3300	40
154		811	10 do	bro or pek	1100	40
159	Lyndhurst	826	37 hf-ch	bro pek	2035	43
163	H J K, in estate mark	838	30 ch	bro tea	2550	25 bid
164	Labugama	841	33 hf-ch	bro pek	1650	44
165		844	23 ch	pek	2185	36
166		847	14 do	pek sou	1190	33
167		850	7 do	bro pek fan	840	37
169	A R W	856	33 ch	bro tea	2747	21 bid

[Mr. E. John.—182,355 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Akkara Totum	978	8 ch	bro pek	720	36
3		984	11 do	pek sou	880	31
8	Ben Nevis	999	18 hf ch	bro pek	1030	67
10		5	21 ch	pekoe	1890	44
13	Mossend	14	31 hf-ch	bro or pek	1550	52
14		17	19 do	or pek	855	49 bid
15		20	50 do	pekoe	2250	42
18	Kanangama	29	16 ch	bro or pek	1600	36
19		32	22 do	bro pek	2[illegible]90	38
20		35	23 do	pekoe	1955	33
21		38	21 do	pek sou	1680	31
22		41	9 do	fans	720	27
23		44	10 do	pek sou fans	700	27
25		50	12 hf-ch	dust	960	24
26	Mocha	53	36 ch	bro or pek	3600	72
27		56	18 do	or pek	1620	60
28		59	32 do	pekoe	3040	58
29		62	30 do	pek sou	2400	45
30	Callander	65	38 hf-ch	bro or pek	2280	54
31		68	21 do	or pek	1197	48
32	Agra Ouvah	71	34 do	bro or pek No. 1	2176	67
33		74	38 do	bro or pek No. 2	2356	55
34		77	14 ch	or pek	1400	48
35		80	9 do	pekoe	855	47
36	Glasgow	83	19 do	bro or pek	1615	58
37		86	27 do	bro pek	2160	53
38		89	29 do	or pek	1885	46
39		92	22 do	pekoe	2090	43
40	Callander	95	14 hf ch	pekoe	742	47
44	Bittacy	107	35 ch	bro pek	3500	44

Lot.		Box.	Pkgs.	Name.	lb.	c.
45		110	24 ch	pekoe	2040	41
46		113	8 do	pek sou	720	41
51	Uda	128	10 do	bro pek	1000	31
52		131	18 do	pekoe	1530	33
53	St. John's	134	27 hf-ch	or pek	1404	54 bid
54		137	26 do	pekoe	1456	49
55		140	25 do	pek sou	1350	44
56	Templestowe	143	32 ch	bro or pek	3200	50
57		146	26 do	or pek	2340	45
58		149	34 do	pekoe	2890	41 bid
60	Maskeliya	155	14 hf ch	bro or pek	700	66
61		158	22 ch	or pek	1080	44
62		161	14 do	pekoe	1260	40
63	D—M—A	164	20 hf-ch	bro pek	1060	38 bid
68	Poilakanoe	179	43 ch	bro pek	4300	42
69		182	26 do	pekoe	2340	37
70	Evalgolla	185	35 ht-ch	hro pek	1750	50
71		188	55 do	pekoe	2475	38
75	B—G—A	200	18 do	bro or pek fans	1170	34
76		203	24 ch	pek dust	3600	27
77	C L M T	206	16 do	bro pek	1568	35 bid
78	Woodstock	209	19 do	bro or pek	1897	44
79		212	15 hf-ch	bro or pek	747	44
80		215	21 ch	pekoe	1677	36
81	W'—Bita	218	7 do 1 hf ch	hro pek	750	35 bid
82	Glassaugh	221	37 do	hro or pek	2405	61
83		224	42 do	or pek	2184	61
84		227	37 do	or pek	1924	61
85		230	37 ch	pekoe	3515	47
86	Kadienlena	233	15 hf-ch	bro or pek dust	1200	29
88	H—L—H	239	22 do	bro pek fans	1320	35
92	Gonavy	251	59 do	bro pek	2950	46
93		254	20 ch	pekoe	1500	41
95	Harrisland	260	11 do	bro pek	1045	42
97		266	11 do	pek sou	814	34
99	Little Valley	272	11 do	or pek	990	41
100		275	9 do	bro pek	900	45
101		278	25 do	pekoe	2125	37
107	B—W	296	22 hf-ch	bro pek fans	1430	33
108	N D D, in estate mark, CTPRC	90	10 do	fans	700	32
109	Whyddon	302	18 ch	bro pek	1800	55
110		305	18 do	pekoe	1800	40
111		308	19 do	pek sou	1805	40
114	Brownlow	317	21 hf-ch	bro or pek	1197	56
115		320	19 ch	or pek	1805	44 bid
116		323	18 do	pekoe	1584	41
117	Syston	326	19 do	bro pek	1805	44
118		329	10 do	pekoe	900	37
119		332	11 do	pek sou	935	34
124	Tempo	347	21 do	bro pek	2100	44 bid
125		350	15 do	pekoe	1200	38
126		353	10 do	pek sou	850	35 bid
129	Glentilt	362	30 do	bro pek	3000	51
130		365	13 do	pekoe	1300	41
131	I—A	368	11 do	pek dust	1610	27

SMALL LOTS.

[Messrs. E Benham & Co.]

Lot.		Box.	Pkgs.	Name	lb.	c.
10	Gonakelle	32	14 hf-ch	pek sou	602	withd'n.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	Y D	1810	5 ch	pek	450	34
2		1813	1 hf-ch	pek	50	33
5	B F	1822	3 hf-ch	bro pek	141	37
6		1825	2 do	pek	100	35
7		1828	3 do	pek sou	153	33
8		1831	2 do	bro pek fans	88	30
12	Kosgalla	1843	7 hf-ch	or pek	350	43
15		1852	4 do	bro pek	200	42
16		1855	2 do	unas	100	31
18		1861	2 do	bro pek fans	140	25
19		1864	6 do	dust	420	27
20	Ketadola	1867	7 ch	bro pek	690	39
22		1873	4 do	pek sou	345	32
23		1876	1 do	fans	120	28
24	Yatiyana	1879	4 do	or pek	240	44
25		1882	11 hf-ch	bro pek	572	41
26		1885	6 do	do No. 2	312	35
28		1891	4 do	pek sou	220	33
32	T'Villa	1903	6 ch	pek No. 2	540	32
35		1912	3 do	fans	366	27
37	Kincora	1918	7 hf-ch	bro pek fans	345	39
38		1921	6 do	dust	570	27
40	Galkanda	1927	7 ch	pek	630	34
41		1930	4 do	pek sou	400	32
42		1933	1 do	bro pek dust	120	27

Lot		Box	Pkgs.	Name.	lb.	c.
43	R G, in estate mark	1936	3 hf-ch	bro or pek	150	39
44		1939	3 do	or pek	150	38
45		1942	3 ch	pek	240	34
46		1945	1 do	pek sou	70	32
49	Mansfield	1954	6 ch	pek sou	510	43
53	Kitulgalla	1966	3 hf-ch	pek sou	165	33
54		1969	2 do	dust	240	27
55	Kowlahena	1972	8 hf-ch	dust	680	28
64	Elle Oya	1999	7 ch	pek sou	595	34
65		2002	6 hf-ch	bro pek fans	420	33
78	Dammeria	2041	5 ch	hro or pek	650	40
82		2053	5 do	pek sou	450	39
83		2056	2 do	dust	180	28
93	Ellamulle	2086	2 ch	sou	180	32
94		2089	7 hf-ch	dust	630	27
95	Ambawella	2092	4 ch	bro pek	400	45
96		2095	3 do	pek	294	40
97		2098	3 do	pek sou	132	35
98		2101	1 hf-ch	dust	63	27
108	Patiagama	2131	6 ch	or pek	540	46
117	Runwella	2158	6 ch	dust	480	27
126	Frogmore	2185	11 hf-ch	or pek	440	51
128		2191	1 ch	pek dust	80	28
129	K W D, in estate mark	2194	9 hf-ch	bro or pek fans	540	38
130	Nella Oolla	2197	1 ch	red leaf	78	25
131	Ookoowatte	2200	1 ch	dust	90	26
132		2203	1 do	pek fans	80	27
133		2206	5 hf-ch	red leaf	250	26
141	St. Leonards	2230	6 ch	bro mix	390	31
142		2233	1 do	dust	85	26
147	Udawera	2248	4 hf-ch	dust	330	27
148		1	4 do	sou	360	26
155	Kakiriskande	22	4 ch	bro pek	400	withd'n.
157		28	6 do	pek sou	570	33
158		31	1 do	dust	95	26
161	Cooroondoowatte	40	10 hf ch	pek sou	500	36
162		43	4 do	pek dust	330	28
163	Harrington	46	9 do	bro or pek	468	86
166		55	2 ch	or pek fans	210	35
171	Erlsmere	70	5 ch	dust	430	27
180	B D W P	97	1 ch	bro pek No. 2	90	31
181		100	1 do	pek No. 2	80	31
182		103	1 do	pe sou No. 2	75	30
183		106	1 hf-ch	mixed tea	55	29
184		109	3 do	dust	255	27
185	B D W G	112	3 hf-ch	dust	180	27
221	Pingarawa	220	6 ch	dust	600	27
22	L G A	223	2 do	red leaf	2[illegible]0	29
230	Kennington	247	5 do	fans	650	34
231		250	6 do	unast	540	33
232		253	3 do	dust	420	26
233		256	1 do	bro tea	90	31
234	N W D	259	3 do	bro tea	321	25
235	Kirimettia	262	3 do	br mix	300	33
236		265	3 do	fans	300	33
238		271	2 do	dust	240	26
240	I G	277	3 do	hro pek	300	38
241		280	2 do	pek	180	34
242	Ingrugalla	283	5 do	pek sou	450	34
243		286	7 hf-ch	bro tea	595	26
244		289	3 ch	red leaf	270	26
246	Claverton	295	1 hf-ch	dust	80	26
247	Kehelwatte	298	1 ch	pek	90	40
252	Mawiliganga-watt	313	5 hf-ch	pek dust	375	27
254	Hunasgeria	319	8 ch	dust	640	27
258	Glencorse	331	8 do	pek sou	640	34
259		334	7 do	pek sou	490	34
260		337	2 do	bro tea	2[illegible]0	29
261		340	2 do	pek fans	240	35
262		343	1 do	dust	170	26
266	Knavesmire	355	12 hf-ch	or pek	600	45
*70		367	6 do	dust	540	28
272	Bodawa	373	9 do	bro pek	5[illegible]2	40
273		376	6 do	pek	264	37
274		379	5 do	pek sou	225	34
275		382	2 do	unast	84	30
286	Farnham	4[illegible]5	12 do	pek sou	540	36
293	Hopton	4[illegible]6	6 ch	pek sou	570	38
294		429	3 do	sou	285	36
295		442	3 do	dust	300	28
298	Parsloes	451	2 do	pek sou	180	34
305	Vogan	472	2 do	bro mix	160	29
307		478	3 do	bro or pek	3[illegible]0	33
311	K P W	490	4 hf-ch	pek sou	180	33
312		493	1 do	dust	85	26
314	Doranakande	499	5 ch	pek	475	36
315		502	6 do	pek No. 2	540	35
316		505	5 do	pek sou	450	33
320	Frogmore	517	15 hox	flo or pek	270	R1 15

Lot.		Box	Pkgs.	Name	lb.	c.
321		529	8 hf-ch	bro or pek	480	91
333	M V	556	3 ch	bro mix	300	31
334		559	2 do	sou	200	28
335		562	1 do	sou	77	28
335		565	2 do	fans	240	33
342	B F B	538	8 hf-ch	unast	400	29
343	B W D	586	2 ch	unast	130	33
344	Poengalla	589	6 do	dust	510	27
345	Memorakande	592	2 do	pek sou	170	33
346	[illegible]	595	3 do	dust	450	27
347	Relugas	598	3 do	sou	390	22
352	Belgodde	613	6 hf-ch	or pek	300	37
353		616	12 do	pek	600	35
354		619	7 do	pek sou	350	33
355		622	1 do	dust	60	26
356	Kolua	625	2 do	bro or pek	200	36
357		628	1 do	bro pek	100	36
358		631	5 do	pek	500	34
359		634	5 do	or pek	500	36
360		637	1 do	pek sou	100	28
370	Pine Hill	667	1 hf-ch	sou	85	30
376	W L	685	3 ch	pek sou	211	32
377	Beausejour	688	3 ch	pek	240	33
378		691	2 do	pek sou	170	31
379		694	2 hf-ch	fans	120	35
380		697	2 do	dust	170	26
388	O S S in est. mark	721	3 ch	pek sou	240	34
389		724	1 do	sou	80	32
390		727	3 hf-ch	pek fans	225	35
391		730	2 ch	dust	180	27
401	Sunnycroft	760	4 hf-ch	bro tea	300	20

[Messrs. Somerville & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
1	S R K	247	1 ch	sou	100	32
3		253	2 do	bro tea	200	25
4	Ahamad	256	13 hf-ch	bro pek	650	37
5		259	12 do	pek	600	34
7		265	4 do	fans	260	26
8		268	3 do	red leaf	150	19
16	Nyanza	292	3 ch	dust	300	27
20	H A	304	1 ch	bro tea	90	15
21		307	2 do	fans	182	20
22	Citrus	310	4 ch	pek dust	600	26
25	Kurulugalla	319	3 ch	pek sou	300	33
26	K G N, in estate mark	322	1 ch	fans	140	28
27		325	1 do	pek dust	150	25
36	Jak Tree Hill	352	4 hf ch	pek sou	160	33
37		355	2 do	fans	130	30
38		358	1 do	dust	80	26
39	Galatotta	361	4 hf ch	bro pek	400	35
40		364	2 ch	pek	200	32
41		367	1 do	pek sou	100	30
45	Ramhodde	379	7 hf-ch	pek sou	350	34
46		382	1 do	dust	90	26
47		385	1 do	fans	70	28
48	Killin	388	5 ch	bro pek	500	38
49		391	3 do	pek	270	35
50		394	1 do	bro mix	100	19
54	Weweltalawe	511	7 hf-ch	dust	560	27
57	Monte Christo	520	3 ch	fans	360	34
58		523	2 do	dust	300	27
64	N I T	541	3 ch	unasNo 1	300	31
66	G'watte	547	5 ch	bro or pek	590	39
70		559	1 do	fans	110	33
71		562	1 hf-ch	dust	80	26
75	Elchico	574	4 ch	con	400	33
77		580	6 hf-ch	dust	450	27
85	Marigold	601	5 hf ch	bro pek dust	375	34
87	W G	610	7 ch	pek	431	27 bid
88		613	7 do	pek sou	558	23 hid
89	in estate mark	616	3 hf ch	fans	195	27
95	R, in estate mark	634	8 hf ch	con	424	26 bid
100	Galphele	649	2 ch 1hf ch	fans	325	27
101		652	3 ch	sou	985	32
103	Welgampola	658	5 hf-ch	bro or pek	290	34
106		667	7 do	pek sou	399	32
109	Kerenvilla	676	4 ch	pek sou	400	30
110		679	1 do 1 hf ch	pek fans	156	28
111		682	1 ch	red leaf	95	22
112		685	1 do	pek dust	86	26
116	Roseneath	697	1 ch	dust	155	26
117		700	1 do	bro mix	78	26
118	Forest Hill	703	9 hf ch	bro or pek	477	34
121		712	6 do	pek sou	564	33
122		715	9 hf ch	fans	666	32
123	H P	718	3 hf ch	bro pek	180	42
124		721	4 do	pek	209	35
125		724	3 do	pek sou	189	33

Lot.		Box.	Pkgs.	Name.	bl.	c.
126	G B	727	6 hf ch	bro tea	300	32
133	K T G	748	6 ch	bro mix	570	19 did
134		751	5 do	pek fans	640	26
136		757	7 hf ch	dust	570	28
141	S S, in estate mark	772	2 hf ch	bro pek	164	34 bih
142		775	2 do	pek	110	33
143		778	2 do	pek sou	114	31
146	Y, in estate mark	787	3 hf ch	dust	225	26
149	Neuchatel	796	5 ch	bro or pek	800	43
152		805	3 do	dust	510	27
455	Polgahakanke	814	6 ch	pek	540	35
156		817	7 do	pek sou	655	33
157		820	2 do	sou	170	32
158		823	4 do	dust	560	27
160	Lyndhurst	829	11 hf-ch	pek	550	36
161		832	14 do	pek sou	630	34
162		835	5 do	dust	425	27
168	Bwatte	853	3 ch	bro mix	300	22

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Akkara Totum	981	7 ch	pekoe	630	33
4		987	7 do	sou	560	22
5		990	2 do	fans	200	29
6		993	1 do	dust	110	27 hid
7		996	2 do	bro mix	160	21
9	Ben Nevis	2	13 hf-ch	or pek	585	62
11		8	8 ch	pek sou	688	40
12		11	2 hf-ch	dust	172	28
16	Mossend	23	5 do	fans	325	37
17		26	2 do	dust	140	27
24	Kanangama	47	4 ch	congou	320	27
41	Calander	98	2 hf-ch	pek sou	100	39
42		101	1 do	fans	75	34
43		104	1 do	dust	80	27
47	Bittacy	116	7 do	dust	595	28
72	Evalgolla	191	6 hf-ch	pek sou	240	33
73		194	3 do	fans	195	32
74		197	2 do	dust	160	27
87	Kadienlena	236	5 ch	congou	500	31
89	K P	242	5 hf-ch	dust	500	26
90		245	8 ch	fans	656	28
91	W H R	248	4 do	dust	400	26
94	Gonavy	257	4 do	pek sou	360	36
96	Harrisland	263	9 do	pekoe	675	37
98	Welicoda	269	8 do	bro tea	656	22
102	Little Valley	281	1 hf-ch	dust	85	26
103	W H	284	2 do	bro pek	138	45
104		287	5 ch	pek sou	270	36
105		290	5 hf-ch	dust	435	26
106		293	2 do	fans	162	37
112	Whyddon	311	6 do	pek fans	480	35
113		314	7 do	dust	630	27
120	Syston	335	1 ch	fans	112	30
121		338	1 do	dust	138	26
122	Bombay	341	5 do	flufy dust	525	23 hid

CEYLON CARDAMOMS SALES IN

(From Our Commercial Correspondent.)

MINCING LANE, September 8.

"Hakata Maru."—GA Ouvah O, 1 cask and 1 barrel sold at 104s 6d; ditto 1, 4 casks and 1 tierce sold at 92s; ditto 2, 5 casks out at 87s; ditto 3, 1 cask and 1 barrel sold at 58s.

"Oruba."—1 Haputale, 1 barrel out; 5 casks and 1 barrel sold at 94s; PB ditto, 1 barrel sold at 100s.

"Hakata Maru."—Pita Ratmalie E, 1 barrel out, ditto 2, 3 casks sold at 91s; ditto 1, 2 casks sold at 95s; 3 casks and 1 tierce sold at 91s; ditto S, 2 casks and 1 tierce sold at 65s; ditto PB, 1 tierce sold at 100s.

"Severn."—RBC MM, 24 bags sold at 41s; 2 bags sold at 34s 6d.

"Sanuki Maru."—Blackwood, 1 bag sold at 43s.

"Inoba Maru."—Gonamatava F, 1 cask out, 105s refused; ditto 1, 3 casks and 1 tierce sold at 103s 6d; ditto 2, 5 casks sold at 89s; 2 casks and 1 barrel sold at 89s; ditto S, 1 cask and 1 tierce sold at 53s; ditto PB, 1 cask sold at 98s.

"Clan Frazer."—Nayabedde F, 1 cask sold at 105s; ditto 1, 4 casks and 1 tierce sold at 103s;

dtto 2, 8 casks and 1 barrel sold at 91s; ditto S' 2 casks sold at 67s; ditto PB, 1 cask sold at 120s.

"Oruba."—Nayabedde F, 1 tierce sold at 105; ditto 1, 2 casks aud 1 barrel sold at 96s; ditto 2, 5 casks sold at 89s; ditto S, 4 casks sold at 65s; ditto PB, 1 cask and 1 barrel sold at 114s 6d.

"Staffordshire."—Gowrakellie F, 1 barrel sold at 106s; ditto 1, 3 casks sold at 91s; ditto 2, 5 casks sold at 90s; 4 casks and 1 tierce sold at 90s; ditto S, 2 casks sold at 60s; ditto PB, 1 cask and 1 barrel sold at 110s. Batgodde OO, 1 barrel sold at 86s; ditto O, 1 cask sold at 84s; ditto PB, 1 tierce sold at 90s.

"Hakata Maru."—Amherst O, 2 casks sold at 94s 6d; ditto 1, 1 cask and 1 tierce sold at 82s 6d; ditto 2, 1 cask sold at 41s; ditto P, 1 brrela sold at 90s; ditto PB, 1 barrel sold at 80s.

CEYLON COCOA.

"Clan Fraser."—1 Palli, 2 bags sold at 60s, sea damaged; 7 bags sold at 60s, sea damaged; F ditto, 3 bags sold at 60s, sea damaged; 6 bags sold at 60s 6d, sea damaged and repacked; ditto A, 4 bags sold at 60s. Grove London, 1 bag sold at 57s 6d, sea damaged and bulked; A ditto, 1 bag sold at 57s 6d, sea damaged and bulked.

"Clan Robertson."—Victoria 2, 4 bags out, 50s refused.

"Clan Stuart."—No mark, 2 bags sold at 41s, sweepings.

"Japan."—OBCE in estate mark, Mahaberia Ceylon OF, 20 bags sold at 82s; 35 bags sold at 83s; ditto 1 F, 31 bags sold at 65s; ditto O, 20 bags sold at 80s; 22 bags sold 82s 6d; ditto OC, 18 bags sold at 76s; ditto I, 17 bags sold at 79s; ditto 2 G, 12 bags sold at 57s 6d.

"Clau Alpiue."—FM in estate mark, 38 bags sold at 31s 6d.

"Orieut."—Mausava Y, 13 bags out at 76s, 73s 6d refused; Rockhill AA, 41 bags out at 75s, 70s refused.

"Kawachi Maru."—Kepitigalla, 43 bags sold at 70s 6d; 7 bags sold at 60s.

"Japan."—Marakona 1, 19 bags sold at 68s; ditto 2, 9 bags sold at 56s 6d; ditto 3, 17 bags sold at 35s. Maria, 17 bags out; ditto 2 1 bag sold at 58s; ditto 3, 2 bags sold at 35s.

"Hakata Maru."—Benveula 1, 5 bags sold at 66s 6d; ditto 2, 2 bags sold at 62s; ditto 3, 1 bag sold at 35s. Rosebury 1, 57 bags out; ditto 2, 5 bags sold at 55s 6d; T, 1 bag sold at 54s: KK, 49 bags sold at 57s. New Peradeniya, 3 bags sold at 49s 6d; B, 8 bags sold at 58s; C, 2 bags sold at 46s; A, 2 bags sold at 61s. Dickeria OO, 9 bags sold at 35s.

"Bingo Maru."—Dickeria O, 2 bags sold at 56s.

"Hakata Maru."—Dickeria O, 5 bags sold at 55s.

"Orient."—Beredewelle COC Ex. No. 1, 18 bags sold at 74s 6d; ditto T, 2 bags sold at 53s; ditto B, 1 bag sold at 89s.

"Staffordshire."—Beredewelle C, 6 bags sold at 51s 6d; ditto Reces, 1 bag sold at 50s.

OBSERVER PRINTING WORKS.

NO. 39 COLOMBO, OCTOBER 9, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs E. Benham & Co.

[8,815 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Y, in estate mark	6	9 ch	bro pek	900	46
2		9	16 do	pek	1120	36 bid
3		12	15 do	pek sou	1275	34
4	Orpington	15	20 ch	bro pek	2100	45
5		18	20 do	pek	1720	38 bid
6		21	20 do	pek sou	1700	35

Messrs. Forbes & Walker.

[334,867 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	V, in estate mark	775	8 ch	pek sou	760	34
3	M'Golla	781	14 ch	sou	1120	33
4		784	10 hf-ch	dust	809	27
13	Drayton	811	53 ch	pekoe	4505	42 bid
14		814	17 do	pek sou	1445	30
28	Glenorchy	856	86 hf-ch	bro pek	5100	54 bid
29		859	69 do	pek	3795	44
32	Gallawatte	868	13 ch	bro pek	1255	45
33		871	13 do	pek	1105	37
34		874	12 do	pek sou	1020	36
35	G M in est. mark Gonapatiya	877	33 hf-ch	bro or pek	1650	50 bid
36		880	33 do	pek	1584	45
37		883	13 do	pek sou	832	38
38		886	13 do	dust	1040	29
39	Maha Uva	889	28 hf-ch	bro or pek	1820	43 bid
40		892	14 do	or pek	840	48
41		895	23 ch	pek	2185	43
45	Fairlawn	907	15 hf-ch	bro pek	750	67
46		910	12 ch	or pek	960	49
47		913	16 do	pek	1440	42
48		916	19 hf-ch	pek sou	855	40
51	Seenagolla	925	32 hf-ch	bro pek	2080	65
57	High Forest	943	49 hf-ch	bro or pek	3234	55
58		846	29 do	pek sou	1392	45
59		949	11 do	pek dust	1012	29
60	Queensland	952	7 ch	bro or pek	700	72
61		955	16 do	pek	1360	44
62		958	9 do	pek sou	765	39
69	Weyunga-watte	979	32 hf-ch	bro or pek	1920	47
70		982	35 ch	bro pek	3325	41
71		985	33 do	pek	2805	37 bid
74	Carlabeck	994	10 ch	pek sou	1000	40
77	Mudamana	1000	8 hf-ch	dust	720	28
78	Chesterford	1005	46 ch	bro pek	4600	48
79		1009	47 do	pek	4700	39
80		1012	43 do	pek sou	4300	36
81	Stamford Hill	1015	24 hf-ch	bro pek	1440	65 bid
82		1018	18 do	or pek	810	55 bid
83		1021	28 ch	pek	2520	44
84		1024	11 do	pek sou	935	41
86	Huanuco	1030	22 hf-ch	bro pek	1210	37
87		1033	47 do	pek	2350	35
88		1036	27 do	pek sou	1350	33
91	Ismale	1045	15 ch	fans	1125	30
92		1048	14 do	dust	1190	27
93		1051	9 do	congou	765	32
100	Woodend	1072	27 ch	bro pek	2700	43
101		1075	39 do	pek	3705	36
102		1075	12 do	pek sou	1020	35
112	New Galway	1108	13 hf-ch	bro pek	780	64
115	Gingranoya	1117	16 hf-ch	dust	920	27
119	Hantleys	1129	26 hf-ch	bro pek	1378	49
121		1135	27 ch	pek	2295	38
124	T U	1144	14 ch	bro tea	1456	42
125	Dea Ella	1147	18 hf-ch	bro or pek	1080	52
126		1150	31 do	or pek	1705	47
127		1153	29 do	pek	1450	41
131	High Forest	1165	40 hf-ch	or pek No. 1	2240	70
132		1168	25 do	or pek	1300	54
133		1171	40 do	pek	2000	49
137	Polatagama	1183	47 ch	bro pek	4700	48
138		1186	24 do	or pek	2040	40
139		1189	44 do	pek	4180	38
140		1192	20 do	pek sou	1800	35
141		1195	5 do	dust	750	withd'n.
142	Palmerston	1198	16 hf-ch	bro or pek	800	68 bid
143		1201	13 ch	pek	1105	44
147	Theydon Bois	1213	7 ch	bro or pek	700	68 bid
148		1216	9 do	bro pek	900	50
149		1219	20 do	pek	1600	40 bid
154	Tonacombe	1234	22 ch	or pek	2200	49
155		1237	11 do	bro or pek	1100	61
156		1240	16 do	bro pek	1600	53
157		1243	42 do	pek	3780	43
158		1246	14 do	pek sou	1260	40
160	Gansarapola	1252	9 ch	pek	765	36
161	Agra Oya	1255	10 do	bro pek	1000	48
162		1258	21 do	or pek	1785	45
163		1261	8 do	pek	720	39
164		1264	13 do	pek sou	1170	36
170	Monkton	1282	21 hf-ch	bro pek	1218	41 bid
176	B D W G	1300	13 hf-ch	fans	1040	27
177	Cooroondoo-watte	1303	13 hf-ch	bro pek	715	58
178		1306	14 do	pek	700	42
180	Ingrogalla	1312	12 ch	bro pek	1200	44
181		1315	13 do	pek	1105	40
185	P	1327	12 do	pek sou	1020	35
188	A M B	1336	31 do	bro pek sou	2604	31
189	W N	1339	16 do	bro tea	1440	30
192	Penrhos	1348	21 hf-ch	bro pek	1113	67
193		1351	18 do	or pek	810	54
194		1354	31 ch	pek	2635	41
197	Nugagalla	1363	33 hf-ch	bro pek	1650	53
198		1366	86 do	pek	4300	39
199		1369	14 do	pek sou	700	35
200		1372	8 do	dust	720	28
201	Stisted	1375	31 do	bro or pek	2015	49
204		1384	24 do	pek sou	1344	33
209	Robgill	1399	35 do	pek sou	1575	39
211	Doorooma-land	1405	24 do	bro pek	1320	47
212		1408	16 ch	pek	1520	38
220	Arapolakande	1432	69 do	bro pek	6210	48
221		1435	42 do	pek	3360	38
228	Castlereagh	1456	17 do	bro pek	1615	59
229		1459	14 do	or pek	1190	48
230		1462	12 do	pek	960	42
234	Lynsted	1474	73 hf-ch	bro pek	4015	52 bid
235		1477	57 do	or pek	2850	45
236		1480	60 do	pek sou	2700	40
238		1468	28 do	fans	1680	37
240	Geragama	1492	14 do	bro or pek	770	48
241		1495	15 ch	bro pek	1275	43
242		1498	15 do	pek	1200	38
244		1501	9 do	pek sou	765	35
245		1504	11 do	fans	880	29
246	Waratenne	1507	14 hf-ch	bro or pek	770	47
247		1510	12 ch	bro pek	1020	43
		1513	22 do	pek	1760	37
255	B W	1537	26 do	pek sou	2340	26 bid
257	M R	1543	10 do	bro pk fans	1000	30
258		1546	15 do	dust	1330	23 bid
259	Middleton	1549	22 hf-ch	bro or pek	1210	93
260		1552	14 ch	bro pek	1400	52
261		1555	12 do	pek	1020	47
262		1558	10 do	pek sou	900	43
265	Yatadcria	1567	12 do	bro or pek	1236	49
266		1570	26 do	bro pek	2678	39
267		1573	12 do	or pek	1116	37
268		1576	51 do	pek	4386	35
272	Matale	1588	30 hf-ch	bro pek	1650	49
273		1591	12 do	pek	1050	41
274		1594	8 do	pek sou	720	37
288	M'Ton	1636	20 do	or pek	1883	40 bid
289	Dunbar	1639	31 hf-ch	bro or pek	1550	65
291		1645	14 ch	pek	1120	46
295	Bargany	1657	15 do	bro pek	2015	48
296		1660	19 do	pek	1575	42 bid

[Messrs. Somerville & Co.—

180,015 lb.

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Blackburn	859	17 hf-ch	fans	864	36
2		862	11 do	dust	847	27
4	Hangran Oya	868	25 hf-ch	bro pek	1375	47
5		871	16 hf ch	or pek	720	45
6		874	16 ch	pek	1360	38
8	Aberfoyle	880	37 hf-ch	bro or pek	1850	43
9		883	12 ch	pek	1200	37
12	Daluk Oya	892	14 hf ch	bro or pek	840	49
13		895	16 do	or pek	880	48
14		898	26 do	pek	1430	38
17	Wilpita	907	7 ch	bro pek	700	40

Lot		Box	Pkgs.	Name.	lb.	c.
23	H J S	925	13 hf-ch	pek sou	780	34
24	Lower Dickoya	928	9 ch	bro or pek	900	44
25		931	21 do	bro pek	2100	40
26		934	11 do	pek	1100	37
27	Mount Vernon	937	20 hf-ch	bro or pek	1200	75
28		940	23 ch	pek	1863	45
29	Lonach	943	58 hf-ch	bro pek	3180	46
30		946	21 ch	pek	1680	38
31		949	11 do	pek sou	880	35
33	Warakamure	955	32 ch	bro pek	3200	38 bid
34		958	25 do	pek	2375	36
35		961	10 do	pek sou	800	33
36	Ambalawa	964	28 hf-ch	bro pek	1456	41
37		967	24 do	pek	1080	37
38	N	970	57 hf-ch	bro pek	3306	46
39		973	70 do	pek	3500	38
40		976	11 ch	pek sou	935	35
42	Columbia	982	25 hf-ch	bro or pek	1250	57
43		985	36 do	or pek	1620	51
44		988	33 do	pek	1485	44
50	Wevatenne	7	13 ch	pek	1035	36 bid
51		10	15 do	pek sou	1325	34
53	Rayigam	16	42 ch	bro pek	2624	40
54		19	32 do	or pek	2624	39
55		22	33 do	pek	2640	36
61	Mousa Eliya	40	38 ch	bro pek	3800	44
62		43	18 do	pek	1710	38
75	Harangalla	82	18 ch	bro pek	1710	45
76		85	61 do	pek	5490	37
77		88	9 do	sou	810	34
78	Ingeriya	91	53 hf ch	bro pek	2670	40
79		94	35 do	pek	1680	36
80		97	29 do	pek sou	1334	34
81		100	46 do	bro pek fan	2760	39
83	Warriatenne	106	27 ch	bro pek	2565	44 bid
84		109	20 do	pek	1800	37
85		112	47 hf-ch	pek sou	2350	34
86		115	16 do	bro tea	976	31
89	Deniyaya	124	54 ch	bro pek	5400	47
90		127	21 do	pek	2100	38
93	M D R, in estate mark	136	34 hf-ch	bro pek	2108	46
94		139	15 ch	pek	1425	38
96	Hopewell	145	17 hf-ch	bro or pek	935	46
97		148	21 do	bro pek	1155	43
98		151	61 ch	pek	5490	38
99		153	82 do	pek sou	7380	34
100		157	16 hf-ch	bro pek fans	880	36
101		160	48 do	dust	2880	27
102	Henegama	163	16 ch	bro pek fans	1600	37
103		166	11 do	bro mix	1100	32
105	Horagoda	172	8 ch	bro or pek	800	46
107		178	19 do	pek	1710	38
111	G P	190	11 ch	bro pek	1100	38
112		193	10 do	pek	900	36 bid
113		196	25 do	pek sou	1875	33
114	X X, in estate mark	199	30 ch	bro tea	2550	26
115	Suriawatte	202	27 ch	bro pek	2295	43 bid
116		205	32 do	pek	2880	37
117		208	13 do	pek sou	1040	33 bid
118	X M Z	211	15 ch	bro tea	1275	21 bid
127	U V W, in estdte mark	238	30 ch	bro tea	2550	26
128	Dartry	241	12 ch	bro tea	1176	34
129		244	17 do	fans	1309	29
135	Nehoda	262	14 ch	bro or pek	1400	39
136		265	35 do	bro pek	3500	42
137		268	15 ch	pek	1350	37
138		271	10 do	pek sou	800	35
140	A & G	277	23 ch	pek	1955	35
141		280	15 do	pek sou	1350	32 bid
142		283	25 do	bro tea	2500	26 bid
143	Hapugasmulle	286	18 ch	bro pek	1980	39
144		289	16 do	pek	1520	35

[Mr. E. John.—144,377 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Galoola	377	31 ch	bro pek	3100	54
4		380	37 do	pekoe	3700	45 bid
5		383	34 do	pek sou	3400	41
14	Koslande	410	17 hf-ch	bro pek	1020	53
15		413	17 ch	pekoe	1530	45
18	Mount Temple	422	10 do	bro or pek	1040	40 bid
19		425	29 do	bro pek	2610	37 bid
20		428	14 do	pekoe	1092	35 bid
21	Agra Ouvah	431	42 hf ch	bro or pek No. 1	2688	69
22		434	48 do	bro or pek No. 2	2976	55
23		437	18 ch	or pek	1800	49
24		440	10 do	pekoe	950	46
29	Natuwakelle	455	8 do	bro pek	800	43
30		458	10 do	pekoe	1000	37
31		461	30 do	pek sou	2700	34

Lot.		Box.	Pkgs.	Name.	lb.	c.
34	Anchor, in est. mark	470	23 hf-ch	sou	1380	38
36	Koslanda	476	17 ch	bro pek	1020	53
37		479	17 do	pekoe	1530	45
40	Galella	488	16 do	or pek	1400	45
41		491	23 do	bro or pek	2300	48
42		494	12 do	pekoe	1080	44
44	Nahavilla	500	20 hf-ch	bro or pek	1200	61
45		503	19 do	or pek	950	50 bid
46		506	9 ch	pekoe	900	46
48	H S, in estate mark	512	9 bags	red leaf	765	27
49	M	515	14 ch	bro pek	1330	48 bid
50		518	14 hf ch	bro or pek	784	50
51		521	24 ch	pekoe	2160	39 bid
52		524	26 hf-ch	fans	2028	27 bid
54	Ottery	530	42 ch	bro or pek	4200	50
55		533	13 do	or pek	1170	44
55		536	24 do	pekoe	2160	40
59	Claremont	545	17 do	bro or pek	1700	42
60		548	8 do	pekoe	720	37
62	Ferndale	554	16 do	or pek	1440	43
63		557	18 do	pekoe	1620	39
66	Glasgow	566	21 do	bro or pek	1785	65
67		569	25 do	bro pek	2000	53
68		572	22 do	or pek	1430	48
69		575	15 do	pekoe	1425	46
70	Rondura	578	12 do	or pek	1080	42 bid
71		581	37 do	bro pek	3700	40
72		584	33 do	pekoe	2970	38
73		587	19 do	pek sou	1710	34
75	Eadella	593	34 do	bro pek	3400	41
76		590	15 do	pekoe	1275	38
77		599	10 do	pek sou	950	34 bid
80	Glassaugh	608	18 hf-ch	or pek	936	66
81		611	20 do	bro or pek	1200	61
82		614	20 ch	pekoe	1900	52
83		617	7 hf ch	dust	560	31
84	M R	620	11 do	dust	990	29
85	Kotuagedera	623	7 ch	bro or pek	700	37 bid
86		626	19 do	bro pek	1900	38 bid
88	Arucliff	632	18 hf-ch	bro pek	1050	50 bid
89		635	27 ch	pekoe	2214	39 bid
90		638	17 do	pek sou	1139	35 bid
91	Ashton	641	22 hf-ch	bro or pek	1210	45 bid
92		644	38 ch	pekoe	3344	38
93		647	18 hf-ch	pek sou	810	33 bid
94	D—K—D	650	28 ch	pekoe	2660	42 bid
95	D—D	653	15 do	sou	1050	33
96	Mahanilu	656	60 hf-ch	bro pek	3420	52
97		659	45 ch	pekoe	4185	44
98		662	29 do	pek sou	2610	40
99		665	19 hf-ch	fans	1406	42
100	K—L—E	668	13 do	bro pek	702	43
101	S—T—N	671	17 do	bro pek	884	44
102	Bellongalla	674	40 do	bro pek	2000	42
103		677	13 ch	pekoe	1040	36
104	D—K—D	680	30 hf-ch	bro pek	1800	51
105	W Polla	683	11 ch	pekoe	935	40
106	Birnam	686	49 do	pek sou	3033	37

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
2	V, in estate mark	778	7 hf-ch	dust	560	27
5	M'Golla	787	2 ch	red leaf fans	190	24
15	Drayton	817	2 ch	sou	160	34
16	Mahagaya	820	3 ch	bro or pek	206	46
17		823	4 do	bro pek	235	45
18		826	6 do	pek	334	39
19		829	6 do	pek son	328	36
20		832	1 do	sou	64	33
21	St. Edwards	835	8 hf-ch	or pek	448	44
22		838	7 do	bro pek	385	44
23		841	10 do	pek	550	36
24		844	5 do	pek sou	240	34
30	Glenorchy	862	3 hf-ch	pek sou	150	40
31		865	5 do	dust	425	28
42	Maha Uva	898	6 ch	pek sou	510	37
43		901	1 hf-ch	pek fans	80	32
44		904	3 do	dust	270	28
49	Fairlawn	919	2 hf-ch	dust	170	28
50	F L, in estate mark	922	2 ch	bro mix	190	27
52	Seenagolla	928	6 ch	or pek	600	47
53		931	5 do	pek	500	45
54		934	1 do	pek sou	100	37
55		937	1 hf-ch	fans	85	32
56		940	1 do	dust	85	28
63	Queensland	961	1 ch	bro mix	90	28
64		964	1 hf-ch	dust	80	27
65	Macaldenia	967	8 do	bro pek	440	43

Lot.		Box.	Pkgs.	Name	lb.	c.
66		970	8 hf ch	pek	405	39
67		973	7 do	pek sou	360	35
68		976	1 do	dust	58	28
72	Weyunga-watte	988	3 ch	pek sou	255	35
73		991	3 hf-ch	dust	255	26
75	Carlabeck	997	8 do	bro pek fans	656	35
76	Mudamana	1000	8 ch	sou	560	33
85	Stamford Hill	1027	4 hf-ch	dust	340	32
89	Huanuco	1039	7 do	dust	340	28
90	Ismalle	1042	8 ch	sou	680	33
94	B B, in estate mark	1054	2 hf-ch	bro pek	100	35
95		1057	1 ch	pek	90	33
96		1060	2 hf-ch	dust	140	26
97	M F, estate mark	1063	2 ch	bro pek	190	35
98		1066	1 do	pek	75	34
99		1069	1 do	pek sou	68	32
103	Woodend	1081	2 ch	dust	290	27
104	L N S, in est. mark	1084	3 ch	pek sou	213	34
105		1087	1 do	bro pek	77	39
106		1090	1 hf-ch	dust	50	27
113	New Galway	1111	1 hf-ch	pek	605	48
114		1114	1 do	pek sou	50	39
116	Gingranoya	1120	4 hf-ch	pek fans	329	33
117	Munukettia Ceylon in est. mark	1123	1 ch	congou	100	34
118		1126	5 hf-ch	dust	460	28
120	Hentleys	1132	15 do	or pek	675	44
122		1138	5 ch	pek sou	400	34
123		1141	5 hf-ch	fans	360	31
128	Dea Ella	1156	11 do	pek sou	550	35
129		1159	10 do	fans	600	32
130		1162	5 do	dust	360	28
144	Palmerston	1204	5 hf-ch	pek sou	350	41
145		1207	2 do	dust	156	29
146		1210	2 do	bro or pek fans	134	38
150	Theydon Bois	1222	8 ch	pek sou	630	36
151	T B, in estate mark	1225	1 ch	congou	85	33
152		1228	3 do	fans	270	33
153		1231	4 hf-ch	dust	300	27
159	Gansarapola	1249	7 ch	bro pek	665	42
171	Monkton	1285	7 ch	pek	665	38
172		1288	6 do	pek sou	480	34
173		1291	3 do	pek sou No. 2	216	33
174		1294	1 do	bro tea	136	22
179	Cooroondoo-watte	1309	9 hf-ch	pek sou	450	38
186	P	1330	2 do	fans	250	32
187		1333	3 do	dust	480	28
190	W N	1342	5 do	fans	500	27
191		1345	3 hf-ch	dust	270	26
195	Penrhos	1357	5 ch	pek sou	390	36
196		1360	3 hf-ch	dust	216	28
202	Stisted	1378	7 do	or pek	420	44
203		1381	11 do	pek	660	39
205		1387	3 do	dust	240	29
206	Kelvin	1390	2 ch	bro mix	160	28
207		1393	2 do	pek fans	220	30
208		1396	3 hf-ch	dust	195	28
210	Pingarawa	1402	3 ch	dust	300	28
213	Doorooma-della	1411	3 do	pek sou	285	34
214		1414	4 hf-ch	fans	288	32
215	Tillyrie	1417	7 ch	pek	656	42
216		1420	1 do	pek sou	85	37
217	Yataderia	1423	1 do	bro or pek	103	42
218	Beaumont	1426	1 do	pek	102	36
219	Arapolakande	1429	5 do	bro or pek	550	40
222		1438	4 do	pek sou	360	34
223		1441	2 do	dust	220	29
231	Castlereagh	1465	3 do	pek sou	240	37
232		1468	7 hf-ch	fans	490	37
233		1471	3 do	dust	240	28
237	Lynsted	1483	15 do	sou	675	35
239		1489	4 do	dust	320	27
256	A in est. mark	1540	2 ch	dust	210	25
263	Kabragalla	1561	11 hf-ch	bro tea	605	26
264		1564	4 do	dust	340	27
269	Yataderia	1579	4 ch	pek sou	456	32
270		1582	4 hf-ch	br pk fans	280	35
271		1585	5 do	dust	435	27
290	Dunbar	1642	10 do	or pek	480	50
292	D B R	1648	6 do	bro pek fans	360	40
293		1651	1 ch	pek sou	80	37
294		1654	1 do	dust	84	27

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Blackburn	865	4 hf-ch	bro tea	304	33
7	Hangran Oya	877	6 ch	pek sou	450	34
10	Aterfoyle	886	5 ch	pek sou	500	33
11		889	6 hf ch	bro pek fans	420	33 bid
15	Daluk Oya	901	10 hf-ch	fans	600	34
16		904	6 do	dust	360	27
18	Wilpita	910	6 ch 1 hf-ch	pek	655	35
19		913	5 ch	pek sou	500	33
20		916	2 do	fans	200	28
21	H J S	919	10 hf-ch	bro pek	600	41
22		922	11 do	pek	660	37
32	S L G	952	3 ch	red leaf	225	19
41	N	979	5 hf-ch	dust	425	29
45	Waveena	991	6 ch	bro pek	600	41
46		994	7 do	pek	595	38
47		997	1 do	pek sou	80	34
48		1	1 do	dust	80	28
49	Wevatenne	4	6 ch	bro pek	540	44
52		13	6 do	con	558	31
56	Rayigam	25	8 ch	pek sou	672	34
57	Glenalla	28	3 hf-ch	fans	150	29
58		31	8 do	dust	640	27
59		34	1 do	bro mix	45	25
60		37	2 do	con	100	30
63	Killin	46	6 ch	bro pek	600	39
64		49	3 ch	pek	270	34
65		52	1 do	sou	90	31
82	Ingeriya	103	2 hf ch	dust	164	28
91	Deniyaya	130	2 ch	pek sou	540	35
92		133	2 do	sou	190	33
95	M D R, in estate mark	142	14 hf ch	pek sou	630	35
104	Henegama	169	5 ch	dust	500	26
106	Horagoda	175	8 ch	or pek	680	44
108		181	8 ch	pek sou	680	34
109		184	2 do	dust	200	27
110		187	1 do	con	90	30
130	Dartry	247	3 ch	dust	282	24
131	R W G	250	2 hf-ch	bro pek	100	39
132		253	2 do	pek	110	35
133		256	5 hf-ch	pek sou	240	33
134		259	2 ch	dust	225	27
139	Neboda	274	3 hf-ch	dust	240	26
145	Hapugasmulle	292	6 ch	unas	600	35

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Battaluwatte	371	2 ch	bro pek	120	43
2		374	1 do	bro mix	40	32
6	Galloola	386	2 do	dust	200	28
16	Koslande	416	4 do	pek sou	400	39
17		419	2 hf-ch	fans	130	37
25	Mel—Villa	443	11 do	bro pek	550	41
26		446	13 do	pekoe	650	35
27		449	5 do	pek sou	250	34
28		452	1 do	dust	67	26
32	Natuwakelle	464	4 ch	bro tea	360	25
33		467	2 do	dust	250	28
35	Anchor, in est. mark	473	5 hf-ch	dust	475	27
38	Koslanda	482	4 ch	pek sou	400	39
39		485	2 do	fans	130	36
43	Galella	497	6 do	pek sou	540	39
47	Nahavilla	509	2 do	sou	180	37
53	S W	527	2 do	bro pek	212	56
57	Ottery	539	5 do	sou	450	37
58		542	2 do	dust	340	28
61	Claremont	551	2 do	red leaf	190	29
64	Yahalakele	560	2 do	dust	300	28
74	Rondura	590	3 hf-ch	dust	270	27
87	Kotuagedera	629	6 ch	pekoe	600	34 bid

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, September 15.

"Duke of Argyle."—North Matale OO, 1 barrel and 1 tierce sold at 60s; 1, 1 cask and 1 tierce out; 2, 1 barrel sold at 28s; PB, 1 barrel sold at 27s 6d; T, 1 cask sold at 27s; NM, 1 barrel sold at 23s 6d; O, 1 barrel sold at 23s 6d; 2, 1 barrel sold at 23s 6d; PB, 1 barrel sold at 23s 6d. Alloowiharie OO, 1 barrel out; O, 1 barrel out; 1, 1 barrel sold at 37s; PB, 1 barrel out; T, 1 barrel sold at 24s.

"Hakata Maru."—Rosebery OO, 1 barrel out, 55s refused ; O, 1 barrel out, 55s refused ; 1, 1 barrel sold at 44s ; PB, 1 barrel out ; T, 1 barrel sold at 24s ; 2, 1 bag out at 18s.

"Clan Macaulay."—1 Rappahannock, 1 barrel out, 50s refused ; 2 ditto, 1 cask and 1 barrel out, 50s refused ; 3 ditto, 1 tierce out, 35s refused ; PB, 1 barrel out ; T, 1 barrel out. Rappahannock, 1 bag out. Size 2 Thotulagalla, 1 barrel and 1 cask out ; size 3 ditto, 1 tierce out ; PB ditto, 1 barrel out ; T ditto, 1 barrel out ; Thotulagalla, 1 bag out.

CEYLON COCOA SALES IN LONDON.

"Clan Ross."—1 SS in estate mark, Estate Cocoa, 49 bags out at 62s ; HGH in estate mark, Estate Cocoa, 73 bags out at 72s ; A HGA in estate mark, 65 bags out at 72s ; B HGA in estate mark, 76 bags out at 60s.

"Staffordshire."—F in estate mark, 55 bags out at 60s.

"Clan Alpine."—MS in estate mark, 52 bags out at 60s ; MK in estate mark, 16 bags out at 60s. Anniewatte, 13 bags out at 71s ; DD in estate mark, 58 bags out at 60s.

"Hakata Maru."—MAK in estate mark, 48 bags out at 60s ; SC LOA in estate mark, 10 bags out at 60s.

"Orient."—Bandarapola 1, 5 bags out at 73s.

"Inaba Maru."—Dynevor A, 17 bags sold at 70s ; ditto B, 35 bags sold at 61s ; ditto C, 13 bags sold at 53s ; ditto D, 3 bags sold at 47s. Ross 1, 52 bags out at 80s, 73 refused ; ditto 2, 3 bags sold at 56s 6d ; ditto 3, 23 bags out at 57s, 58s refused ; ditto B, 12 bags sold at 40s 6d.

"Inaba Maru."—O MAK in estate mark, Estate Cocoa, 5 bags out ; 1 ditto, 27 bags out ; MAK in estate mark, 20 bags out, 50s refused ; C ditto, 8 bags out, 46s refused. Kaduwella, 11 bags out ; ditto No. 3, 1 bag sold at 47s.

CEYLON CARDAMOMS SALES IN LONDON.

"Staffordshire."—Kobo O, 8 cases out at 3s 2d ; ditto S, 8 cases out at 1s 7d ; ditto seeds, 1 case out.

"Clan Ranald."—MAF, 2 cases sold at 2s 3d ; 2 cases sold at 1s 9d.

"Hakata Maru."—EM & Co., Forest Hill 1, 2 cases sold at 2s 8d ; ditto 2, cases sold at 2s 1d ; ditto seed, 2 cases out at 2s 6d.

"Sada Maru."—No mark, 2 packets sold at 2s 1d.

"Clan Stuart."—Tonacombe 2, 3 cases out at 2s 10d ; Dryburg 1, 2 cases out at 2s 9d ; 2 cases out at 2s 7s ; ditto 2, 2 cases out at 2s 1d.

"Kangawa Maru."—Hentimalie seeds, 1 case out at 2s 6d.

"Duke of Devonshire."—WN 1, 2 cases out at 2s 4d ; ditto 2, 2 cases out at 2s.

"Clan Stuart."—WN Ceylon Malabar, 2 cases out at 2s 3d.

"Clan McPherson."—Pitakande Group KAS & Co. No. 1, 5 cases out at 3s 2d.

"Tosa Maru."—M in estate mark, 4 cases out at 2s 6d.

"Derbyshire."—AL 1, 15 cases out at 2s 3d.

"City of Cambridge."—AL 1, 10 cases out.

OBSERVER PRINTING WORKS.

TEA, COFFEE, CINCHONA, COCOA, AND CARDAMOM SALES.

NO. 40 COLOMBO, OCTOBER 16, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs E. Benham & Co.

[38,090 lb.]

Lot.		Box.	Pkgs		Name.	lb	c.
1	Halgolle	7	24	ch	bro pek	2400	42 bid
2		10	24	do	or pek	2250	40 bid
3		13	26	do	pek	2340	37 bid
4		16	14	do	pek sou	1190	34 bid
7	Mandara Newara	25	60	hf-ch	bro pek	3180	52 bid
8		28	62	do	pek	2728	45
9		31	21	do	pek sou	903	41
10	Gonakelle	34	95	hf-ch	bro pek	5035	45 bid
11	M E	37	38	ch	bro pek	3800	45 bid
12		40	21	do	pek	1995	39
13		43	25	do	pek sou	2125	34 bid
14	T T	46	11	ch	bro pek	1067	37 bid
15		49	18	do	pek	1692	37
16		52	20	do	pek sou	1600	32 bid
17	Peria Gall	55	32	ch	bro or pek	3200	44 bid
18		58	22	do	or pek	1870	39 bid

Messrs. Forbes & Walker.

[463,106 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
6	Bickley	1690	17	hf-ch	fans	1071	34
7		1693	9	do	dust	756	27
9	Elfindale	1699	9	ch	pek	855	33
10		1702	20	do	fans	2000	28
11	Karabusnawa	1705	34	hf-ch	bro pek	1700	41
12		1708	21	do	pek	1050	33
15	Kelaneiya and Braemar	1717	14	ch	bro or pek	1400	54
16		1720	14	do	or pek	1400	42
17		1723	12	do	pek	1200	40
18	Grace Land	1726	15	hf-ch	bro pek	825	39
19		1729	16	do	pek	800	36
23	Trewardena	1741	9	ch	bro pek	900	34
24		1744	13	do	pek	1235	32
30	Yalatenne	1762	22	hf-ch	bro or pek	1320	55
31		1765	18	do	or pek	1026	46
32		1768	15	do	pek	795	43
34	Nakiadenia	1774	12	ch	bro pek	1140	44
35		1777	13	do	pekoe	1040	37
36		1780	10	do	pek sou	800	33
37		1783	7	do	bro pek fans	770	38
38	Kincora	1786	51	ch	bro pek	3060	49
40		1792	9	ch	pek No. 2	810	38
41	Tymware	1795	22	hf-ch	or pek	1100	49
42		1798	35	do	pek	1575	43
43		1801	27	do	pek sou	1215	43
47	Ealaoya	1813	15	ch	bro pek	1425	44
48		1816	12	do	pek	1020	40
49		1819	9	do	pek sou	765	36
53	Vogan	1831	44	ch	bro pek	4400	49
54		1834	45	do	pek	4050	38
58	Waitalawa	1846	87	hf-ch	bro pek	4350	48
59		1849	95	do	pek	4750	40
60		1852	59	do	pek sou	2950	35
62	Glengariffe	1858	24	hf-ch	bro pek	1320	50
63		1861	14	do	or pek	700	45
64		1864	19	do	bro or pek	1140	52 bid
65		1867	29	ch	pek	2610	43
66		1870	12	do	pek sou	960	39
69	Ismalle	1879	15	ch	sou	1275	32
71		1885	18	hf-ch	dust	1530	28
72	Glendon	1888	27	ch	bro pek	2565	46
73		1891	30	do	pek	2400	37
74		1894	15	do	pek sou	1275	34
77	High Forest	1903	30	hf-ch	or pek No. 1	1680	70
78		1906	36	do	do ,, 2	1872	57
79		1909	30	do	bro or pek	1500	47
85	Ascot	1927	46	ch	bro pek	4140	43
86		1930	14	do	bro or pek	1400	41
87		1933	12	do	pek	1030	37
88		1936	12	do	pek sou	1020	34
89		1939	10	do	bro pek fans	1000	36
90	Anningkande	1942	15	ch	bro pek	1500	44
91	Agra Oya	1945	16	ch	pek	1360	38
98	Siribandura	1966	17	ch	bro pek	1700	38
99		1969	13	do	pek	1170	36
101		1975	8	do	pek sou	720	33
105	Knavesmira	1987	19	ch	bro pek	1900	45
106		1990	27	do	pek	2430	40
109		1999	18	do	pek	1350	37
112	Naseby	2008	21	hf-ch	bro or pek	1218	76
113		2011	22	do	or pek	1056	56
114		1014	14	do	pek	728	53
115		2017	10	do	fans	760	38
117	Harrington	2023	11	ch	or pek	990	50
118		2026	9	do	pek	810	43
126	Munukettia Ceylon in est. mark	2050	21	hf-ch	or pek	1050	54
127		2053	38	do	bro pek	2090	52
128		2056	19	ch	pek	1520	44
129		2059	9	do	pek sou	810	39
135	Ettapolla	2077	25	hf-ch	bro pek	1400	37
174	West Holyrood	2188	21	ch	pek sou	1680	42
175		2191	30	hf-ch	fans	2160	36
176		2194	17	do	dust	1445	28
177	Torwood	2197	7	ch	bro or pek	728	45
178		2200	37	do	bro pek	3256	47
179		2203	22	do	pek	1760	37
180		2206	15	do	pek sou	1200	34
181		2209	13	hf-ch	bro pek fans	910	35
185	Kirklees	2221	18	hf-ch	bro or pek	1080	55
186		2224	21	ch	or pek	2100	49
187		2227	16	do	pek	1520	43
188		2230	12	do	pek sou	1080	39
193	Weoya	2245	27	ch	bro pek	2700	39
194		2248	34	do	or pek	3400	42
195		1	27	ch	pek	2430	36
196		4	38	do	pek sou	3230	33
198		10	10	do	dust	1500	28
203	Pallagodda	40	13	ch	bro or pek	1300	43
209		43	19	do	bro pek	1900	49
210		46	15	do	or pek	1275	46
211		49	18	do	pek	1440	39
212		52	11	do	pek sou	990	35
213	Clunes	55	18	ch	bro or pek	1710	41
214		58	26	do	bro pek	2210	44
215		61	48	do	pek	3840	34 bid
216		64	10	do	pek sou	900	33
219	Erracht	73	7	ch	bro or pek	700	43
220		76	15	do	bro pek	1200	45
221		79	35	do	pek	2625	36
223		85	7	do	bro pek fans	700	37
225	Massena	91	68	hf-ch	bro pek	3400	44
226		94	20	do	pek	1000	36
230	Ganapalla	106	18	ch	or pek	1620	43
231		109	12	do	bro or bek	1080	43
232		112	20	do	bro pek	1800	41
233		115	39	do	pek	3120	36
234		118	20	do	pek sou	1500	33
235		121	10	do	bro pek fans	1000	36
236	Letchmey	124	7	ch	dust	980	27
239	Non Pariel	133	21	hf-ch	bro pek	1176	65
240		136	18	do	pek	896	47
241		139	20	do	pek sou	891	42
246	Morankande	154	11	ch	or pek	990	48
248		160	17	do	pek	1530	44
250	Dunkeld	166	41	hf-ch	bro pek	2460	45
251		169	12	ch	or pek	1140	46
252		172	15	do	pek	1350	43
253	Killarney	175	30	hf ch	bro or pek	1650	56
254		178	15	ch	pek sou	1425	43
255		181	10	do	fans	1100	40
256		184	9	hf ch	dust	765	28
264	Digdola	208	21	ch	bro pek	1890	38 bid
265		211	31	do	pek	2170	35
266	K P W	214	28	do	bro or pek	1680	49
267		217	25	do	bro pek	1375	45
268		220	61	do	pek	3050	37
269		223	17	do	pek sou	765	33
271	A M B	229	26	ch	bro pek sou	2392	30
272		232	12	do	dust	1584	26
274	Halwatura	238	21	do	bro pek	2100	44
275		241	42	do	pek	3750	41
276		244	36	do	pek sou	2880	36
277	Waratenne	247	13	do	bro pek	1020	42
278		250	17	do	pek	1360	36
284	Walpita	268	28	do	bro pek	2800	42 bid
285		271	17	do	pek	1700	41
293	A	295	14	do	bro mix	1260	out
304	Cooroondoowatte	328	14	hf-ch	pek	770	42
306	Florence	334	8	ch	or pek	728	47 bid
308		340	27	do	pek	2376	39 bid
309		343	13	do	pek sou	1105	36 bid

Lot.		Box.	Pkgs.		Name.		c
310		343	14	ch	sou	1050	32 bid
312	Ahhotsleigh	352	18	do	or pek	1638	66
313		355	63	do	pek	5544	45 bid
314		358	30	do	pek sou	2550	40
315	B P	361	14	hf-ch	dust	1330	26
316	K W	364	22	hf-ch	hro pek	1210	44 bid
317		367	18	ch	pek	1710	39 bid
318		370	12	do	pek sou	1020	35
319		73	14	hf-ch	bro or pek	756	55
320		376	21	do	hro pek	1155	42
321		379	10	ch	pek	860	39
322		382	13	do	pek sou	1144	35
323	Queensland	385	14	hf-ch	hro or pek	700	77
324		388	7	ch	bro pek	700	51
325		391	8	do	or pek	720	59
326		394	18	do	pek	1530	45
328	Hopton	400	27	do	hro pek	2700	50 bid
329		403	22	do	pek	2090	42 bid
336	Mawaliganga-watte	424	16	hf-ch	bro or pek	880	56
337		427	25	do	or pek	1050	40
338		430	42	ch	hro pek	4200	38
339		433	35	do	pek sou	2800	35
341	L	439	17	do	fans	1360	16 bid
342	F	442	16	do	bro pek	1600	37 bid
343		445	23	do	pek	1955	32 bid
344		448	15	do	pek sou	1350	31 bid
345	M A	451	25	do	pek fans	2475	27 bid
350	Middleton	466	24	do	bro pek	2400	53
351		469	21	do	pek	1890	45
352	Harrow	472	13	hf-ch	bro or pek	845	67
353		475	25	ch	pek	2500	45 bid
354		478	10	do	pek sou	900	43
356	Yataderia	484	23	do	hro or pek	2415	42 bid
357		487	39	do	bro pek	4017	37 bid
358		490	23	do	or pek	2185	37
359		493	84	do	pek	7224	35
360	H G M	496	9	do	bro or pek	765	54
361		499	17	do	hro pek	1700	41 bid
362		502	16	do	pek	1360	39
363		505	10	do	pek sou	850	39
364		508	8	do	bro pek fans	720	39
366	Pine Hill	514	19	hf-ch	bro or pek	1140	65
367		517	31	do	or pek	1798	47
368		520	32	ch	pek	2720	41
375	Hayes	541	15	do	pek sou	1250	35bid
386	Great Valley	574	14	do	pek	1260	43 bid
387	Freds Ruhe	577	44	do	hro pek	4400	37
388		580	59	do	pek	5310	35
389		583	21	do	pek sou	1890	33
392	Pine Hill	592	44	do	pek	3740	40 bid
394	D M V	598	14	do	hro pek	1260	37 bid
395		601	17	do	pek	1394	35
399	Glencorse	613	20	do	hro pek	1600	40 bid
400		616	19	do	hro or pek	1805	44
401		619	15	do	pek	1125	36 bid
402		622	11	do	pek sou	825	33

[Messrs. Somerville & Co.—2 2 705 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	H	295	12	ch	dust	1524	27
23	Mettiagodda	361	0	ch	bro pek	1000	39
27	Yarrow	373	74	hf-ch	bro pek	4144	47
28		376	39	do	pek	1950	40
30	L	382	9	hf-ch	dust	765	27
31		385	9	ch	hro mix	900	30
32	Carney	388	20	hf-ch	hro pek	1000	44
33		391	27	do	pek	1215	38
34		394	17	do	pek sou	850	33
38	Mipitiakand Ceylon	511	26	ch	pek sou	2080	33
39	Mossille	514	12	ch	hro pek fans	1200	36
42		523	12	hf-ch	dust	1020	26
44	Dikmukalana	529	25	hf-ch	bro pek	1375	49
45		532	30	do	or pek	1500	43
46		535	22	do	pek	1100	39
47		538	10	do	pek sou	912	35
51	Oolapane	550	8	hf ch	dust	720	27
53	P T N, in estate mark	556	20	hf-ch	pek sou	1000	30 bid
57	Citrus	568	26	ch	bro pek	2600	40
58		571	26	do	pek	2340	36
59		574	8	do	pek sou	800	33
66	Harangalla	595	10	ch	bro pek	950	44
67		598	25	do	pek	2250	39
69	Charlie Hill	604	14	hf-ch	bro pek	770	37
76	Rayigam	625	41	ch	hro pek	4100	38
77		628	31	do	or pek	2542	39
78		631	35	do	pek	2800	37
84	Doragalla	649	15	do	bro or pek	1500	50
85		652	18	do	bro pek	1800	45
86		655	53	ch	pek	4240	39
87		658	28	hf ch	bro mix	1960	38
88	O'Kande	661	112	hf ch	hro pek fan	6720	38
89		664	18	do	sou	1350	33
90		667	28	do	dust	2380	26
106	Kilin	715	7	ch	hro pek	700	38
110	M	727	20	ch	hro pek	2000	43 bid
111		730	13	do	pek	1105	37
112		733	17	do	pek sou	1445	33 bid
113	Oakham	736	24	hf-ch	or pek	960	52
114		739	24	do	bro pek	1440	54
115		742	21	ch	pek	1890	41 bid
118	Ferriby	751	21	ch	hro pek	2100	38
119		754	27	do	pek	2295	34
120		757	18	do	pek sou	1350	32
126	Morata	775	27	ch	bro pek	2565	44
127		778	28	do	pek	2095	38
128		781	37	do	pek sou	2960	34 bid
129	Mora Eliya	784	31	hf-ch	hro or pek	1798	42
130		787	21	do	or pek	1050	43
131		790	29	½-ch	pek	1885	39
132		793	22	ch	pek sou	1760	35
137	Woodthorpe	808	11	ch	pek	946	37
138		811	41	do	pek sou	858	34
140	Kelani	817	24	ch	bro pek	1920	42
141		820	12	do	hro or pek	1200	41
142		823	12	do	pek	1020	37
143		826	12	do	pek sou	1020	34
148	Galphele	841	38	hf-ch	bro pek	2090	45
149		844	41	do	pek	2050	39
150	Galphele B	847	11	ch	bro pek	1100	42
151		850	13	do	pek	1170	36
155	A X, in estate mark	862	9	ch	pek sou	796	32
157	H S, in estate mark	868	32	ch	bro pek	3200	37 bid
158		871	25	do	pek	2375	34 bid
159	A 5 B, in estate mark	874	34		bro tea	2890	24 bid
163	B Y	886	26	ch	bro tea	2210	24 bid
164	Monrovi	889	32	ch	hro pek	3200	42
166		895	29	do	pek	2755	37
167		898	9	do	pek sou	900	34
170	R P, in estate mark	907	23	ch	pek sou	2300	30 bid
171	Tiddydale	910	22	hf-ch	bro pek	1100	37
172		913	19	ch	pek	1710	33
173		916	14	do	pek sou	1260	31
177	M A T, in estate mark	928	24	ch	pek sou	2400	30 bid
178	Eilandhu	931	8	do	hro pek	800	38
179		934	8	do	pek	760	33
181	C D W	940	30	ch	pek	2850	36 bid
182	Handrookande	943	12	hf-ch	hro pek	660	41
183		946	12	do	pek	600	35
186	D W	955	34	ch	pek	3060	38
187	K L	958	11	ch	pek sou	990	30 bid
189		964	12	hf-ch	dust	1080	29
190	A S	967	27	ch	bro pek	2700	44 bid
191		970	30	ch	pek	2700	36 bid
192		973	24	do	pek sou	2004	33 bid
193	I G H	976	34	ch	or pek	3060	36 bid
197	S T	988	27	ch	pek sou	2160	30 bid
198		991	22	do	fans	1694	34
199	D T, in estate mark	994	32	ch	or pek	2980	37 bid
200	H, in estate mark	997	18	ch	bro tea	1440	21 bid
201	W D J	1	17	ch	pek	1700	35 bid
202	T, in estate mark	4	13	ch	or pek	1300	37

[Mr. E. John.—200,532 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	Balagala	689	12	ch	bro pek	1200	37
2		692	12	do	pekoe	1200	34
3	M R	695	8	hf-ch	fans	712	38
4	Gangawatte	698	21	do	or pek	1155	46
5		701	21	ch	pekoe	1785	42
7		707	19	hf-ch	bro or pek	1140	56
8	Yapame	710	24	ch	bro pek	2400	49
9		713	14	do	pekoe	1400	43
10		716	9	do	pek sou	900	39
16	Eila	734	76	do	bro or pek	7600	41
17		737	34	do	pekoe	3060	37
18		740	32	do	pek sou	2560	33
20	Mocha	746	21	do	bro or pek	2100	71
21		749	12	do	or pek	1080	55
22		752	21	do	pekoe	1995	54
23		755	12	do	fans	840	34
24	Eila	758	59	do	hro pek	5015	42
25		761	9	do	fans	1080	35
26		764	11	do	dust	1320	27

Lot		Box	Pkgs.		Name.	lb.	c.
27	Glentilt	767	35	ch	bro pek	3500	51
28		770	14	do	pekoe	1400	43
29	Cleveland	773	27	hf ch	flowy or pek	1485	67
30		776	32	do	pekoe	1600	45
33	Templestowe	785	23	ch	bro or pek	2300	53
34		788	18	do	or pek	1710	48
35		791	26	do	pekoe	2210	43
36	Ottery	794	28	do	bro or pek	2800	45 bid
37		797	10	do	or pek	900	45
38		800	10	do	pekoe	900	40
40	B—K—D	806	41	hf-ch	bro pek	2460	49 bid
41	Gonavy	809	44	do	bro pek	2000	47
42		812	15	ch	pekoe	1125	42
44	Glasgow	818	10	do	pek sou	1000	41
45		821	10	do	fans	1000	30
46	Agra Ouvah	824	39	hf ch	bro or pek No. 1	2496	69
47		827	41	do	bro or pek No. 2	2542	56
48		830	32	do	or pek	1696	49
49		833	10	ch	pekoe	950	51
51		839	23	hf-ch	pek fans	1909	35
53	A—B—M	845	20	do	bro pek	1060	38 bid
54	Ottery	848	25	ch	hro or pek	2500	50
55		851	9	do	or pek	801	44
56		854	12	do	pekoe	1080	41
58	W—D—N	860	26	hf-ch	bro pek fans	1560	37
59	Kandaloya	863	29	do	bro pek	1305	46
60		866	22	do	or pek	1880	41
61		869	61	do	pekoe	2140	38
63	Brownlow	875	22	do	bro or pek	1254	56
64		878	23	ch	or pek	2185	45
65		881	22	do	pekoe	1892	41
70	Y, in est. mark	896	12	do	pek sou	1003	32 hid
71	Agramaldeniya	899	7	do			
			1	hf-ch	hro pek	760	33
73		905	8	ch	pek sou	800	25
74		908	11	do	sou	935	15 bid
78	B—T—Y	920	13	do	pek sou	1144	41 bid
79	Iona	923	33	hf-ch	bro or pek	1815	73
80		926	18	ch	or pek	1710	53
84	Poilakande	938	59	do	bro pek	5900	42
85		941	33	do	pekoe	2979	38
86		944	9	hf-ch	dust	765	27
93	P G R	965	30	ch	bro pek	3000	48 hid
94		968	24	do	pekoe	2040	43 bid
95		971	42	do	pek sou	3024	35 bid
96	Kadien Lena	974	11	hf-ch	bro or pek dust	880	29
97		977	12	ch	congou	1200	29
98	Mount Temple	980	19	do	bro or pek	1900	38 bid
99		983	19	do	bro pek No. 1	1653	37 bid
100		986	18	do	bro pek No. 2	1728	36 bid
101		989	20	do	pekoe	1500	34 bid
103	Sinna Godda	995	42	do	bro or pek	4200	43 bid
104	Ferndale	998	15	do	bro or pek	1500	49
105		1	18	do	pekoe	1620	40
109	Maskeliya	13	20	hf-ch	bro or pek	1000	71
110		16	18	ch	or pek	1620	46
111		19	15	do	pekoe	1350	40
112		22	12	do	pek sou	1080	38
116	Lameliere	34	18	do	pek sou	1350	37
117	E—E	37	18	hf-ch	bro pek fans	993	35
118	Bellongalla	40	44	do	bro pek	2464	39 hid
119		43	20	do	pekoe	1600	36
130	I—A	76	10	ch	pek dust	1490	28 bid
131	Bowhill	79	23	do	pro pek	2300	44
132		82	9	do	pekoe	810	39
135	D D	91	12	do	sou	1104	21 bid
138	Glassaugh	100	26	hf-ch	or pek	1352	60 bid
139		103	24	do	bro or pek	1560	60
140		106	24	ch	pekoe	2280	48
141		109	8	do	pek sou	800	42
142	H, in est. mark	112	15	do			
			1	hf-ch	sou	1126	27

SMALL LOTS.

[Messrs. E Benham & Co.]

Lot.		Box.	Pkgs.		Name	lb.	c.
5	Halgolle	19	2	ch	fans	256	30
6		22	1	do	dust	155	27
19	Peria Galla	61	2	do	fans	289	28

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.		Name.	lb.	c.
1	Ugurassa	1675	1	hf-ch	bro pek	47	31
2		1678	1	do	pek	44	28
3	Wolleyfield	1681	1	ch	bro pek	70	34
4		1684	1	do	pek	85	31
5		1687	2	hf-ch	pek	80	31

Lot.		Box.	Pkgs.		Name.	lb.	c.
8	Elfindale	1696	4	ch	bro pek	400	37
13	Karabusnawa	1711	7	hf-ch	pek sou	350	33
14		1714	4	do	sou	200	32
20	Grace Land	1732	9	do	pek sou	450	31
21	Glenlyon	1735	5	ch	pek sou	460	33
22		1738	1	do	sou	72	30
25	Trewardene	1747	2	ch	pek sou	200	29
26		1750	1	do	sou	100	28
27		1753	2	do	pek fans	190	28
28		1756	2	do	dust	250	27
29		1759	2	do	bro mix	190	22
33	Yellatenne	1771	2	hf-ch	pek sou	100	38
39	Kincora	1789	4	ch	pek	340	40
44	Frotoft	1804	6	hf-ch	dust	510	26
45		1807	4	hf-ch	fans	260	35
46	B D W P	1810	4	do	dust	340	28
50	Elaoya	1822	5	ch	bro pek fans	350	35
51	Springwood	1825	8	ch	congou	680	33
55	Vogan	1837	7	ch	pek sou	595	33
56		1840	3	do	bro or pek	330	35
57		1843	7	hf-ch	dust	595	26
61	Waitalawa	1855	7	hf-ch	dust	630	29
67	Glengariffe	1873	6	hf-ch	fans	402	37
68		1876	8	ch	dust	640	29
70	Ismalle	1882	3	hf-ch	fans	225	29
75	G	1897	4	ch	sou	360	32
76		1900	2	do	dust	270	27
80	Kirrimettia	1912	4	ch	bro mix	400	34
81		1915	4	do	fans	400	35
82		1918	3	do	dust	360	27
83		1921	6	do	unas	540	35
92	Agra Oya	1948	3	hf-ch	dust	240	24
93		1951	7	do	fans	490	33
94	O H S	1954	5	ch	bro pek	500	33
95		1957	5	do	pek	500	32
96		1960	1	do	pek sou	100	37
97		1963	4	do	fans	480	29
100	Sirikandura	1972	2	ch	pek No. 2	180	34
102		1978	2	do	dust	220	33
103		1981	1	do	dust	66	32
104	Knavesm re	1984	13	hf-ch	or pek	650	44 bid
107		1993	8	ch	pek sou	560	33
108		1996	3	hf-ch	dust	255	27
110		2002	1	ch	bro tea	80	20
111	G A M	2005	10	hf-ch	bro mixed	500	20
116	Harrington	2020	13	do	bro or pek	650	70
119		2029	1	ch	pek	110	39
120		2032	2	do	or pek fans	250	38
121		2035	1	do	dust	160	28
136	Ettapolla	2080	11	do	pek	616	35
137		2083	6	do	sou	336	30
138		2086	1	do	dust	69	26
147	St. Leonards on Sea	2107	6	ch	bro or pek	630	39
148		2110	4	do	or pek	380	39
149		2113	7	do	pek	630	34
150		2116	1	do	dust	90	27
151		2119	3	do	bro mix	210	28
156	Allerton	2134	1	ch	bro mix	100	20
157		2137	1	hf-ch	dust	80	26
158		2140	1	ch	red leaf	100	20
159		2143	1	do	dust	120	27
160	No 5, in estate mark	2146	1	ch	dust	88	27
161	B F B	2149	4	hf-ch	unas	220	32
170	L G A	2176	1	ch	or pek	100	34
171		2179	2	do	pek	200	33
172		2182	1	do	pek sou	100	32
173		2185	5	do	bro tea	500	30
189	Kirklees	2233	2	ch	congou	166	32
190		2236	5	do	pek fans	550	33
191		2239	4	do	dust	360	28
192	Weoya	2242	4	do	bro or pek	400	36
197		7	5	ch	sou	450	30
217	Clunes	67	3	ch	dust	270	26
218		70	3	do	pek fans	210	29
222	Erracht	82	8	ch	pek sou	680	33
224		88	1	do	pek dust	175	26
227	Massena	97	10	hf-ch	pek sou	500	33
228		100	3	hf-ch	fans	210	31
229		103	2	do	dust	170	[illegible]
237	Letchmey	127	2	ch	bro pek fans	270	[illegible]
238		130	1	do	pek fans	130	[illegible]
242	Non Pariel	142	2	hf-ch	bro pek fans	[illegible]	[illegible]
243		145	1	do	bro pek dust	90	33
244	S	148	4	ch	pek sou	316	41
245		151	7	do	sou	630	35
247	Morankande	157	11	hf-ch	bro or pek	616	46
249		163	7	ch	pek sou	630	35
260	S S A in est. mark	196	4	do	bro pek	335	36
261		199	4	do	pek	360	34
262		202	2	do	bro mix	148	29
263		205	2	do	pek dust	234	28
270	K P W	226	2	hf-ch	dust	170	26
273	A M B	235	6	ch	red leaf	552	22

Lot		Box.	Pkgs.	Name.	lb.	c.
286	Walpita	274	8 ch	pek sou	640	33
287	Panmure	277	5 do	pek sou	450	33
288		280	7 hf-ch	dust	595	34
289	Hill Side	283	6 ch	bro pek	600	40
290		286	6 do	pek	540	34
291		289	4 do	pek sou	320	32
292		292	3 do	sou	240	30
303	Cooroondoo-watta	325	8 hf-ch	bro pek	440	49
305		331	11 do	pek sou	605	37
307	Florence	337	3 ch	bro pek	300	45
311		349	4 do	fans	440	35
327	N B D	397	3 do	bro mix	255	22
330	Hopton	406	7 do	pek sou	665	37
331		409	4 do	sou	380	35
334		412	4 do	dust	400	29
340	Mawaliganga-watte	436	4 hf-ch	dust	360	26
355	Harrow	481	1 do	dust	90	27
365	H G M	511	5 hf-ch	dust	425	27
369	Pine Hill	523	5 ch	pek sou	425	37
370		526	3 hf-ch	dust	255	27
390	W A	586	2 do	dust	280	28
391		589	1 do	bro mix	105	24
392	Woodlark	595	3 do			
			1 hf-ch	pek	321	33
396	D M V	604	5 ch	pek sou	425	33
397		607	3 do	fans	285	31
398		610	2 do	bro tea	140	29
403	Glencorse	625	1 do	dust	167	28

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
2	H	298	5 ch	sou	435	30
3	Polduwa	301	4 ch	bro pek	400	37
4		304	4 do	pek	410	32
			1 hf-ch			
5		307	2 ch	pek sou	230	32
			1 hf-ch			
6		310	1 ch	fans	140	30
			1 hf-ch			
7		313	1 do	dust	60	27
8	Paragahakande	316	4 ch	bro pek	400	41
9		319	5 ch	pek	425	34
10		322	2 do	pek sou	180	31
11		325	1 do	fans	140	30
			1 hf-ch			
12	Sangaly Toppe	328	2 hf ch	bro tea	150	31
13		331	3 do	pek dust	270	27
14		334	2 ch	red leaf	180	26
15	H B	337	2 hf-ch	bro pek	100	43
16		340	2 do	or pek	100	38
17		343	4 do	pek	200	34
18		346	4 do	pek sou	200	31
19		349	3 ch	red leaf	270	20
20	G A Ceylon	352	5 ch	pek	405	33
21		355	7 do	pek sou	462	31
22		358	8 hf-ch	dust	640	26
24	Mettiagoda	364	4 ch	pek	400	34
25		367	4 ch	pek sou	400	31
26		370	2 do	dust	260	26
29	Yarrow	379	1 hf-ch	dust	80	27
35	Carney	397	1 hf ch	pek fans	50	28
36		505	2 do	sou	100	31
37		508	1 do	dust	50	27
40	Mossville	517	2 ch	pek	180	36
41		520	1 do	bro pek	90	49
43		526	4 do	red leaf	360	25
48	Radage, H D P	541	6 hf-ch	bro pek	300	38
49		544	4 do	pek	200	33
50		547	2 do	pek sou	100	31
52	P T N, in estate mark	553	8 hf-ch	bro pek	448	36
54		559	3 do	pek fans	168	27
55		562	1 do	dust	82	26
56	F P W, Maske-liya	565	6 ch	bro mix	540	27
60	Citrus	577	2 ch	dust	300	27
68	F B	601	3 hf ch	unas	115	31
70	Charlie Hill	607	8 hf ch	pek	440	34
71		610	3 do	pek fans	225	27
72	R K P	613	5 ch	bro pek	400	40
73		616	2 do	or pek	200	40
		619	3 do	pek	255	35
		622	2 do	pek sou	160	32
79	Rayigam	634	6 ch	pek sou	510	32
	H S T	637	3 ch	bro or pek	303	36

Lot.		Box	Pkgs.	Name	lb.	c.
81		640	4 hf-ch	bro pek	200	32
82		643	4 do	pek	360	30
83		646	2 do	pek sou	108	27
91	M G	670	2 ch	bro pek	200	30bid
92		673	4 do	pek	360	30
93		676	4 do	sou	336	out
94		679	4 do	unas	200	31 bid
95	O S T	682	1 ch	bro pek	103	34
96		685	2 do	pek	166	33
97		688	1 hf-ch	pek dust	50	26
107	Killin	718	4 ch	pek	360	33
108	Ravenoya	721	8 hf-ch	bro pek	440	43
109		724	10 do	pek	500	36
116	Oakham	745	[illegible] ch	pek sou	570	36 bid
117		748	3 hf-ch	pek fans	225	33
121	Ferriby	760	1 ch	sou	90	28
122		763	4 ch	fans	400	33
123		766	2 do	dust	290	27
133	Mora Ella	796	1 ¾ ch	sou	60	30
134		799	3 hf-ch	dust	270	26
135		802	3 do	fans	210	32
136	Woodthorpe	805	6 ch	bro pek	600	48
139		814	3 do	sou	228	32
144	Kahatagala	829	5 ch	bro pek	400	36 bid
145		832	2 do	bro or pek	200	37
146		835	3 do	pek	255	34
147		838	2 do	pek sou	160	32
152	Galphele B	853	5 ch	pek sou	500	34
153	A X, in estate mark	856	4 ch	bro pek	406	out
154		859	6 do	pek	466	out
156		865	2 do	dust	195	25
165	Monrovia	892	6 ch	bro or pek	630	37
168	R O	901	2 ch	bro tea	200	25
169		904	1 do	pek dust	155	26
180	Eilandhu	937	1 ch	bro tea	100	23
182	Handrookande	943	12 hf-ch	bro pek	660	41
183		946	12 do	pek	600	35
184		949	3 do	pek sou	150	31
185		952	1 do	dust	60	27
188	K L	961	7 ch	sou	665	15 bid
194	Wevatenne	979	9 hf-ch	bro pek	540	37
195		982	7 do	pek	378	34
196		985	6 do	pek sou	300	32

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
6	Gangawatte	704	6 ch	pek sou	540	37
11	Kataboola	719	7 hf-ch	pek dust	595	26
19	Kirkoswald	743	1 do			
			1 box	bro or pek	62	64
31	Cleveland	779	8 hf-ch	pek sou	384	39
32		782	3 do	fans	240	34
39	Ottery	803	1 ch	dust	167	30
43	Gonavy	515	4 do	pek sou	420	34
50	Agra Ouvah	836	6 do	pek sou	540	44
52		842	4 hf-ch	dust	388	28
57	Ottery	857	1 ch	dust	165	30
62	Kandaloya	872	6 hf-ch	pek sou	240	34
66	Brownlow	884	7 ch	bro pek fans	511	37
67	G L	887	4 do	sou	400	31
68		890	8 hf-ch	dust	640	29
69		893	5 do	bro pek fans	350	36
72	Agramaldeniya	902	7 ch	pekoe	665	25 bid
81	Iona	929	1 do	pek sou	90	43
82		932	5 hf-ch	bro or pek fans	325	41
83		935	3 do	dust	240	30
87	M T P, 3 4, in est. mark	947	4 ch	sou	400	20
88		950	6 do	dust	600	26
102	B P S	992	1 do	pekoe	94	33
106	Maryland	4	5 do	bro pek	500	37
107		7	5 do	pekoe	475	34
108	Anamallai	10	3 do	dust	255	26
113	Maskeliya	25	6 do	sou	600	35
114		28	3 do	dust	270	28
115		31	9 do	bro pek fans	540	38
120	Bellongalla	46	9 do	pek sou	630	34
121		49	5 hf-ch	bro pek fans	350	37
122	L—E—L	52	2 ch	pek sou	160	37
123		55	5 hf-ch	dust	425	31
128	C L	70	3 ch	pek sou	300	} 30 bid
129		73	4 hf-ch	pek sou	220	} 30 bid
133	Bowhill	85	7 ch	pek sou	630	34
134		88	2 do	dust	290	29

TEA, COFFEE, CINCHONA, COCOA, AND CARDAMOM SALES.

NO. 41 COLOMBO, OCTOBER 23, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[24,290 lb.]

Lot.		Box.	Pkgs.	Name.	lb	c.
2	Mapitigama	11	10 ch	bro pek	1000	41
3		14	13 do	pek No. 1	1170	38 bid
6	Battalgalla	23	17 do	pek sou	1360	36
7	Meddakande	26	19 ch	bro or pek	1900	45
8		29	21 do	bro pek	2100	40
9		32	40 do	pek	3800	38
10		35	15 do	pek sou	1350	34
11	Gonakelle	38	14 ch	bro pek	1512	48 bid
12		41	13 do	pek	1131	45
15	Orpington	50	32 ch	bro pek	3200	36 bid
16		53	26 do	pek	2392	33 bid
17		66	9 do	pek sou	810	30 bid

Messrs. Forbes & Walker.

[553,397 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
7	New Peacock	646	18 hf-ch	pek fans	1530	33
18	Maldeniya	679	20 ch	bro or pek	2100	44
19		682	33 do	or pek	2970	20
20		685	44 do	pek	3828	37
21		688	30 do	pek sou	2550	33
22	Dambagstalawa	691	33 ch	bro or pek	3564	51
23		694	28 do	bro pek	2856	42 bid
24		697	23 do	pek	2070	40
25		700	8 do	pek sou	784	39
27	Holton	706	17 ch	bro pek	1615	42
28		,,	16 do	do	1520	42
29		709	13 do	pek	1040	38
30		,,	12 do	do	960	38
31		712	20 do	pek sou	1600	34
35	Palm Garden	724	8 ch	bro pek	920	35
36		727	10 do	pek	1000	33
37		730	7 do	pek sou	700	31
46	Nillomally, O B E C, in est. mark	757	13 ch	bro or pek	1378	61
47		760	26 do	or pek	2340	43
48		763	26 do	bro pek	2600	47
49		766	13 do	pek	1066	42
50		769	23 do	pek sou	1610	37
54	Kelaniya and Braemar	781	14 ch	bro or pek	1400	55
55		784	9 do	or pek	900	42
56		787	9 ch	pek	900	37
59	Nakiadeniya	796	10 ch	bro pek	909	46
60		799	13 do	bro pe No. 2	1235	41
61		802	16 do	pek	1280	37
62	Grange Garden	805	21 ch	bro or pek	2100	46
63		808	14 do	pek	1400	39
66	Mousakelle	817	25 ch	bro or pek	2500	47
67		820	11 do	or pek	1100	42
68		823	10 do	pek	1000	37 bid
77	Monkswood	850	17 hf-ch	bro pek	857	79
78		853	30 do	or pek	1350	64
79		856	20 do	pek	1800	48
80		859	33 do	fans	1848	42
84	MK	871	12 ch	pek	1080	41
85		874	11 do	pek sou	880	39
86	Devounord	877	40 hf-ch	bro pek	2200	51
87		880	48 ch	pek	3360	38
88		883	12 do	dust	960	27
90		889	37 bf-ch	bro or pek	2035	73
91		892	10 ch	or pek	900	58
92		895	18 do	pek	1530	46
108	B D W P	943	28 ch	bro pek	2308	40
109	Erollwood	946	20 bf-ch	bro or pek	900	66
110		949	9 ch	or pek	765	44
111		952	15 do	pek	1275	38
112		955	15 hf-ch	or pek fans	825	37
117	Beaumcnt	970	15 ch	bro pek	1545	42
118		973	35 do	or pek	3220	38
120	Yoxford	979	28 ch	bro pek fans	1764	42
121		982	9 do	pek sou	765	38
122		985	21 hf-ch	dust	1575	28
123	Hayes	988	15 ch	bro or pek	1500	64
124		991	21 ch	bro pek	2100	48
125		994	22 do	or pek	1870	47
126		997	43 do	pekoe	4085	39
127		1000	23 do	pek sou	2070	34
129	Higb Forest	1006	21 hf-ch	or pek No. 1	1155	70
130		1009	21 do	bro or pek	1386	53
131		1012	21 do	pek	987	47
132	Carfax	1015	16 ch	bro or pek	1600	55
133		1018	17 do	or pek	1530	47
134		1021	19 do	pek	1710	41
135	Patiagama	1024	13 do	bro or pek	715	61
136		1027	12 do	or pek	1020	44
137		1030	33 do	pek	2805	40
138		1033	17 do	pek sou	1445	35
139	Galapitakando	1039	8 ch	or pek	760	45
140		1039	21 do	bro pek	2'00	52
141		1042	13 do	pek	1300	41
148	Augusta	1063	5 ch	dust	750	25
153	Passara Group	1078	15 ch	bro or pek	1500	49
154		1081	16 do	or pek	1440	45
155		1084	23 do	pek	2070	41
158	Nahalma	1093	11 ch	sou	1100	32
172	Drayton	1135	53 ch	pek	4505	41
173		1138	24 do	pek sou	2040	37
187	Carberry	1180	21 ch	bro pek	1890	38
188		1'83	25 do	pek	2250	32
189		1186	8 do	pek sou	720	30
190		1189	19 do	bro tea	1710	25
192	G K	1195	8 ch	dust	1120	24
193	Stafford	1198	15 bf-ch	bro or pek	900	60
194		1201	10 ch	or pek	1000	60
195		1204	13 do	pek	1170	49
200	Seenagolla	1219	34 hf-ch	bro pek	2210	56
201		1222	7 ch	or pek	700	51
202		1225	9 do	pek	900	44
204	Galkadua	1231	14 ch	bro pek	1540	37
205		1234	17 do	pek	1700	35
206		1237	12 do	pek sou	1200	31
209	High Forest	1246	24 hf-ch	or pek No. 1	1344	69
210		1249	26 do	or pek	1352	55
2 1		1252	17 do	bro or pek	1122	53
212	Bloomfield	1255	11 ch	bro pek	1155	49
215		1264	9 do	pek fans	738	29
217	Polatagama	1270	48 ch	bro pek	4800	53
218		1273	26 do	or pek	2210	39
2:9		1276	51 do	pek	4590	37
220		1279	20 do	pek sou	2000	32
221		1282	5 do	dust	800	27
222	Inverness	1285	73 hf-ch	bro pek	4015	52
223		1288	40 ch	pek	3c00	41
224		1291	17 do	pek sou	1530	37
233	Ruanwella	1318	42 ch	or pek	3570	43
234		1321	22 do	bro pek	2200	37
235		1324	43 do	pek	3870	36
236		1327	14 do	peksou	1260	33
238	Errach	1333	8 ch	bro or pek	760	40
239		1336	17 do	bro pek	1360	45
240		1339	32 do	pek	2560	35
241		1343	13 do	pek sou	1105	34
250	Knavesmire	1369	14 bf-ch	or pek	700	46
251		1372	24 do	bro pek	2250	43
252		1375	26 do	pek	2210	37
255		1384	16 do	pek	1200	36
257	Gonapitiya	1390	19 hf-ch	bro pek	931	66
258		1393	19 do	or pek	836	55
259		1396	18 do	pek	792	47
272	Rockside	1435	9 ch	dust	1215	31
273		1438	7 do	bro pek fans	840	36
281	Tonacombe	1462	12 ch	bro or pek	1200	64
282		1465	27 do	or pek	2430	50
283		1468	15 do	bro pek	1500	54
284		1471	37 do	pek	3330	42
285		1474	10 do	pek sou	906	38
287	Dewalakande	1480	13 do	bro tea	910	29
289	S V in estate mark	1486	12 hf-ch	pek fans	960	32
292	Beausejour	1495	17 ch	bro pek	1411	37
293		1498	18 do	pek	1440	32
297	Forres	1510	13 do	pek sou	1170	42
299	wa4te	1516	39 bf-ch	bro or pek	2340	47
300		1519	47 ch	bro pek	4465	40
301		1522	45 do	pek	3825	36
316	Geragama	1567	16 hf-ch	bro or pek	880	45
317		1570	16 ch	bro pek	1360	40
318		1573	30 do	pek	2400	36
321	Waratenne	1582	21 hf-ch	bro or pek	1155	43
322		1585	15 ch	bro pek	1275	38

Lot.		Box	Pkgs.		Name.	lb.	c.
323		1588	19	ch	pek	1615	35
324		1591	11	do	pek sou	935	32
326		1597	9	do	dust	720	26
327	Silverkandy	1600	34	do	bro or pek	3604	68 bid
328		1603	30	do	or pek	2580	63
329		1606	40	do	pek A	3200	48
330		1609	18	hf-ch	dust	1548	34
331	Chesterford	1612	50	ch	bro pek	5000	50
332		1615	53	do	pek	5300	57
333		1618	32	do	pek sou	3200	35
334	Warwick	1621	28	do	bro or pek	2800	60
335		1624	44	do	pek	3960	43
336		1627	32	do	pek sou	2880	41
337		1630	15	hf-ch	pek fans	975	36
343	Palmerston	1648	14	do	bro pek	728	69
344		1651	14	do	bro pek	728	52
345		1654	12	ch	pek	1029	48
358	Bellwood	1693	7	do	dust	700	27
366	Coreen	1717	29	hf-ch	bro or pek	1682	57 bid
367		1720	19	do	bro or pek	1102	53 bid
368		1723	36	do	bro pek	2088	40 bid
369		1726	16	ch	or pek	1440	42 bid
370		1729	19	do	pek	1710	38 bid
372	Amblakande	1735	22	do	bro pek	2200	40
373		1738	27	do	pek	2295	37
375		1744	8	do	dust	800	26
376	Hatherleigh	1747	26	do	bro or pek	2600	36
377		1750	21	do	pek	1995	33
378		1753	10	do	pek sou	950	30
381	Yataderiya	1762	14	do	bro or pek	1470	44
382		1765	36	do	bro pek	3708	37
383		1768	12	do	or pek	1116	35 bid
384		1771	42	do	pek	3612	33 bid
388	Clyde	1783	53	do	bro pek	5300	37
389		1786	11	do	bro or pek	1100	36
390		1789	21	do	pek	2100	34
391		1792	8	do	dust	800	26
392	Penrhos	1795	23	hf-ch	bro or pek	1219	60
393		1798	31	ch	pek	2635	39
397	Tavalamtenne	1810	14	do	bro or pek	1400	41
398		1813	9	do	pek	810	37
420	Ugieside	1879	12	do	pek fans	1200	28
436	C S G	1927	53	hf-ch	bro pek	2650	48 bid
437		1930	45	ch	pek	3600	37
438		1933	13	do	pek sou	1040	34
444	Kirklees	1951	21	do	bro or pek	1260	49 bid
445		1954	19	ch	or pek	1900	47
446		1957	27	hf-ch	pek	2565	42
448	Scrubs	1963	18	do	bro or pek	1066	61
449		1966	14	do	bro pek	770	48
450		1969	16	do	pek	736	47
451		1972	16	do	pek sou	736	42
452	C	1975	17	ch	sou	1615	29
469	Batley	2026	42	do	bro pek	4200	40 bid
470		2029	18	do	pek	1620	35
471		2032	18	do	pek sou	1440	33
472	D M V	2035	14	do	bro pek	1260	37 bid

[Messrs. Somerville & Co.—213,449 lb.]

Lot		Box.	Pkgs.		Name.	lb.	c.
6	California	22	10	ch	pek	950	33
13	Kurulugalla	43	10	ch	bro pek	1000	37 bid
14		46	9	do	pek	810	33 bid
20	Ossington	64	8	ch	bro pek	800	38
21		67	14	do	pek	1400	36
25	R C T F, in estate mark	79	13	ch	bro pek	1300	39
26		82	16	do	pek	1360	35
27		85	12	do	pek sou	960	31
30	Mary Hill	94	22	hf ch	bro pek	1430	45
31		97	20	do	pek	1200	37
32		100	13	do	pek sou	780	34
35	Rambodde	109	13	hf-ch	bro pek	715	41
39	Bogahagodawatte	121	19	ch	bro pek	1900	37
40		124	12	do	pek	1200	34
41		127	7	do	pek sou	700	30
42	St. Catherine	130	23	ch	bro or pek	2185	38
46	Nyanza	142	12	ch	bro pek	1200	43
47		145	12	do	or pek	1140	43
48		148	21	do	pek	2100	38
49		151	8	do	pek sou	720	34
50	Yarrow	154	28	hf-ch	bro pek	1568	46
51		157	27	do	pek	1350	38
58	Hanagama	178	24	ch	bro pek	2400	40
59		181	44	do	pek	4180	35
60		184	13	do	pek sou	1090	31
64	D A L, in estate mark	196	15	ch	bro pek	1500	36 bid
65		199	13	do	pek	1235	32 bid
69	Marigold	211	61	hf-ch	bro pek	3355	59
70		214	16	do	pek	800	51
71		217	22	do	pek sou	1100	45

Lot.		Box.	Pkgs.		Name	lb.	c.
73	Harangalla	223	8	ch	bro pek	760	42 bid
74		226	14	ch	pek	1260	38
75		229	8	do	sou	720	32
76		232	9	hf-ch	dust	720	27
77		235	7	ch	fans	700	35
79	Kolabori Kande	241	52	do	bro pek	5200	35 bid
80		244	32	ch	pek	3040	33 bid
81		247	10	do	pek sou	900	31
87	Corfu	265	23	hf-ch	bro pek	1334	44
88		268	31	do	pek	1550	39
92	F F, in estate mark	280	16	hf ch	bro pek	880	39
93		283	15	do	pek	750	35
97	Killin	295	8	ch	bro pek	800	35 bid
102	Hapugasmulle	310	21	ch	bro pek	2310	37 bid
103		313	19	do	pek	1805	34
104	Mahatenne	316	35	ch	bro pek	3500	37 bid
105		319	18	do	pek	1800	34
109	Yspa	331	18	ch	pek sou	1530	33
110		334	15	hf-ch	pek dust	1275	28
114	Maddagedera	346	24	ch	bro pek	2400	40 bid
115		349	26	do	or pek	3600	38 bid
116		352	27	do	pek	2700	35 bid
117		355	18	do	pek sou	1800	33
118	Henegama	358	9	ch	bro mix	900	29 bid
120	Deiyaya	364	38	ch	bro pek	3800	40 bid
121		367	17	do	pek	1530	39
122		370	13	do	pek sou	1170	34
126	Hatdowa	382	19	ch	bro pek	1805	39
127		385	18	do	pek	1370	34
128		388	15	do	pek sou	1125	31
132	New Valley	505	22	ch	bro or pek	2200	58
133		508	14	do	or pek	1260	47
134		511	19	do	pek	1900	41
135		514	16	do	pek sou	1440	41
137	N I T	520	10	ch	unas No. 2	900	28
140	Annandale	529	13	hf ch	bro or pek	713	72
141		532	20	do	or pek	1100	53
142		535	19	do	pek	969	44
143		538	28	do	pek sou	1596	40
153	Glenalla	586	65	hf-ch	bro pek	3575	37 bid
154		571	25	ch	pek	2250	35
155		574	10	do	pek sou	900	32
157	D X	580	32	ch	or pek	2080	36 bid
158	I P	583	24	ch	pek sou	2160	31
159		586	13	hf ch	dust	1105	27
160	A	589	17	ch	pek	1700	35 bid
161	Suriawatte	592	11	ch	bro pek	1067	36 bid
162		595	18	do	pek	1692	33 bid
163		598	27	do	pek sou	2160	30 bid
164	H	601	34	ch	or pek	3060	36 bid
170	Warriatenne	619	17	ch	bro pek	1700	41 bid
171		622	30	do	pek	2700	37
172		625	20	do	pek sou	1600	32 bid
173	L Z	628	16	ch	bro tea	1440	18 bid
179	Mahakande	646	20	ch	pek	2000	39 bid
180	W	649	30	ch	pek	2850	36 bid
181	Kurunegalla	652	15	ch	bro pek	1500	41
182		655	11	do	pek	1100	36
187	M	670	9	ch	bro pek	1080	out
193	X	688	9	ch	pek sou	796	28 bid
194	J M D M	691	15	ch	bro pek	1500	38
195		694	22	do	pek	2090	36
196		697	10	do	pek sou	900	32
200	Siriniwasa	709	19	ch	bro pek	1995	41
201		712	23	do	pek	2300	37
202		715	23	do	pek sou	2070	33
206	Salawe	727	23	ch	bro pek	2530	38
207		730	13	do	pek	1235	37
208		731	14	do	pek sou	1260	33

[Mr. E. John.—171,494 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
4	Sadamulle	124	8	ch	bro pek	800	34
5		127	16	do	pekoe	1600	32
7	Wadhurst	133	12	do	bro pek	1200	47
8		136	9	do	pekoe	855	42
11	Woodstock	145	54	hf-ch	bro pek	2785	36 bid
12		148	19	ch	pekoe	1615	36
13	Mount Everest	151	15	hf ch	bro or pek	825	80
14		154	22	do	or pek	1100	56
15		157	23	ch	pekoe	2300	45
16		160	8	do	pek sou	720	41
18	H	166	11	do	bro mix	1100	25
19	Yapame	169	31	do	bro pek	3100	45 bid
20		172	23	do	pekoe	2300	42
21		175	12	do	pek sou	1200	39
23	G W	181	32	do	fans	2560	28
24		184	8	do	pek sou	760	40
26	Lamiliere	190	50	hf-ch	bro pek	2800	52
27		193	31	ch	pekoe	2790	39 bid
28		196	15	do	pek sou	1125	36
30	Eila	202	50	do	bro or pek	5000	40
31		205	71	do	bro pek	6035	37 bid
32		208	23	do	pekoe	1955	35

Lot		Box.	Pkgs.		Name.	lb.	c.
33	G E	211	14	hf-ch	or pek	700	34 bid
34		214	8	ch	pekoe	800	33
36	M T P, 1 2, in est. mark	220	25	do	sou	2000	29
37		223	12	do	pek dust	1440	25
38	St. John's	226	25	hf-ch	bro or pek	1500	60 bid
39		229	25	do	or pek	1300	57 bid
40		232	25	do	pekoe	1400	52
41		235	12	do	pek fans	840	41
42	Uda	238	8	ch	bro pek	800	30
43		241	14	do	pekoe	1190	31
44		244	14	do	dust	1260	26
48	Bittacy	256	38	do	bro pek	2800	41 bid
49		259	26	do	pekoe	2210	41
53	Glasgow	271	22	do	bro or pek	1870	63
54		274	29	do	bro pek	2320	56
55		277	16	do	or pek	1040	47
56		280	10	do	pekoe	1000	45
57	Agra Ouvah	283	27	hf ch	bro or pek No. 1	1728	69
58		286	34	do	bro or pek No. 2	2108	56
59		289	25	do	or pek	1325	47
60		292	16	do	pekoe	768	46
61	Kotuagedera	295	7	ch	bro or pek	700	34 bid
62		298	19	do	bro pek	1900	35 bid
64	Glasgow	304	13	do	bro or pek	1105	62
65		307	22	do	bro pek	1760	54
66		310	16	do	or pek	1040	47
67		313	10	do	pekoe	1000	46
68	Mossend	316	30	bf-ch	bro or pek	1500	48 bid
69		319	16	do	or pek	800	45 bid
70		322	32	do	pekoe	1440	40
73	Gonavy	331	63	do	bro pek	3150	46
74		334	21	ch	pekoe	1575	37
85	Mahanilu	367	21	hf-cb	bro pek	1197	47 bid
86		370	13	cb	pekoe	1209	43
87		373	17	do	pek sou	1530	38
88	Brownlow	376	21	do	bro or pek	1218	55
89		379	18	do	or pek	1710	45
90		382	19	do	pekoe	1710	41
91		385	10	do	pek fans	750	31
92	Kanangama	388	11	do	bro or pek	1100	38
93		391	20	do	bro pek	1900	39
94		394	23	do	pekoe	2070	35
95		397	12	do	pek sou	960	31
96		400	8	do	pek fans	720	30
97		403	20	do	pek sou fans	1400	33
100	Nahavilla	412	11	do	bro or pek	1400	62
101		415	9	do	or pek	900	51 bid
102		418	10	do	pekoe	1000	46
106	Troup	430	13	do	pek sou	1170	38
107		433	9	do	bro mix	900	32
111	C B	445	16	do	pro pek	1568	29 bid
115	Murraythwaite	457	23	do	bro pek	2185	39 bid
116		460	24	do	pekoe	2040	34 bid
120	Ferndale	472	16	do	or pek	1440	43
121		475	8	do	dust	1000	29
124	Eladuwa	484	14	do	pekoe	1260	34
126	Ena	490	30	do	pek sou	3000	23 bid
134	Sinnagoorie	514	29	do	pek sou	2900	25 bid
135	N	517	12	hf ch	dust	1020	26 bld
138	Lynford	526	10	ch	bro tea	1000	26
139	Suduganga	529	8	do	or pek	720	47
140		532	19	bf-ch	bro or pek	1140	57
141		535	13	ch	pek sou	1105	37
143	E E	541	17	bf-cb	pek fans	1280	30
144		544	7	ch	dust	917	25

SMALL LOTS.

[Messrs. E Benham & Co.]

Lot.		Box.	Pkgs.		Name	lb.	c.
1	Mapitigama	8	11	hf-ch	bro or pek	605	48
4		17	8	ch	pek No. 2	640	34
5		20	7	hf-ch	bro tea	560	28
13	Gonakelle	44	8	ch	pek sou	640	39
14		47	2	bf-cb	dust	120	28

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.		Name.	lb.	c.
1	Kaduruwandola	628	1	cb	bro pek	110	33
2		631	1	hf-cb	bro pek	60	33
3		634	2	ch	pek	180	33
4		637	1	do	pek sou	100	30
5	New Peacock	640	7	ch	pek sou	630	38
6		643	4	hf-ch	bro mix	200	26
8	D G F	649	1	ch	bro or pek	90	37
9		652	1	ch	bro pek	85	37
10		655	2	do	pek	160	34
11		658	1	do	pek sou	80	32
12		661	1	bf-ch	dust	64	26
13	Hurstpierpoint	664	3	ch	bro pek	228	28
14		667	3	do	pek	270	27
15		670	3	do	or pek	286	36
16		673	3	do	pek sou	243	27
17		676	2	do	dust	162	25
26	Dambagastalawa	703	8	bf-ch	bro pek fans	640	29
32	B A	715	4	ch	dust	320	25
33		718	3	do	unas	231	28
34		721	1	do	red leaf	102	22
38	Palm Garden	733	1	do	fans	130	30
39	Bodawa, Invoice No. 17	736	8	hf-cb	bro pek	464	42
40		739	3	do		132	38
41		742	7	do	[illegible]	315	34
42	Holton	745	4	hf-ch	ek pek	220	41
43		748	3	do	pek	150	39
44		751	4	do	pek sou	200	33
45		754	1	do	dust	58	26
51	Nillo Mally, O B E C, in est. mark	775	3	ch	sou	210	33
52		775	2	do	dust	200	26
53		778	2	hf-cb	fans	140	32
57	Kelaneiya and Braemar	790	1	cb	sou	100	32
58		793	2	bf-ch	dust	160	28
64	Grange Garden	811	1	ch	pek sou	100	33
65		814	2	bf-cb	dust	170	26
69	Mousakelle	826	2	ch	sou	200	33
70		829	4	hf-ch	dust	310	28
71	B F	832	5	hf-cb	bro pek	235	40
72		835	5	do	pek	240	37
73		838	5	do	pek sou	225	33
74		841	2	do	fans	110	30
75	Carendon	844	6	ch	bro pek	640	38
76		847	4	do	pek sou	400	33
81	Monkswood	862	6	hf-cb	dust	480	25
82	K M	865	11	do	bro pek	950	46
83		868	15	do	or pek	675	47
89	B and D	886			unas	253	32
93	D F D	898	5	hf-ch	dust	375	29
94	D F D	901	8	hf-ch	bro pek	440	46
95		904	5	cb	or pek	400	42
96		907	7	do	pek sou	560	26
113	W	958	12	bf-ch	bro pek	600	50
114		961	13	ch	pek	650	43
115		964	6	do	pek son	300	35
116		967	1	do	dust	90	28
119	Beaumont	976	7	ch	fans	623	32
128	Hayes	1003	6	do	dust	600	27
142	Galapitakande	1045	4	ch	pek sou	400	36
143		1048	2	do	dust	150	27
149	Preston	1066	2	bf-ch	unas	146	31
150		1069	2	do	red leaf	136	24
151	D	1072	5	ch	sou	500	25
152	Stellenberg	1075	1	ch	pek sou	100	29
157	Passara Group	1090	1	ch	fans	70	32
159	Maldeniya	1096	7	cb	sou	560	31
160		1099	3	do	fans	285	29
161		1102	3	do	dust	336	25
162		1105	1	do	congou	70	25
177	Cooroondoowatte	1150	9	hf-ch	bro pek	495	49
178		1153	12	do	pek	660	39
179		1156	7	do	pek sou	385	34
180		1159	3	do	congou	150	30
181	B B, in estate mark	1162	4	hf-ch	bro pek	200	32
182		1165	1	cb	pek	90	32
183		1168	1	do	dust	115	26
184	Wyamita	1171	2	ch	bro pek	200	39
185		1174	2	do	pek	180	36
186		1177	2	do	pek sou	160	32
191	G K	1192	3	ch	bro tea	270	21
196	Stafford	1207	5	do	pek sou	450	43
197		1210	2	hf-ch	fans	140	34
198		1213	1	do	dust	90	26
203	Galkadua	1228	2	ch	bro or pek	240	38
207		1240	2	do	fans	208	29
208		1243	1	do	dust	145	25
213	Bloomfield	1258	6	ch	pek	570	43
214		1261	3	do	pek sou	285	37
216	B, in estate mark	1267	4	ch	unas	360	31
237	Ruanwella	1330	8	do	dust	640	27
242	Erracbt	1345	4	do	bro pek fans	400	32
243		1348	2	do	pek dust	314	25

Lot.		Box.	Pkgs.	Name.	lb.	c.
253	Knavesmire	1378	6 hf-ch	pek sou	420	32
254		1381	4 do	dust	340	27
256		1387	1 do	bro tea	92	20
264	O K	1411	4 ch	bro mix	360	23
270	Rockside	1429	8 do	sou	640	34
271		1432	2 do	bro mixed	180	26
274	A	1441	4 ch	bro pek	220	28
275		1444	2 do	pek	200	26
276		1447	5 bf-ch	bro pek fans	315	26
277		1450	2 ch	pek fans	130	24
278		1453	6 hf-ch	dust	510	24
279		1456	2 ch	congou	180	19
280		1459	1 do	dust No. 2	85	22
286	Tonacombe	1477	6 ch	dust	540	28
288	Dewalakande	1483	7 hf-ch	dust	595	24
290	S V in estate mark	1489	2 do	fans	120	33
291		1492	4 do	dust	320	26
294	Beausejour	1501	2 ch	pek sou	160	28
295		1504	3 hf-ch	bro pek fans	180	31
296		1507	2 do	dust	170	25
298	Forres	1513	6 do	dust	510	25
302	Weyunga-watte	1525	4 ch	pek sou	340	33
303		1528	4 hf-ch	dust	340	25
304	Ingurugalla	1531	6 ch	pek sou	540	32
305		1534	7 bf-cb	bro tea	595	25
306		1537	4 ch	red leaf	360	24
307	Dromoland	1540	5 hf-ch	br pk fans	350	32
308		1543	3 do	dust	240	27
309		1546	2 ch	red leaf	190	25
319	Geragama	1576	5 cb	pek sou	425	32
20		1579	6 hf-ch	fans	480	28
325	Waratenne	1594	8 do	fans	600	28
338	Warwick	1633	6 do	dust	510	27
339	Angramally	1636	3 ch	bro pek	300	44
340		1639	4 do	pek	360	44
341		1642	2 do	pek sou	196	37
342		1645	1 hf-ch	dust	82	27
346	Palmerston	1657	4 ch	pek sou	300	43
347	Bodawa	1660	3 hf-ch	bro pek	174	42
348		1663	4 do	pek	176	38
349		1666	8 do	pek sou	360	34
350		1669	1 do	red leaf	48	25
351		1672	3 do	pek dust	225	31
371	Coreen	1732	5 hf-ch	dust	400	27
374	Amblakande	1741	6 ch	pek sou	480	34
379	Hatherleigh	1756	4 do	bro mix	360	26
380		1759	2 do	dust	360	26
385	Yataderia	1774	8 do	pek sou	640	31
386	Matalawa	1777	1 do	pek sou	114	22
387		1780	1 do	red leaf	70	18
394	Penrhos	1801	4 do	pek sou	312	37
395		1804	2 do	bro mix	160	28
396		1807	3 hf-cb	dust	213	31
399	Tavalamtenne	1816	4 ch	pek sou	340	33
400		1819	1 do	dust	112	25
406	Allerton	1837	2 do	dust	240	25
407		1840	1 do	bro mix	100	19
408	Dromoland	1843	1 hf-cb	red leaf	45	23
413	Dunnottar	1858	2 cb	bro or pek	200	55
414		1861	3 do	bro pek	300	42
415		1864	4 do	or pek	360	41
416		1867	6 do	pek	540	38
417		1870	4 do	pek sou	360	34
418		1873	1 do	fans	100	29
421	Ugieside	1882	4 ch	dust	320	29
422		1885	5 do	bro mix	500	27
431	B D W P	1912	1 do	bro pek No. 2	90	27
432		1915	1 do	pek No. 2	75	27
433		1918	4 hf-ch	dust	340	26
439	C S G	1936	3 ch	bro mix	250	26
440		1939	6 bf-ch	dust	480	27
453	Kelvin	1978	1 cb	bro mix	80	29
454		1981	3 hf-ch	dust	195	26

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	F P W Maskeliya	7	6 ch	bro mix	540	
	Mukulana	10	8 hf-cb	fans	520	30
		13	5 do	dust	425	26
		16	4 ch	bro tea	400	20
	California	19	6 ch	bro pek	565	36
		28	1 do	dust	125	26
		31	4 do	red leaf	335	22
10	S W J	34	2 ch	sou	180	23
11		37	3 do	fans	300	26
12		40	3 do	pek dust	390	25
15	K G A. in estate mara	49	5 ch	bro tea	550	23
16	Katukitula	52	4 hf ch	bro pek	200	34
17		55	6 do	pek	300	29
18	Allakolla	58	2 ch	red leaf	163	21
19		61	3 hf cb	dust	300	25

Lot		Box.	Pkgs.	Name.	lb.	c.
22	Ossington	70	5 cb	pek sou	500	31
23		73	1 do	bro mix	113	24
24		76	1 do	dust	174	23
25	R C T F, in estate mark	88	5 ch	bro pek fans	500	33
29		91	1 hf-ch	dust	60	25
32	Mary Hill	103	4 ch	bro mix	360	24
34	Rambodde	106	9 hf-ch	bro or pek	495	50
36		112	13 do	pek	650	38
37		115	7 do	pek sou	350	34
38		118	1 do	fans	70	33
43	St. Catherine	133	1 ch	pek	89	24
44		136	1 do	pek sou	84	32
45		139	2 hf-cb	dust	142	26
52	Y, in estate mark	160	2 hf-ch	bro tea	200	19
53		163	1 do	dust	100	25
61	Hanagama	187	1 ch	sou	100	28
62		190	1 do	fans	118	31
63		193	1 do	dust	150	26
66	D A L, in estate mark	202	6 ch	pek sou	570	30
67		205	2 do	bro mix	180	25
68		208	2 do	dust	300	24
72	Marigold	220	5 hf ch	pek dust	375	33
78	Donside	238	4 hf-ch	dust	240	26
80	Corfu	271	8 hf-ch	pek sou	360	34
90		274	1 do	dust	80	24
91		277	4 do	bro pek fans	200	33
94	F F, in estate mark	286	9 hf ch	pek sou	405	33
95		289	1 do	dust	90	24
96		292	1 do	bro pek fans	65	29
98	Killin	298	4 ch	pek	360	34
99		301	1 ch	sou	90	30
100		304	1 do	bro mix	110	18
101	Piti Oya	307	4 ch	sou	284	22
106	Mahatenne	322	6 ch	pek sou	570	32
107		325	1 ch	dust	95	27
108		328	1 do	red leaf	85	23
119	Henegama	361	7 hf ch	dust	630	25
123	Deniyaya	373	2 ch	sou	180	30
127	Hatdowa	391	1 ch	dust	140	25
130		394	5 do	fans	500	34
131		397	1 do	bro mix	80	28
136	N I T	517	2 ch	unas No 1	220	27
138	F, in estate mark	523	2 ch	sou	132	39
139		526	6 hf-cb	dust	402	28
144	F A, in estate mark	541	3 hf-ch	pek sou	156	34
145		544	3 do	dust	324	26
146		547	5 do	fans	325	34
147	Weyweltalawa	550	6 ch	bro tea	480	30
156	F H	577	7 hf ch	bro mix	350	21
183	Kurunegalle	658	3 ch	pek sou	300	33
184	A	661	2 ch	bro pek	200	40
185		664	2 do	pek	200	36
186		667	1 do	pek sou	100	32
188	M	673	3 ch	pek	235	25 bid
189		676	6 do	sou	455	15
190		679	5 do	fans	426	26
191	X	682	4 ch	bro pek	400	out
192		685	6 do	pek	466	out
197	J M D M	700	4 ch	fans	400	29
198		703	2 do	con	200	28
199		706	1 do 1 hf ch	dust	240	26
203	Siriniwasa	718	2 ch	bro pek fans	210	31
204		721	3 do	dust	420	25
205		724	1 do	sou	75	25
209	Salawe	734	2 ch	dust	300	25

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name,	lb.	c.
1	Polduwa	115	2 ch	bro pek	200	26
2		118	4 do	pekoe	400	26
3		121	2 do	sou	200	24
6	Sadamulle	130	1 hf-ch	dust	75	25
9	Wadhurst	139	7 ch	pek sou	630	33
10		142	2 hf-ch	dust	150	31
17	Villa	163	7 ch	red leaf	490	20
22	G W	178	1 hf-ch	pekoe	50	43
25		187	3 ch	red leaf	255	29
29	Lameliere	199	8 bf-ch	pek fans	600	33
35	G E	217	3 ch	pek sou	270	30
45	Theresia	247	2 do	bro pek fans	200	39
46		250	4 hf-ch	dust	320	27
47		253	1 do	sou	35	34
50	Bittacy	262	5 ch	pek sou	450	38
51		265	5 hf-ch	dust	400	27
52	S W	268	6 ch	pek sou	570	35
63	Kotuagedera	301	6 do	pekoe	600	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
71	Mossend	325	6 hf-ch	fans	390	37
72		328	7 do	dust	490	27
75	Gonavy	337	5 ch	pek sou	475	34
76		340	4 hf-ch	fans	320	28
77		343	3 do	dust	240	27
78		346	2 do	congou	160	31
79	G B	349	10 do	bro pek	600	38
80		352	6 ch	pekoe	480	33
81		355	6 hf-ch	dust	480	26
82		358	7 do	fans	560	30
83		361	5 ch	sou	400	33
84		364	2 hf-ch	bro mix	160	24
98	Kanangama	406	5 do	dust	400	25
99		409	5 do	congou	375	27
103	Nahavilla	421	5 do	pek fans	350	37
104		424	3 ch	sou	270	33
105		427	2 hf-ch	dust	160	28
108	Chapelton	436	7 do	dust	630	26
109		439	8 ch	bro mix	640	26
110	K D	442	4 do	pek sou	381	27
112	Marakona	448	1 do	dust	140	26
113		451	1 do	red leaf	110	17
114	The Farm	454	3 hf-ch	dust	225	27
117	Murraythwaite	463	6 ch	pek sou	480	31
118		466	2 do	bro pek fans	260	32
119		469	1 do	dust	160	25
122	Eladuwa	478	4 do	or pek	440	38
123		481	7 do	bro pek	630	41
125		487	5 do	pek sou	450	30
132	Battalluwatte	508	2 do	bro pek	120	45
133		511	1 do	mixed	40	20
136	Lynford	520	8 hf-ch	dust	664	25
137		523	3 do	pek fans	240	31
142	Suduganga	538	3 ch	sou	240	33

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, September 22.

"Clan Macaulay."—O Roehampton, 1 barrel sold at 88s; 1 ditto, 3 casks sold at 80s: 2 ditto, 1 cask sold at 55s; PB ditto, 1 barrel sold at 95s; T ditto, 1 barrel out; GSR in estate mark, 2 casks and 1 barrel out; Roehampton, 1 bag out, overtaken; GSR in estate mark, 1 bag out overtaken.

"Patroclus."—Kahagalla F, 1 barrel sold at 90s; ditto 1, 1 cask and 1 barrel sold at 87s; ditto 2, 6 casks and 1 barrel sold at 78s; ditto S, 2 casks sold at 66s; ditto PB, 1 cask sold at 97s; KGT in estate mark, 1 tierce out; Kahagalla, 2 bags out overtaken. Mahakande F, 1 barrel sold at 85s; ditto 1, 2 casks sold at 80s; ditto 2, 2 casks and 1 barrel sold at 65s; ditto S, 1 barrel out; ditto PB, 1 tierce sold at 78s; MKT in estate mark, 1 barrel out; MKP in estate mark, 1 barrel out. Mahakande, 1 bag out, overtaken. Merriabedde F, 1 cask sold at 93s; ditto 1, 1 cask and 1 tierce sold at 85s; ditto 2, 2 casks sold at 68s; ditto S, 1 barrel out; ditto PB, 1 barrel sold at 79s; MBT in estate mark, 1 barrel out; MBP in estate mark, 1 tierce out. Merriabedde, 1 bag out, overtaken.

"Hakata Maru."—Pita Ratmalie F, 1 barrel out.

"City of Calcutta."—Craig O, 6 casks sold at 92s 6d; 1 barrel sold at 92s 6d; ditto 1, 5 casks out, 75s refused; ditto 2, 3 casks out at 60s; ditto P, 1 cask and 1 barrel sold at 108s.

"Glenochy."—CSC O in estate mark, 100 bags out at 56s, 47s refused; CSCA 1 in estate mark, 159 bags out; ditto 2, 19 bags out at 32s; ditto PB, 10 bags out at 40s; CSCA 1 in estate mark, 85 bags out; ditto 2, 2 bags out; ditto PB, 10 bags out.

"Yorkshire."—1, 2 casks and 1 barrel out at 90s; 2, 5 casks out at 80s; PB, 1 cask and 1 barrel sold at 105s. Pengarawa large size, 1 tierce and 1 barrel sold at 88s.

"Patroclus."—2, 5 casks out at 90s; S, 4 casks out at 72s; PB, 1 cask sold at 85s.

"Clan McKinnon."—Panagala OO, 1 barrel sold at 45s: O, 1 cask and 1 tierce sold at 40s; 1, 3 casks sold at 35s; 2, 1 tierce sold at 25s; T, 1 cask and 1 barrel out at 46s.

MINCING LANE, September 29.

"Yorkshire."—Size 2 Ampittiakande, 1 cask sold at 18s 6d; size 3 ditto, 1 barrel sold at 48s; T ditto, 1 barrel sold at 27s 6d; AK, 1 barrel sold at 27s 6d.

"Kamakura Maru."—JB Ouvah O, 1 barrel sold at 86s; ditto 1, 1 cask sold at 80s; ditto 2, 3 casks and 1 tierce sold at 78s 6d; JB Ouvah 3, 1 barrel and 1 cask sold at 45s; ditto 1 PB, 1 cask sold at 70s; GA Ouvah O, 1 tierce sold at 90s; ditto 1, 1 barrel and 1 cask sold at 85s; ditto 2, 4 casks and 1 tierce sold at 82s, 75s 6d refused; ditto 3, 1 barrel and 1 cask out at 58s, 48s refused; ditto 1 PB, 1 tierce sold at 86s.

CEYLON COCOA SALES IN LONDON.

"Patroclus."—Rockhill AA, 29 bags out at 73s; B, 7 bags out; C, 4 bags out.

"Jumna."—DB & Co. 397 in estate mark, 10 bags out at 76s; DB & Co. 390 in estate mark, 20 bags out at 68s.

"Sanuki Maru."—DB & Co. 387 in estate mark, 19 bags out at 71s.

"Orient."—Bandarapola 1, 5 bags out.

"Patroclus."—Warriapolla, 5 bags sold at 76s; 35 bags sold at 32s 6d; 4 bags sold at 57s 6d; 5 bags sold at 59s 6d; 4 bags sold at 49s. Suduganga, 7 bags sold at 78s. Warriapolla, 2 bags sold at 52s 6d. Suduganga, 4 bags sold at 51s.

"Clan Fraser."—Suduganga, 1 bag sold at 74s.

CEYLON CARDAMOMS SALES IN LONDON.

"City of Sparta."—OMD, 2 cases sold at 2s 9d; 2c sold at 2s 10d; 2 ditto, 1c sold at 1s 6d.

"Shropshire."—HAG in estate mark, Malabar, 8 cases sold at 2s; 4c sold at 2s 6d; 14c out.

"Clan Stuart."—HGA in estate mark, 2 cases sold at 1s 9d; 2c out at 2s 6d.

"Menelaus."—HGA in estate mark, Malabar, 4 cases out at 2s 9d.

"Clan Menzies."—HGA in estate mark, 4 cases out.

"Egypt."—CML in estate mark, FECS, 5 cases out at 2s 6d.

"Clan Ross."—WHD & Co. Nawanagalla No. O, 6 cases sold at 3s 1d; ditto No. 1, 3c sold at 2s 5d. WHD & Co. Esperanza No. O, 10 cases out at 3s 3d; ditto No. 1, 4 cases out at 2s 7d.

"Hakata Maru."—EM & Co. Forest Hill Seed, 2 cases sold at 2s.

"Glenorchy."—Gavatenne O, 3 cases sold at 2s 11d; ditto 1, 4c sold at 2s 5d, and 4c sold at 2s 6d; ditto 2, 2 cases sold at 2s 2d, and 3c sold at 2s 1d; ditto B, 2c sold at 1s 8d; ditto S, 2 cases sold at 1s 6d. Kobe Mysore Cardamom O, 2 cases sold at 3s 6d, and 1 case sold at 3s 5d; ditto 1, 7 cases sold at 2s 9d; 2 cases sold at 2s 10d; ditto 2, 2 cases sold at 2s 4d; ditto 3, 1 case sold at 1s 10d; ditto B, 1 case sold at 2s 2d; ditto S, 2 cases sold at 2s; 1 case sold at 1s 11d; ditto seed, 2 cases sold at 2s 4d.

"Inaba Maru."—Galaha Cardamoms Extra, 1 case sold at 2s 6d; ditto AA, 4 cases sold at 2s 11d; ditto A, 5 cases sold at 2s 4d; ditto B, 5 cases sold at 1s 5d; ditto C, 1 case sold at 2s 6d.

"Yorkshire."—Altwood Ceylon Cardamom, 2 cases sold at 3s 2d; 2 cases sold at 2s 8d; 2 cases sold at 2s 4d; 1 case sold 2s 3d; 2 cases sold at 1s 10d; 1 case sold at 2s 5d.

"Kamakura Maru."—Nicholoya No. 1, 5 cases sold at 3s 1d; ditto No. 4, 1 case sold at 1s 6d.

NO. 42 COLOMBO, OCTOBER 30, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[12,767 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Battalgalla	9	15 ch	pek sou	1200	37
2	Hornsey	12	24 hf-cb	bro pek	1440	44
3		15	25 cb	or pek	2375	44
4		18	18 do	pek	1620	40
7	Kandaoya	27	15 do 1 bf-ch	bro or pek	1292	38 bid
8	Erlsmere	30	30 cb	bro pek	2760	38 bid

Messrs. Forbes & Walker.

[491,436 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	A M B	2041	33 cb	bro pek sou	2805	28
3	Urngalla	2044	15 cb	bro pek	1350	35
9	Dorankande	2062	15 cb	bro pek	1500	38
12		2071	10 do	pek sou	900	32
14	Mansfield	2077	50 hf-cb	bro pek	3000	60
15		2080	23 ch	pek	2070	44
17	Elldula	2086	7 ch	bro pek	770	38
18		2089	7 do	or pek	700	42
19		2092	8 do	pek	736	36
22	Great Valley Ceylon, in est. mark	2101	44 hf-cb	bro pek	2420	56
23		2104	17 cb	or pek	1530	45
24		2107	24 do	pek	2160	33
25		2110	22 do	pek sou	1650	34
28	Sbrubs Hill	2119	36 ch	or pek	3420	44 bid
29		2122	46 do	bro pek	4508	44 bid
30		2125	28 do	bro or pek	2800	40 bid
31		2128	36 do	pek	3240	36
33		2134	24 do	bro pek fans	1920	27
35	Ingrogalla	2140	14 cb	bro pek	1400	40
36		2143	17 do	pek	1445	36
45	Tbeddon	2170	20 ch	bro pek	2000	41
46		2173	9 do	pek	810	36
47		2176	8 do	pek sou	720	34
49	Gingran Oya	2182	18 bf-ch	bro pek	1080	42
50		2185	18 do	or pek	990	43
51		2188	22 ch	pek	1870	39
61	Strathspey	2218	16 ch	bro or pek	1760	54
62		2221	20 do	pek	2000	40
63		2224	11 do	pek sou	1045	38 bid
65	Bargany	2230	15 hf-cb	bro or pek	975	56
66		2233	10 ch	or pek	1050	41 bid
69	Woodend	2242	26 ch	bro pek	2600	39
70		2245	40 do	pek	3800	35
71		2248	10 do	pek sou	850	32
74	Agra Oya	7	17 cb	bro pek	1780	47
75		10	15 do	or pek	1275	42
76		13	13 do	pek	1170	37
77		16	10 do	pek sou	900	33
79	Gallawatte	22	17 do	bro pek	1615	40
80		25	19 do	pek	1615	36
83		34	11 do	pek fans	700	34
85	Rowley	40	20 bf-ch	bro pek	1000	44
86		43	19 do	pek	950	38
87	Tymawr	46	23 ch	or pek	1150	47
88		49	20 do	bro pek	1100	46 bid
89		52	32 do	pek	1440	39
90		55	25 do	pek sou	1125	40
94	Kitulgalla	67	28 hf-ch	or pek	1440	41
95		70	14 do	bro or pek	840	39
96		73	31 do	pek	2325	35
97	Cotswold	76	7 ch	bro pek	700	54
98		79	8 do	pek	720	36
102	Ambalangoda	91	19 ch	bro pek	1900	42
103		94	17 do	pek	1615	38
107	Anningkande	106	11 ch	pek	1045	37
108		109	8 do	pek sou	720	33
110	Erlsmere	115	26 bf-ch	bro or pek	1456	54
111		117	59 ch	bro pek	5310	40 bid
112		121	67 do	pekoe	4824	35
113		124	14 do	pek sou	1232	34
115	Ascot	130	32 cb	bro pek	2880	39
116		133	9 do	bro or pek	900	38
118		139	10 do	dust	800	25
119	C R D	142	10 cb	dust	1000	26
120	Middleton	145	13 ch	bro mix	1300	53
121		148	13 do	pek	1170	43
122	Talgaswella	151	10 ch	bro or pek	1000	44
123		154	16 do	bro pek	1440	49
125		160	29 do	or pek	2610	39
126		163	23 do	pek	1955	36
127		166	19 do	pek sou	1615	33
131	Yalatenne	178	15 ch	bro or pek	900	50 bid
139	N	202	23 ch	bro tea	2990	27
140	Agra Elbedde	205	28 bf-ch	or pek	1540	50 bid
141		208	25 do	bro or pek	1500	51
142		211	57 do	pek	3135	41 bid
143		214	36 do	pek sou	1800	36 bid
146	Springwood	223	9 ch	congou	765	30
147	Castlereagb	226	16 ch	bro pek	1600	53
148		129	15 do	or pek	1200	45
149		232	13 do	pek	1040	41
153	Pambagama	244	53 ch	sou	4770	28
154	Nugagalla	247	16 bf-cb	bro pek	800	53
155		250	40 do	pek	2000	38
156	Vogan	253	55 ch	bro pek	5500	46
157		256	47 do	pek	4230	35
163	Meemora Oya	271	24 hf-cb	pek	960	31
164	Irex	277	36 ch	bro pek	3600	40
165		280	23 ch	pek	2070	35
166		283	11 do	pek sou	880	33
170	Ireby	295	28 cb	bro pek	3080	52 bid
171		298	18 do	pek	1620	42
172		301	10 do	pek sou	900	40
175	Hopton	310	35 cb	bro pek	3500	44 bid
176		313	32 do	pek	3040	40
177		316	10 do	pek sou	950	36
181	Dammeria	328	10 ch	bro or pek	1300	40
182		331	30 do	or pek	3300	46
183		334	32 ch	bro pek	3200	42
184		337	24 do	pek	2160	40
185		340	15 do	pek sou	1350	38
186	D M	343	13 do	bro pek No. 1	1300	36
189	Maha Uva	352	27 hf-ch	bro or pek	1755	43
190		355	14 do	or pek	840	42 bid
191		358	22 do	pek	2090	40
195	Tunisgalla	370	9 ch	pek sou	720	32
198	Glendon	379	33 cb	bro pek	3135	42 bid
199		382	35 do	pek	2800	36
200		385	17 do	pek sou	1360	33
204	Allagalla	397	15 ch	bro mixed	1125	32
205		400	25 hf-ch	dust	2125	26
206		403	19 do	fans	1045	37
215	Yatiyana	430	10 ch	pek	960	34
218	Kilkenny	439	20 ch	bro or pek	2040	35 bid
219		442	19 do	bro pek No. 1	1672	36
220		445	20 do	bro pek No. 2	1920	36
221		448	28 do	pek	2184	34
222	W N	451	17 ch	bro tea	1530	28
225	Yataderia	460	15 cb	bro or pek	1575	42
226		463	38 do	bro pek	3914	37
227		466	14 do	or pek	1302	37
228		469	48 do	pek	4128	33
229	Mariawatte	472	13 ch	pek sou	1105	35
230		475	11 hf-ch	dust	935	26
232	Poonagalla	481	8 ch	or pek	800	44
233		484	18 do	pek	1710	37
244	Weyungawatte	517	28 hf-ch	bro or pek	1680	40 bid
245		520	32 ch	bro pek	3040	37 bid
246		523	29 do	pek	2465	35 bid
250	Arapolakande	535	66 ch	bro pek	5940	46
251		538	39 do	pek	3120	36
254	V O A	547	13 ch	bro tea	1300	23
259	T B, in estate mark	562	8 ch	bro pek	800	37
260		565	14 do	pek	1260	34
265	B	580	17 do	pek sou	1360	33
266		583	14 hf-cb	dust	1120	26
267	Pallagodde	586	14 ch	bro or pek	1400	39
268		589	21 do	bro pek	2100	49
269		592	16 do	or pek	1360	39
270		595	23 do	pek	1840	37
271		598	15 do	pek sou	1350	34
279	Ganapalla	622	18 do	or pek	1620	42
280		625	9 do	bro or pek	810	39
281		628	24 do	bro pek	2160	37
282		631	38 do	pek	3040	34
283		634	10 do	pek sou	750	32
284		637	10 do	bro pek fans	1000	33
285		640	13 hf-ch	dust	1118	26

Lot.		Box	Pkgs.	Name.	lb.	c.
286	Fairlawn	643	30 hf cb	bro pek	1500	59
287		646	22 cb	or pek	1980	44
288		649	10 do	pek	800	40
291	Dea Ella	658	20 bf-cb	bro or pek	1200	44
292		661	33 do	or pek	1815	43
293		664	36 do	pek	1800	37
294		667	19 do	pek sou	950	34
298	H G M	679	9 ch	bro or pek	765	50
299		682	17 do	bro pek	1700	40
300		685	16 do	pek	1360	36
301		688	10 do	pek sou	850	34
302		691	9 do	bro pek fans	810	34
307	I N G in est. mark	706	6 ch	bro pek dust	720	26
319	Pusella	742	9 ch	bro pek	900	43
320		745	13 do	or pek	1105	42
321		748	22 do	pek	1738	34
322	Waratenne	751	13 hf-cb	bro or pek	715	39
323		754	13 ch	bro pek	1105	36
324		757	16 do	pek	1360	33
325	Geragama	760	8 do	bro pek	720	38
326		763	13 do	pek	1105	33
327	Carfax	766	12 do	bro pek	1320	40
328	Monkswood	769	16 bf cb	bro pek	800	72
329		772	18 do	or pek	810	81
330		775	14 ch	pek	1260	48
331	Middleton	778	23 hf ch	bro or pek	1265	66
332		781	25 cb	bro pek	2500	59
333		784	23 do	pek	2070	44
334	Vogan	787	49 do	bro pek	4900	46
335		790	42 do	pek	3990	36
339	Hentleys	802	18 hf-ch	bro pek	954	44
341		808	16 ch	pek	1360	35
344	K P W	817	26 hf-cb	bro or pek	1560	43
345		820	28 do	bro pek	1640	39
346		823	67 do	pek	3350	36
349	O S S in est. mark	832	38 ch	bro or pek	2850	38 bid
350	F	835	33 do	pek	2805	34 bid
355	Knavesmire	850	16 hf-ch	or pek	800	41
356		853	21 ch	bro pek	1995	42
357		856	26 do	pek	2210	37
360		865	22 do	pek	1650	35
361	M	868	10 do	bro or pek	1000	42 bid
362	L	871	19 do	unast	1805	29 bid
381	Dambagas-talawa	928	28 do	bro pek	2856	42 bid
382	Coreen	931	19 bf-ch	bro or pek	1102	53
383		934	36 do	bro pek	2088	40 bid
384	Drayton	937	56 ch	pek	4760	39
385		940	24 do	pek sou	2040	36
389	Mawaliganga-watte	952	28 do	bro pek	2800	36
390		955	28 do	pek sou	2240	32
392	A in est. mark	961	7 do	pek	700	31 bid
393	G P E	964	19 do	or pek	1710	36 bid
394	W P A	967	30 bf-cb	pek	1680	32 bid
395	Clyde	970	51 ch	bro pek	5100	39
396		973	20 do	pek	2000	34
400	Irex	985	8 do	pek sou	720	32 bid
401	W D D	988	48 do	pek	4560	32 bid
402	H A C	991	27 bf-cb	pek sou	1350	31 bid
404	Carberry	997	21 cb	bro pek	1890	40 bid
405		1000	15 do	pek	1200	34
408	Stisted	1009	40 hf-cb	bro or pek	2600	44 bid
411		1018	32 do	pek sou	1824	34
413	Maha Oya	1024	13 cb	pek dust	1300	26
414	Ellawatte	1027	22 do	bro pek	2244	47 bid
415		1030	46 do	pek	4692	39 bid
416		1033	8 do	pek sou	800	38
418	H and B	1039	13 bf-cb	pek sou	780	32 bid
419	M G E	1042	17 do	pek sou	850	30

[Messrs. Somerville & Co.—205,693 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
2	Romania	742	7 ch	bro pek	700	37
3		745	12 do	pek	1200	33
4		748	7 do	pek sou	700	29
7	Honiton	757	26 bf-cb	bro pek	1300	40
8		760	14 ch	pek	1190	35
9		763	14 do	pek sou	1120	32
12	Ravenscraig	772	24 ch	or pek	2040	44
13		775	18 do	bro pek	1620	41
14		778	19 do	pek	1710	37
17	Elcbico	787	68 bf cb	bro pek	3740	39
18		790	39 do	pek	1950	36
19	Patulpana	793	13 do	bro pek	715	36
23	Theberton	805	11 ch	bro or pek	1100	39 bid
24		808	18 do	pek	1620	35 bid
27	Blinkbonnie	817	19 bf-ch	bro pek	1140	66
28		820	26 cb	pek	2288	42
32	Dryburgh	832	25 ch	pek	2075	36
33		835	11 do	pek sou	784	32

Lot.		Box.	Pkgs.	Name.	lb.	c.
35	Aberfoyle	841	18 hf-cb	bro or pek	900	38
36		844	7 cb	pek	700	35
39	Kosgahahena	853	8 cb 1 hf ch	bro pek	900	35
40		856	12 do	pek	1200	32
45	Lonach	871	80 hf ch	bro pek	4400	40 bid
46		874	50 ch	pek	2550	37
47		877	18 do	pek sou	1530	34
48	Glen Morgan Nilgris	880	10 cb	or pek	1000	44 bid
49		883	42 do	pek	3360	38 bid
50		886	13 do	pek sou	845	34 bid
56	Hangraoya	904	34 hf cb	bro pek	1870	43
57		907	21 do	or pek	945	40
58		910	13 ch	pek	1105	37
60	Auburn	916	11 ch	or pek	880	37
61		919	19 do	bro pek	1900	39
62		922	13 do	pek sou	910	32
67	Dikmukalana	937	35 bf-cb	bro pek fan	1925	36
68		940	21 do	pek	1050	34
69		943	22 do	pek sou	1100	32
79	Lower Dickoya	973	17 ch	bro pek	1700	38
80		976	12 do	pek	1200	35
84	Nega	988	14 hf-cb	bro pek	700	38
89	Harangalla	4	12 cb	bro pek	1140	40 bid
90		7	24 do	pek	2160	38
93	Ambalawa	16	30 hf-ch	bro pek	1560	36
94		19	23 do	pek	1035	34
95	Yarrow	22	53 hf-ch	bro pek	2968	40 bid
96		25	53 do	pek	2650	38
102	Depedene	43	80 hf-cb	bro pek	4800	39
103		46	76 do	pek	3800	35
104		49	51 do	pek sou	2550	32
106	Narangoda	55	18 cb	bro pek	1800	37 bid
107		58	12 do	pek	1140	36
110	Medegodde	67	50 bf-cb	bro pek	2500	45
111		70	70 do	pek	3150	37
115	Pasmalie	82	12 cb	bro pek	1320	40 bid
116		85	11 do	or pek	990	39
117		88	23 do	pek	2185	34 bid
118		91	13 do	pek sou	1040	31 bid
127	Neboda	118	15 ch	bro or pek	1500	36
128		121	42 do	bro pek	4200	37
129		124	15 do	pek	1350	34
130		127	10 do	pek sou	800	32
132	Neuchatel	133	39 ch	bro pek	4095	40
133		136	28 do	pek	2380	37
134		139	19 do	pek sou	1710	32
135	Doragalla	142	12 cb	bro or pek	1260	45
136		145	18 do	bro pek	1800	42
137		148	42 do	pek	3570	36
139	Horagoda	154	9 cb	bro or pek	900	40
140		157	9 do	or pek	765	38
141		160	16 do	pek	1440	34
142		163	9 do	pek sou	765	32
144	Kosgama	169	14 ch	bro pek	1470	39
145		172	11 do	pek	880	36
147	Bollagalla	178	22 ch	bro pek	2200	37 bid
148		181	14 do	pek	1120	35
156	K L	205	12 bf cb	dust	1050	26
157	Nillicollay-watte	208	17 hf-cb	bro pek	969	40
158		211	11 do	or pek	935	38
159		214	23 do	pek	1219	35
165	Kotigala	232	10 ch	bro pek	1200	32
166		235	12 do	pek	1365	28
167	K L	238	13 bf ch	bro pek	702	41 bid
168	Ravana	241	12 do	pek sou	1020	31 bid
171		250	25 hf-ch	bro pek	1375	45 bid
172		253	35 do	pek	1575	36 bid
173		256	40 do	pek sou	1800	33
174	R A, in estate mark	259	15 hf ch	bro pek	945	37
175	W V A	262	15 cb	pek	1525	33 bid
176	Monte Christo	265	21 ch	bro pek	2100	45
177	Warakamure	268	25 ch	pek	2375	33
178	Jak Tree Hill	271	22 bf-ch	bro pek	1100	46
179		274	30 do	pek	1350	36
184	Rayigam	289	48 cb	bro pek	4800	38
185		292	33 do	or pek	2706	37
186		295	31 do	pek	2480	35
189	Blacbburn	304	11 bf.cb	fans	825	33

[Mr. E. John.—185,535 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
6	H F	562	9 cb	sou	805	25
7	Perth	565	34 do	bro or pek	3230	38 bid
11	Natuwakelle	577	15 do	bro pek	1500	37 bid
12		580	27 do	pekoe	2700	34
13		583	30 do	pek sou	2700	31
19	Rookwood	601	67 bf-cb	bro or pek	3886	48
20		604	33 do	or pek	1650	49
21		607	36 do	pekoe	1728	41
22		610	91 do	pek sou	4550	37
23		613	51 do	pek sou No. 2	3672	33

Lot.		Box.	Pkgs.	Name	lb.	c.
24	Perth	616	38 ch	bro or pek	3610	38 bid
28	Galloola	628	27 do	bro pek	2700	41 bid
29		631	41 do	pekoe	4100	37 bid
30		634	34 do	pek sou	3400	33 bid
36	Kandaloya	652	48 hf-ch	bro pek	2160	41 bid
37		655	20 do	or pek	800	41
38		658	100 do	pekoe	4000	37
40		664	18 do	fans	900	31
44	N B	676	16 do	dust	1440	26
45		679	10 ch	unas	944	35
53	Alplakande	703	9 do	sou	720	27
57	Glentilt	715	47 do	bro pek	4700	46 bid
58		718	21 do	pekoe	2100	37 bid
60		724	16 hf ch	fans	1280	28
61	Mocha	727	28 ch	bro or pek	2800	68
62		730	17 do	or pek	1530	51
63		733	21 do	pekoe	1995	46 bid
64		736	26 do	pek sou	2080	40 bid
66	Dalhousie	742	21 hf-ch	pro pek	1260	48 bid
67		745	44 do	pek No. 1	1980	39
68		748	24 do	pek No. 2	1080	37
75	Rondura	769	8 ch	or pek	720	44
76		772	27 do	bro pek	2700	39
77		775	28 do	pekoe	2520	35
78		778	15 do	pek sou	1350	32
80	Agra Ouvah	784	28 hf ch	bro or pek		
				No. 1	1792	64
81		787	39 do	bro or pek		
				No. 2	2418	54
82		790	13 do	or pek	1248	47
83		793	8 do	pekoe	760	43
84	Callander	796	19 hf-ch	bro or pek	1140	55
88	Galella	808	16 ch	or pek	1360	44
89		811	26 do	bro or pek	2600	44 bid
90		814	14 do	pekoe	1260	39
92	Kotuagedera	820	17 do	bro or pek	1700	36
93		823	23 do	bro pek	2300	34
94		826	17 do	pekoe	1700	32
95		829	7 do			
			1 hf-ch	pek sou	755	29
96	Gangawatte	832	14 do	or pek	770	49
97		835	14 ch	pekoe	1260	39
99		841	13 hf-ch	bro or pek	780	57
101	Poilakande	847	59 ch	bro pek	5900	34 bid
102		850	31 do	pekoe	2790	33 bid
108	Glasgow	868	18 do	bro or pek	1530	57
109		871	25 do	bro pek	2000	47
110		874	17 do	or pek	1105	46
111		877	11 do	pekoe	1100	42
115	Ferndale	889	9 do	pek sou	810	34
116	M T C L	892	7 do	bro pek	840	38
117		895	10 do	fans	1350	33
118		898	6 do	dust	990	26
119	Yahalakelle	901	10 ch	pek sou	700	29 bid
121	Maskeliya	907	15 hf ch	bro or pek	750	56 bid
122		910	15 ch	or pek	1350	43 bid
123		913	10 do	pekoe	900	39
124		916	11 do	pek sou	1100	36
126	Evalgolla	922	33 hf-ch	bro pek	1650	46
127		925	47 do	pekoe	2115	37
132	T K	940	15 do	bro pek fans	1054	32 bid
133	Morahela	943	11 ch			
			1 hf-ch	bro pek	1112	35 bid
134		946	38 ch	bro pek	3648	37 bid
135		949	30 do	or pek	2820	35
136		952	22 do	or pek	2068	36 bid
137		955	15 do	pekoe	1380	33 bid
141	B, in est. mark	967	14 hf-ch	or pek	700	33 bid
142	Galella	970	8 do	dust	720	26
144	Murraythwaite	976	10 ch	bro pek	950	38
145		979	12 do	pekoe	1020	34
146	Bittacy	982	38 do	bro pek	3800	41 bid
147	Mount Temple	985	10 do	bro or pek	1040	withd'n
148		988	29 do	bro pek	2610	32 bid
149		991	18 do	bro pek No. 2	1728	out

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	M'Golla	2038	2 ch	red leaf fans	190	19
4	Uragalla	2047	5 ch	pek	400	33
5		2050	5 do	pek sou	375	30
6		2053	1 do	red leaf	75	26
7		2056	1 do	dust	120	25
8		2059	1 hf-ch	dust	57	26
10	Doranakan-					
	de	2065	6 ch	pekoe	570	37
11		2068	7 do	pek No. 2	630	35
13		2074	2 do	dust	240	25
16	Mansfield	2083	7 ch	pek sou	595	42
20	Elldula	2095	3 ch	pek sou	270	33
21		2098	1 do	dust	95	27

Lot		Box.	Pkgs.	Name.	lb.	c.
26	Great Valley,					
	Ceylon in est.					
	mark	2113	6 ch	sou	450	31
27		2116	6 do	dust	510	27
32	Shrubs Hill	2131	6 ch	pek sou	570	32
34	Quildon	2137	6 do	bro tea	420	27
48	Theddon	2179	1 ch	dust	150	25
52	Gingran Oya	2191	6 ch	pek sou	540	35
53	Cooroondoo-					
	watte	2194	10 hf-ch	bro pek	560	47
54		2197	12 do	pek	660	39
55		2200	7 do	pek sou	385	34
56		2203	8 do	pek dust	252	28
64	Strathspey	2227	3 ch	dust	348	27
67	Bargany	2236	6 do	pek	600	40
68		2239	2 do	dust	190	26
72	Woodend	1	2 ch	dust	290	26
73	K G K	4	1 hf-ch	red leaf	56	22
78	Agra Oya	19	2 ch	fans	150	33
81	Gallawatte	28	4 ch	pek sou	340	32
82		31	5 do	sou	400	31
84		37	6 do	dust	510	25
91	Ookcowatte,					
	No. 1	58	1 ch	sou	90	30
92		61	1 do	dust	100	25
93		64	4 hf-ch	pek fans	360	28
99	Cotswold	82	8 ch	pek son	600	32
100		85	2 do	sou	150	28
101		88	2 do	dust	170	27
104	Ambalangoda	97	6 ch	pek sou	570	35
105		100	2 do	sou	190	32
106		103	2 do	dust	220	27
109	Anningkan-					
	de	112	2 ch	red leaf	180	26
114	Erlsmere	127	5 ch	dust	344	26
117	Ascot	136	6 ch	bro or fans	600	34
124	Talgaswella	157	6 do	bro pek No 2	540	36
128		169	1 do	fans	130	30
129		172	1 do	dust	135	27
130	T	175	5 ch	fans	650	24
132	Yelatenne	181	11 do	or pek	627	44
133		184	6 hf-ch	pek	318	39
134		187	1 do	pek sou	50	36
135	Yelatenne	190	5 ch	bro or pek	300	52 bid
136		193	2 do	or pek	114	44
137		196	2 do	pek	106	39
138		199	1 do	dust	80	26
144	X X	217	5 ch	pek fans	350	34
145		220	7 do	pek dust	560	26
150	Castlereagh	235	2 ch	pek sou	160	33
151		238	5 hf-ch	fans	350	34
152		241	2 do	dust	160	26
158	Vogan	259	4 ch	pek sou	340	31
159		262	6 do	dust	510	25
160		265	3 do	bro pek fans	330	33
161	Meemora					
	Oya	268	10 hf-ch	bro pek	400	36
163		274	16 do	pek sou	640	29
167	Irex	286	2 ch	dust	200	26
168		289	1 do	bro tea	90	27
169	Cranley	292	1 ch	pek	84	36
173	Ireby	304	5 hf-ch	dust	400	27
174		307	4 do	fans	2 0	36
178	Hopton	319	5 ch	sou	475	32
179		322	4 do	dust	440	26
180	B W D	325	8 hf-ch	dust	600	26
187	Dammeria	346	7 ch	pek No. 1	630	33
188		349	3 hf-ch	dust	270	26
192	Maha Uva	361	8 ch	pek sou	680	35
193		364	2 do	pek fans	150	33
194		367	4 do	dust	360	26
196	Tunisgalla	373	4 hf-ch	dust	320	25
197	Glendon	376	7 ch	bro or pek	455	37
201	G	388	3 do	sou	285	30
202		391	1 do	pek fans	120	30
203		394	1 do	dust	135	24
207	Glencore	406	3 ch	bro pek	375	63
213	Yatiyana	424	2 do	or pek	220	40
214		427	3 do			
			4 hf-ch	bro pek	496	40
216		433	5 do	pek sou	430	31
217		436	1 do	pek sou		
				No. 2	95	29
223	W N	454	5 hf-ch	fans	300	21
224		457	2 do	dust	180	23
231	Poonagalla	478	3 ch	bro or pek	300	44
234		487	3 hf-ch	dust	240	27
235	P G A	490	1 ch	bro mix	95	31
236	P G A, No. 2	493	1 hf-ch	bro or pek	50	36
237		496	1 do	or pek	50	34
238		499	1 ch	pek	95	33
239		502	4 do	fans	480	34
240		505	1 hf-ch	fans	65	34
241		508	3 ch	dust	390	26
242		511	1 do	red leaf	95	32
247	Weyunga-					
	watte	526	3 ch	pek sou	255	32

Lot.		Box.	Pkgs.	Name.	lb.	c.
248		529	3 hf-ch	dust	255	25
249	Arapolakande	532	4 ch	bro or pek	440	41
252		541	5 do	pek sou	450	32
253		544	2 do	dust	220	28
261	T B in est. mark	568	7 ch	pek sou	630	32
262	Cholankande	571	1 box	flo. pek	5	R1·31
263		574	2 do	flo. or pek	32	R1·30
264		557	3 do	flo. bro pek	15	R1·75
289	Fairlawn	652	3 hf-ch	dust	255	28
290	F L in est. mark	655	2 ch	bro mix	200	23
295	Bodawa	670	5 hf-ch	bro pek	290	40
296		673	4 do	pek	176	34
297		676	5 do	pek sou	225	31
308	I N G in est. mark	709	4 do	pek sou	340	30
309		712	4 do	sou	340	27
336	Vogan	793	6 ch	pek sou	510	31
337		796	5 do	dust	425	26
338		799	3 do	bro pek fans	360	31
340	Hentleys	805	10 hf-ch	or pek	450	41
342		811	3 ch	pek sou	240	32
343		814	6 hf-ch	pek dust	450	25
347	K P W	826	13 do	pek sou	650	32
348		829	3 do	dust	255	26
351	O S S in est. mark	838	5 ch	pek sou	400	32
352		841	1 do	sou	80	30
353		844	4 hf-ch	pek fans	320	30
354		847	2 do	dust	200	26
358	Knavesmire	859	9 ch	pek sou	630	33
359		862	4 hf-ch	dust	340	26
363	Belgodde	874	4 do	bro pek	200	40
364		877	3 do	or pek	150	36
365		880	5 do	pek	250	33
366		883	1 do	pek sou	45	31
367	Kotuwa	886	2 ch	bro pek	200	40
368		889	2 do	or pek	160	36
369		892	2 do	pek	160	33
370	D W	895	5 do	bro mix	400	22
371	Relugas	898	5 do	dust	625	26
372	Memorakande	901	3 do	dust	450	26
373	Poengalla	904	4 do	dust	340	26
386	Drayton	943	2 do	sou	160	32
387	Mawaligangawatte	946	16 hf-ch	bro or pek	605	49
388		949	16 do	or pek	672	38
391		958	4 do	pek dust	300	26
397	Clyde	976	2 ch	pek sou	200	31
398		979	4 do	dust	400	25
399		982	4 do	bro tea	400	33
403	Carberry	994	2 do	bro or pek	220	37
406		1003	3 do	pek sou	270	31
407		1006	1 do	dust	86	26
409	Stisted	1012	8 hf-ch	or pek	480	43
410		1015	9 do	pek	540	39
412		1021	4 do	dust	320	26
417	Ellawatta	1036	3 do	dust	300	26

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	St. Leys	739	2 ch	bro mix	160	22
5	Romania	751	2 ch	dust	290	26
6		754	2 do	bro mix	200	24
10	Honiton	766	2 hf ch	fans	100	33
11		769	3 do	dust	210	26
15	Ravenscraig	781	3 ch	pek sou	270	32
16		784	7 hf-ch	fans	560	28
20	Patulpana	796	13 hf-ch	pek	650	33
21		799	7 do	pek sou	350	30
22		802	2 do	sou	100	27
25	Theberton	118	2 ch	pek sou	180	31
26		814	1 do	pek fans	100	29
29	Blinkbonnie	823	5 ch	pek sou	410	39
30	Dryburgh	826	10 hf-ch	bro or pek	600	40
31		829	7 ch	or pek	658	42
34		838	3 hf-ch	fans	219	30
37	Aberfoyle	847	3 ch	pek sou	285	31
38		850	6 hf-ch	bro pek fans	414	34
41	Kosgahahena	859	4 ch	pek sou	355	27
42		862	3 hf-ch	sou	150	26
43		865	1 do	fans	82	26
44		868	3 do	pek dust	230	26
51	Glen Morgan Nilgris	889	3 ch	bro pek	345	35
52		892	3 do	fans	345	30
59	Hangranoya	913	6 ch	pek sou	450	34
63	Auburn	925	2 ch	bro tea	168	28
64		928	1 do	sou	85	20
65		931	1 hf-ch	fans	75	28
66		934	2 do	dust	160	28

Lot.		Box	Pkgs.	Name	lb.	c.
70	Dikmukalana	946	5 hf ch	sou	250	30
71	S	949	4 hf-ch	bro tea	200	27
72		952	4 do	dust	320	26
73	A	955	2 hf-ch	bro tea	100	27
74		958	2 do	dust	160	27
75	P T N, in estate mark	961	6 hf-ch	bro pek	336	28 bid
76		964	12 do	sou	600	27
77		967	2 do	fans	112	22
78		970	1 do	dust	70	26
81	Lower Dickoya	979	2 ch	pek sou	200	31
82		982	2 ch	dust	180	25
83		985	3 sacks	red leaf	180	21
85	Nega	991	9 hf-ch	pek	450	33
86		994	3 do	pek sou	150	30
87		997	1 do	dust	60	27
88	Venture	1	5 ch	red leaf	425	25
105	Depedene	52	4 hf-ch	dust	340	27
108	Narangoda	61	5 ch	pek sou	540	32
109		64	5 hf-ch	dust	375	27
112	Meddagodde	73	6 hf-ch	pek sou	240	32
113		76	3 do	fans	195	32
114		79	3 do	dust	240	26
119	Pussetenne	94	1 hf ch	fans	75	28
120		97	2 do	dust	170	26
121		100	2 do	bro pek fans	150	32
122		103	2 do	bro mix	100	27
123	F A, in estate mark	106	3 ch	red leaf	156	23
131	Nehoda	130	3 hf ch	dust	240	26
138	Boragalla	151	4 ch	bro mix	560	24
143	Horagoda	166	1 ch	dust	100	25
146	Kosgama	175	2 ch	pek sou	150	32
149	Bollagalla	184	7 ch	pek sou	560	31
154	K L	199	7 ch	pek sou	679	28 bid
155		212	7 do	bro mix	665	17
160	Nillicollaywatte	217	2 hf.ch	pek sou	170	31
161		220	1 do	dust	80	25
162		223	2 do	fans	130	27
163	M G	226	2 ch	bro pek	200	26
164		229	4 do	sou	336	19
169	K L	244	3 hf-ch	sou	228	30 bid
170		247	2 do	dust	140	26
180	Jak Tree Hill	277	2 hf-ch	pek sou	80	32
181		280	2 do	fans	130	31
182		283	1 do	dust	80	25
187	Blackburn	289	3 ch	bro tea	255	25
188		301	3 do	sou	285	29
190		307	3 hf ch	dust	270	26
191	G	310	4 ch	bro or pek	345	37
192		313	1 do	bro pek	100	37
193	L	316	1 ch	bro mix	100	17
194		319	7 hf-ch	dust	560	32
195	W O	322	4 ch	bro or pek	400	33 bid
196	D	225	3 ch	pek sou	243	16 bid
197		328	1 do	fans	85	23

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Arabia	547	1 ch	bro pek	10	35
2		550	1 hf-ch	pekoe	5	27
3		553	1 ch 1 hf-ch	sou	137	2
4		556	3 ch	bro mix	249	17
5		559	3 hf-ch	fans	138	19
8	Perth	568	7 ch	pekoe	525	36
9		571	4 do	pek sou	280	32
10		574	2 hf-ch	pek dust	150	28
14	Natuwakelle	586	1 ch	dust	125	25
25	Perth	619	9 do	pekoe	626	36
26		622	6 do	pek sou	402	32
27		625	4 hf-ch	pek dust	300	27
31	Galloola	637	2 ch	dust	200	26
39	Kandaloya	661	12 hf-ch	pek sou	480	33
41		667	12 do	dust	600	26
42		670	7 do	bro tea	280	31
43	N B	673	1 do	pek sou	41	44
46		682	5 ch	sou	500	40
47		685	2 do 1 hf-ch	bro mix	270	27
48	Choughleigh	688	8 do	or pek	400	42
49		691	8 do	bro or pek	480	45 bid
50		694	6 ch	pekoe	510	36
51		697	2 do	pek sou	172	34
52		700	1 hf-ch	dust	90	27
54	W H R	706	3 ch	dust	300	29
55		709	3 do	fans	270	21
58	Albion	712	1 do	red leaf	90	24
59	Glentilt	721	5 do	pek sou	475	35
65	Dalhousie	739	12 hf-ch	or pek	540	56
69		751	4 do	dust	260	28

Lot		Box.	Pkgs.		Name.	lb.	c.
70	Callander	754	11	do	bro or pek	680	51
71		757	6	do	or pek	342	48
72		760	4	do	pekoe	212	42
73		763	1	do	fans	75	30
74		766	1	do	dust	80	27
79	Rondura	781	2	ch	dust	190	31
85	Callander	799	9	hf-ch	or pek	513	46
86		802	7	do	pekoe	371	41
87		805	1	do	pek sou	50	35
91	Galella	817	6	ch	pek sou	540	34
93	Gangawatte	838	5	hf-ch	dust	425	27
100		844	6	do	pek fans	420	34
120	Annamallai	904	2	do	dust	170	25
125	Maskeliya	919	4	ch	unas	400	32
128	Evalgolla	928	3	hf-ch	pek sou	120	32
129		931	3	do	fans	195	33
130		934	1	do	dust	80	26
131	Ankande	937	4	do	dust	280	25
138	Morahela	958	6	do	dust	504	25
143	Galella	973	2	do	red leaf	102	24

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, October 6.

"Senator."—1 Haputale, 1 barrel sold at 74s; 2 ditto, 1 cask and 1 barrel sold at 66s; 3 ditto, 1 barrel out; PB ditto, 1 barrel out; T ditto, 1 barrel out. 1 Leangawella, 1 cask sold at 85s; 2 ditto, 3 casks and 1 barrel sold at 71s; 3 ditto, 1 cask sold at 40s; BB ditto, 1 barrel sold at 65s.

"Austral."—OBEC in estate mark, Delmar O, 1 barrel sold at 79s 6d; ditto 1, 1 cask and 1 tierce sold at 79s 6d; ditto 2, casks out at 70s; ditto PB, 2 barrels out; ditto T, 1 tierce and 1 barrel sold at 30s; OBEC DM 1 in estate mark, 1 barrel sold at 26s; ditto 2, 1 barrel sold at 26s; ditto T, 1 barrel sold at 26s; OBEC in estate mark, Delmar, 1 barrel sold at 27s, overtaken. Standard Co. St. Leonards F, 1 barrel sold at 84s; 1, 1 tierce sold at 82s; 2, 9 casks sold at 82s; S, 6 casks out, 60s refused; PB, 1 cask sold at 75s; St. L T in estate mark, 1 cask out; 1 bag out, overtaken.

"Senator."—Size O, Sarnia Size 1, 1 barrel and 1 cask sold at 73s; size 2, 2 casks and 1 barrel out; PB, 1 barrel out. 60s refused.

"Clan McKennon."—Panagala PB, 1 tierce out at 42s.

"Tosa Maru."—Barragalla F, 1 barrel sold at 98s; ditto 1, 2 casks out, 88s refused; ditto 2, 4 casks and 1 barrel out; ditto S, 1 cask and 1 tierce out; ditto PB, 1 barrel out; BRG T in estate mark, 1 barrel sold at 26s.

CEYLON COCOA SALES IN LONDON.

"Clan Fraser."—F Palli, 95 bags out at 77s 6d; 1 ditto, 12 bags out at 77s 6d; F ditto, 100 bags out at 77s 6d.

"Japan."—F Palli, 20 bags sold at 80s; B ditto, 37 bags out.

"Kamakura Maru."—Grove London, 8 bags sold at 73s.

"Inaba Maru."—O MAK in estate mark, estate cocoa, 5 bags out; MAK in estate mark, 20 bags out.

"Patroclus."—Rockhill B, 7 bags sold at 45s 6d; ditto C, 4 bags sold at 49s 6d. Polwatte A, 57 bags out; ditto B, 26 bags sold at 58s 6d.

OBSERVER PRINTING WORKS.

TEA, COFFEE, CINCHONA, COCOA, AND CARDAMOM SALES.

NO. 43 Colombo, November 6, 1899. Price:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[375,379 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
19	Weweywatte	1099	17 ch	bro pek	935	37
24	Kakiriskande	1114	9 ch	pek	855	35
31	Kincora	1135	51 hf-ch	bro pek	2805	47
33		1141	27 ch	pek	2295	40
35	Hatton	1147	23 ch	bro pek	2530	66
36		1150	32 do	pek	2720	43
38	Bickley	1156	39 ch	or pek	2730	34 bid
39		1159	35 do	pek	2210	34 bid
40		1162	31 do	pek sou	1922	32
41	Galkanda	1165	9 ch	bro pek	900	34
46	Harrington	1180	14 ch	or pek	1260	47
47		1183	9 do	pek	810	41
52	Frogmore	1198	17 hf-ch	bro pek	935	47
55	Dunbar	1207	26 hf-ch	bro or pek	1300	60
57		1213	13 ch	pek	1040	42
60	Shrubs Hill	1222	55 ch	or pek	5225	43
61		1225	14 do	bro or pek	1400	42
62		1228	16 do	pek	1488	37
63	Glencorse	1231	22 ch	bro or pek	2200	42
64		1234	32 do	bro pek	2720	43
65		1237	24 do	pek	1920	36
66		1240	20 do	pek sou	1800	32
69	Bonami Estate J D, in est. mark (Travancore)	1249	7 ch	bro pek	871	37
70		1252	11 do	pek	1078	35
71		1255	16 do	pek sou	1200	32
72		1258	11 do	congou	1250	29
74	Glengariffe	1264	35 hf-ch	bro or pek	2100	48
75		1267	35 do	or pek	2204	42
76		1270	11 ch	pek sou	990	37
87	Queensland	1303	14 hf-ch	bro or pek	700	76
88		1306	7 ch	bro pek	700	48
89		1309	18 do	pek	1530	41
92	Roeberry	1318	20 do	bro pek	2000	49
93		1321	26 do	or pek	2496	46
94		1324	46 do	pek	4416	42
95		1327	19 do	pek sou	1710	40
96	Harrow	1330	15 hf-ch	bro or pek	945	63 bid
97		1333	25 ch	pek	2500	42 bid
98		1333	9 do	pek sou	810	38 bid
100	Hunasgeria	1342	10 ch	sou	900	29
102	High Forest	1348	18 hf-ch	or pek No. 1	990	61 bid
103		1351	15 do	or pek	795	55
104		1354	22 do	pek	1034	45
105	Bloomfield	1357	40 ch	bro pek	4400	46 bid
106		1360	20 do	pek	2000	42
107		1363	9 do	pek sou	855	39
112	Pansalatenne	1378	21 ch	bro or pek	2100	44
113		1381	39 do	bro pek	3510	40 bid
114		1384	24 do	pek	2040	36
115		1387	23 do	pek sou	1955	34
116		1390	9 do	fans	1080	33
125	St. Edwards	1417	14 hf ch	bro pek	784	39
126		1420	15 do	pek	840	35
130	Great Valley Ceylon, in est. mark	1432	15 ch	or pek	1350	45
131		1435	19 do	bro pek	1045	56
132		1438	21 do	pek	1890	37
133		1441	17 do	pek sou	1275	34
134	St. Heliers	1444	31 hf-ch	bro or pek	1705	42
135		1447	18 ch	pek	1584	36
140	T'Villa	1462	15 ch	bro or pek	1500	38
142		1468	30 do	pek	2700	34
144		1474	11 do	pek sou	880	31
147	Naseby	1483	30 hf-ch	bro or pek	1740	69
148		1486	22 do	or pek	1056	52
149		1489	13 do	pek	780	48
150		1492	16 do	pek sou	880	44
152	Cooroondoowatte	1498	14 hf-ch	pek	770	39
154	L G F, in est. mark	1604	16 ch	sou	1600	30
155		1507	26 do	dust	2158	26
156	L B K	1510	9 ch	red leaf No. 2	900	24
157	Killarney	1513	17 ch	bro or pek	1700	54
158		1516	14 do	pek sou	1330	42
159	Seenagolla	1519	13 hf-ch	bro pek	715	51
161	Dunkeld	1525	26 hf-ch	bro or pek	1716	48
162		1528	36 do	bro pek	1980	45
163		1531	16 ch	or pek	1520	44
164		1534	21 do	pek	1890	42
176	Castlereagh	1570	23 ch	bro pek	2300	57
177		1573	18 do	or pek	1530	44
178		1576	15 do	pek	1200	41
182	Yataderia	1588	11 ch	bro or pek	1155	41 bid
183		1591	17 do	bro pek	1751	36 bid
184		1594	14 do	or pek	1330	35 bid
185		1597	40 do	pek	3440	34
186		1600	11 do	bro or pek	1155	41 bid
187		1603	16 do	bro pek	1648	36 bid
188		1606	30 do	pek	2580	33
189	A M B	1609	19 ch	bro pek sou	1520	29
202	Gangarapolla	1648	10 ch	bro pek	900	26 bid
203		1651	10 do	pek	800	28
208	Middleton	1666	21 do	bro pek	2100	55
209		1669	18 do	pek	1620	42
211	G M in est. mark	1675	27 hf-ch	bro or pek	1350	54
212		1678	26 do	pek	1300	44
213		1681	19 do	pek sou	874	40
214	Malvern	1684	22 ch	bro pek	1210	42 bid
215		1687	24 do	pek	1680	38
216		1690	16 do	pek sou	1120	34
217	Monkton	1693	24 hf-ch	bro pek	1248	39
232	Ella Oya	1738	21 ch	bro pek	1995	44
233		1741	21 do	pek	1785	37
234		1744	15 do	pek sou	1275	34
238	Parsloes	1756	27 do	bro pek	2700	41 bid
239		1759	23 do	pek	2070	36
241	Waitalawa	1765	55 hf-ch	bro pek	2750	50
242		1768	65 do	pek	3250	39
243		1771	36 do	pek sou	1800	34
245	Rowley	1777	20 hf-ch	bro pek	1000	47
246		1780	17 do	pek	850	39
247		1783	14 do	pek sou	700	34
249	Grace Land	1789	13 do	bro pek	715	35
265	Waratenne	1837	15 hf-ch	bro or pek	825	41
266		1840	13 ch	bro pek	1105	37
267		1843	23 do	pek	1840	34
268		1846	9 do	pek sou	720	32
274	Pine Hill	1864	27 hf-ch	bro pek	1620	65
275		1867	42 do	or pek	2352	47
276		1870	47 ch	pek	3995	40
279	Vogan	1879	50 do	bro pek	4750	43
280		1882	44 do	pek	3740	36
284	O S S in est. mark	1894	38 do	bro or pek	2350	39
285		1897	33 do	pek	2805	36
288	L	1906	19 do	unast	1805	27
289	Geragama	1909	18 hf-ch	bro or pek	990	42
290		1912	10 ch	bro pek	850	39
291		1915	15 do	pek	1200	35
292	Carfax	1918	14 do	bro or pek	1400	54
293		1921	17 do	or pek	1530	47
294		1924	16 do	pek	1440	41
295	Hapton	1927	35 do	br opek	3500	54
303	Maldeniya	1951	18 do	bro or pek	1890	40 bid
304		1954	40 do	or pek	3600	39 bid
305		1957	48 do	pek	4080	36 bid
306		1960	32 do	pek sou	2720	33
307	Ellawatte	1963	22 do	bro pek	2244	48 bid
308		1966	46 do	pek	4602	40
309	Matale	1969	40 hf-ch	bro pek	2200	42
310		1972	13 ch	pek	1170	36
311		1975	9 do	pek sou	810	35
312	Hornsey	1978	13 do	pek sou	1040	39
313		1981	13 do	fans	1040	30
314	Shrubs Hill	1984	28 do	bro or pek	2800	42
315	Pallagodde	1987	9 do	bro or pek	900	38
316		1990	12 do	bro pek	1200	51
317		1993	11 do	or pek	935	43
318		1996	9 do	pek	720	38
319		1999	8 do	pek sou	720	36
320		2002	14 hf-ch	dust	1190	27
326	Longford	2020	9 ch	pek	900	38
329	Yelatenne	2029	15 do	bro or pek	900	53

[Messrs. Somerville & Co.—157,145 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Tientsin	331	8 ch	dust	1040	28
2	Moragalla	334	7 ch	bro pek	700	38
3		337	13 do	pek	1300	34
4		340	10 do	pek sou	1000	32

Lot.		Box	Pkgs.	Name	lb.	c.
6	Daluk Oya	346	18 hf-ch	or pek	990	38
7		349	25 do	pek	1375	33
21	Kurulugalla	391	13 ch	bro pek	1300	39
22		394	12 do	pek	1080	35
26	Stockholm	511	57 ch	bro pek	5700	49
27		514	41 do	pek	3485	41
34	Rambodde	535	22 hf-ch	bro pek	1220	39
35		538	19 do	pek	950	34
39	Labugama	550	26 hf-ch	bro pek	1800	40
			5 ch			
40		553	16 do	pek	1520	35
42	Lonach	559	77 hf-ch	bro pek	3650	43
43		562	26 ch	pek	2210	37
44		565	12 do	pek sou	1020	33
45	Selvawatte	568	15 ch	bro pek	1425	38
46		571	13 do	pek	1170	34
49	N	580	29 hf ch	bro pek	1682	41
50		583	50 do	pek	2500	35
54	G'wernet	595	19 ch	bro pek	1805	39
55		598	13 do	pek	1040	37
57		604	9 do	bro or pek	900	40
62	Marigold	619	39 hf-ch	bro pek	2145	55
63		622	15 hf ch	pek	750	50
64		625	15 do	pek sou	715	44
67	Panapitiya	634	15 ch	pek	1420	34
68		637	9 do	pek sou	990	30
70	Roseneath	643	26 ch	bro pek	2860	40
71		646	13 do	pek	1170	36
72		649	21 do	pek sou	1785	31
74	Kolaborikande	655	61 ch	bro pek	6100	36
75		658	38 do	pek	3610	33
76		661	13 do	pek sou	1170	31
78	Ambalawa	667	21 hf-ch	pek sou	840	32
82	Florida	679	9 ch	bro pek	900	35
83		682	13 do	pek	1300	32
87	Forest Hill	694	24 ch	bro pek	2280	36 bid
88		697	33 do	pek	2338	34
91	G'watte	706	18 ch	bro pek	1800	37
92		709	9 do	pek	855	34
96	Harangalla	721	20 ch	bro pek	1900	42
97		724	24 do	pek	2160	38
98	Hangranoya	727	25 hf ch	bro pek	1375	44
99		730	23 ch	pek	1955	36
101	Nyanaza	736	9 ch	bro or pek	900	65
102		739	10 do	bro pek	1000	40 bid
103		742	15 do	or pek	1350	45
104		745	18 do	pek	1710	39
105		748	8 do	pek sou	720	34
108	Kirrikelle	757	16 hf-ch	bro or pek	912	82 bid
109		760	26 do	or pek	1482	48 bid
110		763	13 ch	pek	1222	41 bid
111	Agarsland	766	19 hf ch	bro or pek	1045	43
112		769	25 do	bro pek	1250	44
113		772	22 ch	pek	1980	36
114		775	14 do	pek sou	1260	34
116	Rayigam	781	21 hf-ch	dust	1680	26
124	Kuralana	805	9 hf-ch	red leaf	855	19
126		811	15 ch	dust	1425	25 bid
128	Welgampola	817	14 hf-ch	bro pek	770	37
129		820	16 do	pek	896	33
130		823	17 do	pek sou	969	31
133	Pasmalie	832	16 ch	bro pek	1600	42 bid
134		835	14 do	or pek	1260	40 bid
135		838	20 do	pek	1900	37 bid
136		841	13 do	pek sou	1040	33
155	Oakham	893	20 hf-ch	or pek	800	48
156		901	20 do	bro pek	1200	49
157		904	17 ch	pek	1520	39
167	Dartry	934	7 ch	bro tea	728	30
168		937	17 do	fans	1309	29
170	Lynford	943	8 ch	pek sou	720	40

[Mr. E. John.—137,609 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	A—A	994	7 ch	dust	700	24
2	Manickwatte	997	14 hf-ch	or pek	700	41
7	Harisland	12	10 ch	bro pek	950	39
9		18	10 do	pek sou	750	34
11	Vincit	24	15 do	bro pek	1350	39
13		30	10 do	pekoe	900	36
15	M M	36	12 hf-ch	pek fans	924	28 bid
16	Ben Nevis	39	13 do	bro pek	780	70
18		45	15 ch	pekoe	1350	41
21	Claremont	54	16 do	bro or pek	1520	39
22		57	9 do	pekoe	810	35
23		60	9 do	pek sou	765	32
24	Glassaugh	63	42 hf-ch	or pek	2184	58
25		66	36 do	bro or pek	2340	52 bid
26		69	36 ch	pekoe	3120	44 bid
27	Doonhinda	72	14 do	bro pek	1540	42
28		75	20 do	pekoe	2000	40
31	Akkara Totum	84	8 do	bro pek	720	32 bid
37	Bellongalla	102	24 hf ch	bro pek	1344	36
38		105	17 ch	pekoe	1360	34
40	Glentilt	111	30 ch	bro pek	3000	49
41		114	13 do	pekoe	1300	40
42	St. John's	117	26 hf-ch	bro or pek	1560	69
43		120	21 do	or pek	1092	52 bid
44		123	24 do	pekoe	1296	52
45		126	18 do	pek sou	972	47
46	Uda	129	9 ch	pro pek	864	28
47		132	18 do	pekoe	1368	30
49	Agra Ouvah	138	44 hf ch	bro or pek No. 1	2684	61
50		141	29 do	bro or pek No. 2	2418	53
51		144	16 ch	or pek	1504	51
52		147	9 do	pekoe	828	44
53	Glasgow	150	19 do	bro or pek	1615	57
54		153	24 do	bro pek	1340	50
55		156	19 do	or pek	1235	48
56		159	11 do	pekoe	1100	43
57	Loughton	162	30 hf-ch	bro pek	1650	39
58		165	58 do	pekoe	2900	37
59		168	28 do	pek sou	1260	33
61	K K	174	32 do	pek fans	2409	29 bid
62		177	11 ch			
			1 hf-ch	dust	1328	25 bid
63	L E L	180	12 ch	bro or pek	1260	46 bid
64		183	30 do	bro pek	3150	40 bid
65		186	10 do	pekoe	1000	37 bid
66	Birnam	189	23 do	pek sou	1426	35
67	Templestowe	192	27 do	bro or pek	2700	51
68		195	23 do	or pek	2070	46
69		198	29 do	pekoe	2465	40 bid
70		201	15 hf-ch	dust	1200	28
72	Orange Field	207	12 ch	bro pek	1200	33 bid
73		210	9 do	pekoe	855	31
78	Keenagaha Ella	225	11 do	or pek	1100	44
79		228	14 do	pekoe	1260	39
81		234	10 do	sou	750	32
82	Hiralouvah	237	26 hf ch	bro or pek	1300	44
84		243	14 ch	pekoe	1260	38
85		246	15 do	pek sou	1275	34
91	Yahalakelle	264	10 do	pek sou	700	30
93	P D	267	17 hf-ch	bro pek fans	993	32 bid
97	Mount Temple	282	20 ch	bro or pek	2000	37
98		285	41 do	pekoe No.1	3690	35 bid
99		288	30 do	bro pek No.2	2250	34
100	Brownlow	291	24 hf-ch	bro or pek	1392	55
101		294	23 ch	or pek	2116	46
102		297	26 do	pekoe	2184	41
103		300	9 hf-ch	dust	765	27
104	Maskeliya	303	15 do	bro or pek	750	60
105		306	15 ch	or pek	1350	45
106	T B	309	28 hf-ch	pek fans	2044	29 bid
109	Woodstock	318	54 ch			
			1 hf ch	bro pek	2785	34 bid
110	Whyddon	321	18 ch	bro pek	1800	52
111		324	18 do	pekoe	1800	29
112		327	18 do	pek sou	1710	35 bid
115	J B	336	23 hf-ch	bro or pek fans	1495	35 bid

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	K W	1045	4 hf-ch	bro pek	240	37
2		1048	5 do	pek	280	36
3		1051	2 do	pek sou	100	33
4		1054	1 do	dust	90	25
5	Hurstpier-point	1057	4 hf-ch	bro pek	336	35
6		1060	3 do	pek	225	33
7		1063	2 do	pek sou	156	31
8		1066	1 do	congou	78	29
9		1069	1 ch	bro pek dust	106	29
10		1072	1 do	fans	77	27
11	Kalupahana	1075	1 hf-ch	bro or pek	58	50
12		1078	3 ch			
			1 hf ch	or pek	318	36
13		1081	7 do	bro pek	406	40
14		1084	2 ch			
			1 hf-ch	pek	240	34
15		1087	4 ch	pek sou	360	31
16		1090	1 do	sou	85	29
17		1093	3 do	bro mix	291	32
18		1096	1 do	dust	77	25
20	Weweywatte	1102	11 do	pek	550	34
21		1105	1 do	fans	65	27
22		1108	1 hf-ch	dust	50	24
23	Kakiriskan-de	1111	3 ch	bro pek	300	45
25		1117	3 do	pek sou	285	31
26	Mahayaya	1120	3 ch	bro or pek	209	40

Lot.		Box.	Pkgs.	Name.	lb.	c.
27		1123	5 hf-ch	bro pek	293	40
28		1126	7 do	pek	397	37
29		1129	7 do	pek sou	383	32
30		1132	1 do	sou	56	29
32	Kincora	1138	3 ch	bro pek	300	45
34		1144	6 do	pek sou	570	34
37	Hatton	1153	5 ch	pek son	400	41
42	Galkande	1168	6 ch	pek	540	33
43		1171	2 do	pek sou	200	29
44		1174	1 do	dust	120	26
45	Harrington	1177	13 hf-ch	bro or pek	650	72
48		1186	1 ch	pek	100	35
49		1189	2 do	or pek fans	220	36
50		1192	1 hf-ch	dust	90	26
51	Frogmore	1195	10 hf-ch	or pek	400	47
53		1201	4 ch	pek	320	36
54		1204	1 do	dust	80	26
56	Dunbar	1210	11 do	or pek	528	43
58	D B R	1216	5 hf-ch	bro pek fans	300	40
59		1219	1 ch	pek sou	80	35
67	Glencorse	1243	4 ch	pek fans	480	31
68		1246	2 do	bro tea	200	30
73	Bonami J D, in estate mark (Travancore)	1261	4 ch	pek fans	400	32
77	Glengariffe	1273	8 hf-ch	dust	640	27
78	B B, in estate mark	1276	4 hf-ch	bro pek	240	34
79		1279	1 ch	pek	95	32
80		1282	1 do	dust	75	27
81	L B K	1285	6 ch	red leaf	510	27
82	C N	1288	4 ch	bro tea	400	26
90	Queensland	1312	3 hf-ch	dust	235	27
91		1315	3 do	fans	180	26
99	Harrow	1339	1 hf-ch	dust	90	26
101	Hunasgeria	1345	8 ch	dust	640	27
108	Bloomfield	1366	2 hf-ch	pek fans	164	27
117	Maha Uva	1393	5 ch	sou	450	27
118		1396	8 hf-ch	dust	640	27
124	St. Edwards	1414	9 ch	bro or pek	558	40
127		1423	6 do	pek sou	330	30
136	St. Heliers	1450	6 hf-ch	dust	510	27
137	D	1453	5 ch	sou	500	29
141	T'Villa	1465	6 ch	bro pek	600	35
143		1471	2 do	pek No. 2	180	32
145		1477	7 do	sou	560	28
146		1480	2 do 1 hf-ch	fans	273	27
151	Cooroondoowatte	1495	11 hf-ch	bro pek	605	49
153		1501	9 do	pek sou	495	34
160	Seenagolla	1522	4 do	fans	340	27
165	Kabragalla	1537	6 hf-ch	bro tea	330	24
166		1540	3 do	dust	255	26
167	Kennington	1543	4 ch	bro pek fans	520	32
168		1546	6 do	unas	540	31
169		1549	3 do	dust	420	26
170		1552	2 do	bro tea	180	28
171	Kirrimettia	1555	2 ch	bro mix	200	31
172		1558	3 do	dust	360	26
173		1561	2 do	fans	200	32
174		1564	5 do	unas	450	32
175	Broadoak	1567	1 ch	bro or pek	105	47
179	Castlreagh	1579	2 do	pek sou	160	33
180		1582	8 hf-ch	fans	560	34
181		1585	3 do	dust	240	26
216	Middleton	1672	5 hf-ch	dust	400	27
218	Monkton	1696	8 ch	pek	672	35
219		1699	3 do	pek sou No 2	225	31
220		1702	7 do	pek sou	560	33
221		1705	1 do	dust	100	26
222	B F B	1708	2 hf-ch	unast	108	28
223		1711	1 do	bro pek	37	35
224	B D W G	1714	2 do	dust	180	28
225	B D W P	1717	3 ch	bro pek No. 2	270	27
226		1720	1 do	pek	85	26
227		1723	1 do	pek sou	75	28
228		1726	3 do	dust	255	27
229		1729	1 do	mix tea	80	26
230	Opalgalla	1732	3 hf-ch	red leaf	207	21
231		1735	5 do	dust	405	24
235	Ella Oya	1747	8 ch	bro pek fans	600	32
240	Parsloes	1762	4 do	pek sou	320	31
244	Waitalawa	1774	5 hf-ch	dust	425	27
248	Rowley	1786	3 do	dust	150	26
250	Grace Land	1792	13 do	pek	650	33
251		1795	12 do	pek sou	600	31
252		1798	1 do	congou	45	28
253		1801	1 do	red leaf	50	25
259	Cottaganga	1819	4 ch	pek sou	364	34
260		1822	4 hf-ch	dust	364	27
261	Kelvin	1825	3 ch	bro mix	270	28
262		1828	2 do	pek fans	220	27
263		1831	3 hf-ch	dust	195	26
264	Pingarawa	1834	3 ch	dust	300	27
277	Pine Hill	1873	6 do	pek sou	510	34

Lot.		Box.	Pkgs.	Name.	lb.	c.
278		1876	1 ch	sou	85	26
281	Vogan	1885	4 do	pek sou	520	32
282		1888	6 hf-ch	dust	540	26
283		1891	3 ch	bro pek fans	330	31
286	Relugas	1900	5 do	dust	625	23
287	L H O	1903	4 do	dust	500	24
321	Ellamulla	2005	7 hf-ch	dust	630	27
322		2008	2 bags	red leaf	153	21
323	Longford	2011	2 ch	bro or pek	200	51
324		2014	4 do	bro pek	400	41
325		2017	6 do	or pek	516	44
327		2023	5 do	pek sou	450	33
328		2026	2 do	dust	267	27

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
5	M, in estate mark	343	2 ch	pek No 2	224	25
8	Daluk Oya	352	10 hf-ch	pek sou	500	30
9	Meetiagoda	355	6 ch	bro pek	600	32
10		358	5 ch	pek	500	31
11		361	5 do	pek sou	500	27
12		364	1 do	con	100	22
13		367	1 do	dust	100	22
19	Killin	385	5 ch	bro pek	500	36
20		388	2 do	pek	270	33
23	Kurulugalla	397	6 ch	pek sou	600	32
24	K G A, in estate mark	505	1 ch	bro pek fans	140	30
25		508	1 do	pek dust	155	25
28	Stockholm	517	8 hf-ch	dust	640	27
29		520	2 ch	con	170	22
33	Ramboda	532	11 hf ch	bro or pek	605	47
36		541	12 do	pek sou	600	32
37		544	1 do	dust	90	25
38		547	1 hf-ch	fans	70	32
41	Labugama	556	7 ch	pek sou	595	31
47	Selvawatte	574	1 ch	sou	100	30
48		577	2 do	fans	260	29
51	N	586	5 ch	pek sou	425	31
52		589	4 hf-ch	dust	320	26
53		592	2 ch	bro mix	170	23
56	Gwernet	601	7 ch	pek sou	560	32
58		607	3 do	dust	330	26
59		610	2 do	fans	220	26
60	Oolapane	613	2 hf-ch	pek dust	150	27
61		616	3 do	dust	234	26
65	Marigold	628	9 hf-ch	pek fans	675	33
66	Panapitiya	631	6 ch	bro pek	600	38
69		640	3 do	con	271	21
73	Roseneath	652	2 ch	dust	310	26
77	Ambalawa	664	11 hf-ch	pek fans	638	33
79	Sancio	670	2 hf-ch	bro mix	70	25
80		673	5 do	sou	215	30
81		676	5 do	dust	325	23
84	Florida	685	4 ch	pek sou	400	25
85		688	1 do	bro tea	100	22
86	Forest Hill	691	10 hf-ch	bro or pek	520	41
90	F A, in estate mark	703	1 hf-ch	bro or pek	60	60
93	G watte	712	6 ch	pek sou	540	32
94		715	1 do	fans	110	32
95		718	1 hf-ch	dust	80	25
100	Hangranoya	733	6 ch	pek sou	450	34
106	Nyanza	751	1 do	con	80	30
107		754	4 do	fans	400	29
115	Agarsland	778	5 ch	sou	450	30
117	Sangaly Toppe	784	1 ch	bro tea	75	30
118		787	3 do	pek dust	270	26
119		790	5 do	red leaf	265	27
120	Kuralana	793	2 ch 1 hf-ch	bro or pek	270	32 bid
121		796	3 ch	bro pek	300	out
122		799	6 do	pek	600	30 bid
123		802	7 do	sou	665	23
125		808	6 hf-ch	pek fans	425	28 bid
127		814	1 ch	dust No. 2	100	out
131	Welgampola	826	2 hf-ch	sou	116	28
132		829	2 do	dust	120	27
154	P T N, in estate mark	895	6 hf-ch	bro pek	336	30
158	Oakham	907	5 ch	pek sou	475	33
159		910	3 hf-ch	pek fans	225	30
160	H T, in estate mark	913	1 ch	bro pek	67	32
161		916	2 hf-ch	pek	100	33
162		919	5 do	pek sou	270	30
163		922	1 ch	dust	120	26
164	D	925	4 ch	bro pek	424	30
165		928	3 do	pek fans	396	31
166		931	3 hf-ch	unas	126	19
169	Dartry	940	3 hf-ch	dust	285	25

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Manickwatte	1000	8 hf-ch	bro or pek	496	40
4		3	6 ch	pekoe	480	35 bid
5		6	7 do	pek sou	539	32 bid
6		9	1 hf-ch	dust	90	27
8	Harisland	15	6 ch	pekoe	480	37
10	H L	21	8 hf-ch	dust	688	25
12	Vincit	27	2 ch	bro or pek	220	38
14		33	4 do	pek sou	360	32
17	Ben Nevis	42	11 hf-ch	or pek	495	59
19		48	7 ch	pek sou	595	38
20		51	3 hf-ch	dust	246	28
29	Doonhinda	78	5 ch	pek sou	475	34
30		81	2 do	dust	220	28
32	Akkara Totum	87	7 do	pekoe	630	31
33		90	6 do	pek sou	480	27
34		93	1 do	sou	80	24
35		96	4 do	bro mix	320	21
36		99	1 do	fans	100	28
39	O N O	108	4 do	red leaf	260	22
48	Uda	135	6 do	pek sou	450	26
60	Loughton	171	6 hf-ch	dust	300	27
71	Appachi Totum	204	1 ch	bro pek	100	40
74	Orange Field	213	2 do	pek sou	200	28
75		216	2 hf-ch	pek fans	150	27
76		219	1 ch	dust	120	26
77		222	1 do	bro mix	95	25
80	Keenagaha Ella	231	7 do	pek sou	595	34
83	Hiralouvah	240	6 hf-ch	bro pek	390	37
86		249	2 do	fans	130	33
87		252	2 do	dust	160	26
93	A	270	1 ch			
			1 hf-ch	bro pek	150	30
94		273	2 ch	pek sou	190	25
95		276	3 hf-ch	fans	180	25
96	X X	279	1 ch			
			1 hf-ch	unas	150	22
107	Battaluwatte	312	3 ch	bro pek	180	33
108		315	1 hf-ch	pekoe	40	31

CEYLON COCOA SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, October 13.

"Dardanus."—PBM, 7 bags sold at 64s 6d.

"Clan Fraser."—RA in estate mark, 100 bags out at 64s; SA in estate mark, 72 bags out at 64s.

"Clan Alpine."—DD in estate mark, 58 bags out at 60s.

"Hakata Maru."—MAK in estate mark, 28 bags out at 65s; SC LOA in estate mark, 10 bags out at 60s.

"Clan McLean."—O RS in estate mark, 1 bag out at 51s.

"Para."—E in estate mark, D, 1 bag out.

"Port Melbourne."—Goonambil 1, 22 bags out at 82s, (75s) refused. Eriagastenne No. 1, 25 bags out, 72s 6d refused.

"Asia."—D HGA in estate mark, 92 bags out at 65s.

"Clan Fraser."—HGA in estate mark, 99 bags out at 65s.

"Diomed."—OBEC Kondesalla Ceylon O, 49 bags out at 78s; 7 bags out at 75; F ditto 1, 13 bags out; ditto O, 4 bags out; ditto 1, 1 bag sold at 58s; S ditto 2, 2 bags out at 58s; ditto G, 2 bags out. OEC Mahaberia Ceylon O, 16 bags sold at 80s 6d; F ditto 1, 6 bags sold at 64s; C ditto O, 22 bags sold at 84s 6d; C ditto 1, 8 bags sold at 66s 6d; B ditto 3, 17 bags sold at 42s; G ditto 2, 3 bags sold at 53s.

CEYLON CARDAMOMS SALES IN LONDON.

'Diomed."—OBEC Naranghena AAA in estate mark, 12 cases sold at 3s 2d; ditto AA, 8 cases sold at 2s 6d; ditto A, 3 cases sold at 3s 1d; ditto B, 3 cases sold at 1s 9d, 1 case sold at 1s 7d. OBEC Dangkande in estate mark, 1c, sold at 2s 5d.

"Patroclus."—Kelvin EX, 1 case sold at 3s 7d; ditto AA, 2 cases sold at 3s, 1 case sold at 2s 11d; ditto A, 2 cases sold at 2s 5d, 2 cases sold at 2s 4d; ditto B, 3 cases sold at 1s 6d; ditto C, 1 case sold at 2s 5d.

"Dardanus."—Iriatenne O, 6 cases sold at 3s 2d; ditto 1, 6 cases sold at 2s 8d; ditto 2, 2 cases sold at 2s 1d; 2 cases sold at 2s; ditto B&S, 1 case sold at 1s 6d: ditto O, 1 case sold at 2s 11d; ditto 1, 1 case sold at 2s 6d; ditto 2, 1 case sold at 1s 8d; ditto BNS, 1 case sold at 1s; Elkadua O, 1 case sold at 2s 10d; ditto 1, 3 cases sold at 2s 5d; ditto 2, 1 case sold at 1s 7d; ditto B&S, 1 case sold at 1s; seed 1 case out at 2s.

"Clan McNeil."—HGA in estate mark, Malabar, 7 cases sold at 2s; 9 cases sold at 2s 6d.

"Nestor."—HGA in estate mark, Malabar, 2 cases out at 2s and 6 more.

"Clan Stuart."—HGA in estate mark, 4 cases sold at 2s and 14 more.

"Menelaus."—HGA in estate mark, Malabar, 4 cases sold at 2s and 11 more.

"Mallard."—4720 MMB in estate mark, Kobo, Mysore, 3, 1 case sold at 2s. 4721 MMB in estate mark, ditto B, 1 case sold at 2s 6d; 4722 MMB in estate mark, ditto S, 3 cases sold at 2s; 4589 in estate mark, ditto O, 3 cases sold at 1s 7d; 4590 in estate mark, Kobo, Mysore, 4 cases sold at 2s 11d and 2 cases sold at 2s 10d; 4591 in estate mark, Kobo, Mysore, 2, 1 case sold at 2s 4d; 4592 in estate mark, Kobo, Mysore, 3, 1 case sold at 2s; 4594 in estate mark, Kobo, Mysore, S, 6 cases sold at 2s 2d; 4497 MMB in estate mark, Kobo, Mysore, S, 4 cases sold at 2s; 4494 MMB in estate mark, Kobo, Mysore, 2, 1 case sold at 2s 4d; 4495 MMB in estate mark, Kobo, Mysore, 3, 1 case sold at 2s 2d. K in estate mark, Kobo, Mysore, 1, 4 cases sold at 2s 11d; K in estate mark, Kobo, Mysore, 3, 1 case sold at 2s 1d; Ditto, S, 2 cases sold at 1s 11d; 2 cases sold at 1s 10d; 8 cases sold at 1s 11d; MMB in estate mark, Kobo, Mysore, 3, 1 case sold at 2s; ditto, B, 2 cases sold at 1s 7d; 4595 in estate mark, Kobo, Mysore, seed 1c sold at 2s.

"Clan Ross."—WHD&Co., Nawanagalla, No. 1, 3 cases sold at 2s 9d.

"Glenorchy."—WHD&Co. Nawanagalla, No. 1, 4 cases out at 2s 9d.

"Glengyle."—Gallantenne Mysore Cardamoms O, 2 cases sold at 3s 7d; ditto 1, 2 cases sold at 3s 1d; ditto 1, 8 cases sold at 3s; ditto 2, 4 cases sold at 2s 5d; ditto 3, 4 cases sold at 2s; ditto B, 3 cases sold at 2s 1d; ditto S, 1 case sold at 1s 8d; ditto 1 bag sold at 2s.

"Lancashire."—Girindi Ella Estate, Ceylon, cardamoms 1 case sold at 1s 8d and 1 case at 2s 4d.

"Glengyle."—Kobo, Mysore Cardamoms O, 1 case sold at 3s 8d; ditto 1, 2 cases sold at 2s 11d; and 2 cases sold at 2s 10d; ditto 2, 2 cases sold at 2s 4d; ditto 3, 2 cases sold at 2s; ditto B, 1 case sold at 1s 8d; ditto S, 1 case sold at 2s 1d, and 4 cases sold at 2s; ditto S, 1 case sold at 2s 4d.

"Senator."—Kandaloya Cardamoms A, 2 cases sold at 1s 10d; ditto B, 2 cases sold at 1s 10d.

"Clan McLean."—Delpottonoya, 3 cases sold at 3s 5d; ditto 1 case sold at 3s 2d and 2 cases sold at 3s 1d; ditto, 5 cases sold at 2s 8d; ditto, 3 cases sold at 2s 5d; and 1 case sold at 1s 10d; ditto, 3 cases sold at 2s 5d; ditto, 1 case sold at 1s 10d; and one case sold at 1s 9d; ditto 1 case sold at 2s 5d.

"Clan Fraser."—F, in estate mark, 20 cases sold at 1s 8d.

"Port Denison."—342 D B., Co., in estate mark Gonawella O, 5 cases sold at 3s 3d; ditto S, 2 cases sold at 1s 9d; ditto seeds, 1 case sold at 2s 3d.

"Duke of Devonshire."—Mousakande No. 1, 2 cases sold at 3s 3d; and 2 cases sold at 3s 5d.

"Duke of Sutherland."—Mousakande No. 1, Mysore Seed, M in estate mark 2 cases sold at 2s 4d; ditto 1 case sold at 2s 4d; ditto No. 2, 1 case sold at 1s 9d.

"Dadanus."—Nellaoola O, 2 cases sold at 2s 11d; ditto 1, 2 cases sold at 2s 5d and ditto 2, 1 case sold at 1s 10d; ditto B & S, 1 case sold at 1s 6d; ditto seed 1 case sold at 2s 1d; ditto 1, Nagalla O, 1 case sold at 2s 10d; ditto 1, 2 cases sold at 2s 5d; ditto 2, 1 case sold at 1s 11d; ditto B & S, 1 case sold at 1s 7d; ditto seed 1 bag sold at 1s 1d.

NO. 44 COLOMBO, NOVEMBER 13, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[14,340 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Battalgalla	10	19 ch	pek sou	1520	38
2	Hornsey	13	24 hf-ch	bro pek	1140	46
3		16	18 ch	or pek	1710	47
4		19	18 do	pek	1620	42 bid
5	Batley	22	24 ch	bro pek	2280	34 bid
6		25	38 do	pek	3610	32 bid
7		28	27 do	pek sou	2160	30 bid

Messrs. Forbes & Walker.

[468,283 lb.

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	I K V	2038	8 ch	pek fans	960	29
6	St. H	2047	10 ch	pek	970	33
8	Knuckles Group	2053	8 cb	sou	720	32
9		2056	7 do	dust	1050	28
10	Ettapolla	2059	16 hf-cb	bro pek	896	38
13	Holton	2068	16 cb	bro pek	1520	40
14		2071	11 do	pek	880	36
15		2074	10 do	pek sou	800	33
16	Doranakan-de	2077	9 ch	bro pek	900	40
20	Kosgalla	2089	26 hf-ch	bro pek	1300	36
23		2098	25 do	pek	1225	33
29	Condia	2116	11 ch	pek	814	33
30	D H, in est. mark	2119	9 ch	bro mix	1026	37
31	Glenorchy	2122	42 hf-ch	bro or pek	2520	59
32		2125	28 do	bro pek	1540	47 bid
33		2128	39 do	pek	2145	43
35	Kelaneiya and Braemar	2134	16 ch	bro or pek	1600	50
36		2137	14 do	or pek	1200	40
37		2140	12 do	pek	1200	38
38	Nillo Mally O B E C, in est. mark	2143	20 cb	bro or pek	2120	59
39		2146	21 do	bro pek	2100	49
40		2149	28 do	or pek	2520	41
41		2152	11 do	pek	924	39
42	Bramley	2155	22 hf-ch	bro tea	1276	34
43		2158	50 cb	dust	4300	27
44	D, in estate mark	2161	17 hf-ch	bro or pek	1020	36
45		2164	37 do	sou	1850	30
49	Passara Groop	2176	21 hf-ch	bro or pek	1155	48
50		2179	12 ch	or pek	1080	44
51		2182	14 hf-ch	pek	1260	39
52		2185	8 ch	pek sou	880	36
54	Theydon Bois	2191	12 ch	bro pek	1200	46
55		2194	25 do	pek	2000	39
56		2197	11 do	pek sou	935	35
61	Palmerston	2212	15 hf-ch	bro or pek	780	66
62		2215	13 cb	pek	1170	44
64	Tonacombe	2221	14 ch	or pek	1260	47
65		2224	12 do	or pek	1200	59
66		2227	10 do	bro pek	1000	45
67		2230	35 do	pek	3240	40
68		2233	10 do	pek sou	900	37
69	Polatagama	2236	67 ch	bro pek	6030	45
70		2239	29 do	or pek	2320	38
71		2242	36 do	pek	3240	35
72		2245	15 do	pek sou	1500	32
74	High Forest	1	16 do	or pek No. 1	880	62
75		4	15 hf-ch	or pek	780	52
76		7	23 do	bro or pek	1518	50
77	Aberdeen	10	51 ch	bro pek	5100	40
78		13	47 do	pek	3854	37
79		16	24 do	sou	1800	34
80		19	16 hf-cb	bro pek fans	1040	30
85	Torwood	34	26 cb	bro pek	2444	46
86		37	14 do	pek	1120	37
87		40	13 do	pek sou	1040	34
88		43	10 bf-ch	dust	700	28
89	Gallawatte	46	12 ch	bro pek	1140	40
90		49	21 do	pek	1785	37
92	Augusta	55	5 ch	dust	750	27

Lot.		Box.	Pkgs.	Name.	lb.	c.
93	Ugieside	58	71 ch	pek	5680	33
94	Woodend	61	22 ch	bro pek	2200	38 bid
95		64	33 do	pek	3135	34
98	Tunisgalla	73	36 hf-ch	bro pek	1800	46
99		76	20 ch	pek	1600	38
100		79	9 do	pek sou	720	35
101	Nahalma	82	12 ch	sou	1200	32
102		85	14 hf-ch	bro pek fans (Venesta)	1008	36
103		88	12 do	dust (Venesta)	984	27
104	Pambagama	91	18 ch	sou	1620	32
105		94	15 hf-ch	fans	825	33
107	V, in estate mark	100	9 ch	pek sou	855	32
109	Erracht	106	8 ch	bro or pek	760	40
110		109	19 do	bro pek	1710	43
111		112	31 do	pek	2325	35
112		115	16 do	pek sou	1280	33
115	Killarney	124	14 ch	or pek	1190	47
116		127	14 do	pek	1120	42
118	High Forest	133	15 hf-ch	or pek No. 1	825	65
119		136	14 do	or pek	742	54
120		139	29 do	pek	1334	45
121	Pallagodda	141	29 ch	bro or pek	2900	43
122		145	35 do	bro pek	3500	48
123		148	28 do	or pek	2380	45
124		151	26 do	pek	2080	37
125		154	21 do	pek sou	1890	36
126	Maha Uva	157	49 hf-ch	bro or pek	3185	40 bid
127		160	24 ch	pek	2280	39
130	Clunes	169	17 ch	bro or pek	1615	41
131		172	12 do	bro pek	1140	44
132		175	23 do	or pek	1840	42
133		178	46 do	pek	3680	37
134		181	13 do	pek sou	1170	33
148	Weoya	223	6 cb	bro pek	2945	38
149		226	30 do	or pek	2850	40
150		229	36 do	pek	3060	34
151		232	52 do	pek sou	4160	32
152		235	6 do	dust	900	26
165	Ella Oya	274	23 ch	bro pek	2185	43
166		277	11 do	pek	935	37
167	Errollwood	280	25 hf-ch	bro or pek	1250	57
168		283	17 ch	or pek	1530	43
169		286	22 do	pek	1760	41
170		289	11 do	pek sou	990	38
171		292	10 hf-ch	dust	750	28
172	Tymawr	295	23 do	bro or pek	1265	48 bid
173		298	20 do	bro or pek	1100	48 bid
174		301	24 do	or pek	1200	45
175		304	39 do	pek	1755	41
176		307	30 do	pek sou	1350	39
183	Clyde	328	50 ch	bro pek	5000	38
185		334	19 do	broken	1900	35
187	Gallawatte	340	17 cb	bro pek	1615	41
188		343	13 do	pek	1105	36
191	Knavesmire	352	37 do	bro pek	2035	41
192		355	14 do	or pek	770	41
193		358	20 do	pek	1800	38
194		361	20 do	pek	1500	36
196	Cooroondoo-watte	367	18 hf-ch	pek	900	37
197	T B G	370	18 do	bro pek	1008	48
198		373	22 do	or pek	1160	38
199		376	12 ch	pek	1080	36
202	Stamford Hill	385	32 hf-ch	bro pek	1920	57 bid
203		388	25 do	or pek	1125	54
204		391	35 ch	pek	3150	40 bid
205		394	12 do	pek sou	1020	38
207	Digdola	400	19 do	bro pek	1710	39
208		403	49 do	pek	3430	34
212	Scrubs	415	14 hf-ch	bro or pek	798	60
213		418	14 do	bro pek	798	48
214		421	16 do	pek	752	44
215		424	19 do	pek sou	893	40
217	Weyungawatte	430	31 do	bro or pek	1860	43
218		433	34 ch	pek sou	3230	37 bid
219		436	30 do	pek	2550	34 bid
224	A G	445	7 do	pek sou	700	34
226	Carlabeck	457	9 do	pek sou	900	37 bid
228	C B	463	7 do	bro pek	770	36
229		466	10 do	pek	1020	33
231	Torwood	472	38 do	bro pek	3420	47
232		475	20 do	pek	1560	37
233		478	15 do	pek sou	1200	34
234	Yataderiya	481	13 do	bro or pek	1365	45
235		484	20 do	bro pek	2060	36
236		487	37 do	pek	3182	34
237		490	12 do	bro or pek	1260	45
238		493	20 do	bro pek	2060	36

Lot.		Box.	Pkgs.		Name.	lb.	c.
239		496	13	ch	or pek	1235	36
240		499	40	do	pek	3440	34
242	Kilkenny	505	27	do	bro or pek	2754	38
243		508	22	do	pek	1672	34
244	Nakiadeniya	511	11	do	br pk No. 1	990	39
245		514	27	do	br pk No. 2	2565	39
247	Palmerston	520	19	hf-ch	bro or pek	988	66
248		523	17	do	bro pek	850	49
249		526	13	ch	pek	1105	43
251	Dunbar	532	28	hf-ch	bro or pek	1400	65
253		538	13	ch	pek	1040	43
259	Penrhos	556	19	hf-ch	bro or pek	100	58
260		559	19	do	or pek	855	45
262		565	20	ch	bro or pek	1060	63
263		568	17	hf-ch	or pek No. 1	765	47
264		571	24	ch	pek	2040	38
267	Agra Oya	580	10	do	bro pek	1000	46
268		583	12	do	or pek	1020	40
269		586	14	do	pek	1260	38
287	Dunkeld	640	30	hf ch	bro or pek	1860	48
288		643	31	ch	bro pek	1705	45
289		646	15	do	or pek	1425	43
290		649	22	do	pek	1980	41
291	B	652	16	do	bro pek	1552	32 bid
293	Arapolakande	658	81	do	bro pek	7290	45
294		661	47	do	pek	3760	36
302	Chesterford	685	39	do	bro pek	3900	45
303		688	35	do	pek	3500	36
304		691	27	do	pek sou	2700	34
305	Waratenne	694	19	hf ch	bro or pek	1045	42
306		697	15	ch	bro pek	1275	37
307		700	19	do	pek	1520	34
308	Lynsted	703	45	hf-ch	bro pek	2475	52
309		706	37	do	or pek	1850	42
310		709	27	do	bro pek	1215	40
312		715	18	do	fans	1080	37
314	Ketadola	721	8	ch	bro pek	880	39
315		724	11	do	pek	1100	33
335	Matale	784	40	bf-ch	bro pek	2200	41
336		787	15	ch	pek	1275	36
337		790	12	do	pek sou	960	34
338	Bargany	973	8	do	pek	860	39 bid
339	St. M	796	60	do	bro or pek	6000	34 bid
341	C B	802	25	do	br or pk fans	2425	30 bid
342	Chesterford	805	14	do	fans	1260	36
345		814	25	hf-ch	dust	2000	28
346	C B G	817	21	ch	bro pek	1890	38 bid
347	K P W	820	31	hf-ch	bro or pek	1860	45
348		823	30	do	bro pek	1650	39
349		826	61	do	pek	3050	36
352	High Forest	835	17	do	bro or pek	1122	51 bid
353	K S in est. mark	838	10	ch	pek sou	900	30
354	Bargany	841	14	hf-ch	bro or pek	910	49 bid
355		844	8	ch	or pek	880	41
358	Inverness	853	18	do	or pek	1800	46
359		856	38	hf-cb	bro or pek	2280	52
360		859	19	ch	pek	1710	41
363	Middleton	868	32	hf-ch	bro or pek	1760	88
364		871	21	ch	bro pek	1890	58
365		874	19	do	pek	1710	42

[Messrs. Somerville & Co.—135,924 lb.]

Lot		Box.	Pkgs.		Name.	lb.	c.
2	Clova	949	30	bf-ch	bro pek	1500	36
3		952	17	do	pek	850	33
7	Wilpitiya	964	8	ch	bro pek	800	36
8		967	7	do	pek	700	34
15	Walabandua	988	44	ch	bro pek	4400	40
16		991	31	do	pek	2790	36
17		994	11	do	pek sou	935	33
25	Hangranoya	19	18	hf-ch	or pek	720	42
27	H J S	25	13	hf-ch	pek	780	35
31	Paradise	37	8	ch	pek sou	760	33
33	P, in estate mark	43	20	ch	unas	2000	34
36	Mousa Eliya	52	38	ch	bro pek	3990	38
37		55	20	do	pek	1900	36
40	Fairfield	64	16	ch	bro pek	1600	40
42		70	17	hf-ch	dust	1530	27
43	Gangwarily	73	10	hf-ch	dust	800	26
44		76	19	do	fans	1140	32
45		79	21	hf-ch	red leaf	1470	26
47	Lonach	85	80	hf-ch	bro pek	4000	43 bid
48		88	24	ch	pek	1920	38
50	L	94	9	ch	bro mix	900	29
51		97	10	hf-ch	dust	850	27
52	Harangalla	100	13	ch	bro pek	1235	43
53		103	16	do	pek	1440	39
54		106	9	do	sou	810	33
55		109	9	hf-ch	dust	720	28
56	Kelani	112	32	ch	bro pek	2560	43
57		115	15	do	bro or pek	1500	41
58		118	20	do	pek	1700	36
59		121	12	do	pek sou	1080	33

Lot.		Box.	Pkgs.		Name.	lb.	c.
61	R T, in estate mark	127	13	hf-cb	dust	1040	25
62		130	9	ch	bro mix	900	30
66	Depedene	142	34	hf-ch	bro pek	2040	39
67		145	32	do	pek	1600	36
68		148	25	do	pek sou	1250	34
71	Eilandhu	157	10	cb	bro pek	1000	38
72		160	10	do	pek	950	35
78	New Valley	178	25	cb	bro or pek	2500	59
79		181	18	do	or pek	1440	46
80		184	19	do	pek	1900	42
81		187	16	do	pek sou	1440	38
84	N I T	196	8	ch	unas No. 2	720	29
89	Maligatenne	211	12	ch	unas	1204	26
91	P	217	9	ch	unas	895	27
92	Gangwarily	220	9	ch	sou	720	32
93	Doragalla	223	11	ch	bro or pek	1100	48 bid
94		226	17	do	bro pek	1615	41
95		229	38	do	pek	3040	38
96		232	19	bf-ch	pek fans	1330	34
98	N	235	7	ch	bro pek fans	980	28
99		241	20	hf-ch	dust	1780	25
101	Annandale	247	15	hf-ch	bro or pek	820	66 bid
102		250	20	do	or pek	1080	48 bid
103		253	21	do	pek	1050	41 bid
104		256	24	do	pek sou	1344	39
105		259	9	do	dust	720	28
109	G T	271	16	ch	pek sou	1360	33
110	D	274	11	ch	bro pek	1100	38
113	Carney	283	24	hf-ch	bro pek	1200	42
114		286	32	do	pek	1440	36
115		289	22	do	pek sou	1100	33
126	Ingeriya	322	50	bf-ch	bro pek	2500	39
127		325	40	do	pek	1920	35
128		328	24	do	pek sou	1104	33
129		331	33	do	bro pek fans	1980	37
131	J M D M	337	10	cb	bro pek	940	37 bid
132		340	13	do	pek	1235	34
144	Salawe	376	18	ch	bro pek	1980	39
145		379	12	do	pek	1140	36
146		382	14	do	pek sou	1330	33
148	L	386	15	hf-ch	dust	1425	26

[Mr. E. John.—155,420 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
4	N D D, in est. mark	348	14	hf-cb	fans	980	30
5	L T	351	34	do	bro or pek	2590	36 bid
6	M A	354	43	do	bro or pek	2795	41
7	Woodstock	357	40	do	bro pek	2000	35
8		360	15	ch	pekoe	1050	34
9	Mossend	363	30	hf-ch	bro or pek	1500	44 bid
10		366	16	do	or pek	800	44 bid
12	G T	372	10	cb	pekoe	900	31
13		375	9	do	sou	810	34
14		378	9	hf-cb	dust	855	25
16	Glassaugh	384	21	do	or pek	1092	63
17		387	21	do	bro or pek	1365	55
18		390	17	cb	pekoe	1615	46
19	Kotuagedera	393	19	do	bro pek	1900	38
20		396	11	do	pekoe	1045	36
22	Brownlow	402	21	hf ch	bro or pek	1218	56
23		405	17	cb	or pek	1564	45
24		408	19	do	pekoe	1615	40
25		411	20	do	pek sou	1640	38
26	Little Valley	414	15	do	or pek	1350	42 bid
27		417	15	do	bro pek	15 0	41 bid
28		420	30	do	pekoe	2550	38
30	Yapame	426	21	do	bro pek	2100	46
31		429	8	do	pekoe	1800	40
32		432	7	do	pek sou	700	37
34	Galella	438	12	do	or pek	1020	41
35		441	20	do	bro pek	2000	44
36		444	10	do	pekoe	900	39
38	Glentilt	450	31	do	bro pek	3100	45 bid
39		453	11	do	pekoe	1100	41
40	Mocha	456	23	do	bro or pek	2300	66
41		459	15	do	or pek	1350	51
42		462	24	do	pekoe	2280	44 bid
43		465	10	do	fans	800	30
49	B K	483	12	hf-ch	dust	1152	32
56	Agra Ouvah	504	37	do	bro or pek No. 1	2220	62
57		507	20	do	bro or pek No. 2	1710	52
58		510	11	ch	or pek	1034	47
59		513	8	do	pekoe	720	42
60	Gangawatte	516	20	hf-ch	or pek	1100	46
61		519	16	ch	pekoe	1360	40
63		525	21	hf-ch	bro or pek	1260	54
64	H	528	9	ch	bro mix	900	24
65	Y	531	9	do	red leaf	810	25
69	L E L	543	20	hf ch	bro pek fans	1300	34 bid
70		546	30	do	pek fans	2290	29 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
71	Glasgow	549	18 ch	bro or pek	1530	65
72		552	25 do	pro pek	2000	52
73		555	14 do	or pek	1232	46
74		558	12 do	pekoe	1200	42
75	Ottery	561	36 do	bro or pek	3600	44 bid
76		564	10 do	or pek	900	40 bid
77		567	14 do	pekoe	1330	39 bid
79	T B	573	24 hf-ch	pek fans	1950	30
83	Ferndale	585	14 ch	bro or pek	1400	48
84		588	18 do	pekoe	1620	39
85		591	20 do	bro or pek	2000	47
86		594	12 do	or pek	1080	41
87		597	18 do	pekoe	1620	38
88	Maryland	600	8 do	bro pek	800	35
89		603	8 do	pekoe	760	32
90	Maskeliya	606	17 hf-ch	bro or pek	850	62 bid
91		609	15 ch	or pek	1350	45
92		612	10 do	pekoe	900	40
95	D R	621	30 hf-ch	pek fans	2250	29 bid
98	Dickapittia	630	30 ch	bro pek	3000	44 bid
99		633	35 do	pekoe	3500	39
100	Kadian Lena	636	7 do	congou	700	23
101	T B	639	22 hf-ch	pek fans	1650	30
107	J C	657	20 do	bro pek fans	1400	34 bid
108		660	17 do	bro pek fans	1190	34 bid

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
2	I K V	2035	2 ch	bro mix	224	27
4	Gingranoya	2041	4 hf-ch	dust	360	27
5		2044	4 do	fans	312	29
7	St. H	2050	1 ch	dust	104	24
11	Ettapolla	2062	8 hf ch	pek	448	33
12		2065	4 do	sou	224	31
17	Doranakande	2080	3 ch	pek	285	33
18		2083	4 do	pek No. 2	360	33
19		2086	4 do	pek sou	360	31
21	Kosgalla	2092	6 hf-ch	or pek	300	40
22		2095	3 do	bro pek	150	40
24		2101	13 do	pek sou	650	31
25		2104	1 ch	bro pek fans	70	28
26		2107	3 hf-ch	dust	210	26
27	B D W	2110	6 do	bro tea	300	31
28	Condia	2113	5 ch	bro pek	450	28
34	Glenorchy	2131	3 hf-ch	dust	255	28
46	D, in estate mark	2167	5 hf-ch	fans	300	28
47		2170	8 ch	bro mix	480	27
48		2173	2 hf-ch	du st	180	26
53	Passara Groop	2188	1 hf-ch	fans	70	30
57	T B, in estate mark	2200	5 hf-ch	dust	350	27
58		2203	3 ch	fans	270	30
59	N B D	2206	8 do	bro mix	680	24
60		2209	5 do	unas	450	31
63	Palmerston	2218	3 ch	pek sou	234	39
73	Polatagama	2248	3 ch	dust	450	26
81	All Whitt	22	8 hf-ch	bro or pek	480	60
82		25	4 do	or pek	200	55
83		28	7 do	pek	350	50
84		31	5 do	pek sou	250	40 bid
91	Augusta	52	1 ch	sou	100	34
96	Woodend	67	8 ch	bro pek	640	32
97		70	2 do	dust	290	27
103	V, in estate mark	103	5 ch	dust	400	27
113	Erracht	118	3 ch	bro pek fans	330	32
114		121	2 do	pek dust	328	26
117	Killarney	130	5 ch	bro mix	475	32
128	Maha Uva	163	1 hf-ch	pek fans	75	31
129		166	3 do	dust	270	28
135	Clunes	184	5 ch	dust	450	27
136		187	5 do	bro or pek fans	350	33
137		190	3 do	pek fans	195	33
138	W, in estate mark	193	3 ch	bro tea	216	17
147	Weoya	220	6 ch	bro or pek	660	38
184	Clyde	331	4 do	bro or pek	440	40
186		337	4 do	dust	400	26
189	New Galway	346	8 hf-ch	bro pek	480	55
190		349	4 do	pek	220	44
195	Knavesmire	364	3 ch	dust	255	27
200	T B G	379	2 do	pek sou	180	32
201		382	1 hf-ch	dust	80	25
206	Stamford Hill	397	4 do	dust	340	30
209	Digdola	406	8 ch	pek sou	680	31
210		409	3 do	dust	411	26
211		412	4 do	bro pek fans	380	31
216	Scrubs	427	4 hf-ch	br or pk fans	268	32
220	Weyungawatte	439	4 ch	pek sou	340	32
221		442	3 hf-ch	dust	255	26
223	A G	448	4 ch	dust	520	27
224		451	1 do	bro tea	100	32
225	Atgalla	454	2 do	pek sou	173	32
227	Carlabeck	460	8 hf-ch	bro pek fans	656	32 bid
230	C B	469	3 do	bro pek fans	240	29
241	Springwood	503	6 ch	congou	540	32
246	Nakiadeniya	517	4 do	dust	580	26
259	Palmerston	529	2 do	pek sou	160	40
252	Dunbar	535	9 hf-ch	or pek	432	52
254	D B R	541	2 ch	pek sou	160	35
255		544	3 hf-ch	bro pek fans	240	37
256		547	1 do	dust	80	27
261	Peurhos	562	3 do	pek dust	243	27
265		574	3 ch	pek sou	240	33
266		577	3 hf-ch	fans	219	31
270	Agra Oya	589	4 ch	pek sou	360	33
292	Arapolakande	655	5 do	bro or pek	550	38
295		664	6 do	pek sou	540	32
296		967	2 do	dust	220	28
311	Lynsted	712	6 hf-ch	sou	270	37
313		718	3 do	dust	240	27
316	Ketadola	727	5 do	pek sou	450	33
317		730	1 do	pek sou No. 2	90	30
318		733	1 do	bro mix	67	27
319		736	1 do	fans	120	26
320	Nellacola	739	1 ch	dust	150	26
321		742	2 do	red leaf	150	24
340	H F in est mark	799	1 hf-ch	bro pek	40	45
343	Chesterford	808	1 ch	congou	90	32
344		811	2 do	bro tea	200	32
350	K P W	829	12 hf-ch	pek sou	600	32
351		832	2 do	dust	170	27
356	Bargany	847	6 ch	pek	600	38
357		850	1 hf-ch	dust	95	27
361	Inverness	862	5 ch	pek sou	450	38
362		865	6 hf-ch	dust	510	27

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	X Z	946	4 ch	sou	380	31
4	Clova	955	9 hf-ch	pek sou	405	31
5		958	3 do	dust	180	21
6		961	2 do	fans	100	30
9	Wilpitiya	970	5 ch	bro pek	500	32
10		973	3 hf-ch	con	150	25
11		976	5 do	fans	275	28
12		979	2 do	dust	160	26
13		982	2 do	red leaf	80	22
14		985	2 do	red leat dust	110	21
18	Wallasmulle	997	4 ch	dust	600	27
19	Alutkelle	1	10 hf-ch	bro pek	500	36
20		4	5 do	pek	250	34
21		7	7 do	pek sou	322	32
22		10	1 do	dust	70	27
23		13	1 do	fans	49	28
24	Hangranoya	16	14 hf-ch	flowy. or pek	630	73
26	H J S	22	10 hf-ch	bro pek	600	38
28		28	7 do	pek sou	420	33
29	Paradise	31	10 hf-ch	bro pek	550	40
30		34	5 ch	pek	500	36
32		40	7 hf ch	dust	490	28
34	P, in estate mark	46	2 ch	fans	180	23
35		49	3 do	bro pek	345	21
38	Mousa Eliya	58	2 ch	pek sou	190	33
39		61	2 do	dust	300	26
41	Fairfield	67	5 ch	pek	500	35
46	Forest Hill	82	8 hf-ch	fans	616	31
49	Lonach	91	8 ch	pek sou	640	34
60	R T, in estate mark	124	5 hf-ch	fans	350	28
69	Depedene	151	3 hf-ch	bro mix	180	22
70		154	3 do	dust	240	27
73	Romania	163	1 box	silver tips	2	R5
82	N I T	190	4 ch	dust	360	27
83		193	3 ch	unas No. 1	330	30
90	Maligatenne	214	1 do	dust	118	22
97	N	235	4 ch	bro mix	415	22
100		244	5 hf-ch	fans	325	24
106	Sangaly Toppe	262	1 hf-ch	bro tea	75	20
107		265	2 do	dust	180	27
108		268	2 ch	red leaf	200	27
111	D	277	6 ch	pek	570	35
112		280	4 do	dust	360	32
116	Carney	292	2 hf ch	sou	100	32
117		295	2 do	dust	100	27
130	Ingeriya	334	3 hf-ch	dust	228	27
133	J M U M	343	5 ch	pek sou	470	32
134		346	3 do	sou	255	29
135		349	1 do	dust	140	26
136		352	2 do	con	154	29
137	Danawkande	355	3 hf-ch	bro pek	150	47

Lot.		Box.	Pkgs.	Name.	lb.	c.
138		358	4 hf-ch	pek	200	36
139		361	3 do	pek sou	150	34
140		361	1 do	bro mix	55	30
141		367	1 do	con	43	30
142		370	1 do	unas	50	33
143	D	373	3 ch	sou	243	36
147	Salawe	385	2 ch	dust	312	28

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
11	G T	369	4 ch	bro pek	360	44
15	M G	381	6 hf ch	fans	480	35
21	Kotuagedera	399	2 ch	pek sou	190	32
29	Little Valley	423	2 hf ch	dust	170	28
33	Yapame	435	8 do	fans	640	33
37	Galella	447	6 ch	pek sou	610	35
50	B K	486	1 hf ch	bro tea	48	20
51		489	1 do	bro mix	72	18
62	Gangawatte	522	7 ch	pek sou	665	36
66	A	534	3 do	pekoe	300	27
67		537	2 do	bro mix	200	17
68		540	1 do	pek fans	85	24
78	Ottery	570	1 do	dust	170	28
93	Maskeliya	615	9 hf-ch	bro pek fans	510	34
94		618	3 do	dust	270	28
96	R, in est. mark	624	6 do	unas	318	28
97	Yapame	627	4 ch	pekoe	400	37

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, October 13.

"Diomed."—Wiharagalla F, 1 barrel sold at 107s; ditto 1, 2 casks and 1 barrel sold at 93s; ditto 2, 7 casks sold at 82s 6d; ditto S, 2 casks sold at 55s; ditto PB, 1 cask sold at 102s.

"Sanuki Maru."—Wiharagalla 2, 1 cask and 1 barrel out at 75s.

"Bingo Maru."—Nayabedda 1, 1 cask out at 90s.

"Senator."—Size 1 Golconda, 1 cask aud 1 barrel out, 31s refused; PB ditto, 1 barrel out, 70s refused.

"Diomed."—Kahagalla 1, 1 barrel sold at 89s. ditto 2, 1 cask and 1 barrel sold at 74s; ditto S, 1 cask and 1 tierce sold at 63s; ditto PB, 1 barrel sold at 71s. Needwood 1, 1 tierce sold at 103; ditto 2, 3 casks and 1 tierce sold at 84s 6d; ditto S, 2 casks sold at 64s; ditto PB, 1 barrel sold at 71s. Idulgashena F, 1 barrel sold at 107s; ditto 1, 1 cask and 1 barrel sold at 98s; ditto 2, 4 casks and 1 tierce sold at 86s 6d; ditto S, 1 cask and 1 tierce sold at 66s; ditto PB, 1 tierce sold at 106s. Haldummulla F, 1 barrel sold at 111s; ditto 1, 1 cask sold at 103s; ditto 2, 3 casks and 1 barrel sold at 82s; ditto S, 1 cask sold at 62s; ditto PB, 1 barrel sold at 91s.

"Hakata Maru."—Pita Ratmalie F, 1 barrel sold at 80s; 1 barrel sold at 65s; ditto 1, 1 cask and 1 tierce sold at 60s; ditto 2, 3 casks and 1 barrel out at 55s; ditto PB, 1 barrel sold at 50s.

"Austral."—Blackwood O, 1 cask and 1 barrel sold at 99s; ditto EF, 4 casks sold at 88s; ditto F, 2 casks sold at 61s 6d; ditto PB, 1 barrel sold at 104s; BKW T, 1 barrel sold at 27s.

"Omrah."—Hiralouvah O, 1 cask and 1 tierce out; ditto 1, 2 casks out; ditto 2, 1 cask sold at 50s; ditto P, 1 barrel sold at 75s; ditto T, 1 barrel out.

MINCING LANE, October 20.

"Clan Fraser."—2 Leangawella, 5 casks out; 2 bags out, overtaken. Haputale, 1 bag out.

"Kamakura Maru."—GA Ouvah 3, 1 cask and 1 barrel sold at 46s 6d.

"Clan Fraser."—Needwood 2, 4 casks out; ditto PB, 1 barrel out at 60s, 45s refused.

CEYLON COCOA SALES IN LONDON.

"Tosa Maru."—Asgeria A, 19 bags out at 80s ditto T, 1 bag sold at 54s.

"Clan MacLaren."—Kepitigalla, 30 bags sold at 66s; 11 bags sold at 61s; 5 bags sold at 51s 6d; 21 bags sold at 62s; 4 bags sold at 51s 6d; 12 bags sold at 57s; 8 bags sold at 48s; 4 bags sold at 50s.

"Clan Ross."—C in estate mark, 22 bags out at 64s; LOA in estate mark, 81 bags out at 56s; 1 AK in estate mark, 28 bags sold at 55s; AK in estate mark, 19 bags sold at 52s 6d.

"Ava."—O MAK in estate mark, 62 bags sold at 61s.

"Clan Fraser."—O MAK in estate mark, estate cocoa, 59 bags out at 73s; MAKM in estate mark, estate cocoa, 63 bags out at 60s. NN in estate mark, estate cocoa, 64 bags out at 60s. Aseworth, estate cocoa, 37 bags out at 60s. SMAS in estate mark, estate cocoa, 65 bags out at 60s. KM in estate mark, 87 bags out at 60s. 1 MAK in estate mark, estate cocoa, 20 bags out at 60s. KK in estate mark, 30 bags out at 60s.

"Clan McPherson."—N in estate mark, O, 41 bags out at 63; 1 ditto, 30 bags out; 32 bags out at 60s.

"Clan Chisholm."—A MAK in estate mark, estate cocoa, 24 bags out at 64s; B ditto, 66 bags out at 62s.

"Duke of Argyle."—SMAK in estate mark, 56 bags out at 60s. M in estate mark, estate cocoa, 17 bags out at 60s. MM in estate mark, estate cocoa, 29 bags out at 60s.

"Socotra."—S in estate mark, 2 bags out at 53s. JL in estate mark, estate cocoa, 11 bags out. KK in estate mark, 100 bags out.

"Tonkin."—HGA in estate mark, 22 bags out, 56s refused.

"Hitachi Maru."—B HGA in estate mark, 16 bags out at 58s. 1 M in estate mark, estate cocoa, 17 bags out at 60s, 56s refused.

"Duke of Devonshire."—M in estate mark, 20 bags out.

"Clan Stuart."—D MP in estate mark, estate cocoa, 31 bags out. M in estate mark, 5 bags out. D in estate mark, 2 bags out.

"Duke of Norfolk."—MLM in estate mark, estate cocoa, 25 bags out. MM in estate mark, 14 bags out.

"Tosa Maru."—Monarakelle 1, 178 bags out at 70s; 2, 28 bags sold at 73s. Broker, 2 bags sold at 51s 6d.

"Hakata Maru."—Alloowiharie, 11 bags out at 82s 6d. Dickeria O, 5 bags out.

"Duke of Fife."—Dickeria O, 21 bags out.

"Clan Alpine."—1 Palli, 77 bags out at 78s; F ditto, 73 bags out at 78s; 2 ditto, 41 bags out at 52s 6d; P ditto, 9 bags sold at 53s.

OBSERVER PRINTING WORKS.

NO. 45 COLOMBO, NOVEMBER 20, 1899. Price:—12½ cents each 3 copies 30 cents ; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

Messrs. Forbes & Walker.

[491,082 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Igalkande	877	22 ch	pek	1980	35
5	Elfindale	889	11 do	fans	1100	26
8	Maligatenne P U	898	7 do	pek	700	34
10	Ingrogalla	904	25 ch	bro pek	2500	37 bid
11		907	26 do	pek	2210	38
12	Mousakelle	910	44 ch	bro or pek	4400	44 bid
13		913	14 do	or pek	1400	40
14		916	14 do	pek	1400	37
27	Munukattia Ceylon, in est. mark	955	23 hf-ch	or pek	1150	48
28		958	41 do	bro pek	2255	51
29		961	17 do	pek	1300	38
30		964	9 ch	pek sou	810	36
38	Grange Garden	988	41 ch	bro or pek	4100	42
39		991	21 do	pek	2100	38
44	Bonami Estate J D, in estate mark	1006	10 ch	pek sou	750	33
45		1009	12 do	congou	1380	27
46	Putupaula	1012	19 hf-ch	bro or pek	1235	39 bid
47		1015	49 ch	bro pek	4410	43
48		1018	33 do	pek	2850	37
49		1021	16 do	pek sou	1120	33
51	Ascot	1027	55 ch	bro pek	4950	37 bid
52		1030	11 do	bro or pek	1100	37 bid
53		1033	12 do	pek	1030	36
54		1036	12 do	pek sou	1080	33
55		1039	16 do	bro pek fans	1600	32
57	Gonapatiya	1045	21 hf-ch	bro pek	1020	55 bid
58		1048	33 do	or pek	14 2	56
59		1051	48 do	pek	2160	42
60		1054	30 do	pek sou	1320	40
61		1057	16 do	pek fans	928	40
62	Hayes	1060	20 ch	bro or pek	2000	61
63		1063	14 do	bro pek	1400	41 bid
64		1066	20 do	or pek	1700	43
66		1072	15 do	pek sou	1350	34
67	Morankande	1075	16 ch	or pek	1440	40
68		1078	17 hf-ch	bro or pek	952	43
69		1081	27 ch	pek	2430	37
70		1084	15 do	pek sou	1350	34
71	Ganapalla	1087	24 ch	or pek	2160	40
72		1090	13 do	bro or pek	1170	39
73		1093	32 do	bro pek	2880	36
75		1099	30 do	pek sou	2250	32
76		1102	8 do	bro pek fan	800	33
77		1105	9 hf-ch	dust	720	27
78	Dammeria	1108	9 ch	bro or pek	1030	41
79		1111	28 do	or pek	3080	43
80		1114	33 do	bro pek	3300	41
81		1117	31 do	pek	2790	39
82		1120	14 do	pek sou	1260	38
84	D M	1126	8 ch	tippy bro pek	800	34
87	Glendon	1135	25 ch	bro pek	2375	42
88		1138	26 do	pek	2080	36
89		1141	12 do	pek sou	1020	34
93	Mawiliganga-watte	1153	14 hf-ch	bro or pek	770	49
94		1156	20 do	or pek	840	38
95		1159	23 ch	bro pek	3135	36
96		1162	30 do	pek sou	2400	33
98	Sirikandura	1168	22 ch	bro pek	2200	37
99		1171	19 do	pek	1710	35
100		1174	15 do	pek sou	1275	32
103	Glengariffe	1183	55 hf-ch	bro or pek	3245	49
104		1186	33 do	or pek	1881	42
105		1189	13 ch	pek sou	1170	36
111	A M B	1207	14 ch	bro pek sou	1148	30
112	H G M	1210	9 ch	bro or pek	765	54
113		1213	20 do	bro pek	2000	38 bid
114		1216	9 do	or pek	810	49
115		1219	22 do	pek	1870	38
116		1222	10 do	pek sou	850	35
117		1225	8 do	bro pek fans	720	35
119	Cooroondoo-watte	1231	27 hf-ch	bro pek	1485	46
120		1234	20 do	pek sou	1000	34
121	Harrington	1237	17 hf-ch	bro or pek	850	66
122		1240	15 ch	or pek	1425	46
123		1243	13 do	pek	1170	41
130	Harrow	1264	13 hf-ch	bro or pek	832	62
131		1267	19 ch	pek	1900	42
134	Knavesmire	1276	18 hf-ch	or pek	990	42
135		1279	51 do	bro pek	2805	42
136		1282	29 ch	pek	2320	37
137		1285	19 do	pek	1425	35
139	Yataderia	1291	16 ch	bro or pek	1680	40 bid
140		1294	30 do	bro pek	3090	35 bid
141		1297	12 do	or pek	1140	36
142		1300	53 do	pek	4558	33 bid
143	Castlereagh	1303	30 ch	bro pek	3000	49
144		1306	26 do	or pek	2210	46
145		1309	20 do	pek	1600	39
149	Maragalla	1321	9 ch	bro pek	1008	45 bid
150		1324	9 do	or pek	900	44
151		1327	39 do	pek	3900	38 bid
152		1330	21 do	pek sou	1890	36
153	Beausejour	1333	19 ch	bro pek	1577	36 bid
154		1336	22 do	pek	1760	33
158	C, in estate mark	1348	10 ch	bro tea	1003	29
159	Weyunga-watte	1351	31 hf-ch	bro or pek	1860	41
160		1354	33 ch	bro pek	3135	38
161		1357	30 do	pek	2550	33 bid
164	West Holy-rood	1366	15 ch	pek sou	1200	39
165		1369	26 hf-ch	fans	1820	35
166		1372	12 do	dust	1020	28
172	Polatagama	1390	97 ch	bro pek	8730	42
173		1393	35 do	or pek	2800	36
175		1399	15 do	pek sou	1500	30
180	Killarney	1414	22 hf-ch	bro or pek	1320	53
181		1417	13 ch	pek sou	1235	42
184	Hopton	1426	42 ch	bro pek	4200	43 bid
185		1429	35 do	pek	3150	39 bid
186		1432	17 do	pek sou	1530	35
188	Queensland	1438	7 ch	bro or pek	700	65
189		1441	7 do	bro pek	700	47
190		1444	19 do	pek	1650	42
191		1447	8 do	or pek	720	50
192		1450	9 do	pek sou	765	38
193	Theydon Bois	1453	7 ch	bro or pek	700	53
194		1456	11 do	bro pek	1100	40 bid
195		1459	22 do	pek	1760	39
196		1462	12 do	pek sou	1020	34
197	Macaldeniya	1465	25 hf-ch	bro pek	1375	42
198		1468	18 do	pek	900	37
199		1471	19 do	pek sou	950	34
202	Roeberry	1480	18 ch	bro pek	1800	47
203		1483	9 do	or pek	864	45
204		1486	15 do	or pek	1380	45
205		1489	23 do	pek	2208	41
206		1492	10 do	pek	900	40
208		1498	11 do	pek sou	924	37
209		1501	7 do	fans	700	28
210	Patiagama	1504	13 ch	bro or pek	715	53
211		1507	9 do	or pek	765	45 bid
212		1510	13 do	pek	1105	38
213		1513	9 do	pek sou	720	34
214	Erlsmere	1516	59 ch	bro pek	5310	40 bid
215		1519	63 do	bro pek	5922	42 bid
216		1522	48 do	bro or pek	2880	46 bid
217		1525	38 do	pek	3002	38 bid
220	Monkswood	1534	30 hf-ch	bro pek	1500	66 bid
221		1537	53 do	or pek	2385	60 bid
222		1540	30 ch	pek	2850	49
223		1543	15 do	pek sou	1275	44
225		1549	23 hf-ch	fans	1238	40
233	O'Bede	1573	16 do	bro pek	1696	48
234		1576	12 do	or pek	1200	41
235		1579	13 do	pek	1235	38
237	Middleton	1585	14 hf-ch	bro or pek	784	81
238		1588	13 ch	bro pek	1235	57
239		1591	13 do	pek	1235	45
240		1594	10 do	pek sou	900	42
241	Dambagas-talawa	1597	32 do	bro or pek	3520	53
242		1600	30 do	bro pek	3150	43 bid
243		1603	26 do	pek	2340	40
244		1606	7 do	pek sou	700	37
246	Walpita	1612	35 do	bro pek	3500	39
247		1615	24 do	pek	2100	36
248		1618	11 do	pek sou	880	33
258	Freds Ruhe	1648	50 do	bro pek	5000	37 bid
259		1651	45 do	pek	4050	36
260		1654	24 do	pek sou	2160	32
268	D M V	1678	18 ch	bro pek	1692	34

Lot.		Box	Pkgs.	Name	lb.	c.
269		1681	23 ch	pek	1840	32
292	Anningkande	1750	16 do	bro pek	1600	40 bid
293		1753	12 do	pek	1140	37
294	Tymawr	1756	23 hf-ch	bro or pek	1265	55
295		1759	24 do	or pek	1200	46
296		1762	40 do	pek	1800	41
305	Beaumont	1789	24 do	bro pek	2280	41 bid
306		1792	40 do	or pek	3680	36 bid
317	Ireby	1825	32 do	bro pek	3520	53
318		1828	20 do	pek	1800	44
319		1831	10 do	pek sou	900	39
336	Cotswald	1882	13 ch	bro pek	1300	45 bid
337		1885	16 do	pek	1140	37
338		1888	12 do	pek sou	900	33
352	Shrubs Hill	1930	34 ch	bro pek	3060	38 bid
353		1933	55 do	or pek	4675	38 bid
354		1936	23 do	bro or pek	2300	42
355		1939	21 do	pek	1680	35
357		1945	18 do	bro pek fans	1440	27
368	Matale	1978	40 hf-ch	bro pek	2200	38 bid
369		1981	17 ch	pek	1445	37
370		1984	12 do	pek sou	1020	33

[Messrs. Somerville & Co.—16),518 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
7	Bogahagoda-watte	514	14 ch	bro pek	1400	34 bid
8		517	7 do	pek	700	33
11	Diluk Oya	526	18 hf-ch	bro or pek	1080	40 bid
12		529	21 do	or pek	1155	37 bid
13		532	22 do	pek	1210	35
14	Lyndhurst	535	47 hf-ch	bro pek	2585	36 bid
15		538	41 do	pek	2050	35
18	Ambalawa	547	27 hf-ch	bro pek	1350	36 bid
19		550	18 do	pek	810	34
21	Tiddydale	553	10 ch	pek	900	32
23	Wavena	562	23 do	pek sou	2185	38 bid
24		565	19 do	pek	1520	36
29	Killin	580	13 ch	bro pek	1326	34 bid
30		583	12 do	pek	972	34
35	Mipitiakande	598	49 ch	pek sou	3920	33
36		601	26 hf-ch	pek fans	2080	30
42	Hanagama	619	33 ch	bro pek	3300	37 bid
43		622	51 do	pek	4845	34
44		625	14 do	pek sou	1260	32
48	P T N, in estate mark	637	20 hf-ch	sou	1000	29
59	Yarrow	670	53 hf-ch	bro pek	2968	37 bid
60		673	46 do	pek	2300	37
67	Kolaborikande	694	69 ch	bro pek	6900	38 bid
68		697	31 do	pek	2945	32 bid
69		700	15 do	pek sou	1350	30
79	Charlie Hill	730	17 hf-ch	bro pek	955	33 bid
89	Neboda	760	12 ch	bro or pek	12 0	36
90		763	40 hf-ch	bro pek	2000	35 bid
91		766	9 ch	pek	810	36
92		769	10 do	pek sou	800	33
94	K T A	775	18 ch	bro pek No. 2	1728	33 bid
95	J D M, Galgot-tagama	778	14 ch	bro pek	1470	out
96		781	11 do	pek	990	out
97		784	10 do	pek sou	850	out
103	D B	802	20 ch	pek sou	1800	31 bid
110	Moia Ella	823	39 hf-ch	bro pek	2262	41
111		826	35 ¾ ch	pek	2275	38
112		829	22 ch	pek sou	1760	35
113	Monrovia	832	32 ch	bro pek	3200	38
115		838	27 do	pek	2565	37
116		841	9 do	pek sou	900	33
120	California	853	8 ch	pek	760	34
123	Handrookande	862	19 hf-ch	bro pek	1045	39 bid
127	Ferriby	874	35 hf-ch	bro pek	1575	35 bid
128		877	28 ch	pek	2380	34
129		880	16 do	pek sou	1200	32
133	F B	892	18 ch	pek sou	1620	31
134	Atterville	895	17 ch	bro pek	1700	34 bid
135		898	18 do	pek	1800	34
136		901	8 do	pek sou	816	27 bid
140	Neuchatel	913	46 ch	bro pek	4370	39 bid
142		919	29 ch	pek	2320	36
143		922	25 do	pek sou	2000	33
155	C T	958	30 ch	pek sou	2700	31 bid
156	G B	963	34 hf-ch	dust	1700	28
157	I P	934	28 ch	pek sou	2520	32
159	W	970	25 hf-ch	pek sou	1235	31

[Mr. E. John.—199,600 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Gonavy	669	54 hf-ch	bro pek	2700	46
5		672	20 do	pekoe	1600	39
7	Galloola	678	29 ch	bro pek	2900	40 bid
8		681	33 do	pekoe	3300	40
9		684	27 do	pek sou	2700	37
11	Rondura	690	10 do	or pek	900	43
12		693	30 do	bro pek	3000	39
13		696	31 do	pekoe	2790	36
14		699	16 do	pek sou	1140	33
16	Mount Everest	705	19 hf-ch	bro or pek	1045	77
17		708	24 do	or pek	1200	54
18		711	24 ch	pekoe	2400	45
19		714	10 do	pek sou	900	40
20		717	22 hf ch	bro pek fans	1540	37
23	Rookwood	726	64 ch	bro or pek	3520	45
24		729	78 do	pekoe	7020	38
25		732	23 do	pek sou	1656	34
27	Kotuagedera	738	30 do	bro pek	3000	37 bid
28		741	20 do	pekoe	1900	33 bid
33	Little Valley	756	21 do	pekoe	1785	36 bid
35	Kadien Lena	762	14 hf-ch	bro or pek dust	1120	38
36	Mahanilu	765	47 do	bro pek	2585	46 bid
37		768	26 ch	pekoe	2418	41
38		771	13 do	pek sou	1235	37
39		774	15 hf-ch	fans	1050	35
40	Coslande	777	15 do	bro pek	900	46
41		780	14 ch	pekoe	1330	36 bid
44	Glentilt	789	30 do	bro pek	3000	45 bid
45		792	11 do	pekoe	1100	39
47	Eila	798	80 do	bro or pek	8000	38 bid
48		801	75 do	bro pek	6375	37
49		804	37 do	pek sou	2960	33
50		807	14 do	fans	1680	33
51		810	9 do	dust	1260	26
52	Agra Ouvah	813	30 hf-ch	bro or pek No. 1	1800	66
53		816	28 do	bro or pek No. 2	1593	57
54		819	10 ch	or pek	940	47
57		828	30 hf-ch	pek fans	2100	34
59	Glassaugh	834	26 do	or pek	1352	62
60		837	24 do	bro or pek	1560	52
61		840	21 ch	pekoe	1995	44
62		843	9 do	dust	810	31
63	Nahavilla	846	19 do	bro or pek	1900	47 bid
64		849	14 do	or pek	1400	43
65		852	11 do	pekoe	1100	38 bid
70	Coslande	867	15 hf-ch	bro pek	900	46
71		870	14 ch	pekoe	1330	37
80	Bellongalla	897	71 hf-ch	bro pek	3550	36
81		900	25 ch	pekoe	2000	32
86	Kanangama	915	24 do	bro pek	2280	39
87		918	26 do	pekoe	2210	33 bid
92		933	14 hf-ch	dust	980	27
93		936	11 ch	bro or pek	1155	38
94		939	13 do	pek sou	1040	32
95	Cleo	942	29 do	bro pek	2900	34 bid
96	Gonavy	945	47 hf ch	bro pek	2350	46
97		948	15 ch	pekoe	1125	37
99	B & S	954	9 do	bro pek	1050	25 bid
101	L E L	960	11 hf-ch	or pek fans	825	33
107	Murraythwaite	978	19 ch	bro pek	1805	38
108		981	19 do	pekoe	1615	35
113	G O	996	39 hf-ch	pekoe	2145	40 bid
114	W H G	999	20 ch	pek sou	2000	38
118	L T	11	34 hf-ch	bro or pek	2590	38 bid
119	Ferry Side	14	19 do	bro pek	1083	40 bid
120		17	13 ch	pekoe	1196	36 bid
121		20	13 do	pek sou	1274	31 bid
122	Glentilt	23	33 do	bro pek	3300	45 bid
123		26	14 do	pekoe	1400	39
124		29	16 do	fans	1280	28
125	M A	32	43 hf-ch	bro or pek	2795	43 bid
127	Ferndale	38	15 ch	or pek	1350	44
128		41	12 do	pekoe	1080	39
129	D D	44	10 do	pek sou	840	33 bid
130		47	25 hf-ch	bro pek fans	1625	32 bid
131		50	26 do	pek fans	1950	30
132		53	18 ch	dust	3096	25
133	G P	56	10 do	bro pek	900	32
134		59	10 do	pekoe	809	31
135	K K	62	19 hf-ch	pek fans	1514	29 bid
136	R	65	39 ch	bro pek	3900	38 bid
137		68	30 do	bro pek	2850	39 bid
138		71	20 do	pekoe	1500	33 bid
139		74	12 do	pek sou	1020	32
140	P	77	7 do	pek sou	700	27

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
2	M'Golla	880	3 ch	sou	240	34
3		883	1 do	red leaf fans	95	25
4	B B B, in estate mark	886	7 ch	dust	630	23

Lot.		Box.	Pkgs.	Name.	lb.	c.
6	Maligatenne P U	892	3 ch	bro or pek	315	53
7		895	5 do	or pek	432	38
9		901	5 do	pek sou	450	33
15	Mousakelle	919	2 ch	sou	200	33
16		922	4 hf-ch	dust	340	28
23	Bodawa Invoice No. 20	943	7 hf-ch	bro pek	406	41
24		946	5 do	pek	220	36
25		949	7 do	pek sou	315	33
26		952	1 do	dust	80	28
31	Mount Pleasant C E D S	967	6 hf-ch	bro pek	360	33
32		970	1 do	do	55	
33		973	5 do	pek	250	35
34		976	5 do	pek sou	250	32
35		979	1 do	unas	58	31
36		982	1 do	fans	60	31
37		985	1 box	golden tips	5	R5·00
40	Grange Garden	994	2 ch	pek sou	200	33
41		997	3 hf-ch	dust	255	28
42	Bonami J D Estate, in est. mark	1000	1 ch	bro pek No 2	90	out
43		1003	1 do	pek	75	out
50	Putupaula	1024	3 hf-ch	dust	240	30
56	Ascot	1042	5 ch	dust	600	27
65	Hayes	1069	6 do	pek	600	37
83	Dammeria	1123	2 do	dust	180	33
85	D M	1129	3 ch	tippy pek	270	32
86	Glendon	1132	4 do	bro or pek	360	33
90	G	1144	5 ch	sou	475	31
91		1147	2 do	dust	270	26
92		1150	2 do	bro tea	230	31
97	Mawiliganga-watte	1165	5 hf-ch	pek dust	375	28
101	Sirikandura	1177	3 ch	bro fans	300	31
102		1180	1 do	dust	142	25
106	Glengariffe	1192	6 hf-ch	dust	480	27
118	H G M	1228	5 hf-ch	dust	425	27
124	Harrington	1246	2 ch	pek	200	35
125		1249	2 do	or pek fans	220	36
126		1252	1 hf-ch	dust	90	31
132	Harrow	1270	5 do	pek sou	450	36
133		1273	2 do	dust	170	27
138	Knavesmire	1288	4 hf-ch	dust	340	28
146	Castlereagh	1312	4 ch	pek sod	320	33
147		1315	9 hf-ch	fans	630	35
148		1318	4 do	dust	320	29
155	Beausejour	1339	2 ch	pek sou	170	31
156		1342	2 do	bro pek fans	200	31
157		1345	2 hf-ch	dust	160	27
162	Weyunga-watte	1360	4 ch	pek sou	340	33
163		1363	4 hf-ch	dust	340	26
167	O H S, in estate mark	1375	4 ch	bro pek	395	35
168		1378	4 do	pek	400	32
169		1381	3 do	fans	343	28
170		1384	1 do	red leaf	100	25
176	Polatagama	1402	3 ch	dust	450	27
182	S	1420	3 ch 1 hf ch	pek sou	317	34
183		1423	3 ch	sou	255	23
187	Hopton	1435	5 ch	dust	525	28
200	Macaldenia	1474	2 hf-ch	dust	170	28
201		1477	2 do	bro tea	130	23
207	Roeberry	1495	5 ch	pek sou	450	37
218	Erlsmere	1528	7 do	pek sou	616	34
219		1531	7 do	dust	602	27
224	Monkswood	1546	5 ch	pek sou No. 2	400	39
226		1552	5 hf-ch	dust	400	25
230	Aigburth	1564	2 ch	congou	190	31
231		1567	3 do	bro mix	195	24
232		1570	3 do	dust	300	25
236	O'Bode	1582	4 do	pek sou	340	34
246	Dambagas-talawa	1609	8 hf-ch	bro pek fans	640	32
249	Walpita	1621	2 ch	sou	160	32
250		1624	1 do	fans	110	28
267	Allerton	1675	1 do	dust	120	26
270	D M V	1684	10 do	pek sou	620	32
271		1687	3 do	fans	180	29
272		1690	1 hf-ch	bro tea	56	29
273		1693	1 ch	dust	91	26
283	Sinnapittia	1723	1 ch	pek sou	87	24
287	Dehiatgama	1735	5 hf-ch	dust	400	25
307	Beaumont	1795	8 do	fans	656	29
333	Ookoowatte	1873	6 do	pek fans	540	30
334		1876	2 do	dust	200	26
335		1879	3 do	r d leaf	216	29
339	Cotswald	1891	2 ch	sou	150	31
340		1894	2 do	dust	170	31
356	Shrubs Hill	1942	7 hf-ch	pek sou	595	33
358	Maldeniya	1948	8 ch	sou	640	31
359		1951	4 do	pek fans	380	26
360		1954	4 do	dust	448	26
361		1957	1 do	congou	70	26
367	D	1975	5 do	sou	475	30
371	Matale	1987	4 hf-ch	fans	280	32
372		1990	8 do	dust	640	27
373		1993	3 ch	sou	300	31

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	X	391	4 ch	bro pek	406	26
2		394	5 do 1 hf-ch	pek	566	31
3		397	1 do	dust	112	25
4	Labuduwa	505	6 hf-ch	bro pek	300	39
5		508	4 do	pek	200	34
6		511	10 do	pek sou	500	33
9	Bogahagoda-watte	520	6 ch	pek sou	570	32
10		523	1 do	bro pek fans	125	29
16	Lyndhurst	541	12 hf ch	pek sou	540	33
17		544	3 do	dust	255	27
20	Tiddydale	553	9 hf-ch	bro pek	450	37
22		559	6 ch	pek sou	510	30
25	Wavena	568	2 ch	pek sou	160	33
26		571	2 hf-ch	dust	160	28
27	Nega	574	8 hf-ch	unas	400	32
28		577	1 do	bro tea	60	26
31	Killin	586	3 ch	sou	252	32
32		589	1 do	bro mix	110	21
33		592	1 do	dust	100	28
34	Mipitiakande	595	7 ch	pek	547	33
37	D A L	604	4 ch	bro pek	400	38
38		607	4 do	pek	380	34
39		610	2 do	pek sou	190	32
40		613	1 do	dust	150	27
41	W L, in estate mark	616	1 ch	red leaf	90	20
45	Hanagama	628	2 ch	sou	184	30
46		631	1 do	fans	130	30
47		634	1 do	dust	152	26
49	P T N, in estate mark	640	11 do	bro pek	616	31
50		643	2 do	fans	110	27
51	Paragahakande	646	5 ch	bro pek	500	38
52		649	7 do 1 hf-ch	pek	610	34
53		652	2 ch	pek sou	180	32
54		655	2 do	fans	180	30
55		658	1 hf-ch	dust	70	23
56		661	1 ch	red leaf	100	23
57	Aberfoyle	664	2 ch	bro mix	130	23
58		667	3 do	dust	255	25
61	Y, in estate mark	676	2 hf-ch	dust	190	26
80	Charlie Hill	733	11 hf-ch	pek	605	33
81		736	2 do	pek sou	100	31
82		739	3 do	pek fans	220	27
83	Kotigala	742	4 ch	bro pek	460	35
84		745	3 do	pek	315	32
85		748	1 do	pek sou	105	30
86		751	3 do	sou	315	29
87		754	1 do	fans	100	25
88	Donside	757	4 hf-ch	dust	340	27
93	Neboda	772	3 hf-ch	dust	255	27
98	J D M Galpot-tagama	787	2 ch	sou	170	24
99		790	1 do	sou No 2	85	21
100		793	2 do	pek dust	250	25
101		796	6 do	fans	510	27
109	H F, in estate mark	820	4 hf ch	bro pek	240	32
114	Monrovia	835	5 ch	bro or pek	560	36
117		844	1 do	bro tea	100	25
118		847	1 do	dust	138	26
119	California	850	5 ch	bro pek	475	36
121		856	4 do	pek sou	400	32
122		859	1 do	red leaf	94	21
124	Handrookande	865	11 hf ch	pek	550	34
125		868	3 do	pek sou	150	33
126		871	1 do	dust	70	28
130	Ferriby	883	5 ch	sou	475	30
131		886	4 do	fans	400	33
132		889	4 hf-ch	dust	300	27
137	Atterville	904	4 ch	unas	400	32
138		907	2 do	bro mix	176	25
139		910	1 do	dust	140	27
141	Neuchatel	916	5 ch	bro or pek	600	38
144		925	4 do	dust	660	27
158	W	967	2 ch	bro pek	200	34

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	P P P	660	2 ch	bro pek	192	39
2		663	2 do	pekoe	180	38
3		666	2 do	pek sou	180	33
6	Gonavy	675	6 do	pek sou	540	34
10	Galloola	687	4 do	dust	400	29

Lot.		Box.	Pkgs.	Name.	lb.	c.
15	Rondura	702	2 do	dust	240	31
21	Mount Everest	720	4 hf ch	dust	400	26
22		723	2 ch	bro mix	160	26
26	Rookwood	735	6 hf-ch	pek dust	478	29
29	Kotuagedera	744	4 ch	pek sou	380	32
30		747	5 hf ch	bro pek fans	350	32
31	Little Valley	750	1 ch	or pek	90	41
32		753	6 do	bro or pek	600	42
34		759	1 hf-ch	dust	85	28
42	Coslande	783	3 ch	pek sou	300	33
43		786	1 do	fans	115	33
46	Glentilt	795	5 do	pek sou	475	35
55	Agra Ouvah	822	7 do	pekoe	630	41
56		825	7 do	pek sou	595	37
58		831	4 hf ch	dust	380	28
66	Nahavilla	855	2 do	pek fans	140	36
67		858	2 ch	sou	180	34
68		861	2 hf-ch	dust	160	29
72	Coslande	873	3 ch	pek sou	300	31
73		876	1 do	fans	115	34
88	Kanangama	921	4 do	pek fans	360	30
89		924	10 do	pek sou fans	650	23
90		927	4 do	bro mix	260	23
91		930	4 do	sou	300	27
98	Gonavy	951	4 do	pek sou	380	34
100	L E L	957	6 do	pek sou	450	34
102		963	3 hf-ch	dust	285	27
109	Murraythwaite	984	8 ch	pek sou	640	33
110		987	5 do	fans	600	33
111		990	1 do	dust	170	26
115	W H G	2	7 hf-ch	dust	595	26
116		5	6 do	fans	420	20
117		8	3 ch	bro mix	300	33
141	P	80	4 hf-ch	bro pek fans	260	32

CEYLON COCOA SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, October 27.

"Clan McNeil."—2 Palli, 13 bags sold at 46s 6d; F 2 ditto, 7 bags sold at 46s 6d.

"Guadalquiver."—PBM 1, 16 bags out at 68s.

"Inaba Maru."—A Elmshurst, 17 bags sold at 70s: B ditto, 6 bags sold at 49s 6d.

"Kamakura Maru."—A Glenalpin, 13 bags sold at 65s; B ditto, 2 bags sold at 48s.

"Socotra."—A Normandy, 31 bags sold at 69s; B ditto, 2 bags sold at 50s.

"Glengyle."—Beredewelle COC, 6 bags sold at 74s; ditto T, 11 bags sold at 41s.

"Staffordshire."—Ex. No. 1 Udapolla, 41 bags out; ditto B, 9 bags out.

"Clan McLaren."—SS A in estate mark, 61 bags out at 60s; O SS in estate mark, 4 bags out at 66s; 2 SS in estate mark, 10 bags out at 60s; HGA in estate mark, 43 bags out.

"Clan Menzies."—K in estate mark, estate cocoa, 10 bags out.

"Kamakura Maru."—DMA & Co. in estate mark, 31 bags out; O ditto, 28 bags out; TM in estate mark, 1 bag out.

"Glenorchy."—HGA in estate mark, 130 bags out at 58s; BC ditto, 20 bags out at 53s; O DMA & Co. in estate mark, estate cocoa 6 bags out at 70s; A in estate mark, 8 bags out at 58s.

"Clan Forbes."—RS in estate mark, 10 bags out.

"Bingo Maru."—MA in estate mark, 55 bags out at 60s.

"Wakassa Maru."—O JL in estate mark, 65 bags out; 1 ditto, 12 bags out at 58s.

"Staffordshire."—F in estate mark, 55 bags out.

"Clan Alpine."—MK in estate mark, 16 bags out.

"Clan McLean."—DC in estate mark, 20 bags out at 46s; 2 bags out at 40s 6d; NN in estate mark, 48 bags out; DMA & Co. in estate mark, estate cocoa, 14 bags out.

"Clan Ross."—1 SS in estate mark, estate cocoa, 20 bags out at 62s; B HGA in estate mark, 105 bags out at 58s. Sundry marks, 1 bag sold at 48s.

"Clan McArthur."—1 M in estate mark, estate cocoa, 11 bags out at 58s; AS in estate mark, estate cocoa, 31 bags out at 60s; R in estate mark, 53 bags out.

"Kamakura Maru."—AM in estate mark, estate cocoa, 51 bags out; CF HGA in estate mark, 10 bags out; SM in estate mark, 10 bags out; M in estate mark, 7 bags out; MM in estate mark, 2 bags out.

"Clan Stuart."—A in estate mark, 100 bags sold at 58s 6d; 46 bags sold at 58s; 10 bags sold at 56s.

"Clan Chisholm."—A in estate mark, Ambatele estate, 29 bags sold at 66s; S in estate mark, 13 bags out; R S in estate mark, 1 bag sold at 35s.

"Cheshire."—Old Haloya, 6 bags out; 1 bag sold at 37s.

CEYLON CARDAMOMS SALES IN LONDON.

"Duke of Portland."—Gonawella, D B & Co., 360 in estate mark, 8 cases out; ditto 1, 17 bags out; ditto 2, 2 cases sold at 2s 4d and 2 cases sold at 2s 3d; ditto 3, 1 case sold at 1s 10d; ditto B, 2 cases sold at 1s 10d; ditto S, 8 cases sold at 1s 8d; ditto Seed 1 bag sold at 2s 2d.

"Hakata Maru."—Kobo Mysore O, C J P 111 in estate mark, 1 case sold at 3s 7d; ditto 1, 1 case sold at 2s 11d; ditto 2, 1 case sold at 2s 4d; ditto 3, 1 case sold at 1s 11d; ditto B, 1 case sold at 2s 4d; ditto S, 1 case sold at 1s 8d.

"Derbyshire."—A L 1, 7 cases out.

"Clan McIntyre."—A L A, 6 cases out at 2s 6d; ditto 1, 12 cases out at 2s 4d.

"Socotra."—Mysore Kobo 2, 2 cases out at 2s; ditto 3. 2 cases out; ditto B, 2 cases out at 2s 5d. Dryburgh Mysore 1, 4 cases out at 2s 6d; ditto 3, 1 case out 2s 2d. Rangalla Mysore O, 1 case out at 3s 6d; ditto 1, 5 cases out; ditto 2, 2 cases out; ditto 3,1 case out.

"Carthage."—AA CML NF CS, in estate mark 5 cases out at 2s 9d.

"Shannon."—AA 1 in estate mark, 3 cases out at 2s 5d.

"Sado Maru."—Hentimalie seed, 3 cases out at 2s 5d.

"Staffordshire."—Kobo O, 4 cases out at 3s 8d.

"Duke of Norfolk."—HA & Co. A Mysore, 4 cases out.

"Clan Matheson."—Pitakande Group, 4 cases out at 3s 3d.

"Clan Fraser."—SS in estate mark, Mysore, 6 cases out at 2s 6d.

"Kamakura Maru."—HGA in estate mark, Mysore, 6 cases out at 2s 6d.

"Dardanus."—BB, O in estate mark, 2 cases sold at 1s 11d; AW 1 case sold at 10d.

"Cheshire."—Hoolo Group, 1 case sold at 2s 6d.

"Clan Chisholm."—HGA in estate mark, 1 case out at 2s 6d.

"Menelaus."—OBEC in estate mark, Naranghene, 2 cases out.

"Shropshire."—HGA in estate mark, Malabar, 4 cases out.

"Menelaus."—HGA in estate mark, Malabar, 4 cases out.

"Egypt."—CML in estate mark, FFCS, 5 cases sold at 2s 6d.

"Menelaus."—Wedebette Cardamoms EX, 1 case sold at 3s 9d; ditto AA, 4 cases sold at 3s 2d; ditto A, 6 cases sold at 2s 5d; ditto B, 3 cases sold at 1s 6d.

"Clan Maclaren."—Altwood Ceylon Cardamoms 1 case sold at 3s 3d; 2 cases sold at 2s 8d; 2 cases sold at 2s 6d; 1 bag sold at 2d; 1 case sold at 8d.

"Staffordshire."—Kobo Mysore Cardamoms 1, 8 cases sold at 2s 10d; Kobo Mysore O, 1 case sold at 3s 5d.

"Umballa."—Knuckles Group, Madulkelle, Mysore B, 4 cases sold at 2s 2d.

NO. 46 COLOMBO, NOVEMBER 27, 1899. { PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS

E. Benham & Co.

[35,302 lb.]

Lot.		Box.	Pkgs		Name.	lb	c.
1	Hornsey	11	14	ch	pek sou	1120	37
2	Battalgalla	14	10	ch	pek sou	800	36
15	Mapitigama	53	8	ch	bro or pek	840	42 bid
16		56	23	hf-ch	bro pek	1196	39 bid
17		59	18	ch	pek	1584	35
18		62	17	hf-ch	pek sou	731	33

Messrs. Forbes & Walker.

[565,484 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	E D P	2014	15	hf-ch	dust	1200	26
2	Carendon	2017	13	ch	bro pek	1430	34
3		2020	10	do	pek	1000	33
4	New Peacock	2023	9	ch	pek sou	810	34
6		2029	24	do	pek fans	1800	30
13	Yatiyana	2050	17	hf-ch	bro pek	850	37
14		2053	15	do	pek	780	33
16	Cooroondoo-watte	2059	18	hf-ch	pek	900	36
22	M T C L	2077	12	do	fans	816	33
23	Bickley	2080	26	hf-ch	bro or pek	1430	40 bid
24		2083	74	do	or pek	5402	37 bid
25		2086	44	do	pek	2860	36
33	Glencorse	2110	19	ch	bro pek	1615	37
34		2113	19	do	bro or pek	1805	39
35		2116	14	do	pek	1120	33
40	Thedden	2131	28	ch	bro pek	2800	36 bid
41		2134	11	do	pek	990	35
42		2137	8	do	pek sou	720	33
47	Beverley	2152	82	hf-ch	bro pek	4510	36 bid
48		2155	50	box	bro or pek	1100	40 bid
49		2158	34	hf-ch	pek	1700	35
50	Kincora	2161	26	ch	bro pek	2600	42
51		2164	16	do	pek	1360	38
52		2167	8	do	do No. 2	760	34
53		2170	13	hf-ch	bro pek fans	910	34
56	Kelaneiya and Braemar	2179	25	ch	bro or pek	2500	41 bid
57		2182	17	do	or pek	1700	39
58		2185	11	do	pek	1100	37
62	Carlabeck	2197	9	hf-ch	bro pek fans	720	31
64	Strathspey	2203	19	hf-ch	bro or pek	1140	57
65		2206	14	do	pek	1400	47
68	Elldalua	2215	7	ch	bro pek	770	35 bid
69		2218	7	do	or pek	700	35
70		2221	8	do	pek	720	32
77	Carberry	2242	22	ch	bro pek	1980	37 bid
78		2245	23	do	pek	2070	34
80		1	4	ch	pek sou	720	33
89	C S G	28	87	hf-ch	bro pek	4350	40 bid
90		31	68	ch	pek	5450	38
91		34	17	do	pek sou	1360	34
92		37	9	hf-ch	dust	720	27
93	Holton	40	31	ch	bro pek	2685	34 bid
94		43	18	do	pek	1415	33
95		46	9	do	pek sou	720	31
96	Kilkenny	49	44	hf-ch	bro or pek	2200	36 bid
97		52	21	do	bro pek No. 1	1890	34 bid
98		55	23	do	bro pek No. 2	2116	33 bid
99		58	23	do	pek	1725	32
100	Huanuco	61	22	hf-ch	bro pek	1100	29
101		64	44	do	pek	1980	32
102		67	22	do	pek sou	990	30
104	Pansalatenne	73	33	ch	bro pek	3 35	35 bid
105		76	21	do	pek	189	30 bid
106		79	20	do	pek sou	1600	31
110	T B G	91	18	hf-ch	bro pek	1008	43
111		94	16	do	or pek	800	38
117	G K	112	9	ch	dust	1260	26
118	Naseby	115	18	hf-ch	or pek	828	56
119		118	21	do	bro pek	1218	57
120		121	14	do	pek	728	50
121		124	9	do	fans	702	37
123	P	130	9	ch	pek	720	33
124	Agra Elbedde	133	20	hf-ch	or pek	1000	56
125		136	25	ch	bro or pek	1500	65
126		139	38	do	pek	2280	43
127		142	29	hf-ch	pek sou	1450	39
131	Farnham	154	56	ch	bro pek	2800	43 bid
132		157	27	do	or pek	1215	42 bid
133		160	44	do	pek	2420	37
134		163	20	do	pek sou	900	34
137	Dyakula, No. 2	172	26	ch	bro pek	1430	38 bid
138		175	24	do	pek	1680	34 bid
139		178	16	do	pek sou	1120	32
141	Arslena	184	28	ch	bro pek	2520	35
142		187	27	do	pek	2295	34
144	Talgaswela	193	17	ch	bro or pek	1785	41 bid
145		196	25	do	bro pek	2250	41 bid
146		199	7	do	do No. 2	770	34
147		202	34	do	or pek	3060	36
148		205	30	do	pek	2550	34
149		208	20	do	pek sou	1700	32
153	Woodend	220	24	ch	bro pek	2400	34 bid
154		223	36	do	pek	3420	33
158	Blink Bonnie	235	17	ch	pek	1425	42
160	Dunkeld	241	23	hf-ch	pek fans	1610	32
161		244	12	do	dust	1140	26
162	Dea Ella	247	21	hf-ch	bro or pek	1155	44
163		250	34	do	or pek	1700	38
164		253	34	do	pek	1700	36
168	Fairlawn	265	28	do	bro pek	1400	62
169		268	16	ch	or pek	1440	41
172	Hayes	277	21	ch	bro or pek	2100	48 bid
173		280	32	do	bro pek	3200	37 bid
174		283	25	do	or pek	2125	41
175		286	42	do	pek	3780	38
176		289	25	do	pek sou	3125	34
177	High Forest	292	23	hf-ch	bro or pek	1518	52
178		295	28	do	or pek No. 1	2232	58
179		298	15	do	or pek	795	48
180	Palmerston	301	19	do	bro or pek	950	61
181		304	14	ch	pek	1190	43
184	Polatagama	313	25	ch	or pek	2125	36 bid
188	Nakiadeniya	325	12	ch	bro pek No. 1	1080	39
189		328	8	do	bro pek No. 2	760	37
190		331	27	do	pek	2295	35
191		334	10	do	pek sou	800	33
193	Hatton	340	25	ch	bro pek	2625	60
194		343	36	do	pek	3060	44
202	O SS, in est. mark	367	29	ch	bro or pek	2175	34 bid
203		370	31	do	pek	2480	33 bid
204	Kirklees	373	22	ch	bro or pek	1320	38 bid
205		376	21	do	or pek	2100	40 bid
206		379	18	do	pek	1800	37
207		382	25	do	pek sou	2125	35
208	Battawatte	385	25	ch	bro pek	2750	37 bid
209		388	45	do	pek	4275	38
210		391	20	do	pek sou	1600	34
211	Maha Uva	394	60	hf-ch	bro or pek	3900	42
212		397	34	ch	pek	3230	40
213		400	16	do	pek sou	1360	35
219	Erracht	418	14	ch	bro or pek	1330	36
220		421	18	do	bro pek	1440	39
221		424	29	do	pek	2175	34
222		427	15	do	pek sou	1275	32
230	Massena	451	45	hf-ch	bro pek	2250	35 bid
231		454	16	do	pek	800	35
234	Galkadua	463	16	ch	bro pek	1760	34 bid
235		466	18	do	pek	1800	32
236		469	11	do	pek sou	1100	30
240	Carfax	481	19	ch	bro or pek	1900	53
241		484	20	do	or pek	1800	43 b
242		487	20	do	pek	1800	41
243	St. Heliers	490	13	hf-ch	bro or pek	702	47 bid
244		493	46	do	bro pek	2484	38 bid
245		496	20	do	pek	1720	35
246		499	10	do	pek sou	880	33
248	N B D	505	9	ch	unas	900	25
250	Hentleys	511	25	hf-ch	bro pek	1250	39 bid
151		514	16	do	or pek	720	40 bid
252		517	25	do	pek	2125	34
255	Tavalamtenne	526	19	ch	bro or pek	1900	36 bid
256		529	8	do	pek	715	37
259	Vogan	538	58	ch	bro pek	5510	38 bid
260		541	51	do	pek	4335	34
264	Gonapatiya	553	21	hf-ch	bro pek	1029	51 bid
265		556	20	do	bro pek	980	57
266		559	23	do	or pek	1012	54
267		562	28	do	pek	1260	42
268	Tymawr	565	20	do	or pek	1000	44 bid

Lot.		Box.	Pkgs.		Name.	lb.	c.
269		568	35	ch	pek	1575	39 bid
270		571	36	do	pek sou	1620	37
273	Rowley	580	21	hf-ch	bro pek	1050	43 bid
274		583	18	do	pek	900	36 bid
279	Coreen	598	27	ch	bro or pek	2835	43 bid
280		601	14	do	or pek	1260	45
281		604	13	do	pek	1170	38 bid
282		607	9	do	pek sou	720	36
285	Putupaula	616	42	hf-ch	bro pek	3780	37 bid
286		619	33	do	pek	2475	35
287		622	13	do	pek sou	910	33
288	Yataderia	625	8	ch	bro or pek	840	39 bid
289		628	37	do	bro pek	3811	33 bid
290		631	43	do	pek	3698	33
291	Mariawatte	634	19	do	pek sou	1615	33
292		637	14	hf ch	dust	1190	25
293	Torwood	640	26	ch	bro pek	2340	39
294		643	18	do	pek	1368	34
295		646	9	do	pek sou	720	33
296		649	12	do	sou	360	31
298	Forres	655	36	do	bro pek	4032	44 bid
299		658	35	do	pek	3525	41 bid
300		661	9	do	pek sou	810	37 bid
315	Ingrugalla	706	9	hf-ch	bro tea	772	27
327	Middleton	742	21	do	br or pk No. 2	1176	61
328		745	13	ch	bro pek	1300	49
329		748	16	do	pek	1520	42
330	Doranakande	751	11	do	bro pek	1100	34 bid
332		757	9	do	pek sou	810	31
338	Dunbar	775	30	do	bro or pek	1500	61
339		778	18	do	or pek	864	50
340		781	21	ch	pek	1680	43
345	Ingrogalla	796	17	do	bro pek	1700	35 bid
346		799	19	do	pek	1615	37
348	Clyde	805	58	do	bro pek	5220	37 bid
349		808	20	do	bro or pek	2200	36
350		811	37	do	pek	3330	34
352	Halwatura	817	48	do	or pek	4320	35 bid
353		820	57	hf-ch	bro pk fans	3705	32
354	Okande	823	16	do	dust	1440	25
355	Geragama	826	22	do	bro or pek	1210	38
356		829	9	ch	bro pek	765	35
357		832	12	do	pek	960	33
358		835	12	do	bro pek	960	35
359		838	20	do	pek	1600	34
360		841	13	do	pek sou	1105	31
363		850	23	hf-ch	bro or pek	1265	38
364		853	23	ch	bro pek	1840	35
365		856	27	do	pek	2160	33
366	Waratenne	859	22	hf-ch	bro or pek	1210	38
367		862	25	ch	bro pek	2000	34
368		865	45	do	pek	3600	33
369		868	11	do	pek sou	935	31
371		874	9	hf-ch	dust	720	25
378	K	895	5	ch	dust	800	24
389	Stafford	928	17	do	bro or pek	1020	51
390		931	9	do	or pek	855	51
391		934	10	do	pek	850	41
400	B & D	961	46	ch	pek No. 2	4140	35
401		964	15	do	dust	1260	25
404	Ir.x	973	37	do	bro pek	3700	37
405		976	21	do	pek	1890	33
406		979	10	do	pek sou	800	31
409	Pine Hill	988	38	hf-ch	bro or pek	2280	59
410		991	46	do	or pek	2576	43
411		994	50	ch	pek	4250	38
412		997	10	do	pek sou	850	35
414	Beauscjour	1003	19	ch	bro pek	1577	35
415	Tonacombe	1006	20	do	or pek	1800	40 bid
416		1009	11	do	bro or pek	1100	63
417		1012	14	do	bro pek	1470	40 bid
418		1015	42	do	pek	3780	40
419		1018	10	ch	pek sou	900	36
422	Clunes	1027	18	do	bro or pek	1710	36
423		1030	10	do	bro pek	950	37
424		1033	20	do	or pek	1600	37
425		1036	33	do	pek	2640	33
426		1039	9	do	pek sou	810	31
431	Arslena	1054	32	do	pek sou	2560	33
432		1057	7	do	dust	700	25
437	Great Valley, Ceylon, in est. mark	1072	44	hf-ch	bro pek	2420	52
438		1075	34	ch	pek	3060	36
439		1078	42	hf-ch	or pek	2100	40
440		1081	26	ch	pek sou	1950	33
442		1087	9	hf-ch	dust	765	25
443	Ingrogalla	1090	25	ch	bro pek	2500	35 bid
444	Dambagas-talawa	1093	30	do	bro pek	3150	37 bid
451	H G M	1114	20	do	bro pek	2000	37 bid
452	Theydon Bois	1117	11	do	bro pek	1100	36 bid
457	Freds Ruhe	1132	50	do	bro pek	5000	34 bid
458	Beaumont	1135	24	do	bro pek	2280	36 bid
459	Digdola	1138	13	do	bro pek	1170	38 bid
		1141	27	do	pek	1890	34

Lot.		Box	Pkgs.		Name	lb.	c.
463	Amblakande	1150	22	ch	bro pek	2200	38 bid
464		1153	26	do	pek	2210	35
466	Penrhos	1159	40	hf-ch	bro or pek	2120	53
467		1162	31	do	or pek	1395	40 bid
468		1165	54	ch	pek	4590	36

[Messrs. Somerville & Co.—302,112 lb.]

Lot		Box.	Pkgs.		Name.	lb.	c.
2	S R K	976	6	ch	dust	900	26
4	F F, in estate mark	982	16	hf-ch	bro pek	880	31 bid
8	R C T F	994	15	ch	bro pek	1500	35
9		997	17	do	pek	1530	32
10		1	24	do	pek sou	1920	30
11		4	9	do	bro pek fans	900	33
13	Citrus	10	32	ch	bro pek	3200	35
14		13	34	do	pek	3060	33
15		16	11	do	pek sou	1100	32
18	Kurulugalla	25	22	ch	bro pek	2200	34 bid
19		28	15	do	pek	1350	33 bid
23	Nyanza	40	10	ch	bro or pek	1000	50 bid
24		43	13	do	bro pek	1300	38
25		46	14	do	or pek	1330	40
26		49	26	do	pek	2660	36
27		52	11	do	pek sou	990	34
28	St. Catherine	55	40	ch	bro or pek	3800	33 bid
32	Rambodde	67	14	hf-ch	bro or pek	770	47
33		70	21	do	bro pek	1155	37
37	Kurunegalle estate Co.	82	20	ch	bro pek	2000	37 bid
38		85	12	do	pek	1200	34
42	Mousa Eliya	97	36	ch	bro pek	3600	37 bid
43		100	18	do	pek	1620	37 bid
44	Theberton	103	24	ch	bro pek	2400	34 bid
45		106	34	do	pek	3060	36
48	Columbia	115	13	hf-ch	bro pek	845	33 bid
49		118	33	do	bro or pek	1650	50 bid
50		121	44	do	or pek	1980	48 bid
51		124	54	do	pek	2430	41
52	Glen Morgan Nilgris	127	9	ch	or pek	900	40 bid
54		133	37	do	pek	2960	37
55		136	32	do	pek sou	2080	32 bid
57	Wendura	142	11	ch	bro pek	1023	34 bid
59		148	10	do	pek sou	750	31
61	Dryburgh	154	24	ch	pek	1992	34
62	Ravenoya	157	14	hf-ch	bro pek	770	35 bid
72	Mahatenne	187	42	ch	bro pek	4200	34 bid
73		190	22	do	pek	2200	33
77	K G A	202	8	ch	bro pek	800	33 bid
78	Glenalmond	205	18	ch	bro pek	1710	35 bid
79		208	8	do	pek	700	34
80		211	11	do	pek sou	880	32
85	Lower Dickoya	226	22	hf-ch	bro or pek	1276	36
86		229	19	ch	bro pek	1900	34
87		232	8	do	pek	840	34
88	Stockholm	235	45	ch	bro pek	4500	44 bid
89		238	31	do	pek	2635	40 bid
90		241	16	do	pek sou	1280	36 bid
93	Harangalla	250	30	ch	bro pek	2850	39
94		253	40	do	pek	3600	37
95		256	8	do	sou	720	33
96		259	8	do	fans	800	33
98	Roseneath	265	31	ch	bro pek	3255	37
99		268	19	do	pek	1710	36
110		271	30	do	pek sou	2550	32
020	N	277	54	hf-ch	bro pek	3132	38
103		280	80	do	pek	4000	35
104		283	10	ch	pek sou	850	31
105		286	9	hf-ch	dust	730	27
106	Kirrikelle	289	20	hf-ch	bro or pek	1100	63 bid
107		292	50	do	or pek	2800	44 bid
108		295	46	ch	pek	4140	41
109	Mary Hill	298	24	hf ch	bro pek	1560	38 bid
110		301	21	do	pek	1260	34
111		304	15	do	pek sou	900	33
117	Havilland	322	14	ch	sou	1260	27
121	Mousakande	334	30	ch	bro pek	2700	34 bid
122		337	43	ch	pek	3741	33
123		340	10	hf-ch	fans	700	28
124	Marigold	343	72	hf-ch	bro pek	3960	44 bid
125		346	16	do	pek	800	45
128	Hapugasmulle	355	18	ch	bro pek	1980	34
129		358	15	do	pek	1425	32
131	Hatdowa	364	18	do	bro pek	1710	35
132		367	17	do	pek	1275	34
133		370	13	do	pek sou	975	31
137	Galphele	382	37	ch	bro pek	3700	37
138		385	25	do	pek	2250	34
139	Galphele B	388	17	ch	bro pek	1700	35
140		391	15	do	pek	1350	33
142		397	6	do	fans	780	25
144	Narangoda	508	36	ch	bro pek	3600	33 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
145		511	21 ch	pek	1995	32
146		514	14 do	pek sou	1260	30
147	Meddegodda	517	43 hf-ch	bro pek	2150	41
148		520	61 do	pek	2745	35
152	X X X	532	15 ch	pek	1500	30 bid
153	Rayigam	535	38 ch	bro pek	3800	33 bid
154		538	28 do	or pek	2240	35
155		541	40 do	pek	3200	35
156		544	16 do	pek sou	1275	32
160	Pasmalie	556	15 ch	bro pek	1500	38 bid
161		559	13 do	or pek	1170	38 bid
162		562	18 do	pek	1710	31 bid
163		565	9 do	pek sou	720	32 bid
182	Lonach	622	90 hf-cb	bro pek	4950	37 bid
183		625	30 ch	pek	2550	37
184		628	14 do	pek sou	1190	33
185	Rothes	631	15 hf-ch	bro or pek	840	53 bid
186		634	14 do	or pek	700	42 bid
187		637	16 do	pek	720	39
195	R I T	661	10 ch	bro mix	900	19 bid
197		667	9 hf-ch	bro pek dust	810	25
205	Woodthorpe	691	9 cb	bro pek	900	38
206		694	16 do	pek	1376	35
207		697	16 do	pek sou	1248	33
210	Primrose Hill	706	8 ch	bro pek	800	39
211		709	14 do	pek	1204	36
212		712	15 do	pek sou	1170	33
215	P H	721	30 ch	pek sou	2700	28 bid
216	Doragalla	724	16 ch	bro or pek	1680	42 bid
217		727	23 do	bro pek	2185	38
218		730	53 do	pek	4240	35
225	Henegama	751	24 ch	bro pek fans	2400	29 bid
226		754	7 do	bro mix	700	29
227	H G A	757	24 ch	pek sou	2160	29 bid
228	Killin	760	13 ch	bro pek	1326	34 bid
229	Nillicollay-watte	763	24 bf-ch	bro pek	1344	37
230		766	15 ch	or pek	1260	34
231		769	16 do	pek	1440	32
234	F F	778	17 hf-ch	pek fans	1280	26 bid
235		781	7 ch	dust	917	24 bid
237	Charlie Hill	787	17 hf-ch	bro pek	955	33 bid
238	Bollagalla	790	33 ch	bro pek	3300	35 bid
239		793	21 do	pek	1680	35
240		796	12 do	pek sou	360	32
243	B G	805	27 ch	pek sou	2430	27 bid
244	F, in estate mark	808	11 ch	bro pek	1100	28 bid
257	B K	838	30 ch	pek sou	2700	27 bid
256	Honiton	844	30 hf-ch	bro pek	1500	35 bid
257		847	16 ch	pek	1360	33
358		850	15 do	pek sou	1200	31
261	F B	859	18 ch	pek sou	1620	28 out
262	T T	862	36 hf-ch	bro or pek	2376	30 bid
263		865	11 ch 1 hf-ch	dust	1328	25 bid
264	Ambalawa	868	36 hf-ch	bro pek	1800	33 bid
265		871	21 do	pek	945	32
266	Corfu	874	22 hf-ch	bro pek	1254	36 bid
267		877	24 do	pek	1200	37
270	K T G	886	9 ch	pek No. 2	826	28
271		889	8 do	pek fans	1040	20 bid
272		892	17 do 1 hf-ch	sou	1662	25

[Mr. E. John.—224,999 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	N	86	14 hf-cb	dust	1190	27
3	W P	89	32 ch	unas	2880	34
5	Kotuagedera	95	12 do	bro or pek	1200	35
6		98	8 do	bro pek	800	35
7		101	8 do	pekoe	760	32
10	Galella	110	13 do	or pek	1105	41
11		113	19 do	bro pek	1900	42
12		116	12 do	pekoe	1080	37
14	HS, in est. mark	122	12 bags	red leaf	1020	16
15	Kandaloya	125	27 hf-cb	or pek	1215	45
16		128	18 do	or pek	720	40
17		131	57 do	pekoe	2280	35 bid
19	Glasgow	137	33 do	bro or pek	1914	61
20		140	41 do	bro pek	2214	49 bid
21		143	14 ch	or pek	1232	45
22		146	11 do	pekoe	1100	42
23	Iona	149	36 hf-ch	bro or pek	1980	63
24		152	18 ch	or pek	1710	49
25		155	14 do	pekoe	1190	45
29	Cleveland	167	32 hf-ch	flow or pek	1760	52 bid
30		170	38 do	pekoe	1976	43
33	Lameliere	179	61 do	bro pek	3416	51
34		182	33 ch	pekoe	2970	40
35		185	18 do	pek sou	1350	38
37	Templestowe	191	34 do	bro or pek	3400	45
38		194	29 do	or pek	2610	43
39		197	36 do	pekoe	3060	39
40	Poilakande	200	78 do	bro pek	7800	33 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
41		203	36 do	pekoe	3220	32 bid
42		206	12 hf-ch	dust	1020	25
46	Ben Nevis	218	11 ch	bro pek	1177	57
48		224	20 do	pekoe	1800	38
52	Dalbousie	236	21 hf-ch	bro pek	1260	49 bid
53		239	41 do	pek No. 1	1845	39
54		242	25 do	pek No. 2	1000	36
62	Glasgow	266	10 ch	pek sou	1000	39
63		269	16 do	fans	1600	33
64	Agra Ouvah	272	40 hf-cb	bro or pek No. 1	2400	61
65		275	36 do	bro or pek No. 2	2052	54
66		278	16 ch	or pek	1488	47
67		281	9 do	pekoe	810	43
73	S W	299	8 ch	unas	760	33
79	Ottery	3 7	39 do	bro or pek	3900	41 bid
80		320	36 do	bro or pek	[illegible]600	39 bid
81		323	12 do	or pek	1080	38
82		326	18 do	pekoe	1710	36
100	Uda	380	8 do	bro pek	736	27
101		383	13 do	pekoe	962	27
102		386	9 hf-ch	pek dust	774	24
103	St. John's	389	25 do	bro or pek	1500	72
104		392	25 do	or pek	1250	58
105		395	25 do	pekoe	1400	48
106		398	17 do	pek fans	1190	39
110	Bovey	410	15 ch	or pek	1200	37
111		413	11 do	bro pek	1122	40 bid
112		416	16 do	pekoe	1472	34
115	Evalgolla	425	38 hf-ch	bro or pek	1900	42
116		428	53 do	pekoe	2385	35
120	Claremont	440	18 ch	bro or pek	1[illegible]00	34
121		443	9 do	pek sou	855	29
122		446	7 do	fans	700	28
129	Ferndale	467	12 do	bro or pek	1200	47
130		470	12 do	or pek	1080	40
131		473	13 do	pekoe	1170	37
132	Mahanilu	476	47 hf cb	bro pek	2585	43 bid
150	Little Valley	530	21 cb	pekoe	1785	35
170	Mocha	590	25 do	bro or pek	2500	62
171		593	13 do	or pek	1170	56
172		596	20 do	pekoe	1900	46
173		599	22 do	pek sou	1760	42
174	Kotuagedera	602	7 do	bro or pek	700	33 bid
175		605	19 do	bro pek	1900	33 bid
176	Bittacy	608	22 do	bro pek	2200	45
177		611	16 do	pekoe	1280	40
178	Nahavilla	614	19 do	bro or pek	1900	45 bid

SMALL LOTS.

[Messrs. E Benham & Co.]

Lot.		Box.	Pkgs.	Name	lb.	c.
13	B, in estate mark	47	2 ch	pek	170	32
14		50	1 do	dust	106	25

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
5	New Peacock	2026	7 bf-ch	bro mix	350	27
12	Yatiyana	2047	5 hf-ch	or pek	300	36
15		2056	6 do	sou	460	31
17	Horagaskelle	2062	7 hf ch	bro pek	438	34
18		2065	8 do	pek	428	32
19		2068	10 do	pek sou	562	30
20		2071	2 do	bro mix	108	28
21	Cleveland	2074	5 hf-ch	fans	400	29
26	D G F	2089	5 do	bro pek	243	36
27		2092	5 do	pek	225	34
28		2095	6 do	pek sou	240	32
29		2098	1 do	sou	34	30
30		2101	2 do	pek fans	94	30
31		2104	1 do	dust	75	27
32		2107	1 do	red leaf	32	25
36	Glencorse	2119	9 ch	pek sou	675	31 bid
37		2122	2 do	pek fans	230	31
38		2125	1 do	bro tea	100	24
39		2128	1 do	dust	165	25
43	Thedden	2140	2 ch	dust	300	27
44	S K M	2143	1 hf-ch	bro pek	65	39
45		2146	1 do	pek	50	33
46		2149	1 do	pek sou	61	31
54	Kincora	2173	6 do	dust	510	27
55	Munukattia Ceylon, in estate mark	2176	6 hf-ch	dust	480	25
59	Kelaneiya and Braemar	2188	2 ch	sou	200	35
60		2191	4 hf-ch	dust	320	27
61	Arapolakan-de	2194	3 ch	dust	330	26

Lot,		Box.	Pkgs.	Name.	lb.	c.
63	D	2200	6 ch	pek son	640	31
66	Strathspey	2209	7 ch	pek sou	665	36
67		2212	2 do	dust	208	27
71	V, in estate mark	2224	3 ch	bro or pek	150	36
72		2227	2 do	or pek	160	37
73		2230	3 do	pek	210	34
74		2233	7 do	pek sou	665	32
75		2236	1 do	pek fans	75	31
76		2239	3 do	dust	240	25
79	Carberry	2248	4 ch	bro or pek	440	37
81		4	1 do	bro tea	90	30
82		7	1 do	dust	140	27
83	Cooroondoo-watte	10	11 hf-ch	bro pek	605	40
84		13	9 do	pek	450	37
85		16	6 do	pek sou	300	34
86		19	3 do	congou	180	32
87		22	5 do	pek dust	420	28
88		25	3 do	dust	320	25
103	Huanuco	70	5 do	dust	400	23
107	Pansalatenne	82	5 ch	sou	450	27
108		85	3 do	dust	435	25
109		88	5 do	unas	475	25
112	Tembiligalla	97	8 ch	pek	640	35
113		100	6 do	pek sou	420	33
114		103	2 hf-ch	fans	120	30
115		106	1 do	dust	80	25
116	G K	109	4 ch	bro tea	360	21
122	P	127	6 ch	sou	480	28
128	X X	145	5 ch	pek fan	350	32
129		148	5 do	pek dust	400	26
130	Farnham	151	7 hf-ch	bro or pek	420	40
135		166	8 ch	pek fans	480	33
136		169	5 do	dust	375	26
140	Opalgalla	181	5 hf-ch	dust	280	26
143	Arslena	190	7 ch	fans	630	30
150	Talgaswela	211	4 ch	fans	400	29
151		214	2 do	dust	260	25
155	Woodend	226	8 ch	pek sou	680	30
156		229	2 do	dust	260	25
157	Blink Bonnie	232	2 ch	pek sou	160	37
159	Dunkeld	238	5 ch	pek sou	450	36
165	Dea Ella	256	14 hf-ch	pek sou	630	33
166		259	6 do	fans	360	31
167		262	1 do	bro or flowery pek	55	83
170	Fairlawn	271	14 hf-ch	pek	630	38
171		274	3 do	dust	255	27
182	Palmerston	307	3 do	dust	225	30
183		310	3 do	bro or pek fans	195	37
185						
186	A O	316	1 hf-ch	bro pek	63	36
187	Scrubs	319	2 do	bro pek	102	48
192	Anandale	322	1 do	bro pek	62	39
195	Nakiadeniya	337	3 ch	dust	435	27
196	Hatton	346	4 ch	dust	600	30
197	Maligatenne	349	6 ch	bro pek	623	35
198		352	5 do	pek	500	33
199		355	4 do	pek sou	328	31
200	Mark Ville	358	6 hf-ch	bro pek	304	33
201		361	4 do	pek	194	32
214		364	1 do	pek sou	43	30
215	Maha Uva	403	2 hf-ch	pek fans	150	31
223		406	4 do	dust	360	28
224	Erracht	430	5 ch	bro pek fans	500	31
223		433	2 do	pek dust	292	25
222	Massena	457	6 hf-ch	pek sou	300	32
233	Galkadua	460	3 ch	bro or pek	360	37
237		472	1 do	fans	125	30
238		475	1 do	congou	110	28
239		478	1 do	dust	124	25
247	N B D	502	3 ch	bro mix	270	27
249	H F, in estate mark	508	6 ch	bro pek	600	30
253	Hentleys	520	3 hf-ch	pek sou	240	31
254		523	4 do	dust	320	26
257	Tavalam-tenne	532	3 ch	pek sou	255	32
258		535	1 do	dust	120	25
261	Vogan	544	8 ch	pek sou	650	31
262		547	8 hf-ch	dust	680	25
263		550	3 ch	bro pek fans	330	31
283	Coreen	610	5 hf-ch	dust	400	26
284	Putupaula	613	9 do	bro or pek	585	37
297	C N	651	6 ch	bro tea	600	28
301	Forres	664	7 hf-ch	dust	560	26
311	Kirrimettia	694	4 do	bro mix	400	31
312		697	4 do	dust	480	26
313		700	4 do	fans	400	32
314		703	7 do	unast	630	32
316	Ingrugalla	709	3 do	red leaf	272	25
317	P G A	712	2 do	br or pk	200	35
318		715	3 ch, 1 hf-ch	or pek	350	34
319		718	4 ch	pek	308	33
320		721	7 do	bro mix	665	31

Lot.		Box.	Pkgs.	Name.	lb.	c.
321		724	4 ch	sou	380	31
322	Bodawa	727	9 hf-ch	bro pek	522	36
323		730	7 do	pek	308	35
324		733	4 do	pek sou	180	32
325		736	1 do	red leaf	42	33
326	Beverley	739	1 do	pek sou	50	31
331	Doranakande	754	4 ch	pek	380	34
333		760	1 do	dust	105	25
341	D B R	784	6 do	bro pek fans	360	36
342		787	4 ch	pek sou	320	31
343		790	1 do	bro mix	7?	32
344		794	1 hf-ch	dust	80	26
347	P G A	802	1 do	bro or pek	50	34
351	Clyde	814	4 ch	dust	600	25
361	Geragama	844	6 hf-ch	fans	450	28
362		847	4 do	dust	340	25
370	Waratenne	871	6 hf-ch	fans	450	28
372		877	5 ch	bro mix	480	25
373	Angramally	880	5 do	bro pek	500	39 bid
374		883	6 do	pek	516	38
375		886	3 do	pek sou	270	35
376		889	1 hf-ch	dust	86	26
377	K	892	2 ch	sou	200	30
382	Woodlark	907	80 box	flo. bro or pek	400	41
392	Stafford	937	4 ch	pek sou	320	37
393		940	2 do	fans	140	33
394		943	1 do	dust	90	26
402	B & D	967	5 do	unast	450	30
403	B in est. mark	970	5 do	fans	485	26
407	Irex	982	2 do	dust	200	25
408		985	1 do	bro tea	90	24
413	Pine Hill	1000	6 hf-ch	dust	510	27
420	Tonacombe	1021	5 hf-ch	dust	450	26
421	Pingarawa	1024	5 ch	dust	500	27
427	Clunes	1042	2 hf-ch	bro or pk fans	140	31
428		1045	2 do	pek fans	130	30
429		1048	5 do	dust	450	25
430	P G A	1045	1 ch	pek	95	22
433	Arslena	1060	3 do	bro mix	255	25
434	Dunnottar	1063	1 do	pek fans	100	30
435		1066	1 do	dust	130	25
436		1069	1 do	bro mix	90	25
441	Great Valley, Ceylon, in est. mark	1084	8 do	sou	600	30
450	E	1111	1 do	bro tea	90	30
461	Digdola	1144	4 do	pek sou	280	30
462		1147	4 do	bro pek fans	360	30
465	Amblakande	1156	8 do	pek sou	640	32
469	Penrhos	1168	6 do	pek sou	480	38
470		1171	3 hf ch	fans	195	32

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	S R K	973	2 ch	sou	200	30
3		979	3 do	bro tea	300	26
5	F F, in estate mark	985	13 hf-ch	pek	650	31
6		988	10 do	pek sou	450	30
7		991	3 do	bro pek fans	195	30
12	R C T F, in estate mark	7	2 hf-ch	dust	150	25
16	H A	19	2 ch	fans	155	21
17		22	3 do	pek dust	480	25
20	Kurulugalla	31	5 ch	pek sou	500	31
21	KG A, in estate mark	34	1 ch	fans	140	29
22		37	1 do	pek dust	140	26
29	St. Catherine	58	1 ch	pek	85	32
30		61	1 do	pek sou	65	30
31		64	2 do	dust	248	25
34	Rambodde	73	10 hf-ch	pek	550	35
35		76	7 do	pek sou	385	32
36		79	2 do	fans	140	31
39	Kurunegalla estate Co.	88	4 ch	pek sou	400	32
40		91	2 hf-ch	unas	120	32
41		94	2 do	dust	150	25
46	Theberton	109	3 ch	pek sou	270	32
47		112	1 do	dust	100	24
53	Glen Morgan Nilgiris	130	4 ch	bro or pek	460	33 bid
56		139	3 do	fans	360	28
58	Wendura	145	6 ch	pek	450	33
60		151	1 hf-ch	dust	83	26
63	Ravenoya	160	12 hf-ch	pek	600	34
64		163	3 do	pek sou	165	32
65		166	1 ch	sou	65	31
66		169	1 do	dust	115	36
67	D B R, in estate mark	172	2 hf-ch	bro pek	84	33
68		175	6 do	bro pek	300	34
69		178	1 do	pek	90	32
70		181	2 do	pek sou	65	31
71		184	1 ch	dust	92	25

Lot.		Box	Pkgs.	Name.	lb.	c.
75	Mahatenna	196	2 ch	dust	200	27
76		199	1 do	red leaf	80	23
81	Glenalmond	214	2 hf-ch	fans	135	30
82		217	4 do	dust	380	26
83		220	2 ch	sou	176	30
84	Cocroondo-watte	223	4 hf ch	pek	164	36
91	Stockholm	244	5 hf-ch	dust	4 0	27
92	K D L	247	5 ch	pek sou	500	26 bid
97	Harangalla	262	7 hf-ch	dust	560	27
101	Rosenath	274	1 ch	bro mix	76	27
112	Mary Hill	307	3 hf-ch	bro mix	270	24
113	Gangwarily	3 0	6 hf-ch	dust	510	25
114		313	5 ch	fans	500	31
115		316	4 do	sou	320	30
116		319	3 do	red leaf	225	27
118	Glenalla	325	1 do	dust	145	26
119		328	1 do	fans	103	28
120	Mousakande	331	13 hf-ch	bro or pek	6-9	39
126	Marigold	349	11 hf-ch	pek sou	550	41
127		352	6 do	pek fans	450	33
130	Hanugasmulle	361	7 ch	sou	6 0	30
134	Hatdowa	373	1 ch	dust	140	30
135		376	4 do	fans	400	32
136		379	1 do	sou	75	30
141	Galphele B	394	6 ch	pek sou	600	32
143		505	3 do	sou	285	31
149	Meddegodda	523	6 hf-ch	pek sou	280	32
150		526	8 do	fans	520	31
151		529	3 do	dust	140	26
157	F A, in estate mark	547	3 ch	pek sou	255	34
158		550	3 do	fans	363	33
159		553	2 do	dust	204	27
164	Pasmalie	568	6 hf-ch	dust	3 0	26
165		571	4 do	fans	450	28
171	A B	589	1 ch 1 hf-ch	pek	137	30
172	Ahamad	592	12 hf ch	bro pek	600	34
173		595	9 do	pek	450	32
174		598	8 do	pek sou	400	30
175		601	3 do	fans	160	25
176		604	2 do	red leaf	100	19
177	H	607	5 ch	dust	515	27
188	R, in estate mark	640	10 hf-ch	pek sou	400	34
189		643	7 do	unas	350	32
190		646	1 do	bro mix	50	25
191		649	1 do	dust	90	26
192	A B C	652	2 ch	pek	154	31
193	R I T	655	5 ch	bro pek	5 0	33
194		658	5 do	pek sou	450	28
196		664	2 do 1 hf-ch	bro pek fans	272	29
198	S	670	5 hf-ch	dust	400	26
99		673	5 do	bro tea	250	38
200	A	676	3 hf-ch	dust	240	26
201		679	4 do	bro tea	200	38
202	B'Watte	682	1 ch	bro p k fans	125	30
203		685	5 do	pek sou	475	30
204		688	2 do	bro mix	190	25
208	Woodthorpe	700	4 ch	sou	301	31
209		703	1 hf-ch	red leaf	44	21
213	Primrose Hill	715	4 ch	sou	304	31
214		718	1 hf-ch	dust	56	25
219	Doragalla	733	8 hf-ch	bro mix	560	25
236	L L	784	7 hf-ch	fans	468	28
241	Bollagalla	799	1 ch	bro tea	110	29
242		802	2 do	dust	180	25
245	F, in estate mark	811	4 do	sou	364	38
246		814	7 hf-ch	dust	455	27
247	M	817	3 ch 1 hf-ch	pek sou	351	21
248		820	1 do	dust	105	23
249	D	823	3 hf-ch	dust	285	23
250	London	826	5 ch 1 hf-ch	bro or pek	540	32 bid
251	Blackburn	829	6 do	fans	420	30
252		832	5 do	dust	425	26
253		835	2 do	sou	174	30
255	W E K	841	7 ch	bro or pek fans	670	30
259	Honiton	853	2 hf-ch	fans	100	31
260		856	2 do	dust	140	26
268	Corfu	880	11 hf-ch	pek sou	495	34
269		883	3 do	dust	225	27
273	K T G	895	1 ch	dust	96	25
274	Muckloway	898	8 hf-ch	bro pek	416	39
275		901	11 do	pek	506	34
276		904	12 do	pek sou	564	32
277		907	3 do	fans	180	27

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Alplakande	83	7 ch	sou	560	28
4	W P	92	6 ch	sou	480	30
8	Kotuagedera	104	1 do	pek sou	95	30
9		107	1 hf-ch	bro pek fans	70	29
13	Gale'la	119	5 ch	pek sou	450	33
18	Kandaleya	134	7 hf ch	pek sou	280	33
26	Iona	1 8	2 ch	pek sou	100	45
27		161	5 hf-ch	bro or pek fans	325	
28		164	3 do	dust	240	27
31	Cleveland	173	8 do	pek sou	384	36
32		176	3 do	fans	240	32
36	Lameliere	188	8 do	fans	616	30
43	Theresia	209	2 ch	bro pek fans	200	34
44		212	5 hf ch	dust	400	27
45	E	215	6 ch	bro or pek	600	32 bid
47	Ben Nevis	221	8 do	or pek	680	62
49		227	4 do	pek sou	344	26
50		230	2 hf-ch	dust	174	26
51	Dalhousie	233	11 do	or pek	495	47
55		245	4 do	fans	280	33
73	F	296	1 do	congou	63	30
74	S W	302	7 do	fans	469	29
75		305	1 do	dust	88	25
76	N D D, in est. mark	308	9 do	fans	630	28
77		311	4 do	dust	320	25
78		3 4	6 ch	bro mix	600	26
83	Ottery	329	1 do	dust	170	26
107	K	401	5 do	bro pek	500	32 bid
108	Marakona	404	1 do	dust	150	25
109	The Farm	407	3 do	dust	270	26
113	Povey	419	1 hf-ch	fans	70	27
114		422	1 do	dust	80	26
117	Evalgolla	431	6 do	pek sou	240	33
118		434	6 de	fans	390	32
119		437	2 do	dust	160	25
123	Claremont	449	6 ch	pek dust	600	26
143	G	509	1 do	bro pek	98	35
151	Elston	533	2 do	congou	200	26
156	K G	548	6 do	or pek fans	582	29

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, October 27.

"Oruba."—O Haputale, 1 barrel sold at 89; 2 ditto, 5 casks out at 85s, 78s refused; 9 casks out.

"Kamakura Maru."—Gonamotava F, 1 barrel sold at 100s; ditto 1, 1 cask and 1 tierce sold at 100s 6d; ditto 2, 5 casks sold at 91s 6d; 7 casks and 1 tieree sold at 91s 6d; ditto S, 3 casks and 1 tierce sold at 58s; ditto PB, 1 cask sold at 100s; GMT T in estate mark, 1 cask sold at 34s.

"Menelaus."—Standard Company, Liddesdale 2, 1 cask out; S, 2 casks and 1 tierce sold at 65s; PB, 1 barrel out; LSD T in estate mark, 1 barrel sold at 31s. Liddesdale, 1 bag sold at 47s.

"Patroclus."—Standard Company, Liddesdale 1, 1 barrel out; 2, 5 casks sold at 80s; S, 4 casks sold at 60s.

"Senator."—Sarnia, size 2. 2 casks and 1 barrel out at [illegible]s.

"Inaba Maru."—Pingarawa No. 2, 1 barrel out at 65s.

CEYLON COCOA SALES IN LONDON.

"Asia."—D HGA in estate mark, 50 bags out at 64s.

NO. 47 COLOMBO, DECEMBER 4, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[15,415 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Hornsey	21	25 do	bro pek	1500	40
5		24	20 ch	or pek	1900	41
6		27	18 do	pek	1620	40

Messrs. Forbes & Walker.

[608,548 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	W K	1177	28 ch	bro pek	2520	34
3		1180	16 do	pek	1280	33
4	Andaradeniya	1183	13 do	bro pek	1300	36
12	Frogmore	1207	14 hf-ch	bro pek	770	42
18	A B F	1225	7 cb	congou	700	28
20	Glenesk	1231	13 do	bro pek	1040	22
24	Kelaneiya and Braemar	1243	30 do	bro or pek	3000	40
25		1246	26 do	or pek	2600	41
26		1249	24 do	pek	2400	36
27	Kincora	1252	21 do	bro pek	2100	41
28		1255	13 do	pek	1100	38
31	St. Edwards	1264	14 hf-ch	pek	770	3
33	Glencorse	1270	17 ch	bro or pek	1530	37
34		1273	21 do	bro pek	1680	36
35		1276	13 do	pek	1049	34
36		1279	17 do	pek sou	1190	31
40	Mansfield	1291	74 hf-ch	bro pek	4400	47 bid
41		1294	30 ch	pek	2700	42
42		1297	11 do	pek sou	935	37
43		1300	10 hf-ch	dust	900	29
44	Kilkenny	1303	45 do	bro or pek	2250	36 bid
45		1306	23 do	bro pek No. 1	2070	33 bid
46		1309	32 do	do No. 2	2880	32 bid
47		1312	41 do	pek	3075	32
48		1315	16 do	pek sou	1290	30
49	Errollwood	1318	24 do	bro or pek	1200	56
50		1321	23 ch	or pek	2070	43 bid
51		1324	27 do	pek	2295	40
52		1327	10 do	pek sou	990	36
53		1330	14 hf-cb	bro or pek fans	800	34
55	Ambalangoda	1336	18 ch	bro pek	1800	42
56		1339	15 do	pek	1350	37
64	Gallawatte	1363	13 do	bro pek	1235	87 bid
65		1366	15 do	pek	1275	83
66		1369	10 do	pek sou	850	32
67		1372	10 do	pek fans	700	32
68	Knavesmire	1375	17 hf-cb	or pek	850	40
69		1378	57 do	bro pek	3135	40
70		1381	39 do	pek	3120	36
71		1384	11 do	pek sou	770	31
73		1390	20 do	pek	1500	35
74	Pallagodda	1393	14 ch	bro or pek	1400	36
75		1396	25 do	bro pek	2500	43
76		1399	16 do	or pek	1360	44
77		1402	19 do	pek	1615	41
78		1405	19 do	pek sou	1710	35
79	High Forest	1408	25 hf-ch	or pek No. 1	1400	64
80		1411	20 do	or pek	1040	57
81		1414	16 do	pek	736	43
89	Mudamana	1438	12 cb	sou	840	29 bid
97	Galapitakande	1462	17 do	bro pek	1700	40
98		1465	12 do	pek	1200	37
101	L G F, in est mark	1474	9 do	sou	900	29
102		1477	18 do	dust	1440	25
110	T U	1501	11 do	bro or pek	1100	57
111		1504	28 do	or pek	2576	47
112		1507	19 do	pek	1577	45
113	A M B	1510	40 do	pek sou	3360	27
114	Cooroondoo-watte	1513	17 hf-ch	bro pek	935	39
115		1516	23 do	pek	1335	36
116		1519	13 do	sou	750	33
117	Harrington	1522	18 do	bro or pek	900	59
118		1525	20 ch	or pek	1900	44
119		1528	17 do	pek A	1530	40
124	Daphne	1543	8 do	bro pek No. 2	760	34
125		1546	9 do	pek	720	35
129	Doorooma-					

Lot.		Box.	Pkgs.	Name.	lb.	c.
	della	1558	40 hf-ch	bro pek	2200	34
130		1561	18 do	pek	1710	42
133	K, in est mark	1570	32 ch	bro mix	3200	25
134	N· gagalla	1573	31 hf-cb	bro pek	1550	37
135		1576	64 do	pek	3200	35
138	K P W	1585	58 do	bro or pek	3480	39
139		1588	41 do	bro pek	2255	37
140		1591	56 do	pek	2800	34
141		1594	2[illegible] do	pek sou	1000	31
143	Palmerston	1600	15 do	bro or pek	750	57
144		1603	14 do	bro pek	742	47
145		1606	16 do	pek	1360	42
146	Theydon Bois	1609	12 ch	bro pek	1200	59
147		1612	20 do	pek	1600	58
148		1615	16 do	pek sou	1360	33
152	Macaldenia	1627	21 hf-cb	bro pek	1155	35 bid
153		1630	19 do	pek	955	38
154		1633	18 do	pek sou	900	32
157	St. Heliers	1642	39 hf-cb	bro or pek	2145	39
158		1645	34 do	pek	1978	35
163	Shrubs Hill	1660	59 ch	bro pek	5310	37 bid
164		1663	35 do	pek	2870	34
165		1666	25 do	bro or pek	2500	38
166		1669	11 do	bro pek fans	880	27
174	Nilloomally, O.B.E.C. in est. mark	1693	36 ch	bro pek	3600	44
175		1696	21 hf-ch	or pek	1890	40
176		1699	22 ch	pek sou	1540	36
177	Wewawatte	1702	16 hf-ch	bro pek	880	34 bid
179	Lyegrove	1708	11 ch	bro pek	1760	36 bid
180		1711	9 do	pek	810	37
181		1714	16 do	pek sou	935	34
183	Agra Oya	1720	28 ch	bro pek	2800	40
184		1723	23 do	or pek	1955	58
185		1726	35 do	pek	3150	36
186		1729	16 do	pek sou	1440	32
189	Gallawatte	1738	12 ch	bro pek	1140	37
190		1741	14 do	pek	1190	35
191	Ascot	1744	55 ch	bro or pek	5500	36
192		1747	11 do	bro or pek	1100	36 bid
193		1750	54 do	bro pek	4860	35 bid
194		1753	55 do	bro pek	4950	35 bid
196	Devonford	1759	32 hf-ch	bro or pek	1760	66 bid
197		1762	12 ch	or pek	1080	57
198		1765	14 do	pek	1190	48
199	G, M, in estate mark	1768	20 hf-cb	bro or pek	1000	48 bid
200		1771	20 do	pek	1000	41
201		1774	14 do	pek fans	840	36
202		1777	9 do	pek dust	720	25
203	Gonapatiya	1780	21 cb	bro pek	1029	60
204		1783	28 do	or pek	1232	55
205		1786	31 do	pek	1395	44
206		1789	20 do	pek sou	880	41
210	Deaculla	1801	40 hf-cb	bro pek	2200	40 bid
211		1804	42 do	pek	2940	36 bid
212		1807	18 do	pek sou	1260	34
213	Middleton	1810	19 ch	bro pek	1900	59
214		1813	19 do	pek	1805	42
215		1816	13 do	pek sou	1170	39
216	Pusella	1819	8 ch	bro pek	8[illegible]0	37 bid
217		1822	15 do	or pek	1200	59
218		1825	22 do	pek	1584	33 bid
223	Arapolakande	1840	75 ch	bro pek	6750	49
224		1843	39 do	pek	3120	35
227	Essex	1852	9 do	bro pek	918	34
228		1855	17 do	pek	1445	31
229		1858	12 do	sou	1030	24
235	Castlereagh	1876	28 do	bro pek	2800	46
236		1879	24 do	or pek	2040	42
237		1882	23 do	pek	1840	39
241	Yataderiya	1894	13 do	bro or pek	1365	38 bid
242		1897	44 do	bro pek	4532	33 bid
243		1900	19 do	or pek	1805	33 bid
244		1903	81 do	pek	7224	31 bid
248	Wyamita	1915	9 do	congou	720	29
249	Polatagama	1918	80 do	bro pek	7200	37
250		1921	32 do	or pek	2500	34
251		1924	38 do	pek	3230	33
252		1927	17 do	pek sou	1700	29
254	Ruanwella	1933	30 do	or pek	2550	37 bid
255		1936	23 do	bro pek	1380	38
256		1939	24 do	pek	2160	34
257		1942	10 do	pek sou	900	31
260	Dammeria	1951	29 do	bro or pek	2900	41
261		1954	21 do	bro pek	2310	42
262		1957	18 do	pek	1620	29
263		1960	8 do	pek sou	720	37
265	D M	1966	10 do	bro pek	1000	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
270	Morankande	1981	14 cb	or pek	1260	40
271		1984	13 hf-ch	hro or pek	728	40
272		1987	22 ch	pek	1980	34
274	Dunkeld	1993	69 hf-ch	bro or pek	4140	48
275		1996	16 ch	or pek	1520	42
276		1999	22 do	pek	1980	38
277	Ganapalla	2002	24 do	or pek	2160	38
278		2005	22 do	bro or pek	1980	37
279		2008	32 do	bro pek	2880	35
80		2011	62 do	pek	4960	32 bid
81		2014	25 do	pek sou	1875	29
82		2017	12 do	bro pek fans	1200	32
83		2020	12 hf-ch	dust	960	26
284	Killarney	2023	32 hf-ch	hro or pek	1760	49
284		2026	11 ch	pek sou	1045	40
292	Rockside	2047	10 do	sou	800	30
94		2053	7 do	dust	945	28
295		2056	6 do	dust No. 2	1050	25
296		2059	7 do	bro pek fans	840	34
301	C L in est. mark	2074	18 do	sou	1620	32
302		2077	25 do	fans	2625	32
304	Beverley	2083	11 hf-cb	hr or pk fans	715	37
305		2086	18 do	dust	1566	27
306		2089	15 do	pek sou	750	31
307	W V R A	2092	12 do	fans	960	25
308	Vogan	2095	85 ch	bro pek	8075	37
309		2098	70 do	pek	6300	33
310		2101	9 do	pek sou	720	30
311		2104	10 hf-ch	dust	850	25
324	Woodend	2143	22 do	bro pek	2200	33 bid
325		2146	37 do	pek	3515	32 bid
326		2149	12 do	pek sou	1020	30 bid
328	Augusta	2155	8 do	dust	1200	25
332	Bargany	2167	29 hf ch	hro or pek	1885	44 hid
333		2170	19 do	or pek	1140	41
334		2173	12 do	hro pek	720	38
335		2176	9 do	pek	810	38
350	Yahaella	2221	9 do	bro pek	900	36
351		2224	20 do	pek	1800	34
361	Weoya	4	18 do	bro or pek	800	35
362		7	40 do	hro pek	3800	35
363		10	39 do	or pek	3705	37
364		13	39 do	pek	3315	34
365		16	48 do	pek sou	3840	31
366		19	8 do	dust	1200	26
372	Rozella	37	30 ch	bro or pek	1800	46
373		40	58 do	bro pek	3480	37
374		43	23 do	pek	1955	34
381	Rozella	64	32 do	hro pek	3360	38
382		67	20 do	pek	1700	36
383	A R	70	33 do	bro tea	2706	21
384	Glengariffe	73	38 hf-ch	bro or pek	2280	42
385		76	30 do	hro pek	1740	37
386		79	15 cb	pek sou	1350	36
387		82	9 hf-ch	dust	720	26
388	O S S in est. mark	85	29 ch	bro or pek	2175	35
389		88	27 do	bro or pek	2025	35 bid
390		91	31 do	pek	2480	33
391		94	17 do	pek	1360	33 hid
396	Clyde	109	58 do	bro pek	5220	38
403	Mousakellie	130	30 do	bro or pek	3000	38
404		133	10 do	or pek	1000	39
405		136	10 do	pek	1000	36
414	Elldalua	163	7 do	hro pek	770	36
416	Glendon	169	22 do	bro pek	2090	39
417		172	23 do	pek	1840	35
418		185	12 do	pek sou	1020	31
421	St. Heliers	184	13 hf-ch	bro or pek	702	48
422		187	46 do	bro pek	2484	40
423	Harrow	190	17 do	bro or pek	1088	49
424		193	26 ch	pek	2500	43
425		196	10 do	pek sou	900	38
428	Pansalatenne	205	33 do	bro pek	3135	36 bid
429	Matale	208	45 bf-ch	bro pek	2475	34 hid
430		211	19 ch	pek	1615	34
431		214	11 do	pek sou	880	32
432	Farnham	217	27 bf-ch	or pek	1215	39
433	Rowley	220	21 do	bro pek	1050	41 bid
434		222	18 do	pek	900	36
435	Tunisgala	226	66 do	bro pek	3300	40
436		229	16 ch	pek	1280	34
451	Theydon Bois	274	11 do	hro pek	1100	39
453	Amblakande	280	22 do	bro pek	2200	39
455	Temhiligalla	286	21 hf-ch	hro pek	1155	40
456		289	25 do	or pek	1250	36
457		292	13 ch	pek	1170	35
458		295	9 do	pek sou	810	32
461	Woodend	304	24 do	bro pek	2400	34 bid
467	H G M	322	10 do	hro or pek	850	47
468		325	22 do	bro pek	2200	36
470		331	25 do	pek	2125	36
471		334	11 do	pek sou	935	33
472		337	10 do	bro pek fans	900	33

[Messrs. Somerville & Co.—178,894 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Daluk Oya	910	14 hf-ch	cr pek	770	
2		913	22 do	pek	1210	52 bid
5	Ossington	922	8 ch	bro pek	800	34 hid
6		925	14 do	pek	1400	32
9	Bidbury	934	18 ch	pek	1530	36
10		937	17 do	pek sou	1360	34
12	Horagoda	943	10 ch	bro or pek	1000	35 bid
14		949	12 do	pek	1080	33
17	Ravenscraig	958	27 ch	bro pek	2430	36 bid
18		961	22 do	pek	1980	35
19	Blinkhonnie	964	25 bf-cb	bro pek	1500	62
20		967	32 ch	pek	2816	40
22	Jak Tree Hill	973	24 hf-ch	bro pek	1200	38 bid
23		976	33 do	pek	1485	34
27	Siriniwasa	988	23 ch	bro pek	2300	38
28		991	25 do	pek	2500	34
29		994	22 do	pek sou	1930	32
32	S P, in estate mark	4	8 ch 1 bf-cb	pek fans	1430	25
38	Yspa	22	16 cb	pek sou	1360	32
39		25	21 hf-ch	dust	1785	26
40	Rambodde	28	16 bf-cb	bro or pek	880	41
41		31	26 do	bro pek	1430	37
42		34	24 do	pek	1200	35
46	Dryburgh	46	15 hf-cb	bro or pek	900	41
47		49	11 ch	or pek	1023	37 bid
48		52	14 do	pek sou	910	31
55	Auhurn	73	17 ch	bro pek	1700	36
56		76	10 do	pek	850	33
57		79	15 do	pek sou	1050	31
62	Warakamure	94	61 ch	bro pek	6100	33
63		97	43 do	pek	4085	31
64		100	16 do	pek sou	1440	29
65		103	10 bf-ch	dust	900	25
71	Wewatenne	121	10 ch	pek sou	900	31
72	Wilpita	124	10 ch	bro pek	1000	34
73		127	7 do	pek	700	32
78	Hangranoya	142	58 bf-ch	bro pek	2900	38 hid
79		145	20 do	or pek	800	36
80		148	29 ch	pek	2320	34
81		151	18 do	pek sou	1170	31
82		154	14 hf-ch	fans	910	30
84	Kavana	160	40 bf-ch	hro pek	2200	35 bid
85		163	45 do	pek	2025	34
86		166	40 do	pek sou	1800	32
92	Lonach	184	82 bf-ch	hro pek	4510	36 bid
93		187	34 ch	pek	2890	35
94		190	16 do	pek sou	1360	32
95	L	193	7 cb	bro mix	700	26
96		196	11 hf-cb	dust	880	25
98	G A Ceylon	202	23 ch	hro mix	1863	25
99	Gwernet	205	15 ch	bro pek	1500	36 bid
100		208	11 do	pek	990	37
102		214	7 do	bro or pek	770	39
104	B G	220	30 ch	bro tea	2460	20
105	Annandale	223	26 ch	hro or pek	1508	57 bid
106		226	29 hf-ch	or pek	1624	47
107		229	32 do	pek	1632	43
108		232	26 do	pek sou	1430	41
123	Lahugama	277	32 hf-ch	hro pek	1600	37
124		280	20 cb	pek	1800	33
126		286	6 do	bro or pek	720	34
129	Kerenvilla	295	10 ch	hro pek	1030	34
130		298	12 do	pek	1140	31
131		301	7 do	pek sou	700	28
145	Marigold	343	72 hf-cb	bro pek	3960	44
146	Deniyaya	346	49 ch	bro pek	4900	34
147		349	21 do	pek	1890	32
157	Havilland	379	11 cb	fans	1100	30
163	Yarrow	397	57 hf-ch	pek	2850	34
166	Salawe	511	21 ch	bro pek	2205	36
167		514	12 cb	pek	1140	33
168		517	9 do	pek sou	855	31

[Mr. E. John.—255,084 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
6	Poilakande	632	68 ch	bro pek	6460	34
7		635	30 do	pekoe	2550	32
8	Vincit	638	13 do	bro pek	1170	36
9		641	10 do	pekoe	900	33
13	Bellongalla	653	50 hf-ch	bro pek	2800	34
14		656	30 cb	pekoe	2400	31
15		659	11 hf-ch	fans	770	27
16	Wadhurst	662	9 ch	hro pek	900	43
17		665	10 do	pekoe	950	39
18		668	8 do	pek sou	720	35
20	Mossend	674	22 hf-ch	bro or pek	1100	45
21		677	16 do	or pek	800	45
22		680	25 do	pekoe	1125	41
24	Agra Ouvah	686	38 do	bro or pek		

Lot.		Box.	Pkgs.	Name.	lb.	c.
				No. 1	2280	57
25		689	39 hf-ch	bro or pek No. 2	2223	48 bid
26		692	15 ch	or pek	1410	44 bid
27		695	11 do	pekoe	1012	41
28	Callander	698	25 hf-ch	bro or pek	1500	40 bid
31	Glasgow	716	27 do	bro or pek	1674	63
35		719	38 ch	bro pek	3040	47
36		722	24 do	or pek	1560	43
37		725	12 do	pekoe	1200	41
38	Brownlow	728	43 hf-ch	bro or pek	2408	46
39		731	34 ch	or pek	3060	41
40		734	24 do	pekoe	2016	39
41		737	11 hf-ch	dust	902	29
51	Ratwatte	767	25 ch	bro pek	2500	36
52		770	22 do	pekoe	1980	34
53		773	10 do	pek sou	800	31
54	Glassaugh	776	41 hf-ch	or pek	2132	62
55		779	46 do	bro or pek	2990	48
56		782	39 ch	pekoo	3705	43
57		785	12 do	pek sou	1200	38
59	G L	791	9 hf-ch	dust	720	26
62	Choughleigh	800	13 do	bro or pek	728	42
63		803	11 ch	pekoe	1012	35
70	Elkaduwa	824	9 do	or pek	810	38
71		827	20 do	pekoe	1800	33
74	Glentilt	836	47 do	bro pek	4700	42 bid
75		839	20 do	pekoe	2000	39
76	Kandal Oya	842	27 hf-ch	bro pek	1215	44
77		845	21 do	or pek	840	39
78		848	62 do	pekoe	2480	35
80	Coslande	854	21 do	bro pek	1155	39 bid
81		857	14 ch	pekoe	1260	35 bid
87	Mount Temple	875	32 do	bro or pek	3045	34 bid
88		878	26 do	pekoe	2002	31 bid
89	Akkara Totum	881	9 do	bro pek	810	32
90		884	8 do	bro pek	720	32
96	Gonavy	902	42 hf-ch	bro pek	2100	41
97		905	15 ch	pekoe	1125	38
102	Coslande	920	21 hf ch	bro pek	1155	38 bid
103		923	14 ch	pekoe	1170	35
107	Rondura	935	12 do	or pek	1080	38
108		938	35 do	bro pek	3500	37
109		941	35 do	pekoe	3150	35
110		944	16 do	pek sou	1410	31
112	Agra Ouvah	950	39 hf-ch	bro or pek No. 1	2340	56
113		953	35 do	bro or pek No. 2	1995	53
114		956	15 ch	or pek	1395	44
115		959	10 do	pekoe	900	42
116	Westhall	962	20 hf-ch	dust	1800	28
117		965	18 ch	bro mix	1800	26
123	Gangawatte	983	24 do	or pek	2160	42
124		986	33 do	pekoe	2805	40
125		989	11 do	pek sou	090	36
126		992	30 hf-ch	bro or pek	1800	51
132	Mahanilu	10	38 do	bro pek	2280	42 bid
133		13	26 ch	pekoe	2418	40
134		16	18 do	pek sou	1620	37
135		19	8 hf-ch	dust	760	26
137	Syston	25	16 ch	bro pek	1520	34 bid
139		31	9 do	pek sou	720	29
144	Little Valley	46	10 do	bro or pek	1000	45 bid
145		49	8 do	or pek	720	40
146		52	29 do	pekoe	2175	35
147		45	14 do	pek sou	1120	34
155	Glasgow	79	37 do	bro or pek	2294	59
156		82	44 do	bro pek	3520	46
157		85	26 do	or pek	1690	43
158		88	14 do	pekoe	1400	42
159	S W	91	7 do	unas	700	32
160	Brownlow	94	24 hf-ch	bro or pek	1392	56
161		97	23 ch	or pek	2185	42
162		100	22 do	pekoe	1804	40
163	Glassaugh	103	34 hf-ch	or pek	1768	60
164		106	40 do	bro or pek	2600	49
165		109	30 ch	pekoe	2850	43
167	W, in est. mark	115	10 do	bro tea	1003	25
168	Mocha	118	25 do	bro or pek	2500	62
169		121	14 do	or pek	1260	60
170		124	14 do	pekoe	1330	44
171		127	9 hf-ch	fans	720	33
176	Harrisland	142	16 ch	bro pek	1568	35
177		145	17 do	pekoe	1360	34
178		148	10 do	pek sou	750	32
179		151	8 do	pek sou No. 2	760	30
181	Murraythwaite	157	25 do	bro pek	2375	34
182		160	24 do	pekoe	2040	33
184	Maskeliya	166	17 hf-ch	bro or pek	850	52 bid
185		169	19 ch	or pek	1710	41
186		172	11 do	pekoe	990	38
187		175	14 do	pek sou	1400	35
201	Morahela	217	40 do	bro pek	3960	34 bid
202		220	27 do	or pek	2646	34
203		223	26 do	or pek	2548	34
204		226	23 do	pekoe	2162	33
206	Gampai	232	14 do	or pek	700	36 bid

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	Avoca	1174	6 ch	pek sou	576	35
5	Andaradeniya	1186	6 do	pek	600	33
6		1189	3 do	pek sou	270	31
7		1192	3 do	sou	159	29
8		1195	1 do	dust	80	26
11	Frogmore	1204	9 hf-ch	or pek	360	42
13		1210	5 ch	pek	400	39
14	Fetteresso	1213	2 hf-ch	bro tea	114	30
15		1216	2 ch	red leaf	202	27
16	A B F	1219	5 do	bro pek	500	34
17		1222	4 do	pek	400	32
19		1228	1 do	dust	116	25
21	Glenesk	1234	4 do	bro or pek	360	34
22		1237	6 do	pek	480	31
23		1240	6 do	pek sou	420	29
29	St Edwards	1258	12 hf-ch	bro pek	672	38
30		1261	12 do	bro pek	672	35
32		1267	5 ch	pek sou	285	31
37	Glencorse	1282	1 do	dust	167	24
38		1285	2 do	pek fans	240	29
39		1288	2 do	bro tea	200	34
54	E	1333	1 do	bro tea	90	24
57	Ambalangoda	1342	7 do	pek sou	630	33
58		1345	2 do	dust	220	26
72	Knavesmire	1387	4 hf-ch	dust	340	26
82	I O	1417	5 ch	bro or pek	535	28
83		1420	2 do	pek	158	28
84		1423	3 do	pek fans	282	23
85	S W	1426	1 do	bro or pek	107	28
86		1429	1 do	pek	79	28
87		1432	2 do	sou	190	24
88		1435	1 do	pek fans	94	23
90	Mudamana	1441	5 do	dust	675	25
96	Galapitakaude	1459	7 do	or pek	665	37
99		1468	3 do	pek sou	300	31
100		1471	3 do	dust	225	28
103	B B, in est mark	1480	4 hf-ch	bro pek	200	33
104		1483	1 ch	dust	116	26
105		1486	1 do	pek	95	30
106		1489	1 do	dust	120	26
107		1492	2 do	pek	180	31
108		1495	1 hf ch	dust	70	26
109		1498	6 do	bro pek fan	300	31
120	Harrington	1531	1 ch	pek B	95	35
121		1534	4 hf-ch	or pek fans	280	35
122		1537	1 do	dust	90	25
123	Daphne	1540	5 ch	bro pek No 1	450	36
126		1549	1 do	pek sou	67	28
127		1552	1 do	dust	136	25
128		1555	1 hf-ch	red leaf	44	23
131	Doorooma-della	1564	2 ch	pek son	200	30
132		1567	3 hf-ch	fans	225	26
136	Nugagalla	1579	13 do	pek sou	650	30
137		1582	5 do	dust	450	26
142	K P W	1597	3 hf-ch	dust	255	25
149	T B, in est. mark	1618	4 hf-ch	dust	280	25
150		1621	4 do	fans	240	31
151	Macaldenia	1624	11 do	bro or pek	660	36
155		1636	3 do	unas	170	29
156		1639	2 do	dust	160	25
159	St. Heliers	1648	3 hf-ch	bro tea	267	26
160	M'Golla	1651	3 ch	read leaf fans	285	23
167	Quilon	1672	8 ch	bro tea	536	25
168	Mahayaya	1675	5 hf-ch	bro or pek	355	35
169		1688	7 do	bro pek	420	43
170		1681	10 do	pek	570	35
171		1684	9 do	pek sou	495	32
172		1687	2 do	sou	120	29
173		1690	1 ch	dust	101	25
178	Wewatte	1705	12 hf-ch	pek	600	32
182	Lyegrove	1717		dust	200	25
195	Ascot	1756	7 hf-ch	dust	560	25
219	Kennington	1828	4 ch	fans	520	32
220		1831	6 do	unas	540	28
221		1834	3 do	dust	345	25
222	Arapolakande	1837	4 ch	bro or	440	36
225		1846	6 do	pek sou	540	31
226		1849	2 do	dust	220	26
230	P G A	1861	4 hf-ch	bro mix	280	28
231		1864	3 do	dust	225	26
232	A G	1867	5 ch	pek sou	500	23
233		1870	3 do	dust	390	25
234		1873	1 do	bro tea	100	30
238	Castlereagh	1885	5 do	pek sou	400	33
239		1888	6 hf-ch	fans	420	35
240		1891	3 do	dust	240	26
245	Wyamita	1906	2 ch	bro pek	200	35
246		1909	2 do	pek	180	32
247		1912	2 do	pek sou	160	31

Lot.		Box.	Pkgs.	Name.	lb.	c.
253	Polatagama	1930	4 ch	dust	600	25
258	Ruanwella	1945	6 do	dust	480	25
259	Dammeria	1948	4 do	bro or pek	480	44
264		1963	2 do	dust	180	28
266	D M	1969	3 do	pek	540	30
273	Morankande	1999	6 do	pek sou	540	31
286	B W D	2029	6 hf-ch	bro or fans	330	30
287		2032	6 ch	unast	480	28
293	Rockside	2050	1 do	bro mix	90	27
303	C L in est. mark	2080	5 do	red leaf	450	27
312	Vogan	2107	5 do	bro pek fans	550	31
327	Woodend	2152	2 do	dust	280	24
329	Belgodda	2158	9 hf-ch	or pek	450	32
330		2161	8 do	bro pek	400	35
331		2164	12 do	pek	600	30
336	Bargany	2179	3 do	dust	285	26
34	Memorakande	2197	4 ch	dust	600	26
342	Poengalla	2200	5 do	dust	425	26
343	Kotuwa	2203	3 do	bro or pek	300	35
344		2206	3 do	pek	300	33
345		2209	3 do	pek sou	270	30
346		2212	1 do	dust	120	25
347	Relugas	2215	5 do	dust	625	29
348	Yahaella	2218	3 do	bro or pek	370	33
349		2227	7 do	pek sou	630	31
352		2230	1 do	sou	105	29
354		2233	1 do	pek fans	90	23
355		2236	1 do	dust	100	24
392	O S S in est. mark	97	8 do	pek sou	640	31
393		100	1 do	sou	80	30
394		103	4 do	pek fans	300	29
395		106	3 do	dust	300	25
397	New Galway	112	9 hf-ch	bro pek	540	63
398		115	6 do	pek	330	43
406	Mousakellie	139	3 ch	sou	300	30
407		142	3 do	dust	255	26
408	B F in est mark	145	5 hf-ch	br opek	280	36
409		148	7 do	pek	303	31
410		151	8 do	pek sou	312	29
411		154	4 do	bro pek fans	208	29
412	Kelvin	157	2 ch	sou	180	28
413		160	3 hf-ch	dust	195	25
415	Glendon	166	4 do	bro or pek	260	38
419	G	178	4 ch	sou	360	30
420		181	2 do	dust	270	25
426	Harrow	199	2 hf-ch	dust	180	25
427	Angramally	202	5 ch	bro pek	500	41
437	Tunisgalla	232	8 do	pek sou	640	30
438		245	5 hf ch	dust	400	24
452	Yatiyana	277	5 ch	unast	500	27
459	Tembiligalla	298	2 hf-ch	fans	120	29
460		301	1 do	dust	80	24
473	H G M	340	4 do	dust	340	52

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
3	Daluk Oya	916	8 hf-ch	fans	480	28
4		919	8 do	dust	480	26
7	Ossington	928	5 ch	pek sou	500	30
8		931	1 do	dust	117	24
11	Bidbury	940	3 ch	dust	420	25
13	Horagoda	946	8 ch	or pek	680	35
15		952	2 do	dust	200	25
16		955	2 do	con	180	26
21	Blinkhonnie	970	5 ch	pek sou	410	39
24	Jak Tree Hill	979	3 hf-ch	pek sou	120	31
25		982	3 do	fans	195	29
26		985	1 do	dust	80	24
30	Siriniwasa	997	3 ch	bro pek fans	300	29
31		1	2 do	dust	200	25
43	Ramhodde	37	11 hf-ch	pek sou	550	31
44		40	1 do	dust	90	24
45		43	1 do	fans	70	31
49	Dryburgh	55	4 hf-ch	fans	222	31
50	Galatotta	58	4 ch	bro pek	400	31
51		61	2 do	pek	200	29
52	Nillicollaywatte	64	3 ch	pek sou	249	31
53		67	2 hf-ch	dust	160	26
54		70	1 do	fans	70	26
58	Auburn	82	1 ch	sou	66	28
59		85	1 do	bro tea	70	20
60		88	2 hf-ch	dust	170	25
61		91	2 do	fans	140	23
66	S L G	106	2 ch	red reaf	160	21
67	Oolapane	109	2 ch	bro pek	200	35
68		112	4 do	pek sou	280	30
69	Wewatenne	115	3 ch	hro pek	270	35
70		118	8 do	pek	680	31
74	Wilpita	130	5 ch	pek sou	500	29
75		133	2 do	fans	200	28
76		136	1 do	dust	85	25
77		139	1 hf-ch	con	55	25

Lot.		Box.	Pkgs.	Name.	lb.	c.
83	Hangranoya	157	8 hf-ch	dust	640	25
87	Ravana	169	3 hf-ch	dust	255	26
97	G A Ceylon	199	1 ch	dust	132	23
101	Gwernet	211	5 ch	pek sou	425	21
103		217	2 do	dust	220	26
109	Annandale	235	12 hf-ch	sou	576	34
125	Labugama	283	8 ch	pek sou	680	30
132	Kerenvilla	304	2 hf-ch	pek dust	160	23
133		307	1 ch	pek fans	100	27
134		310	1 do	red leaf	100	21
140	K L	328	6 hf-ch	bro pek	331	30
141		331	4 ch	pek	336	29
142		334	3 do	sou	255	25
143		337	3 do	red leaf	264	20
150	Deniyaya	358	4 do	pek	500	26
151	Patulpana	361	12 hf-ch	bro pek	660	33
152		364	10 do	pek	500	31
153		367	5 do	pek sou	250	23
154		370	1 do	sou	50	26
155	Havilland	373	4 ch	sou	360	30
156		376	8 hf-ch	dust	480	27
169	Salawe	520	2 ch	dust	316	24

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	A A	617	3 ch	dust	300	24
2	Battaluwatte	620	2 hf-ch	bro pek	100	30
3		623	1 do	pekoe	50	27
4		626	1 do	pek sou	50	26
5		629	1 do	bro tea	50	20
10	Vincit	644	4 ch	pek sou	360	30
11		647	2 do	pek fans	230	34
12		650	1 do	dust	130	25
19	Wadhurst	671	2 hf-ch	dust	140	20
23	Mossend	683	4 do	fans	200	34
29	Callander	701	10 do	or pek	570	39 bid
30		704	6 do	pekoe	318	36 bid
31		707	2 do	pek sou	100	34
32		710	1 do	fans	75	24
33		713	1 do	dust	80	26
58	G L	788	6 ch	sou	510	35
60		794	6 hf-ch	bro pek fans	420	32
61	Choughleigh	797	5 ch	or pek	425	40
64		800	2 do	pek sou	172	31
65		809	2 hf-ch	dust	156	26
66	Caledonia	812	4 do	dust	320	26
67		815	1 ch	bro mix	90	27
68	W H R	818	4 do	dust	400	28
69	Eladuwa	821	5 do	bro pek	550	35
72		830	7 do	sou	630	31
73		833	2 do	mixed	250	23
79	Kandal Oya	851	9 hf-ch	pek sou	360	33
80	Coslande	860	1 ch	pek sou	95	32
83		863	2 do	congou	170	29
84		866	3 do	fans	380	32
91	Akkara Totum	887	7 do	pekoe	630	28
92		890	3 do	pek sou	240	26
93		893	1 do	sou	80	24
94		896	1 do	bro mix	80	20
95		899	2 do	fans	200	25
98	Gonavy	908	4 do	pek sou	360	34
99		911	4 hf-ch	fans	200	26
100		914	3 do	dust	225	26
101		917	3 ch	congou	225	20
105	Coslande	929	2 do	congou	170	30
106		932	3 do	fans	350	33
111	Rondura	947	2 do	dust	240	30
118	Nanuoya	968	4 do			
			1 hf-ch	sou	410	28
127	Gangawatte	995	2 ch	sou	180	32
136	Syston	22	3 do	bro or pek	300	45
138		28	4 do	pekoe	340	31
140		34	1 do	fans	130	27
141	N	37	5 do	bro pek	475	35
142		40	4 do	pekoe	360	30
143		43	1 do	sou	90	28
153	K P	73	3 hf ch	dust	200	25
154		76	7 do	fans	574	30
172	C	130	2 ch	bro pek	250	31
173		133	2 do	pekoe	202	23
174		136	2 do			
			1 hf-ch	bro mix	244	17
175		139	3 do	fans	240	18
180	Harrisland	154	4 do	dust	332	27
183	Annamallai	163	2 do	dust	170	25
188	Maskeliya	178	3 ch	unas	300	31
189		181	7 hf ch	bro pek fans	420	35
190		184	2 do	dust	150	26
200	W, in est. mark	214	1 ch	bro or pek	97	33
205	Morahela	229	4 hf-ch	dust	336	25
207	Gampai	235	8 do	bro or pek	493	37
208		238	4 ch	pekoe	320	33 hid
209		241	7 do	pek sou	576	30
210		244	1 hf-ch	dust	90	25
211		247	1 ch	red leaf	100	21

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, November 3.

"Menelaus."—Niabedde 1, 1 tierce out at 80s, 78s refused; ditto 2, 5 casks out at 62s; ditto 3, 10 casks out at 62s; ditto PB, 1 cask sold at 103s. Gonakelle 1, 1 barrel sold at 99s 6d; ditto PB, 1 barrel sold at 117s. Gowerakellie F, 1 barrel sold at 103s; ditto 1, 1 cask sold at 99s; ditto 2, 5 casks sold at 85s; ditto PB, 1 cask sold at 105s.

"Vondel."—PBH L OO, 9 bags sold at 29s 6d; ditto O, 18 bags sold at 29s 6d. PBH L 1, 11 bags sold at 34s; ditto PB, 5 bags sold at 29s 6d.

"Clan Buchanan."—PBH L PB, 1 cask and 1 tierce sold at 45s; ditto T, 4 casks and 1 barrel sold at 30s.

"Clan McArthur."—O M in estate mark, 1 barrel out at 60s; 1 ditto, 2 casks out at 55s; 2 ditto, 1 barrel out at 45s, 20s refused; ditto PB, 1 barrel out at 40s, 45s refused.

"Yarra."—JL in estate mark, O, 3 casks and 1 tierce sold at 60s; ditto 1, 3 casks out at 50s; ditto 2, 1 cask out at 40s; ditto PB, 1 tierce out at 60s.

"Wakasu Maru."—HGA in estate mark, O, 1 bag sold at 45s 6d; ditto 1, 12 bags sold at 45s 6d; ditto 2, 16 bags sold at 43s; ditto 3, 9 bags out at 40s; ditto PB, 3 bags out at 59s.

"Hitache Maru."—2 M in estate mark, 63 bags out at 37s.

"Kamakura Maru."—HGA in estate mark, 27 bags out at 40s, 30s refused.

MINCING LANE, November 10.

"Clan Fraser."—2 Leangawella, 5 casks sold at 45s; 2, bags sold at 37s. Haputale, 1 bag sold at 34s. Nedwood 2, 4 casks sold at 50s; ditto PB, 1 barrel sold at 50s.

"Hitachi Maru."—Gonamotava 1, 1 barrel out; ditto 2, 1 cask out, 45s refused; ditto S, 1 barrel and 1 cask out, 30s refused; ditto PB, 1 barrel out. GMC T in estate mark, 1 barrel out. Berragalla 1, 1 barrel out at 110s, 90s refused; ditto 2, 2 casks out at 105s, 91s refused; ditto S, 1 cask sold at 60s; ditto PB, 1 barrel out at 103s, 92s refused. BRG T in estate mark, 1 barrel out.

CEYLON COCOA SALES IN LONDON.

"Clan Stuart."—1 MAK in estate mark, 103 bags sold at 61s. 1 MM in estate mark, 48 bags sold at 62s 6d; 8 bags sold at 55s 6d. AA in estate mark, 23 bags sold at 54s. O D in estate mark, 52 bags sold at 59s 6d.

"Sanuki Maru."—DB & Co. 387 in estate mark, 19 bags out at 72s.

"Hakata Maru."—O MA in estate mark, estate cocoa, 48 bags out at 70s, 67s refused.

"Inaba Maru."—O MA in estate mark, estate cocoa, 5 bags out. MAK in estate mark, 20 bags out.

"Menelaus."—Sirigalla A, 65 bags out at 77s 6d; 18 bags sold at 67s; ditto T, 5 bags sold at 57s 6d.

"Diomed."—DBEC F in estate mark, Kondesalle, Ceylon O, 7 bags out at 74s.

OBSERVER PRINTING WORKS.

Lot.		Box.	Pkgs.		Name.	lb.	c.
230		1045	19	ch	or pek	1805	40
231		1048	28	do	pek	2520	39
232	Seenagolla	1051	20	hf-cb	bro pek	1100	43 bid
233		1054	12	ch	pek sou	1020	37
234	Aberdeen	1057	56	ch	bro pek	5432	37
235		1060	47	do	pek	3760	35
237		1066	15	bf-ch	bro pek fans	1050	32
246	Polatagama	1093	68	ch	bro pek	6120	38 bid
247		1096	32	do	or pek	2560	34 bid
248		1099	48	do	pek	4080	33
249		1102	20	do	pek s u	2000	30
254	Yataderia	1117	27	ch	bro or pek	2835	bid
255		1120	58	do	bro pek	5974	33 bid
256		1123	19	do	or pek	1805	34 bid
257		1126	70	do	pek	6020	31 bid
258		1129	15	do	pk sou No 1	1200	29
259		1132	7	do	pk sou No.2	798	27
265	Carlabeck	1150	11	do	pek sou	1100	37
266		1153	10	hf-ch	bro pek fans	800	30
267	Dewalakande	1156	30	ch	bro pek fans	3300	28
269		1162	5	do	dust	750	25
271	M	1168	8	do	bro mix	800	30
275	Mawaliganga-watte	1180	24	bf cb	bro or pek	1272	39
276		1183	32	do	or pek	1280	37
277		1186	72	ch	bro pek	6696	33
278		1189	68	do	pek sou	4760	31
279		1192	14	hf-ch	dust	1260	25
283	Kirimettia	1204	8	ch	unast	720	30
284	Palmerston	1207	14	hf-ch	bro or pek	700	56 bid
285		1210	11	cb	pek	935	41
289	Hillside	1222	10	do	pek	900	31
291	Maligatenne	1228	10	do	bro pek	1040	33
292		1231	8	do	pek	760	30
297	Ingrogalla	1246	20	do	bro pek	2000	36
298		1249	20	do	pek	1700	37
305	Queensland	1270	14	bf-ch	bro or pek	700	63
306		1273	8	do	or pek	720	54
307		1276	24	ch	pek	2040	43
308		1279	9	do	pek sou	765	38
318	Beaconsfield	1309	10	do	dust	950	26
329	Tymawr	1342	32	hf-cb	bro or pek	1760	52
330		1345	29	do	or pek	1450	44
331		1348	20	do	or pek	1000	44
332		1351	40	do	pek	1800	41
333		1354	30	do	pek sou	1350	39
334	Monkswood	1357	22	do	bro pek	1100	66
335		1360	23	cb	pek	2070	47
336	B D W P	1363	21	do	bro pek	1785	37 bid
337	Penrbos	1366	17	bf-ch	bro or pek	901	49
338		1369	31	do	or pek	1395	42
339		1372	17	do	or pek	765	41
340		1375	27	ch	pek	2295	36
343	A M B	1384	29	cb	bro pek sou	2552	28
344	Weoya	1387	31	do	bro pek	2945	34 bid
345	Bargany	1390	8	do	pek	800	35 bid
346	Uragala	1393	5	do	bro or pek	721	36
347	Dambagas-talawa	1396	26	do	bro or pek	2808	45
348		1399	24	do	bro pek	2520	39
349		1402	22	do	pek	2024	39
350		1405	8	do	pek sou	800	36
352	M E in est. mark	1411	9	do	pek sou	721	23 bid
358	C in est. mark	1429	28	bf-ch	or pek	1400	34
359	M N in est. mark	1432	20	ch	bro pek	1883	35 bid
360	Citrus	1435	8	do	pek sou	800	29
361	Weyunga-watte	1438	22	hf-ch	bro or pek	1320	38
362		1441	23	ch	bro pek	2185	36
363		1444	24	do	pek	2040	33
366	Inverness	1453	22	do	or pek	2200	45 bid
367		1456	41	hf-ch	bro or pek	2460	47 bid
368		1459	22	cb	pek	1980	42
371	B in est. mark	1468	19	hf-ch	bro pek	940	33 bid
372	Ireby	1471	33	ch	bro pek	3630	49
373		1474	22	do	pek	1980	43
374		1477	10	do	pek sou	900	38
390	Pallagodda	1525	17	do	bro or pek	1700	35
391		1528	22	do	bro pek	2200	45
392		1531	20	do	or pek	1600	37
393		1534	20	do	pek	1600	36
394		1537	20	do	pek sou	1700	33
395	Vogan	1540	74	do	bro pek	7400	38
396		1543	70	do	pek	6300	34
397		1546	9	do	pek sou	720	32
400	Kilkenny	1555	44	bf-ch	bro or pek	2200	36
401		1558	21	ch	bro pek	1890	33
402		1561	23	do	br pk No. 2	2116	32 bid
403		1564	45	hf ch	bro or pek	2250	30
404		1567	32	do	br pek No.2	2880	32 bid
408	Rowley	1579	25	hf-cb	bro pek	1250	38
409		1582	21	do	bro pek	1050	38
410		1585	21	do	pek	1050	37
411	Deaculla	1588	40	do	bro pek	2200	43
412	Errollwood	1591	23	ch	or pek	2070	41
413	Forres	1594	36	do	bro pek	4032	48
414		1597	35	do	pek	3325	40 bid
415		1600	9	do	pek sou	810	41
416	Macaldeniya	1603	21	bf-ch	bro pek	1155	36
417	Wewawatte	1606	16	do	bro pek	880	[illegible]

[Messrs. Somerville & Co.—232,390 lb.]

Lot		Box.	Pkgs.		Name.	lb.	c.
1	Datry	523	11	ch	bro tea	1078	26
2		526	18	hf-ch	fans	1350	27
13	Blinkbonnie	559	11	bf-ch	fans	715	34
16	Waverley	568	32	cb	pek sou	3200	38
17	Mary Hill	571	20	bf-ch	bro pek	1120	36
18		574	17	do	pek	850	33
21	Neboda	583	17	ch	bro or pek	1700	34
22		586	58	do	bro pek	5800	35
23		589	16	do	pek	1440	33
24		592	15	do	pek sou	1200	31
26	Kelani	598	40	ch	bro pek	3200	38
27		601	21	do	bro or pek	2100	28
28		604	25	do	pek	2125	34
39	Bidbury	637	16	cb	or pek	1440	39
40		640	10	do	bro or pek	1000	39
41		643	7	do	bro or pek No. 2	840	37
44	H J S	652	20	hf-ch	pek sou	1200	32
45	S R K	655	12	cb	pek sou	1140	32 bid
46	Walabandua	658	54	cb	bro pek	5400	37
48		664	49	do	pek	4410	35
50		670	16	do	pek sou	1360	31
51	Kurulugalla	673	24	ch	bro pek	2400	34 bid
52		676	18	do	pek	1620	33
58	Illukettla	694	18	ch	bro pek	2060	33
59		697	20	do	pek	2000	32
63	Attiville	709	9	ch	bro pek	900	34
64		712	11	do	pek	1100	32
65	Monte Christo	715	30	ch	bro pek	3000	39
68	Nyanza	724	20	cb	bro pek	2000	38
69		727	20	do	or pek	1800	38
70		730	36	do	pek	3420	35
71		733	24	do	pek sou	2160	32
72		736	12	do	dust	1200	27
73	Ladysmith	739	24	hf-cb	bro or pek	1200	33 bid
74		742	23	do	bro pek No. 1	2001	33 bid
75		745	19	do	bro pek No. 2	1710	33
76		748	20	do	pek	1500	31 bid
77		751	15	do	pek sou	1350	29 bid
79	T P N, in estate mark	757	26	hf-cb	pek sou	1300	25
82	Carney	766	24	hf-cb	bro pek	1200	38
83		769	34	do	pek	1530	34
84		772	19	do	pek sou	950	31
86	Henegama	778	18	ch	bro pek fans	1800	33
87		781	11	hf-ch	dust	990	24
88		784	17	cb	bro mix	1700	27
89	Maddegedera	787	22	cb	bro pek	2200	35 bid
90		790	38	do	or pek	3800	35
91		793	30	do	pek	3000	33
92		796	20	do	pek sou	2000	30
93	Doragalla	799	14	ch	bro or pek	1400	38 bid
94		802	23	do	bro pek	2185	37
95		805	44	do	pek	3520	36
97		811	25	hf-cb	bro mix	1625	32
98	Kosgama	814	18	ch	bro pek	1000	36
99		817	15	do	pek	1200	33
102	Bogahagoda-watte	826	19	cb	bro pek	1900	34
103		829	10	do	pek	950	31
107	Harangalla	841	28	ch	bro pek	2660	37 bid
108		844	38	do	pek	2850	27
112	Rambodde	856	21	hf-ch	bro pek	1155	36
113	Mora Ella	859	23	bf-ch	bro or pek	1334	41
114		862	20½	ch	pek	1300	37
115		865	13	ch	pek sou	1040	34
116	New Valley	868	30	cb	bro or pek	3000	46 bid
117		871	20	do	or pek	1800	42
118		874	20	do	pek	2000	38
119		877	20	do	pek sou	1600	37
121	N I T	883	10	ch	unas No. 2	900	25
122	Rayigam	886	31	ch	bro pek	3100	35 bid
123		889	27	do	or pek	2295	35
124		892	25	do	pek	2975	34
125	Marigold	895	65	hf-cb	bro pek	3575	44
126		898	23	do	pek	1150	42
127		901	18	do	pek sou	900	38
133	Mahatenne	919	27	ch	bro pek	2700	36
134		922	16	do	pek	1600	34
135	Clova	925	21	hf-cb	bro pek	1050	53 bid
136		928	16	do	pek	800	31
138	Stockholm	934	47	cb	bro pek	4700	46

Lot,		Box.	Pkgs.		Name.	lb.	c.
139		937	33	ch	pek	2805	40
145	Labuduwa	955	18	hf-ch	pek sou	900	30
154	Deniyaya	982	49	ch	br pek	4900	35 bid
155	Harangalla	985	28	do	bro pek	2660	38 bid
156		988	38	do	pek	2850	37
157	Tientsin	991	6	do	dust	780	25
158	Yarrow	994	100	hf-ch	bro pek	5600	36 bid
159		997	55	do	pek	2750	34
162	Ingeriya	7	48	hf-ch	bro pek	2400	35
163		10	36	do	pek	1728	33
164		13	28	do	pek sou	1288	31
165		16	29	do	bro pek fans	1740	33
167	Hapugasmulle	22	20	ch	bro pek	2200	33 bid
168		25	15	do	pek	1425	32
171	Oakham	34	22	hf-ch	bro pek	1320	42
172		37	20	do	or pek	800	41
173		40	16	ch	pek	1440	37
178	Sigiri	55	33	ch	bro or pek	1815	33 bid
179		58	23	do	pek	1771	33
184	D G T	73	9	ch	bro or pek	945	35

[Mr. E. John.—240,884 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
18	Sumtravelle	301	8	ch	unas	800	29
19	Kotuagedera	304	18	do	bro or pek	1800	35 bid
20		307	9	do	bro pek	855	34
21		310	18	do	pekoe	1710	33
24	Dickapittia	319	34	do	bro pek	3400	36 bid
25		322	43	do	pekoe	4300	37
28		331	13	hf-ch	fans	845	30
30	Birnam	337	62	do	pek sou	2666	36
31		340	49	do	bro pek	2940	35
32	Hiralouvah	343	34	do	bro or pek	1700	34 bid
33		346	13	do	bro pek	780	34
34		349	17	ch	pekoe	1530	34
35		352	12	do	pek sou	1020	30
39	Eila	364	81	do	bro pek	6885	36
40		367	39	do	pekoe	3315	34
41	Glentilt	370	44	do	bro pek	4400	43 bid
42		373	20	do	pekoe	2000	40
43	Bellongalla	376	25	hf-ch	bro pek	1400	33
48	Kandaloya	391	22	do	bro pek	590	42 bid
49		394	21	do	or pek	840	38
50		397	72	do	pekoe	2880	35
52	Ottery	403	35	ch	bro or pek	3500	41
53		406	11	do	or pek	990	40
54		409	17	do	pekoe	1615	38
56	Tempo	415	24	do	bro pek	2520	34 bid
58		421	14	do	pekoe	1190	34
59		424	12	do	pek sou	1020	30
61	Chapelton	430	8	hf-ch	dust	720	27
62		433	9	ch	bro mix	720	30
63	Little Valley	436	14	do	pek sou	1190	34
64	H	439	10	do	bro mix	1000	27
65	Gelella	442	23	do	or pek	1955	40
66		445	33	do	bro pek	3300	38 bid
67		448	11	do	pekoe	990	39
68		451	8	do	pek sou	720	37
70	Whyddon	457	19	do	bro pek	1900	39 bid
71		460	18	do	pekoe	1800	38
72		463	18	do	pek sou	1530	33
75	Templestowe	472	25	do	bro or pek	2500	42 bid
76		475	21	do	or pek	1890	42 bid
77		478	28	do	pekoe	2380	39 bid
85	Dalhousie	502	17	hf-ch	pekoe	1020	43 bid
86		505	35	do	pek No. 1	1575	37
87		508	23	do	pek No. 2	920	34
89	Callander	514	25	do	bro or pek	1500	40 bid
92	Agra Ouvah	523	35	do	bro or pek No. 1	2100	54
93		526	32	hf-ch	bro or pek No. 2	1824	46
94		529	17	ch	or pek	1581	43
95		532	10	do	pekoe	900	43
96	Glasgow	535	37	do	bro or pek	2220	56
97		538	42	do	bro pek	3360	46
98		541	27	do	or pek	1755	45
99		544	18	do	pekoe	1800	40
100	F, in est. mark	547	18	do	pek sou	1620	34 bid
101	Poilakande	550	67	do	bro pek	6030	33 bid
102		553	42	do	pekoe	3780	32
103	Chougbleigh	556	11	do	bro pek	1045	39
104		559	11	do	pekoe	1100	36
105	G B	562	12	hf-ch	bro pek	720	32
107	Troup	568	23	ch	sou	2070	35
108		571	8	do	bro mix	800	28
109	M R	574	11	hf-ch	dust	990	27
114	W T	589	10	ch	pek sou	900	29 bid
115	I—A	592	13	do	sou	1157	26 bid
116	Y K	595	19	do	dust	2850	25
117	Keenagaha Ella	598	22	do	pek sou	1650	30
119	Ferndale	604	12	do	pekoe	1080	37
120		607	8	do	dust	1000	27
121	Orange Field	610	10	ch	bro pek	1000	3
122		613	10	do	pekoe	900	31
132	Ferndale	643	12	do	or pek	1080	42 bid
133		646	21	do	pekoe	1890	37
134	K E	649	24	hf-ch	pek fans	1800	29 bid
135	P W	652	9	ch	bro pek	900	32 bid
136	Brownlow	655	23	hf-ch	bro or pek	1334	43 bid
137		658	20	ch	or pek	1900	42
138		661	25	do	pekoe	2175	38
140	Glassaugh	667	27	hf-ch	or pek	1431	63
141		670	30	do	bro or pek	1950	47
142		673	26	ch	pekoe	2470	42
144	K D	679	23	hf-ch	pek fans	1725	26½ bid
147	K C	688	20	ch	pek fans	1500	29½ bid
152	C G P	703	12	do	bro pek	1200	33
154	J G	709	20	hf-ch	bro pek fans	1300	33
155	Maskeliya	712	17	do	bro or pek	850	51 bid
156	J F	715	20	do	bro pek fans	1300	32 bid
157	Ottery	718	24	ch	bro or pek	2400	41 bid
158		721	10	do	or pek	900	39 bid
159		724	15	do	pekoe	1420	36 bid
161	J E	730	20	hf-ch	bro pek fans	1300	31 bid
162	Coslande	733	21	do	bro pek	1155	40
163	Morahela	736	33	ch	bro pek	3267	35
166	J D	745	20	hf-ch	bro pek fans	1300	31 bid
167	Bellongalla	748	31	do	bro pek	1736	34 bid
168		751	26	ch	pekoe	2080	30 bid

SMALL LOTS.

E. Benhsm & Co.

Lot.		Box.	Pkgs.		Name.	lb.	c.
15	Halgolle	55	2	ch	fans	230	31
16		58	1	do	dust	150	24

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.		Name.	lb.	c.
1	Beverley	358	1	hf-ch	pek	50	35
2	New Peradeniya	361	8	hf-ch	red leaf	304	21
3	Karowkettia	364	2	ch	bro pek	222	32
4		367	3	do	pek	294	30
5	Tennehena	370	1	ch	bro pek	100	33
6		373	2	do	pek	203	31
9	Dikbedde	382	5	ch	sou	500	29
10		385	1	do	red leaf	100	21
12	Bodowa, Inv. No. 22	391	6	hf-ch	bro pek	348	37
13		394	6	do	pek	264	33
14		397	6	do	pek sou	270	32
15		400	1	do	red leaf	41	23
16		403	1	do	pek dust	75	25
28	Graceland	439	11	hf-ch	pek	550	32
29		442	9	do	pek sou	405	30
30		445	1	do	congou	45	26
31		448	1	do	red leaf	50	24
32		451	5	do	bro tea	250	31
39	Galkanda	472	6	ch	pek sou	600	29
40		475	2	do	bro pek dust	240	26
46	Nilloomally O B E C. in est mark	493	5	hf-ch	fans	350	33
53	Kitulgalla	514	4	do	pek sou	200	32
54		517	3	ch	dust	360	25
60	Queensland	535	2	hf ch	dust	150	26
61		538	2	do	fans	150	30
64	Patiagama	547	7	hf-ch	or pek	595	41
67		556	5	do	dust	400	27
68		559	2	do	sou	160	27
72	Fairlawn	571	3	hf-ch	dust	255	28
73	F L, in estate mark	574	2	ch	bro mix	180	23
83	Maha Uva	604	2	hf-ch	pek fans	150	34
88	Weyunga-Watte	619	7	ch	pek sou	560	30
89		622	4	hf-ch	dust	340	25
95	Pine Hill	640	4	ch	pek sou	300	33
96		643	1	do	sou	85	25
101	Passara Group	658	2	ch	fans	140	34
106	Clyde	673	4	ch	dust	400	25
111	Stamford Hill	988	3	hf-ch	dust	255	30
113	Bargany	694	10	hf-ch	or pek	580	40
116		703	1	ch	dust	95	26
118	Walton	709	6	ch	or pek	600	37
121		718	2	do	fans	260	34
130	C, in estate mark	745	2	ch	pek	190	34
138	Nakiadeniya	769	1	ch	red leaf	80	24
141	D M V	778	6	do	pek sou	480	29

Lot.		Box.	Pkgs.	Name.	lb.	c.
142		781	2 ch	bro pek fan	174	28
143		784	1 do	hro tea	76	27
144		787	1 do	dust	76	25
145	Maha Oya	790	5 ch	sou	450	27
160	Yelatenne	835	9 ch	or pek	513	40
161		838	8 do	pek	424	37
162		841	2 hf-ch	pek sou	100	37
163		844	1 do	fans	75	33
164	D G F	847	2 hf-ch	hro pek	100	34
165		850	3 do	pek	132	31
166		853	3 do	pek son	120	31
170	D B R	865	6 hf-ch	hro pek fans	360	29
171		868	3 ch	pek sou	240	37
172		871	1 hf-ch	dust	85	25
175	Holton	880	6 ch	pek nos	480	30
176	B A	883	4 ch	dust	300	25
177		886	4 do	read leaf	400	22
183	W N	904	6 hf-ch	dust	540	24
191	Knavesmire	928	2 hf-ch	dust	170	25
192	K H L	931	3 ch	hro mix	195	23
193	Bodawa, Inv. No. 23	934	4 hf-ch	bro pek	224	36
194		937	3 do	pek	126	33
195		940	4 do	pek sou	180	32
203	St. Leonards-on-Sea	964	7 ch	or pek	630	34
205		970	1 do	dust	90	24
206		973	3 do	hro mix	195	23
209	Holmwood	982	2 ch	pek	190	35
211		988	1 do	dust	150	26
212	B D W G	991	3 hf-ch	dust	240	33
217	Ella Oya	1006	6 ch	dust	564	24
228	Morankande	1039	4 hf-ch	dust	360	25
236	Aberdeen	1063	8 ch	sou	600	30
238	S	1069	2 do	sou	180	29
250	Polatagame	1105	2 do	dust	3.0	25
253	Battawatte	11 4	7 do	pek sou	560	33
260	Dromoland	1135	6 hf-ch	bro pek fans	390	33
261		1138	4 do	dust	320	27
262		1141	2 ch 1 hf-ch	red leaf	245	25
263	N W D	1144	3 ch	bro tea	321	24
264	Wewekellie	1147	1 do	bro tea	100	31
268	Dewalakande	1159	8 do	bro tea	560	28
270	P G A	1165	8 do	bro mix	560	28
272	K	1171	2 do	unast	200	26
280	Kirrimettia	1195	4 ch	bro mix	400	29
281		1198	3 do	fans	300	33
282		1201	5 do	dust	600	28
286	Palmerston	1213	3 do	pek sou	240	40
287	Hillside	1216	3 do	hro or pek	236	35
288		1219	4 do	bro pek	400	34
290		1225	6 do	pek sou	480	29
293	Maligatenne	1234	6 do	pek sou	540	27
294	Cooroondoo-watte	1237	11 hf-h	bro pek	605	42
295		1240	13 do	pek	650	37
296		1243	10 do	pek sou	550	34
304	K	1267	8 ch	dust	480	25
309	N B D	1282	4 do	hro mix	320	24
310		1285	8 do	unast	680	29
319	Richmond	1312	4 hf-ch	or pek	220	60
320		1315	4 do	hro pek	240	59
321		1318	5 do	pek	225	47
322		1321	1 do	pek sou	45	44
323		1324	1 do	dust	75	36
341	Penrhos	1378	5 ch	pek sou	400	33
342		1381	5 hf-ch	dust	425	26
351	Damhagas-talawa	1403	6 do	bro pek fans	480	31
353	Glencorse	1414	5 ch	pek fans	575	27
354	Letchemy	1417	4 do	fans	500	27
364	Weyungawatte	1447	3 do	pek sou	255	31
365		1450	3 hf-ch	dust	255	26
369	Inverness	1462	5 ch	pek sou	450	40
370		1465	7 hf-ch	dust	560	31
375	Ireby	1480	5 ch	fans	350	35
376		1483	5 do	dust	400	27
379	D in est. mark	1492	9 hf-ch	fans	540	38
388	Naseby	1519	1 do	pek	82	38
389	U	1522	2 ch	dust	275	25
398	Vogan	1549	8 hf-ch	dust	680	25
399		1552	5 ch	bro pek fans	550	30

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Dartry	529	3 hf-ch	dust	291	25
4	Pannapitiya	532	3 ch	bro pek	300	34
5		535	5 do	pek	475	32
6		538	4 do	pek sou	440	29
7		541	2 do	con	130	28
8	R K K	544	7 ch	hro pek	560	25
9		547	2 do	bro or pek	200	37
10		550	5 do	pek	425	32
11		553	3 ch	pek sou	270	29
12		556	1 do	dust	125	25
14	Blinkbonnie	562	5 hf-ch	dust	425	26
15	Lawrence	565	4 ch	red reaf	348	24
19	Mary Hill	577	9 hf-ch	pek sou	540	32
20		580	2 do	hro mix	180	25
25	Neboda	595	4 hf-ch	dust	340	25
29	Kahatagalla	607	6 ch	hro pek	480	35
30		610	2 do	hro or pek	200	35
31		613	4 do	pek	340	33
32		616	3 do	pek sou	270	31
33		619	1 do	dust	125	25
34	J P E	622	4 do	hro pek	320	35
35		625	1 do	bro or pek	100	36
36		628	3 do	pek	255	33
37		631	2 do	pek sou	180	30
38		634	1 do	dust	125	24
42	H J S	646	7 hf-ch	hro pek	420	35
43		649	7 do	pek	420	33
47	Walahandua	661	1 ch	hro pek No. 2	100	34
49		667	1 do	pek No. 2	90	33
53	Kurulugalla	679	3 ch	pek sou	300	28
54	K G A, in estate mark	682	4 ch	bro tea	400	25
55		685	1 do	hro pek fans	130	31
56		688	1 do	pek dust	140	25
57		691	1 do	pek fans	98	26
60	Illukettia	700	6 ch	pek sou	600	28
61	E S	703	2 ch	sou	183	27
62		706	1 do	hro mix	78	29
66	Allakolla	718	5 ch	sou	450	27
67		721	2 do	red leaf	180	24
78	T P N, in estate mark	754	8 hf-ch	hro pek	448	26
80		760	4 do	fans	224	23
81		763	1 do	dust	83	24
85	Carney	775	3 hf-ch	sou	150	27
96	Doragalla	808	7 ch	pek sou	525	32
100	Kosgama	820	3 ch	pek sou	225	30
101		823	2 do	pek fans	140	29
104	Bogahagoda-watte	832	5 ch	pek sou	475	29
105		835	2 do	hro pek fans	250	29
106	Deniyaya	838	4 ch	sou	350	29
109	Wewetenne	847	10 hf-ch	bro pek	600	33
110		850	7 do	pek	378	30
111		853	5 do	sou	250	29
120	N I T	880	4 ch	unas No. 1	440	28
123	Marigold	904	5 hf-ch	pek fans	375	32
137	Clova	931	4 hf-ch	pek sou	180	28
140	Stockholm	940	7 ch	pek sou	560	37
141		943	6 hf-ch	dust	480	26
143	Labuduwa	949	8 hf-ch	bro pek	511	34
144		952	7 do	pek	393	34
146		958	1 do	pek dust	50	27
147		961	1 do	fans	61	26
151	Danwella	973	1 ch	hro or pek	96	34
152		976	1 do	pek	65	32
153		979	1 do	fans	137	25
160	Y, in estate mark	1	2 hf-ch	bro mix	100	22
161		4	2 ch	dust	180	24
166	Ingeriya	19	4 hf-ch	dust	300	25
169	Hapugasmulle	28	5 ch	sou	450	28
174	Oakham	43	5 ch	pek sou	475	36
175		64	3 hf-ch	pek fans	225	28
176	A A	49	3 hf-ch	hro tea	150	21
180	H, in estate mark	61	2 hf-ch	bro pek	120	32
181		64	2 do	pek	110	29
182		67	6 do	pek sou	300	27
183		70	2 do	dust	170	25
185	D G T	76	2 ch	hro pek	220	31
186		79	3 do	or pek	340	32
187		82	1 box 6 ch 1 hf-ch	pek sou	625	27
188		85	3 ch	pek fans	399	27
189		88	1 do	bro mix	86	20
190	A	91	7 hf-ch	fans	504	29

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	W H	250	3 hf-ch	or pek	198	36
2		253	4 do	bro pek	232	34
3		256	7 do	pekoe	371	33
4		259	5 do	pek sou	260	31
5		262	5 do	dust	455	28
6		265	2 do	fans	148	33
7	Ohiya	268	6 ch	pek sou	540	29
8		271	4 do	fans	340	27
9		274	4 do	sou	340	26
22	Kotuagedera	313	3 do	pek sou	285	29
23		316	2 hf-ch	bro pek fans	150	27
26	Dickapittia	325	5 ch	pek sou	500	37

Lot.		Box.	Pkgs.	Name.	lb.	c.
27		328	8 hf-ch	dust	640	26
29		334	1 ch	sou	100	30
36	Hiralouvah	355	2 hf-ch	fans	140	30
37	K T	358	2 ch	sou	210	35
38		361	1 do	pek fans	110	20
44	Bellongalla	379	5 hf-ch	fans	350	27
45		382	6 do	dust	540	25
51	Kandaloya	400	10 do	pek sou	400	31
55	Ottery	412	2 ch	dust	340	30
57	Tempo	418	2 do	bro or pek	240	37
60		427	1 do	dust	170	25
69	R L	454	1 do	red leaf	90	26
73	Whyddon	466	8 hf ch	pek fans	584	33
74		469	7 do	dust	630	27
84	Dalhousie	499	9 do	or pek	405	47
88		511	5 do	fans	325	34
90	Callander	517	10 do	or pek	570	36 bid
91		520	6 do	pekoe	318	35
106	G B	565	6 ch	pekoe	480	30
118	Keenagaha Ella	601	4 do	bro pek fans	520	30
123	Orange Field	616	2 do	pek sou	180	28
124		619	1 do	pek fans	95	26
125		622	1 do	dust	125	24
126		625	1 do	bro mix	100	22
139	Brownlow	664	9 hf-ch	bro pek fans	648	35
153	G C P	706	4 do	bro or pek	220	35
160	Ottery	727	1 ch	dust	170	29
164	Morahela	739	3 do	sou	273	29
165		742	4 hf-ch	dust	336	25
169	Bellongalla	754	8 ch	pek sou	480	28
170		757	3 hf-ch	bro pek fans	210	31
171		760	2 do	dust	140	27

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, November 17.

"Hitachi Maru."—GA Ouvah O, 1 barrel sold at 90s; ditto 1, 1 cask and 1 barrel sold at 91s s ditto 2, 8 casks sold at 80s; ditto 3, 4 caskl and 1 barrel sold at 61s; GA Ouvah 1 PB, ; cask sold at 80s; ditto Triage, 1 cask sold at 35s; 1 bag sold at 55s; 7 bags sold at 35s.

"Clan For bes."—R S O in estate mark, 60 bags out at 50s, 40s refused; 39 bags out; 101 bags out at 43s. 37s refused; MS in estate ma 5,5rk bags out at 43s.

OBSERVER PRINTING WORKS.

NO. 49 — COLOMBO, DECEMBER 18, 1899. — PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[9,221 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Hornsey	14	10 hf-ch	hro or pek fans	700	35
2		17	10 do	fans	950	29
3	Hornsey	20	23 ch	pek sou	1840	35 bid
4	Hornsey	23	32 ch	or pek	3040	42
5		26	28 do	pek	2240	38 bid

Messrs. Forbes & Walker.

[532,529 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	E D P	1609	14 hf-ch	dust	1050	26
2	Calendon	1612	10 ch	hro pek	1092	34
7	N	1627	27 ch	hro tea	3510	28
17	Doranakande	1657	10 ch	pek sou	900	33
18	Pallawatte	1660	20 ch	hro pek	2000	36
19		1663	10 do	pek	1000	34
22	T'Villa	1672	16 ch	hro or pek	1600	37
23		1675	8 do	hro pek	760	34
24		1678	40 do	pek	3600	33
25		1681	13 do	pek No. 2	1235	31
29	Ewhurst	1693	14 hf-ch	bro or pek	728	36
30		1696	26 ch	bro pek	2210	34
32		1702	27 do	pek	2214	32
35	Holton	1711	14 ch	bro pek	1260	33
36		1714	12 do	pek	900	33
45	Anningkande	1741	14 ch	hro pek	1400	37
46		1744	11 do	pek	1045	38
47		1747	10 do	pek sou	900	32
48		1750	10 do	dust	750	28
49	L B K	1753	19 ch	red leaf	1900	25
50	Passara Group	1756	15 ch	hro or pek	1500	43
51		1759	12 do	or pek	1080	43
52		1762	15 do	pek	1350	40
53		1765	11 do	pek sou	990	37
69	Macaldeniya	1813	15 hf-ch	bro pek	825	36
70		1816	40 do	pek	720	34
80	Allagalla	1846	10 ch	dust	850	27
82	Hayes	1852	16 ch	bro pek	1600	39
83		1855	31 do	pek	2635	39
84		1858	25 do	pek sou	2125	36
86	High Forest	1864	31 hf-ch	or pek No. 1	1736	64
87		1867	21 do	or pek	1092	52
88		1870	20 do	hro or pek	1300	52
89	Battawatte	1873	13 ch	bro pek	1430	40
90		1876	20 do	pek	1900	37
92	Tunisgalla	1882	79 hf-ch	hro pek	3950	35
93		1885	31 ch	pek	2480	34
94		1888	18 do	pek sou	1440	31
95	Hunasgeria	1891	10 ch	sou	900	29
96		1894	10 do	dust	800	27
97	Nakiadeniya	1897	9 ch	hro pek No. 1	810	36
98		1900	15 do	hro pek No. 2	1425	37
99		1903	14 do	pek	1120	34
106	Kakiriskande	1924	12 ch	pek	1140	32
109	K P W	1933	30 hf-ch	bro or pek	1650	39
110		1936	22 do	hro pek	1210	36
111		1939	86 do	pek	4300	34
114	Stamford Hill	1948	40 hf-ch	bro pek	2400	46
115		1951	31 do	or pek	1395	50
116		1954	40 do	pek	3600	40
117		1957	9 do	pek sou	765	38
119	Uragalla	1963	16 ch	hro pek	1440	32
127	Springwood	1987	15 ch	sou	1200	31
129	Theydon Bois	1993	8 ch	hro pek	800	37 bid
130		1996	23 ch	pek	1840	38
131		1999	11 do	pek sou	935	36
138	B, in estate mark	2020	13 ch	dust	1950	29
139	Palmerston	2023	15 hf-ch	hro or pek	750	55
140		2026	15 do	bro pek	795	43
141		2029	13 do	pek	1105	43

Lot,		Box.	Pkgs.	Name.	lb.	c.
142	Queensland	2032	14 hf-ch	bro or pek	700	63
143		2035	7 ch	bro pek	700	41 hid
144		2038	12 do	pek	1020	41
146	St Heliers	2044	16 ch	bro or pek	1600	39
147		2047	21 do	pek	1666	36
148	Massena	2050	61 hf-ch	hro pek	3050	36 bid
149		2053	22 do	pek	1100	34
150		2056	15 do	pek sou	750	32
154	Dunkeld	2068	52 do	bro or pek	3120	40
155		2071	14 do	or pek	1330	41
156		2074	18 do	pek	1620	39
157	Rozelle	2077	30 ch	hro pek	3150	34
158		2080	23 ch	pek	1955	34
159		2083	18 do	pek sou	1620	32
160		2086	18 hf-ch	dust	1440	26
161	Seenagolla	2089	48 hf-ch	bro pek	2640	44
162		2092	15 ch	or pek	1275	41
163		2095	18 do	pek	1530	40
164	Killarney	2098	28 hf-ch	hro or pek	2280	46
165		2101	18 ch	pek sou	1710	40
166		2104	10 hf-ch	fans	700	36
167	Ganapalla	2107	20 ch	or pek	1800	37
168		2110	22 do	bro or pek	1980	37
169		2113	34 do	hro pek	3060	34
170		2116	70 do	pek	5600	33
171		2119	20 do	pek sou	1500	30
173	Morankande	2122	13 ch	or pek	1170	39
174		2128	24 do	pek	2160	35
176	Fairlawn	2134	21 hf-ch	bro pek	1155	48
177		2137	15 ch	or pek	1350	40
179	Carfax	2143	20 ch	bro or pek	2000	47
180		2146	21 do	or pek	1890	43
181		2149	22 do	pek	1980	41
183	Letchimey	2155	12 hf-ch	dust	960	28
186	Dea Ella	2164	19 hf-ch	hro or pek	1140	40
187		2167	32 do	or pek	1760	37
188		2170	32 do	pek	1600	37
189		2173	14 do	pek sou	700	34
191	High Forest	2179	18 hf-ch	or pek No. 1	1008	58 hid
192		2182	18 do	or pek	936	53
193		2185	21 do	pek	957	45
194	Eriacht	2188	13 ch	hro or pek	1235	36
195		2191	38 do	bro pek	2850	37
196		2194	40 do	pek	2800	33
197		2197	24 do	pek sou	1680	30
198		2200	13 do	bro pek fans	1300	35
205	Maha Uva	2221	58 hf-ch	hro or pek	3480	38
206		2224	51 ch	pek	4655	37
207		2227	20 do	pek sou	1600	35
210	Clunes	2236	16 ch	bro or pek	1520	36
211		2239	13 do	hro pek	1170	35
212		2242	25 do	or pek	2000	36
213		2245	41 do	pek	3280	34
214		2248	13 do	pek sou	1170	31
217	H, in estate mark	7	8 ch	hro mix	800	30
225	Mawilliganga-watte	31	15 hf-ch	hro or pek	825	40
226		34	21 do	or pek	882	36
227		37	52 ch	bro pek	4680	34
228		40	49 do	pek sou	3675	31 hid
229	P G A	43	10 ch	hro mix	700	30
230	Torwood	46	37 ch	bro pek	3330	37 bid
231		49	17 do	pek	1360	34
232		52	16 do	pek sou	1280	32
233		55	11 hf-ch	bro pek fans	726	34
234	Castlereagh	58	34 ch	hro pek	3400	42 bid
235		61	30 do	or pek	2550	41
236		64	23 do	pek	1840	38
238		70	10 hf-ch	fans	700	33
244	Cooroondoo-watte	88	14 hf-ch	hro pek	700	39
247	Ingrogalla	97	10 ch	bro pek	1000	35
248		100	11 do	pek	935	36
249	I N G, in estate mark	103	7 ch	hro pek dust	840	26
250	Harrington	106	17 hf-ch	bro or pek	850	50 bid
251		109	17 ch	or pek	1615	44
252		112	13 do	pek A	1170	40
258	Tonacombe	130	29 do	or pek	2610	41
259		133	12 do	hro or pek	1200	48
260		136	24 do	bro pek	2520	40
261		139	56 do	pek	5040	33
262		142	18 do	pek sou	1620	37
268	Mansfield	160	48 hf-ch	hro pek	2880	44 bid
269		163	19 ch	pek	1710	39
272	Gonapatiya	172	17 hf-ch	bro pek	833	48 b

Lot.		Box.	Pkgs.	Name.	lb.	c.
273		175	21 hf-ch	or pek	924	50
274		178	27 do	pek	1215	43
275		181	14 do	pek fans	812	38
276	O'Bode	184	9 cb	bro pek	1035	38
277		187	8 do	or pek	800	38
278		190	10 do	pek	900	36
283	Middleton	205	13 do	bro pek	1235	48 bid
284		208	18 do	pek	1620	41
287	T U	217	20 do	or pek	1860	51
288		220	35 do	pek sou	1925	4
289	Kilkenny	223	37 hf-ch	bro or pek	1961	35
290		226	22 ch	bro pek	1870	33
291		229	26 do	pek	1950	32
295	Roeberry	241	85 do	bro pek	8500	38 bid
296		244	73 do	pek	6570	37
297		247	20 do	pek sou	1682	35
310	Sunnycroft	286	9 do	pek	900	31
311	Ismalle	289	22 do	sou	1760	29
312		292	14 hf-ch	fans	1050	27
313		295	27 do	dust	2295	26
316	Erlsmere	304	13 do	bro or pek	741	45
317		307	25 ch	bro pek	2425	39 bid
318		310	28 do	bro pek	2660	39 bid
319		313	29 do	pek	2233	38
320		316	11 do	pek sou	1114	36
325	Deaculla	331	40 bf-ch	bro pek	2200	47
326		334	37 ch	pek	2590	37sold
327		337	18 do	pek sou	1260	35
328	Errolwood	340	29 do	bro or pek	1450	46
329		343	20 ch	or pek	1800	47 bid
330		346	20 do	or pek	2070	35 bid
331		349	23 do	pek	2070	37
332		352	20 do	pek sou	900	36
333	Ella Oya	355	23 do	bro pek	2185	35 bid
334		358	21 do	pek	1785	34
335		361	22 do	pek sou	1870	32
336	Gallawatte	364	9 do	bro pek	855	35 bid
337		367	13 do	pek	1105	34
338		370	10 do	pek sou	850	33
339	Stisted	373	47 hf-ch	bro or pek	3055	36
340		376	13 do	or pek	780	36
341		379	15 do	pek	900	34
342		382	25 do	pek sou	1400	32
344	Talgaswela	388	21 ch	bro or pek	2100	38
345		391	26 do	bro pek	2210	38
347		397	34 do	or pek	2890	36
348		400	29 do	pek	2465	34
349		403	21 do	pek sou	1785	32
352	Hentleys	412	25 hf-ch	bro pek	1250	38
353		415	18 do	bro pek	954	39
355		421	20 ch	pek	1700	33
358	Parsloes	430	39 do	bro pek	3900	36
359		433	26 do	pek	2340	34
381	Augusta	499	5 do	dust	750	26
382	Bargany	502	32 hf-ch	bro or pek	1518	39 bid
383		505	7 ch	bro pek	735	35 bid
384		508	13 hf-ch	or pek	715	36 bid
385		511	10 ch	pek	900	35
391	Pine Hill	529	18 hf ch	bro or pek	1080	52
392		532	32 do	or pek	1972	46
393		535	30 do	pek	2400	38
398	Putupaula	550	51 ch	bro pek	4590	36 bid
399		553	34 do	pek	2550	35
400		556	12 do	pek sou	840	32
402	Harrington	562	25 cb	bro pek	2500	37
403		565	17 do	bro pek	1700	36
404	H G M	568	9 do	bro or pek	765	43
405		571	8 do	or pek	720	40
406		574	24 do	bro pek	2400	35
407		577	28 do	pek	2380	36
408		580	13 do	pek sou	1105	33
409		583	10 do	bro pek fans	900	34
412	Gampaha	592	23 do	bro or pek	2530	42 bid
413		595	8 do	or pek	760	40
414		598	19 do	pek	1520	40
415		601	19 do	pek sou	1710	36
416	Polatagama	604	68 do	bro or pek	6120	37 bid
417		607	32 do	or pek	2560	34 bid
418	Fredsrube	610	50 do	bro pek	5000	35 bid
419	Yelatenne	613	23 do	bro or pek	1380	36 bid
420	Glendon	616	30 do	bro pek	2850	37
421		619	32 do	pek	2560	35
422		622	17 do	pek sou	1445	33
425	Dunbar	631	31 hf-ch	bro or pek	1550	52 bid

[Messrs. Somerville & Co.—
244,586 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Tientsin	94	21 ch	pek sou	1890	37
2	Dalukoya	97	15 hf-ch	bro or pek	900	39 bid
3		100	21 do	or pek	1155	36
4		103	32 do	pek	1760	33
6	Dikmukalana	109	50 do	bro pek fans	2750	33
7		112	33 do	pek	1650	34
8	Blinkbonnie	115	26 bf-ch	bro pek	1560	47
9		118	37 ch	pek	3256	40
15	Kolaborikande	136	67 ch	bro pek	6700	33
16		139	43 do	pek	4085	32
17		142	20 do	pek sou	1800	29 bid
22	Hangranoya	157	66 hf-ch	bro pek	3300	36 bid
24		163	27 cb	pek	2430	32 bid
25		166	21 do	pek sou	1470	31
26	Ravenscraig	169	45 ch	or pek	3825	35
27		172	19 hf-ch	br pek	1045	36
33	Lonach	190	71 hf-ch	bro pek	3905	36
34		193	30 ch	pek	2400	34
35		196	12 do	pek sou	1020	33
37	Oolapane	202	52 cb	bro pek	5200	34
38		205	24 do	pek	2400	35
39		208	17 do	pek sou	1530	33
40	W V V	211	9 ch	pek	900	33
42	Killin	217	17 ch	bro pek	1700	35
43		220	14 do	pek	1260	33
45	Columbia	226	15 hf-ch	bro or pek	780	52
46		229	21 do	or pek	945	43
47		232	31 do	pek	1240	40
48	C M, in estate mark	235	23 hf-ch	pek	1035	34
49	Glen Morgan Nilgiris	238	25 hf-ch	or pek	1250	43 bid
51		244	15 hf-cb	bro or pek	900	36
52		247	50 ch	pek	4075	35 bid
54	Maligatenne	253	14 ch	unas	1323	27
56	P	259	15 cb	unas	1418	27
59	St. Catherine	268	46 ch	bro or pek	4370	34
69	Razeen	298	40 hf-ch	bro pek	2 00	37 bid
70		301	28 do	or pek	1260	39
71		304	35 do	pek	1925	35
72		307	16 do	pek sou	720	33
76	Deniyaya	319	45 ch	bro pek	4500	35 bid
77		322	18 do	pek	1800	36
78		325	18 do	pek sou	1800	33
80	Charlie Hill	331	18 ch	bro pek	990	33
81		334	13 hf-ch	pek	715	31
85	Depedene	346	83 hf-ch	bro pek	4980	36
86		349	75 do	pek	3750	33
87		352	57 do	pek sou	2850	30
89	California	358	8 ch	bro pek	760	34
90		361	11 do	pek	1045	31
91		364	8 do	pek sou	800	28
94	Handrookande	373	17 hf-ch	bro pek	935	36
98	Ambalawa	385	36 hf-ch	bro pek	1800	33
99		388	23 do	pek	1035	32
101	Mossville	394	10 ch	bro pek fans	1000	28
102		397	8 hf-cb	dust	720	25
103		505	8 ch	red leaf	720	21
111	K T G	529	16 ch	red leaf	1520	22
112		532	9 hf-ch	dust	720	32
113	Havilland	535	30 ch	sou	2700	27
115		541	10 do	fans	1000	28
122	Doragalla	562	9 ch	bro or pek	945	42
123		565	18 do	bro pek	1800	38
124		568	37 do	pek	2960	36
125		571	10 do	pek sou	800	33
126		574	9 do	bro mix	1080	25
127	Chetnole	577	20 ch	bro or pek	2000	43
128		580	29 do	bro pek	2900	37
129		583	39 do	pek	3705	36
130		586	17 do	pek sou	1530	32
132		592	12 hf-ch	fans	780	29
136	New Valley	604	30 ch	bro or pek	3000	44 bid
137		607	15 do	or pek	1350	41
138		610	25 do	pek	2500	38
139		613	17 do	pek sou	1530	37
141	N I T	619	8 ch	unas No. 2	720	28
142	Annandale	622	13 hf-ch	bro or pek	754	55
143		625	15 do	or pek	870	45
144		628	19 do	pek	912	41
145		631	21 do	pek sou	1260	39
147	Citrus	637	17 ch	bro pek	1700	34
149		643	22 ch	pek	1980	32
150		646	8 do	pek sou	800	29
151	Selvawatte	649	18 ch	bro pek	1710	34 bid
152		652	14 do	pek	1260	31 bid
155	S N T	661	15 ch	bro pek	1575	34 bid
156		664	12 do	pek	1140	35 bid
159	Kurunegalle ets Co. Ltd.	673	19 ch	bro pek	1900	36 bid
160		676	13 do	pek	1300	35
163	Monrovia	685	38 ch	bro pek	3800	35
164		688	6 do	bro or pek	708	34
165		691	35 do	pek	3325	34
166		694	12 do	pek sou	1200	32
169	Mora Ella	703	13 hf-ch	bro or pek	754	37
170		706	11 ¾ ch	pek	715	37
171	I P	709	26 hf-ch	dust	2184	26
172		712	27 ch	pek sou	2430	21 bid
173	G B	715	32 hf-ch	dust	1600	28
186	H J S	754	14 hf-ch	pek sou	840	32
187	Paradise	757	39 hf-ch	bro pek	2145	35
188		760	16 ch	pek	1600	34

Lot.		Box.	Pkgs.	Name.	lb.	c.
189		763	14 ch 1 hf ch	pek sou	1380	33

[Mr. E. John.—240,816 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Mount Everest	769	9 bf-cb	pekoe	900	44
4	Rookwood	772	31 do	or pek	1550	44
5		775	61 do	pekoe	3050	40
6	K	778	24 do	pekoe	1200	34
7	Galloola	781	24 ch	bro pek	2400	43
8		784	29 do	pekoe	2900	39
9		787	26 do	pek sou	2600	37
11	Maryland	793	7 do	bro pek	700	34
12		796	8 do	pekoe	760	32
13	Glentilt	799	28 do	bro pek	2800	40 bid
14		802	11 do	pekoe	1100	36 bid
16		808	18 do	fans	1440	29
21	Yapame	823	30 do	bro mix	3000	42
22		826	13 do	pekoe	1300	38
23		829	8 do	pek sou	800	36
25	Sbawlands	835	69 do	bro pek	6900	36 bid
26		838	29 do	pekoe	2565	24
27		841	14 do	pek sou	1260	33
29	N B	847	9 bf-cb	dust	765	29
32	Kataboola	856	10 do	dust	850	25
33	Mahanilu	859	28 do	bro pek	1540	44
34		862	20 cb	pekoe	1860	42
35		865	10 do	pek sou	900	38
36		868	15 hf-ch	fans	1125	34
38	L E L	874	33 cb	bro pek	3135	34 bid
39		877	24 do	pekoe	1968	38
41		883	10 do	dust	830	26
42	Iona	886	56 hf-cb	bro or pek	3080	58
43		889	28 cb	or pek	2660	42 bid
44		892	18 do	pekoe	1530	41
48	Poilakande	904	20 do	bro pek	1800	34
49		907	12 do	pekoe	1080	33
50		910	15 bf-cb	dust	1275	26
53	Kolapatna	919	18 cb	bro pek	1890	39
54		922	18 do	or pek	1530	35
55		925	18 do	pekoe	1440	35
59	Mocha	937	19 do	bro or pek	1900	60
60		940	11 do	or pek	1045	51
61		943	18 do	pekoe	1710	45
62		946	16 do	pek sou	1360	43
63	Templestowe	949	27 do	bro or pek	2700	40 bid
64		952	22 do	or pek	1980	42
65		955	29 do	pekoe	2465	38 bid
66	Sinna Dua	955	13 hf-cb	bro pek	806	37
67		958	10 ch	pekoe	850	34 bid
71	Eadella	970	25 do	bro pek	2500	35
72		973	24 do	bro pek	2100	35 bid
73		976	33 do	pekoe	3300	33
74		979	10 do	pek sou	900	32
75	Woodstock	982	36 hf cb	bro pek	1800	34
76		985	15 cb	pekoe	1200	32
77	Agra Ouvab	988	34 hf-ch	bro or pek No. 1	2040	59
78		991	32 do	bro or pek No. 2	1824	45
79		994	14 cb	or pek	1302	43
80		997	9 do	pekoe	810	41
81		1000	9 bf-ch	pek sou	765	40
82		3	32 do	pek fans	2560	34
84	Glasgow	9	34 do	bro or pek	2040	57
85		12	39 do	bro pek	3120	46 bid
86		15	21 do	or pek	1365	48
87		18	14 do	pekoe	1400	44
88	Gonavy	21	53 bf-cb	bro pek	2650	42
89		24	17 cb	pekoe	1275	37
91	Brownlow	30	25 hf-cb	bro or pek	1450	43 bid
92		33	18 ch	or pek	1710	41
93		36	20 do	pekoe	1800	38
94		39	17 do	pek sou	1445	35
95	G B	42	9 bf-cb	dust	720	27
99	W H	54	20 do	pek fans	1300	31 bid
100	Agra Ouvab	57	30 do	bro or pek No. 1	1800	58
101		60	26 do	bro or pek No. 2	1482	44 bid
102		63	8 cb	or pek	744	43
104	G B	69	24 bf-cb	pek fans	1800	28 bid
105	Cleveland	72	36 do	flow or pek	1980	55 bid
106		75	38 do	pekoe	1900	42
109	Lamiliere	84	68 cb	bro pek	3808	37
110		87	45 do	pekoe	4050	33 bid
111		90	25 do	pek sou	1875	34
112		93	11 do	pek fans	836	28
113	Coslande	96	21 hf ch	bro pek	1155	37 bid
115	B D	702	19 do	bro pek fans	1235	30
121	Maskeliya	120	32 do	bro or pek	1600	55
122		123	19 cb	or pek	1710	41
123		126	13 do	pekoe	1170	37
124		129	7 do	pek sou	700	36
134	Claremont	159	26 do	bro or pek	2600	34
135		162	12 do	pekoe	1080	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
138	Ottery	171	30 cb	bro or pek	3000	41 bid
139		174	13 do	or pek	1170	39
140		177	17 do	pekoe	1615	37
147	A	198	13 do	dust	2184	24 bid
152	Gangawatte	213	41 hf-cb	or pek	2132	42
153		216	42 cb	pekoe	3780	39
154		219	13 do	pek fans	1170	36
155		222	58 bf-ch	bro or pek	3364	50
156	Glassaugh	225	19 do	or pek	1007	62
157		228	22 do	bro or pek	1430	52
158		231	19 ch	pekoe	1805	43
159		234	7 do	pek sou	700	41
165	Troup	252	25 do	pek sou	2250	38
166	Nahavilla	255	47 bf-cb	bro or pek	2820	44 bid
167		258	42 do	or pek	2100	40
168		261	16 cb	pekoe	1600	38
179	X X	294	12 do	sou	1080	19 bid
180	Ferndale	297	25 do	bro or pek	2500	47
181	Murraytbwaite	300	23 do	bro pek	2185	35
182		303	23 do	pekoe	1955	32 bid
183		306	12 do	pek sou	960	30
186	M	315	15 do	dust	2490	25
187	D D	318	38 bf-cb	pek fans	2736	28 bid
190	Dalhousie	327	27 do	pek No. 1	1215	36 bid
193	C C	336	41 do	bro pek fans	2624	33 bid

SMALL LOTS.

E. Benhsm & Co.

Lot.		Box.	Pkgs.	Name.	lb.	c.
6	Rasagalla	29	1 ch	bro or pek	100	37
7		32	1 do	or pek	100	36
8		35	3 do	pek	251	33

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
3	Carendon	1615	5 do	pek	460	32
8	N	1630	5 cb	unas	450	32
9	Bodawa, Inv. No. 24	1633	3 bf-cb	bro pek	168	36
10		1636	2 do	pek	94	34
11		1639	9 do	pek sou	423	32
12		1642	1 do	red leaf	47	24
13		1645	2 do	pek dust	160	26
14	Doranakande	1648	6 cb	bro pek	600	35
15		1651	3 do	pek	285	35
16		1654	6 do	pek No. 2	540	32
20	Pallawatte	1666	3 cb	pek sou	270	32
21		1669	1 dc	sou	90	31
26	T'Villa	1684	6 cb	pek sou	480	29
27		1687	4 do	sou	320	27
28		1690	3 do 1 bf-cb	fans	438	25
31	Ewhurst	1699	8 ch	pek	656	32
33		1705	5 do	pek sou	330	29
34		1708	10 bf-ch	fans	690	27
37	Holton	1717	5 cb	pek sou	400	30
38	B A	1720	5 do	dust	375	25
39		1723	4 do	red leaf	400	23
54	Passara Group	1768	1 cb	fans	80	28
55	M F, in estate mark	1771	2 ch	bro pek	180	29
56		1774	1 do	pek	80	29
57		1777	1 do	pek sou	80	27
58		1780	1 hf-cb	pek sou	32	27
68	Macaldeniya	1810	4 cb	bro or pek	230	33
71		1819	12 bf-ch	pek sou	600	33
72		1822	2 do	unas	110	30
73		1825	2 do	dust	150	27
79	Allagalla	1843	7 cb	bro mix	525	31
81		1849	11 do	fans	660	30
85	Hayes	1861	2 ch	dust	200	27
91	Battawatte	1879	7 cb	pek son	560	32
105	Kakiriskande	1921	3 ch	bro pek	300	39
107		1927	2 do	pek sou	190	30
112	K P W	1942	11 hf-cb	pek sou	550	31
113		1945	1 do	dust	85	25
118	Stamford Hill	1960	5 bf-cb	dust	425	28
120	Uragala	1966	5 cb	pek	90	30
121		1969	5 do	pek sou	400	29
122		1972	2 do	unas	150	30
123		1975	1 do	unas	80	30
124		1978	1 do	red leaf	90	24
125		1981	1 do	dust	119	25
126		1984	1 do	dust	71	25
128	Springwood	1990	1 ch	red leaf	100	22
132	T B, in estate mark	2002	3 hf-ch	dust	210	5

Lot.		Box.	Pkgs.	Name.	lb.	c.
133		2005	2 hf-ch	fans	120	27
134		2008	2 ch	congou	160	28
135	Amhewella, N G	2011	1 hf-ch	bro pek	58	40
136		2014	1 do	pek	55	33
237	B, in estate mark	2017	7 ch	sou	630	29
145	Queensland	2041	4 ch	bro pek dust	308	32
151	Massena	2059	4 hf-ch	fans	280	28
152		2062	1 do	dust	90	25
153	Fernlands	2065	4 ch	sou	360	36
173	Morankande	2125	11 hf-ch	bro or pek	616	36
175		2131	7 ch	pek sou	630	31
178	Fairlawn	2140	2 hf-ch	dust	170	28
182	Letchimy	2152	3 ch	or pek	150	33
184		2158	2 hf-ch	bro pek fans	150	31
185		2161	3 do	pek fans	225	30
190	Dea Ella	2176	8 do	dust	560	30
199	Erracht	2203	2 ch	pek dust	378	26
208	Maha Uva	2230	1 hf-ch	pek fans	80	30
209		2233	5 do	dust	450	28
215	Clunes	1	3 ch	dust	270	26
216		4	3 do	bro or pek fans	210	32
218	H, in estate mark	10	1 ch	dust	120	24
237	Castlereagh	67	7 ch	pek sou	560	37
239		73	4 hf-ch	dust	320	27
245	Cooroondoowatte	91	12 do	pek	600	37
246		94	11 do	pek sou	550	33
253	Harrington	115	2 ch	pek B	190	34
254		118	2 hf-ch	or pek fans	240	36
255		121	1 do	dust	90	27
256	W L	124	6 do	bro pek	376	40
257		127	3 do	pek dust	213	27
263	W V R A	145	4 do	bro tea	300	22
264	B D W P	148	3 ch	br pek No. 2	270	29
265		151	2 do	pek No. 2	160	29
266		154	2 do	pk sou No. 2	1[illegible]0	28
267		157	2 do	dust	170	27
270	Mansfield	166	8 do	pek sou	680	37
271		169	5 hf-ch	dust	450	28
279	O'Bode	193	4 ch	pek sou	340	33
298	Roeberry	250	6 do	fans	600	28
299	Z	253	7 do	pek sou	574	32
300	Bodawa	256	4 hf-ch	bro pek	240	41
301		259	5 do	pek	205	35
302		262	5 do	pek sou	250	32
303		265	1 do	red leaf	37	23
304		268	1 do	pek dust	54	26
305	Allerton	271	2 ch	bro pek fans	240	26
306		274	1 do	dust	120	24
307		277	1 do	bro mix	100	19
308	Sunnycroft	280	5 do	bro tea	650	20
309		283	6 do	bro pek	600	35 bid
314	Ismalle	298	8 do	congou	600	26
315		301	2 do	red leaf	154	23
321	Erlsmere	319	5 do	dust	425	27
343	Stisted	385	2 hf-ch	dust	160	32
346	Talgaswela	394	7 ch	br pk No. 2	665	33
350		406	5 do	fans	350	27
351		409	3 do	dust	270	26
354	Hentleys	418	9 hf-ch	or pek	405	37
356		424	4 ch	pek sou	320	30
357		427	3 hf-ch	fans	231	28
360	Parsloes	436	6 ch	pek sou	480	30
380	Augusta	496	1 do	sou	105	27
386	Burgandy	514	1 do	dust	100	25
387		517	1 do	red leaf	54	24
388		520	1 box	tips	7	R2·50
389		523	1 do	silver tips A	4	R4·25
390		526	1 do	silver tips B	4	R4·00
394	Pine Hill	538	5 ch	pek sou	375	33
395		541	3 hf-ch	dust	255	27
401	Putupaula	559	3 do	dust	240	25
410	H G M	586	4 hf ch	dust	340	26
423	G	625	7 ch	sou	630	30
424		628	1 do	dust		25

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
5	Dulukoya	106	9 hf ch	pek sou	450	29
10	Blinkhonnie	121	6 ch	pek sou	492	39
11	A P	124	6 ch	red reaf	510	25
12	Radage	127	5 hf ch	bro pek	250	32
13		130	6 do	pek	300	29
14		133	2 do	pek sou	100	27
23	Hangranoya	160	13 hf-ch	or pek	520	36
28	Ravenscraig	175	8 hf-ch	fans	640	29
29	A D L, in estate mark	178	2 ch	pek	190	32
30		181	3 do	pek sou	285	29
31		184	1 do	dust	150	25

Lot.		Box.	Pkgs.	Name.	lb.	c.
32	W, in estate mark	187	1 ch	red leaf	90	24
36	Katukitula	199	10 hf-ch	bro pek	500	30
41	W V V	214	5 ch	pek sou	500	29
44	Killin	223	3 ch	pek sou	270	30
53	Glen Morgan Nilgris	250	5 ch	or pek fans	400	28 bid
55	Maligatenne	2[illegible]5	2 ch	bro sou	166	31
60	St. Catherine	271	1 ch	pek	93	31
61		274	1 do	pek sou	71	30
62		277	2 do	dust	212	25
65	Razeen	295	4 hf-ch	bro or pek	240	35
73		310	4 do	pek fans	240	29
74		313	2 do	dust	150	26
75	X Z	316	4 ch	sou	400	25
79	Deniyaya	328	3 ch	sou	270	29
82	Charlie Hill	337	2 hf-ch	pek sou	100	28
8		340	2 do	bro pek fans	100	26
84		343	2 do	pek fans	150	26
88	Depedene	355	5 hf-ch	dust	425	26
95	Handrookande	376	12 hf-ch	pek	600	34
96		379	3 do	pek sou	150	30
97		382	1 do	dust	80	27
100	Mossville	391	1 ch	bro pek	100	40
114	Havilland	538	6 hf-ch	dust	540	25
116	X	544	2 do	bro pek	174	32
117		547	1 ch	pek	100	30
118		550	2 hf ch	pek sou	110	29
119		553	1 do	bro mix	70	26
120		556	2 do	dust	160	25
121	S P, in estate mark	559	3 ch 1 hf-ch	fans	388	[illegible]3
131	Chetnole	589	10 hf-ch	bro pek fans	650	30
133		595	7 do	dust	525	26
134	S	598	2 ch	or pek fans	256	29
135		601	2 do	red leaf	120	20
140	N I T	616	2 ch	unas No. 1	200	28
146	Annandale	634	8 hf-ch	dust	624	26
148	Citrus	640	2 ch	bro or pek	390	32
153	Selvawatte	655	1 ch	sou	105	28
154		658	2 do	fans	260	28
157	S N T	667	6 ch	pek sou	540	33
158		670	2 hf-ch	dust	150	26
161	Kurunegalle est Co., Ltd.	679	5 ch	pek sou	500	32
162		682	2 do	unas	200	31
167	Monrovia	697	2 ch	bro tea	210	28
184	H J S	784	9 hf-ch	bro pek	540	34
185		751	10 do	pek	600	33
190	Paradise	766	8 hf-ch	dust	60[illegible]	27

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	A A	763	2 ch	dust	200	24
2	Mount Everest	766	11 hf-ch	or pek	550	53
10	Galloola	790	2 ch	dust	200	27
15	Glentilt	805	7 do	pek sou	665	37
24	Yapame	832	6 hf-ch	dust	570	27
28	Shawlands	844	6 do	dust	450	27
30	M G	850	8 do	fans	640	32
31	G	853	3 ch	unas	255	29
37	L E L	871	8 do	bro or pek	760	38 bid
40		880	3 do	pek sou	256	
45	Icna	895	2 do	pek sou	170	38
46		898	7 hf ch	bro or pek fans	490	35
47		901	4 do	dust	300	30
51	P K	913	2 ch	sou	156	28
52		916	1 do 1 hf-ch	fans	173	28
56	Mahagalatenne	928	3 do	bro pek	150	33
57		931	5 do	pekoe	250	30
58		934	4 do	pek sou	200	28
68	Sinna Dua	961	6 ch	pek sou	462	32 bid
69		964	1 hf-ch	dust	90	26
70		967	1 ch	red leaf	100	26
83	Agra Ouvah	6	5 hf-ch	dust	485	26
90	Gonavy	27	5 ch	pek sou	475	35
96	G B	45	7 hf-ch	fans	490	31
97		48	4 ch	sou	320	32
98		51	1 hf-ch	bro mix	70	24
103	Agra Ouvah	66	7 ch	pekoe	630	42
107	Cleveland	78	12 hf-ch	pek sou	600	38
108		81	4 do	fans	320	30
114	Patulpana	99	12 do	pekoe	600	32
125	Maskeliya	132	2 ch	unas	200	28
126		135	6 hf-ch	fans	360	33
127		138	3 do	dust	270	25
128	K T	141	1 ch	sou	109	26
136	Claremont	165	5 do	fans	475	30
137		168	2 do	pek dust	200	27
141	Ottery	180	1 do	dust	170	27
142	S T	183	1 hf-ch	bro pek	50	30

Lot.		Box.	Pkgs.	Name.	lb.	c.
143		186	3 hf-ch	pekoe	168	27
144		189	2 ch	pek sou	100	24
145		192	1 do	bro or pek	80	31
146		195	1 hf-ch	dust	58	25
160	Glassaugh	237	3 ch	bro mix	300	26
161	P	240	3 do	bro or pek	312	36
162		243	1 do	bro pek fans	1?8	29
163	K P	246	1 hf-ch	bro pek	6?	36
164	K	249	1 ch	pekoe	8?	32
169	Nahavilla	264	4 do	pek fans	2?0	33
170		267	3 do	sou	270	32
171		270	2 hf-ch	dust	160	26
184	Murraythwaite	309	4 ch	bro pek fans	500	30
185		312	2 do	dust	3?0	25
188	Dalhousie	321	6 hf-ch	or pek	270	51
189		324	11 do	bro pek	660	42
191		330	17 do	pek No. 2	680	33
192		333	3 do	fans	195	31

CEYLON COCOA SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, November 24th.

"Hitachi Maru."—MAK in estate mark, 23 bags out.

"Clan Sinclair."—JL in estate mark, 4 bags out.

"Elphinstone."—MAK, 40 bags out.

"Clan McLean."—1 AK in estate mark, 30 bags out at 60s; MAKM in estate mark, estate cocoa, 50 bags out at 59s.

"Clan McLean."—R SS in estate mark, 10 bags out 58s; HGA in estate mark, 14 bags out.

"Clan Menzies."—K in estate mark, estate cocoa, 10 bags sold at 58s.

"Glenochy."—BC HGA in estate mark, 20 bags out; A in estate mark, 8 bags out at 59s.

"Wakassa Maru."—1 JL in estate mark, 12 bags out at 60s.

"Clan Alpine."—MK 16 bags sold at 59s.

"Kamakura Maru."—CT HGA in estate mark, 10 bags out; MM in estate mark, 2 bags out at 60s.

"Clan McPherson."—M in estate mark, 32 bags out.

"Clan Fraser."—NN in estate mark, estate cocoa, 1 bag out; KH in estate mark, 1 bag out.

"Hakata Maru."—Dickeria O, 5 bags out.

"Duke of Fife."—Dickeria D, 21 bags out.

"Hitachi Maru."—Palle London 2, 20 bags sold at 56s 6d; ditto T, 5 bags sold at 56s 6d.

"Stentor."—Palli London 2, 14 bags sold at 57s; ditto T, 5 bags sold at 56s 6d; DKY London 1, 17 bags sold at 73s; ditto 2: 5 bags sold at 56s; ditto T, 2 bags sold at 55s.

"Clan Stuart."—HGA in estate mark, 4 bags sold at 61s.

"Lancashire."—1 MLM in estate mark, 7 bags out.

"Clan Alpine."—GW No. 3, 3 bags sold at 50s.

CEYLON CARDAMOMS SALES IN LONDON.

"Stentor."—Nella Oola O, 3 cases sold at 3s 3d; ditto 1, 3 cases sold at 2s 9d; ditto 2, 1 case sold at 1s 10s; ditto B & S, 1 case sold at 1s 9d; ditto seed, 1 case sold at 2s 4d.

"Phyrhus."—Wariagalla Mysore D, 1 case sold at 1s 11d; 4 cases out.

"Clan Stuart."—Wariagalla Mysore C, 1 case sold at 2s 1d.

Umballa."—DBEC in estate mark, Nillumally Mysore, 3 cases out at 2s.

"Clan McLaren."—Delpotonova, 2 cases out at 2s.

"Kamakura Maru."—HGA Mysore, 2 cases out at 1s 10d; MLM in estate mark, 6 cases out at 1s 10d.

"Clan Campbell."—WS A & Co. in estate mark, 2 cases sold at 2s 1d; 1 case sold at 2s 3d; 1 bag sold at 2s.

"Glenochy."—WHD & Co. Nawanagalla No. 1, 4 cases sold at 2s 4d.

"Clan McAlister."—M in estate mark, Mysore, 2 cases sold at 1s 9d: 7 cases sold at 1s 8d; AS in estate mark, Mysore, 3 cases sold at 1s 9d; SS in estate mark, Mysore, 1 case out.

"Menelaus."—HGA in estate mark, Malabar, 4 cases out at 1s 9d.

"Clan McNeil."—HGA in estate mark, Malabar, 3 cases sold at 1s 10d.

"Nestor."—HGA in estate mark, Malabar, 2 cases out.

"Clan Stuart."—HGA in estate mark, 4 cases out.

"Elphinstone."—JA in estate mark, Malabar, 4 cases out at 2s.

"Nestor."—HGA in estate mark, Mysore, 4 cases out at 2s 2d.

"Kamakura Maru."—HGA in estate mark, Mysore, 5 cases out at 2s 3d.

"Borneo."—Elkadua seed, 3 cases sold at 2s 5d.

"Socotra."—Deyanella O, 2 cases sold at 3s 3d; A in estate mark. Mysore, 2 cases sold at 1s 8d; 2 cases sold at 1s 9d.

"Clan McIntyre."—JA in estate mark, 4 cases out.

"Palawan."—RQ C, 1 case out.

"Dardanus."—Nichola Oya No. 2, 1 case out; Elkadaua , 3 cases out.

"Glengyle."—WN Ceylon Mysore Cardamoms 1, 3 cases sold at 2s 10d.

"Stentor."—PBM 1, 1 case sold at 3s 10d; ditto 2, 1 case sold at 3s 8d; PBM, 2 cases out at 2s 10d.

"Arabia."—CC C in estate mark, 1 case sold at 2s 10d; 1 case sold at 2s 11d; 1 case sold at 2s 5d; 2 cases sold at 2s 10d.

"Historian."—Gavatenne 3, 1 case sold at 2s; ditto 4, 3 cases out.

"Clan Ranald."—B in estate mark, Mysore, 11 cases out at 2s 4d; 1 case sold at 2s 1d.

"Dardanus."—AM O in estate mark, 8 cases sold at 1s 10d.

'Duke of Portland."—MM, 3 cases out at 2s.

"Bullionist."—G in estate mark, 11 cases out.

NO. 50 COLOMBO, DECEMBER 23, 1899. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[28,215 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Battalgalla	15	26 ch	pek sou	1820	35 ibd
2	Orpington	18	93 ch	bro pek	8820	35 bid
3		21	35 hf-ch	bro or pek	2100	36 bid
4		24	90 ch	pek	7650	34 bid
5		27	34 do	pek sou	2550	31 bid
6	Hornsey	30	30 do	or pek	2850	43
7		33	18 do	pek	1440	38
8		36	11 hf-ch	bro or pek fans	715	35

Messrs. Forbes & Walker.

[803,854 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Elfindale	634	8 ch	fans	800	28
5	Walpita	646	27 ch	bro pek	2700	35
6		649	18 do	pek	1800	37
8	Ettapolla	655	15 hf-ch	bro pek	810	34
12	Florence	667	30 ch	pek	2640	38
13		670	16 do	pek sou	1360	35
14		673	13 do	sou	1105	33
15	Mousakelle	676	27 ch	bro or pek	2700	37 bid
16		679	11 do	or pek	1100	37
17		682	11 do	pek	1100	35
20	Grange Garden	691	20 ch	bro or pek	2000	38
21		694	16 do	pek	1600	37
24	Strathspey	703	16 ch	bro or pek	1680	45 bid
25		706	22 do	pek	2200	40
26		709	14 do	pek sou	1330	37
36	Carbery	739	18 ch	bro pek	1620	37
38		745	17 do	pek	1530	33
43	G K	760	6 ch	dust	840	27
44	New Peacock	763	12 do	pek sou	1080	34
46		769	24 hf-ch	pek fans	1800	30
51	Sirikandura	784	26 ch	bro pek	2600	36
52		787	29 do	pek	2755	33
53		790	23 do	pek sou	2070	31
54		793	7 do	bro pek fans	790	33
56	Palm Garden	799	11 ch	bro pek	1265	36
57		802	12 do	pek	1200	33
58		805	8 do	pek sou	800	30
64	Kincora	823	32 ch	bro pek	3200	41
65		826	37 do	pek	2960	38
66		829	11 do	pek No. 2	990	33
	Kelaneiya and Braemar	853	40 ch	bro or pek	4000	38 bid
75		856	30 do	or pek	3000	37
76		859	18 do	pek	1800	35
79	Holton	868	17 ch	bro pek	1530	35
80		871	13 do	pek	975	34
84	C S G	883	99 hf-ch	bro pek	4955	40 bid
85		886	83 ch	pek	6640	37
86		889	25 do	pek sou	2000	33
87		892	12 do	dust	960	27
88	Agra Elbedde	895	25 hf-ch	bro pek	1250	53
89		898	31 do	bro or pek	1860	52
90		901	57 do	pek	3420	43
91		904	39 do	pek sou	1950	41
94	Monkswood	913	24 hf-ch	bro pek	1200	57
96		919	24 ch	pek	2160	45
97		922	12 do	pek sou	1020	41
98		925	11 do	do No. 2	880	40
99		928	24 hf-ch	fans	1344	40
101	Cotswold	934	11 ch	bro pek	1100	44
102		937	13 do	pek	1170	36
103		940	12 do	pek sou	900	33
108	Ookoowatte	955	7 ch	pek fans	700	31
109	Passara Group	958	15 ch	bro or pek	1500	38 bid
110		961	17 do	bro or pek	1700	39 bid
111		964	16 do	or pek	1440	39
112		967	10 do	pek	900	38
113		970	10 do	pek sou	900	35
115	Tymawr	976	30 hf-ch	or pek	1500	42½bid
116		979	52 do	pek	2340	40
117		982	30 do	pek sou	1350	36
118	Devonford	985	40 hf-ch	bro or pek	2200	64
119		988	13 ch	or pek	1170	55
120		991	19 do	pek sou	1520	41

Lot.		Box.	Pkgs.	Name.	lb.	c.
121	Northcove	994	11 ch	sou	1100	28
123	Ella Oya	1000	16 hf-ch	bro pek fans	1040	32
124	H E I	1003	25 hf-ch	unas	2125	28
125	Rowley	1006	21 do	bro pek	1050	37
126		1009	21 do	pek	1050	35
127	D, in estate mark	1012	20 hf-ch	bro or pek	1200	35
128		1015	36 do	sou	1800	30
130		1021	8 do	dust	720	26
131	Harrow	1024	21 hf-ch	bro or pek	1260	54
132		1027	25 ch	pek	2500	40 bid
133		1030	12 do	pek sou	1080	37
136	Knavesmire	1039	17 hf-ch	or pek	850	39
13		1042	24 ch	bro pek	2280	37
138		1045	27 do	pek	2295	35
139		1048	20 do	pek sou	1500	33
141	Polatagama	1054	51 ch	bro pek	4590	37
142		1057	21 do	or pek	1680	34
143		1060	34 do	pek	2890	33
144		1063	18 do	pek sou	1800	29
146	Kirklees	1069	30 hf-ch	bro or pek	1800	40
147		1072	23 ch	or pek	2185	40
148		1075	22 do	pek	2200	36
149		1078	25 do	pek sou	2125	33
151		1084	10 do	dust	1900	28
153	Woodend	1090	26 ch	bro pek	2600	34
154		1093	39 do	pek	3510	32
155		1096	9 do	pek sou	720	31
157	Clyde	1102	52 ch	bro pek	4680	37
158		1105	14 do	bro or pek	1400	36
159		1108	32 do	pek	2880	34
160		1111	12 do	pek sou	1080	32
16	V, in estate mark	1129	13 ch	pek sou	1235	30
168	Gallawatte	1135	11 ch	bro pek	1045	36
169		1138	11 do	pek	935	34
170	B D W G	1141	54 hf-ch	bro pek	2700	39 bid
171		1144	32 do	pek	1600	36
174	Ascot	1153	29 ch	bro or pek	2900	55
175		1156	11 do	bro or pek	1100	35
176		1159	73 do	bro pek	6570	34
177		1162	54 do	bro pek	4860	34 bid
178		1165	55 do	bro pek	4950	34 bid
179		1168	27 do	pek	2430	34
180		1171	33 do	pek sou	2970	32
181		1174	10 do	dust	800	26
182	Middleton	1177	31 hf-ch	bro or pek	1736	55
183		1180	13 ch	bro pek	1236	47 bid
184		1183	16 do	pek	1440	42
186	Huanuco	1189	21 hf-ch	bro pek	1050	32
187		1192	47 do	pek	2115	32
188		1195	30 do	pek sou	1350	31
190	Matale	1201	34 hf-ch	bro pek	1870	35
191		1204	14 ch	pek	1190	34
192		1207	9 do	pek sou	765	32
200	St. Edwards	1231	12 ch	bro or pek	732	37
202		1237	15 do	pek	840	32
212	Dunbar	1267	25 hf-ch	bro or pek	1250	54
213		1270	15 hf-ch	or pek	720	48
214		1273	12 ch	pek	960	44
218	Munukattia Ceylon, in est. mark	1285	19 hf-ch	or pek	950	40
219		1288	38 do	bro pek	2280	42
220		1291	22 do	pek	1760	38
221		1294	10 do	pek sou	900	33
222	O B E C, in estate mark Forest Creek	1297	18 ch	bro or pek	1980	57
223		1300	20 do	or pek	2000	45
224		1303	28 do	pek No. 1	2520	41
225		1306	30 do	pek No. 2	3000	39
226	Tavalamtenne	1309	22 ch	bro or pek	2200	38
227		1312	9 do	pek	810	36
229	Digdola	1318	13 ch	bro pek	1170	37 bid
230		1321	10 do	do	950	38
231		1324	13 do	pek	1040	34
232		1327	17 do	pek sou	1190	33
233		1330	10 do	bro pek fans	950	32
235	T U	1336	26 ch	bro or pek	2808	49 bid
236		1339	29 do	or pek	2552	48
237		1342	28 do	pek	2128	44
238	Igalkande	1345	10 ch	pek	900	34
240	Beverley	1351	94 hf-ch	bro pek	5170	37
241		1354	40 do	pek	2000	34
242		1357	18 do	pek sou	900	33
244		1363	9 do	dust	783	27

Lot.		Box.	Pkgs.		Name.	lb.	c.
247	Hayes	1372	24	ch	bro or pek	2280	53
248		1375	25	do	bro pek	2500	37
249		1378	45	do	or pek	3825	38
250		1381	53	do	pek	4505	37
251	Battawatte	1384	27	ch	bro pek	2970	39
252		1387	47	do	pek	4465	38
253		1390	16	do	pek sou	1280	35
257	Bloomfield	1402	29	ch	bro pek	319)	40 bid
258		1405	18	do	pek	1710	39
259	Pallagodde	1408	14	ch	bro or pek	1400	35
260		1411	21	do	bro pek	2100	42
261		1414	18	do	or pek	1530	39
262		1417	14	do	pek	1190	38
263		1420	15	do	pek sou	1350	34
264		1423	12	do	sou	1080	32
265		1426	20	do	dust	1700	26
266	Dammeria	1429	6	ch	bro or pek	720	37
267		1432	27	do	or pek	2700	39
268		1435	28	do	bro pek	2800	39
269	Bloomfield	1438	30	ch	bro pek	3300	40 bid
270		1441	18	do	pek	17 0	39
271		1444	11	do	pek sou	1045	37
273	Maha Uva	1450	74	hf-ch	bro or pek	4440	37
280	Erracht	1471	8	ch	bro or pek	720	36
281		1474	16	do	bro pek	1200	36
282		1477	28	do	pek	1960	34
284		1483	9	do	bro pek fans	855	34
286	B, in estate mark	1489	9	ch	dust	900	25
288	Dea Ella	1495	15	hf-ch	bro or pek	825	42
289	do	1498	26	do	or pek	1430	40
290		1502	29	do	pek	1450	36
293	Seenagolla	1503	20	hf-ch	bro pek	1100	42 bid
295	Galkadua	1516	13	ch	bro pek	1430	35
296		1519	15	do	pek	1500	33
297		1522	11	do	pek sou	1100	30
307	B, in estate mark	1552	19	hf-ch	bro pek	940	32
311	Erlsmere	1564	18	hf-ch	bro or pek	1080	42 bid
312		1567	23	ch	bro pek	2185	39 bid
313		1570	25	do	pek	1900	38
316	Mariawatte	1579	18	do	pek sou	1530	33
		1582	13	hf-ch	dust	1040	25
323	Beaumont	1600	24	ch	bro pek	2400	35 bid
324		1603	46	do	or pek	4048	35
332	Pussella	1627	13	do	bro pek	1287	36
333		1630	16	do	or pek	1296	36 bid
334		1633	24	do	pek	1824	33
335	Scrubs	1636	29	hf-ch	bro or pek	1653	45 bid
336		1639	15	do	bro pek	855	42
337		1642	16	do	pek	736	40
338		1645	29	do	pek sou	1450	38
339	C N	1648	11	ch	bro tea	1100	26
340	M A	1651	17	do	pek sou	1100	32
343	Ingrugalla	1660	9	hf-ch	bro tea	772	26
346	Beausejour	1669	17	ch	bro pek	1411	34 bid
347		1672	25	do	pek	2000	31 bid
351	Torwood	1684	35	do	bro pek	3150	37
352		1687	21	do	pek	1680	34
353		1690	14	do	pek sou	1092	32
355	Arapolakande	1696	72	do	bro pek	6480	39 bid
356		1699	39	do	pek	3120	35
359	Weyungawatte	1708	19	hf-ch	bro or pek	1045	39
360		1711	20	ch	bro pek	1800	34 bid
361		1714	20	do	pek	1600	33
387	St. Leonards-on-Sea	1792	11	do	bro or pek	1155	34
399	Palmerston	1828	14	hf-ch	bro or pek	700	65
400		1831	15	ch	pek	1275	42
404	N B D	1843	25	do	bro mix	2125	25
405		1846	9	do	unast	855	26
410	C	1861	13	do	sou	1235	31
423	Pallagodde	1900	15	do	bro or pek	1500	35
424		1903	15	do	bro pek	1500	42
425		1906	13	do	bro pek	1040	36
426		1909	13	do	pek	1040	36
427		1912	10	do	pek sou	850	34
432	Halwature	1927	37	do	bro pek fans	2755	32
441	Warwick	1954	41	ch	bro pek	4100	45 bid
442		1957	50	do	pek	4500	42
443		1960	35	do	pek sou	3150	38
446	Chesterford	1969	44	do	bro pek	4400	40
447		1972	37	do	pek	3700	35
448		1975	28	do	pek sou	2800	33
449		1978	15	do	fans	1350	34
452		1987	23	hf-ch	dust	1840	27
454	Geragama	1903	20	do	bro or pek	1100	36
455		1996	9	ch	bro pek	810	35
456		1909	19	do	pek	1710	32
457		2002	13	do	pek sou	1105	31
460	Waratenne	2011	17	hf-ch	bro or pek	935	36
461		2014	16	ch	bro pek	1360	34
462		2017	33	do	pek	2805	33
466	Geragama	2029	8	do	bro pek	760	35
467		2032	8	do	pek	720	33
470	St. Heliers	2041	8	do	bro or pek	760	41 bid
471	Patiagama	2044	20	hf-ch	bro or pek	1100	41
472		2047	10	ch	or pek	850	38
473		2050	46	do	pek	3680	35
474		2053	16	do	pek sou	1280	32
480	Maldeniya	2071	15	do	bro or pek	1575	36
481		2074	30	do	or pek	2700	36
482		2077	44	do	pek	3740	34
483		2080	25	do	pek sou	2125	32
490	Bargany	2101	23	hf-ch	bro or pek	1518	39
491		2104	7	ch	bro pek	735	34
492		2107	13	hf-ch	or pek	715	36
493	Kilkenny	2110	23	ch	bro pek	2116	33
494		2113	32	do	bro pek	2880	33
495	Naseby	2116	20	hf-ch	bro or pek	1160	49 bid
496		2 19	26	do	bro or pek	1508	49
497		2122	19	do	or pek	874	52
498		2125	15	do	pek	780	46
499		2128	13	do	pek sou	702	44
508	Great Valley, Ceylon, in est. mark	2155	18	do	or pek	1620	41
509		2158	42	hf-ch	bro pek	2310	44
510		2161	25	ch	pek	2250	37
511		2164	21	do	pek sou	1575	33
512		2167	12	do	sou	900	28
513		2170	10	hf-ch	dust	850	26
514	Doranakande	2173	10	ch	bro pek	1000	34
517		2182	9	do	pek sou	810	31
519	Pansalatenna	2188	33	do	bro pek	3135	35
520	Glengariffe	2191	51	hf-ch	bro or pek	3060	41
521		2194	23	do	or pek	1150	41
522		2197	47	do	bro pek	2632	37
523		2200	15	ch	pek sou	1350	35
527	Amblakande	2212	24	do	bro pek	2400	35
528		2215	23	do	pek	1955	33
530	Vogan	2221	70	do	bro pek	6650	37 bid
531		2224	52	do	pek	4680	34
535	Penrhos	2236	22	hf-ch	bro or pek	1166	48
536		2239	21	do	or pek	945	40
537		2242	35	ch	pek	2975	36
556	Fredsruhe	49	50	do	bro pek	5000	35
564	Matale	73	40	hf-ch	bro pek	2200	35
565		76	15	ch	pek	1275	34
566		79	9	do	pek sou	765	32
567	Waitalawa	82	67	hf-ch	bro pek	3350	39
568		85	82	do	pek	4100	35
569		88	35	do	pek sou	1750	33
570		91	14	do	dust	1196	27
571	Nugagalla	94	22	do	bro pek	1100	41
572		97	49	do	pek	24 0	34
576	Inverness	109	16	ch	or pek	1600	45
577		112	21	hf-ch	bro or pek	1260	45
578		115	13	ch	pek	1170	40
587	Bandara Eliya	142	68	hf-ch	or pek	3536	39
588		145	65	do	bro or pek	4030	40
589		148	29	ch	pek	2465	36
590		151	31	do	pek sou	2480	34
604	Cordeen	193	17	hf-ch	bro or pek	1020	38 bid
605		196	24	ch	bro pek	2520	36 bid
606		199	21	do	or pek	1890	40 bid
607		202	8	do	pek No. 1	800	37
608		205	34	do	pek	3060	36 bid
609		208	12	hf-ch	or pek fans	910	33

[Messrs. Somerville & Co.—311,892 lb.]

Lot		Box.	Pkgs.		Name.	lb.	c.
1	Oolapane	769	11	ch	dust	1320	26
2	Eilandhu	772	10	ch	bro pek	1000	34
3		775	10	do	pek	950	32
8	Nyanza	790	11	ch	bro pek	1100	47
9		793	12	do	or pek	1140	38 bid
10		796	22	do	pek	2090	35
11		799	11	do	pek sou	990	32
13	S R K	805	10	ch	pek sou	950	34
15		811	6	do	dust	900	26
17	Mipitiakande	817	30	hf-ch	pek sou	2550	31
18		820	14	do	pek fans	1190	27
19	Ferriby	823	34	hf-ch	bro pek	1530	35
20		826	29	ch	pek	2465	33
21		829	16	do	pek sou	1280	31
25	Hanagama	841	23	ch	bro pek	2300	34
26		844	66	do	pek	6270	32
27		847	9	do	pek sou	810	30
30	Wendura	856	10	ch	bro pek	1000	35
32		862	10	do	pek sou	800	32
34	Lonach	868	80	hf-ch	bro pek	4400	37
35		871	31	ch	pek	2635	35
36		874	12	do	pek sou	1020	33
37	N	877	49	hf-ch	bro pek	2695	36 bid
38		880	87	do	pek	4350	34
42	Kirrikelle	892	32	hf-ch	bro or pek	1856	60 bid
43		895	17	ch	or pek	1700	40 bid
44		898	54	do	pek	4968	37 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
45	S	901	10 hf-ch	dust	800	26
49	Rambodde	913	15 hf-ch	bro or pek	825	40
50		916	27 do	bro pek	1350	36
51		919	18 do	pek	900	34
58	Nillicollay-watte	940	15 hf-ch	bro pek	870	35
59		943	18 ch	or pek	1476	36
60		946	21 do	pek	1995	33
64	Auburn	958	12 ch	or pek	1200	35
65		961	9 do	pek	765	34
69	Theberton	973	32 ch	bro or pek	3200	34
70		976	53 do	pek	4770	34
73	Mahatenne	985	17 ch	bro pek	1700	34
74		983	8 do	pek	800	32
78	Kurulugalla	1	17 ch	bro pek	1700	34
79		4	16 do	pek	1440	33
83	Galphele	16	19 ch	bro or pek	1900	38
84		19	32 do	bro pek	3200	34
85		22	25 do	pek	2500	34
86	do B	25	19 ch	pek	1710	33
90	Ravenoya	37	16 hf-ch	bro pek	880	36
91		40	16 do	pek	800	34
93	Lower Dickoya	46	21 ch	bro pek	2100	34
94		49	13 do	pek	1300	34
97	Kosgahahena	58	11 ch	bro pek	1160	34
98		61	14 do	pek	1350	33
103	Woodthorpe	76	9 ch	bro pek	900	37
104		79	16 do	pek	1376	34
105		82	16 do	pek sou	1248	32
114	Harangalla	109	22 hf-ch	bro pek	2090	38 bid
115		112	44 ch	pek	3520	36 bid
116		115	13 do	sou	975	32
117		118	15 hf-ch	dust	1125	27
118		121	15 ch	pek	1200	35 bid
121	Meddegodda	130	46 hf-ch	bro pek	2300	37
122		133	70 do	pek	3150	35
126	Hatdowa	145	27 ch	bro pek	2565	36
127		148	29 do	pek	2175	33
128		151	25 do	pek sou	1875	30
132	Lyndhurst	163	47 hf-ch	bro pek	2585	36
133		166	39 do	pek	1950	34
136	Ukuwela	175	10 ch	bro tea	900	25
140	Salawe	187	16 ch	bro pek	1680	34
141		190	10 do	pek	900	33
142		193	8 do	pek sou	720	31
151	Neuchatel	220	48 ch	bro pek	5040	35
153		226	32 do	pek	2720	34
154		229	27 do	pek sou	2295	32
158	Hangranoya	241	12 hf-ch	dust	900	28
163	Kurulugalla	256	24 ch	bro pek	2400	33 bid
165	Rayigam	262	37 ch	bro pek	3700	35
166		265	26 do	or pek	2210	35
167		268	24 do	pek	2040	33
168		271	11 do	pek sou	990	31
169		274	30 hf-ch	dust	2400	27
174	F, in estate mark	289	11 hf-ch	dust	726	27
175	Gartmore	292	68 hf-ch	bro pek	4420	50
176		295	32 ch	pek	2880	39 bid
177		298	13 do	pek sou	1235	37
179	J M D M	304	12 ch	bro pek	1200	33
180		307	16 do	pek	1520	33
184	Yarrow	319	38 hf-ch	bro pek	2128	36 bid
185		322	39 do	pek	1950	34 bid
187	Honiton	328	32 hf-ch	bro pek	1600	35
188		331	18 ch	pek	1530	34
189		334	18 do	pek sou	1440	31
192	Tiddydale	343	19 hf-ch	bro pek	950	34
193		346	20 ch	pek	1800	33
194		349	12 do	pek sou	1080	30
195	Gangwarily	352	24 ch	sou	1800	29
197		358	10 do	fans	1000	34
199	Hopewell	364	50 hf-ch	bro or pek	2500	43
200		367	40 do	bro pek	1800	38
201		370	38 ch	pek fans	3420	36
202		373	21 do	pek sou	1785	33
203	Doragalla	376	12 ch	bro or pek	1200	41
204		379	24 do	bro pek	2400	37 bid
205		382	60 do	pek	4800	35
207		388	20 hf-ch	bro mix	1300	31
214	Welgampola	514	16 hf-ch	pek	896	32
217	M M	523	75 ch	pek sou	6000	29 bid
224	Roseneath	544	31 ch	bro pek	3255	36 bid
225		547	21 do	pek	1890	35
226		550	23 do	pek sou	1955	32 bid
236	Kuralana	580	14 hf-ch	bro pek	770	33 bid
242	Neboda	598	22 ch	bro or pek	2200	34
243		601	50 do	bro pek	5000	34
244		604	20 do	pek	1800	33
245		607	14 do	pek sou	1120	31
251	Ranasingha-patana	625	41 hf-ch	bro or pek	2542	37
252		628	26 ch	pek	2028	35
253		631	40 do	pek sou	3200	33
257	D	643	9 ch	bro pek	900	35
262	R C T F, in estate mark	658	14 ch	bro pek	1400	34
263		661	20 do	pek	1800	32
264		664	23 do	pek sou	1955	30
265		667	7 do	bro pek fans	700	33
271	Marigold	685	75 hf-ch	bro pek	4125	44
272		688	22 do	pek	1100	41
275	Siriniwasa	697	19 ch	bro pek	1995	38
276		700	22 do	pek	2090	34
277		703	17 do	pek sou	1530	32
285	Oakham	727	21 hf-ch	bro pek	1260	41
288		730	19 do	or pek	760	40
287		733	15 ch	pek	1350	38

[Mr. E. John.—223,982 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
6	W, in est. mark	354	7 ch	pekoe	700	33
10	Eladuwa	366	8 do	or pek	760	40
11		369	20 do	pekoe	1800	33
14	Coslande	378	17 do	bro pek	935	37 bid
15		381	15 do	pekoe	1350	33
19	Eila	393	60 do	bro or pek	6000	35 bid
20		396	26 do	pekoe	2210	34
21		399	41 do	pek sou	3280	32
22		402	9 do	fans	1080	33
23	Glentilt	405	34 do	bro pek	3400	42 bid
24		408	13 do	pekoe	1300	40
25	Koslanda	411	17 hf-ch	bro pek	935	37 bid
26		414	15 ch	pekoe	1350	33
30	Kotuagedera	426	23 do	bro pek	2300	34
31		429	14 do	pekoe	1260	32
34	Alplakande	438	11 do	sou	880	29
39	Galella	453	12 do	bro pek	1200	40
42		462	8 hf-ch	dust	720	26
44	N	468	9 do	dust	765	29
45	Bellongalla	471	31 do	bro pek	1736	33 bid
46	Gonavy	474	41 do	bro pek	2050	38 bid
47		477	13 ch	pekoe	975	37
52	Uda	492	9 do	bro pek	855	30
53		495	17 do	pekoe	1258	29
54	St. John's	498	26 hf-ch	bro or pek	1560	77
55		501	20 do	or pek	1040	58
56		504	26 do	pekoe	1456	47
61	Mossend	519	22 do	bro or pek	1320	41 bid
62		522	16 do	or pek	800	44
63		525	47 do	pekoe	1880	41
71	Rondura	549	12 ch	or pek	1080	39
72		552	27 do	bro pek	2700	35
73		555	32 do	pekoe	2880	34
74		558	20 do	pek sou	1800	32
76	Agra Ouvah	564	36 hf-ch	bro or pek No. 1	2160	58
77		567	32 do	bro or pek No. 2	1824	47
78		570	26 do	or pek	1300	45
79		573	8 ch	pekoe	720	41
80	Glasgow	576	39 hf-ch	bro or pek	2340	55
81		579	32 ch	bro pek	2560	47
82		582	20 do	or pek	1300	45
83		585	13 do	pekoe	1300	43
84		588	15 do	fans	1500	29
85	Callander	591	25 hf-ch	bro or pek	1500	38 bid
100	Gangawatte	636	19 ch	or pek	1900	40
101		639	25 do	pekoe	2125	37
102	Kadien Lena	642	26 hf-ch	bro or pek dust	2080	27
103		645	14 ch	congou	1400	28
105	Little Valley	651	7 do	bro pek	700	37 bid
106		654	20 do	pekoe	1500	35
107		657	12 do	pek sou	960	34
110	L W, Ceylon	666	47 hf-ch	pek sou	2115	35
111	K	669	15 ch	pekoe	1500	31
114	Ferndale	678	20 do	or pek	1800	40 bid
115	Claremont	681	17 do	bro or pek	1700	35
116		684	10 do	pekoe	900	33
122	Kolapatna	702	18 do	bro pek	1890	35
123	Mandarawatte	705	34 do	or pek	3298	33 bid
124	Myraganga	708	78 do	bro pek	7176	36 bid
125		711	17 hf-ch	bro or pek	1020	36 bid
126		714	64 ch	pekoe	5440	35
127		717	27 do	pek sou	1890	33
129		723	9 hf ch	dust	765	27
131		729	21 do	fans	1365	30
132	Glassaugh	732	24 do	or pek	1272	63
133		735	27 do	bro or pek	1755	51
134		738	22 ch	pekoe	2090	43
135		741	9 hf-ch	dust	885	30
137	Perth	747	41 ch	bro or pek	4018	36
138		750	17 do	pekoe	1360	36
147	Rookwood	777	46 hf-ch	bro or pek	2530	44 bid
148		780	25 ch	pekoe	2250	39
149		783	21 do	pek sou	1890	36
150	Bellongalla	786	20 hf-ch	bro pek	1120	33 bid
151	Glentilt	789	35 ch	bro pek	3500	44 bid
152		792	14 do	pekoe	1400	38 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
153	Mocha	795	14 ch	bro or pek	1400	60
154		798	12 do	or pek	1140	50
155		801	15 do	pekoe	1350	42 bid
156		804	9 do	pek sou	765	41
157	Evalgolla	807	40 hf-ch	bro pek	2000	37 bid
158		810	59 do	pekoe	2655	34
162	Ottery	822	31 ch	bro or pek	3100	38 bid
163		825	14 do	or pek	1260	39
164		828	16 do	pekoe	1520	36
169	Eadella	843	14 do	bro or pek	1400	36 bid
170		846	17 do	bro pek	1700	34 bid
171		849	24 do	bro pek	2400	34 bid
172		852	24 do	pekoe	2400	33
173		855	9 do	pek sou	810	32
174		858	9 hf ch	dust	720	25
175	A	861	13 ch	dust	2184	25
176	Perth	864	53 do	bro or pek	5194	38
180	Vincit	876	14 do	bro pek	1260	34 bid
181		879	13 do	pekoe	1170	32
184	M	883	11 do	dust	1848	24 bid
185	Bellongalla	891	21 do	pekoe	1680	31

SMALL LOTS.

E. Benhsm & Co.

Lot.		Box.	Pkgs.	Name.	lb.	c.
9	Hornsey	89	3 ch	fans	270	27

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
7	Walpita	657	8 ch	pek sou	640	30
9	Ettapolla	658	5 hf-ch	pek	280	35
10		661	4 do	sou	224	29
11		664	2 do	dust	132	25
18	Mousakelle	685	2 ch	sou	200	30
19		688	4 hf-ch	dust	340	27
22	Grange Garden	697	3 ch	pek sou	300	31
23		700	5 hf-ch	dust	425	27
27	Strathspey	712	7 ch	sou	637	24
28		715	3 do	dust	345	27
33	B	730	3 do	bro pek	285	35
34		733	4 do 1 hf-ch	pek	455	31
35		736	3 ch	pek sou	300	29
37	Carberry	742	2 ch	bro or pek	200	34
39		748	7 do	pek sou	630	32
40		751	2 do	bro tea	180	31
41		754	1 do	dust	140	25
42	G K	757	5 ch	bro tea	480	27
45	New Peacock	766	10 hf-ch	bro mix	500	27
47	Igalkande	772	7 ch	pek	630	33
48		775	1 do	sou	70	28
49	L G F, in estate mark	778	5 ch	sou	550	30
50		781	8 do	dust	680	26
55	Sirikandura	796	2 ch	red leaf	188	25
59	Palm Garden	808	1 ch	fans	130	29
60		811	1 do	congou	96	27
61	Kaduruwandola	814	1 ch	bro pek	110	35
62		817	1 do	pek	100	32
63		820	1 do	pek sou	100	30
67	Hurstpierpoint	832	6 ch	bro pek	588	33
68		835	4 do	pek	364	32
69		838	2 do	pek sou	186	30
70		841	2 do	dust	236	27
71		844	1 do	fans	84	27
72		847	1 do	bro mix	62	26
73		850	1 do	congou	61	26
77	Kelaneiya and Braemar	862	3 ch	sou	300	31
78		865	5 hf-ch	dust	409	26
81	Holton	874	8 ch	pek sou	640	30
82	B A	877	1 ch	dust	75	25
83		880	1 do	red leaf	100	23
92	X X	907	5 hf-ch	fans	350	33
93		910	7 do	dust	560	26
95	Monkswood	916	5 do	or pek	225	59
100		931	4 do	dust	360	26
104	Cotswold	943	2 ch	sou	150	27
105		946	2 do	dust	170	27
106	Ookoowatte	949	1 ch	sou	95	29
107		952	3 do	dust	315	25
114	Passara Group	973	1 ch	fans	65	30
122	C N M	997	5 ch	dust	450	26
129	D, in estate mark	1018	9 hf-ch	fans	540	31
134	Harrow	1033	2 do	dust	160	26
135		1036	1 do	bro or pek		

Lot.		Box.	Pkgs.	Name	lb.	c.
				fans	70	34
140	Knavesmire	1051	4 hf-ch	dust	340	27
145	Polatagama	1066	3 ch	dust	450	26
150	Kirklees	1081	6 do	pek fans	660	32
152	D	1087	6 ch 1 hf-ch	sou	626	28
156	Woodend	1099	2 ch	dust	280	26
161	Clyde	1114	3 ch	dust	450	26
162	V, in estate mark	1117	1 ch	bro or pek	110	36
163		1120	2 do	or pek	140	35
164		1123	3 do	pek	210	32
165		1126	1 hf-ch	pek sou	40	30
167		1132	6 ch	dust	480	27
172	B D W G	1147	9 hf-ch	pek sou	450	33
185	Middleton	1186	5 hf-ch	dust	425	26
189	Huanuco	1198	6 hf-ch	fans	486	27
193	Matale	1210	5 do	dust	400	26
194	Ellamulle	1213	2 bag	red leaf	100	23
195	Bambragalla	1216	6 hf-ch	bro or pek	360	38
196		1219	10 do	or pek	500	38
197		1222	5 do	pek	250	33
198		1225	4 do	pek sou	200	30
199		1228	1 do	dust	80	25
201	St. Edwards	1234	11 ch	bro pek	638	35
203		1240	7 do	pek sou	392	31
204	Maligatenne	1243	6 ch	or pek	630	36
205		1246	5 do	bro pek	500	33
206		1249	7 do	pek	665	31
207		1252	1 do	pek	75	31
208		1255	5 do	pek sou	450	29
209		1258	1 do	do	62	29
210		1261	1 do	dust	100	25
211		1264	1 do	bro mix	90	25
215	D B R	1276	5 hf-ch	bro pek fans	300	36
216		1279	2 do	pek sou	160	35
217		1282	1 do	dust	70	25
228	Tavalamtenne	1315	1 ch	dust	120	26
234	Digdola	1333	5 ch	sou	400	30
239	Beverley	1348	3 ch	bro or pek	195	36
243		1360	1 hf-ch	bro pek fans	60	32
245	R, in estate mark	1366	5 ch	pek	510	30
246		1369	1 hf-ch	dust	60	25
272	Bloomfield	1447	8 ch	pek fans	680	27
283	Erracht	1480	10 ch	pek sou	680	30
285		1486	2 do	bro pek dust	310	25
287	Dea Ella	1492	2 hf-ch	bro or flowery pek	116	58
291		1504	7 do	pek sou	350	32
292		1507	7 do	fans	450	30
294	Galkdua	1513	2 ch	bro or pek	210	37
298		1525	1 do	fans	133	28
299		1528	1 do	sou	80	23
300	S	1531	2 ch	sou	146	28
301	K	1534	1 ch	pek sou	100	28
302		1537	2 do	dust	320	25
303	S S F, in estate mark	1540	5 hf-ch	bro pek	230	30
304		1543	6 do	pek sou	305	28
305		1546	2 do	dust	106	26
309	Opalgalla	1558	5 ch	dust	400	24
310		1561	3 ch	red leaf	219	24
314	Erlsmere	1573	4 ch	pek sou	352	34
315		1576	2 do	dust	170	26
318	Kennington	1585	5 ch	fans	600	30
319		1588	7 do	or pek	609	32
320		1591	5 do	dust	650	26
325	Beaumont	1606	8 hf-ch	fans	688	27
326	S V, in estate mark	1609	7 hf-ch	fans	504	29
327		1612	7 do	dust	595	25
328	Kabragalla	1615	7 do	bro tea	385	24
329		1618	3 do	dust	255	27
330	A G	1621	3 ch	pek sou	300	30
331		1624	1 do	dust	144	25
341	M A	1654	7 ch	sou	525	29
342		1657	4 do	dust	520	25
344	Ingurugalla	1663	4 ch	red leaf	363	23
345	Beausejour	1666	15 box	bro pek	330	35 bid
348		1675	2 ch	pek sou	170	29
349		1678	2 hf-ch	bro pek fan	120	32
350		1681	5 do	dust	400	26
354	Arapolakande	1696	5 ch	bro or pek	550	36
357		1702	4 do	pek sou	360	31
358		1705	2 do	dust	220	25
362	Weyugawatte	1717	2 ch	pek sou	160	31
363		1720	2 hf-ch	dust	160	26
364	Tembiligalla	1723	9 hf-ch	bro pek	495	37
365		1726	10 do	or pek	500	37
366		1729	5 ch	pek	450	35
367		1732	3 do	pek sou	270	32
368		1735	1 hf-ch	dust	80	25

Lot.		Box.	Pkgs.	Name.	lb.	c.
388	B D W P	1795	1 ch	bro pek No. 2	90	27
389		1798	1 do	pek No. 2	80	26
390		1801	1 do	pek sou No. 2	80	25
391		1804	3 hf-ch	dust	255	25
401	Palmerston	1834	2 hf-ch	bro or pek fans	140	35
402		1837	1 do	bro mix	70	34
403		1840	2 do	dust	160	28
406	Stafford	1849	10 do	bro or pek	600	43
407		1852	4 ch	or pek	330	45
408		1855	7 do	pek	595	41
409		1858	3 do	pek sou	240	34
411	Pingarawa	1864	5 ch	dust	500	26
431	Queensland	1924	3 ch	bro or pek	294	53
433	Okande	1930	5 hf-ch	dust	475	25
444	Warwick	1963	8 do	pek fans	520	33
445		1966	8 do	dust	680	26
450	Chesterford	1981	1 ch	congou	90	28
451		1984	2 do	bro tea	200	33
453	Gangawatte	1990	6 hf-ch	bro or pek	351	36 bid
458	Geragama, Invoice No. 75	2005	5 hf-ch	fans	375	27
459		2008	4 do	dust	320	26
463	Waratenne, Invoice No. 76	2020	6 ch	pek sou	540	31
464		2023	8 hf-ch	fans	560	27
465		2026	7 do	dust	595	25
475	Peak Shadow	2056	6 ch	bro pek	540	28
476		2059	7 do	pek	560	29
477		2062	2 do	pek fans	200	28
478		2065	1 do	bro mix	80	22
479		2068	1 do	dust	130	24
484	Valdeniya	2083	6 ch	sou	540	28
485		2086	2 do	pek fans	200	27
486		2089	3 do	dust	300	24
487	Relugas	2092	5 ch	dust	650	29
515	Doranakande	2176	3 ch	pek	285	33
516		2179	2 do	pek No. 2	180	32
518		2185	1 do	dust	105	25
524	Glengariffe	2203	8 hf-ch	dust	640	26
525	New Galway	2206	2 do	bro pek	120	52
526		2209	7 do	pek	385	43
529	Amblakande	2218	8 ch	pek sou	640	31
532	Vogan	2227	6 do	pek sou	480	31
533		2230	7 hf-ch	dust	595	26
534		2233	3 ch	bro pek fans	330	31
538	Penrhos	2245	7 ch	pek sou	560	32
539		2248	3 hf-ch	fans	231	30
579	Inverness	118	5 ch	pek sou	450	35
580		121	5 hf-ch	dust	425	27
591	Bandara Eliya	154	6 hf-ch	dust	540	25
592		157	1 ch	red leaf	100	24
610	Coreen	211	5 hf-ch	dust	400	25

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
4	A S W	778	12 hf ch	bro pek	600	29
5		781	12 do	pek	600	27
6		784	2 do	pek sou	90	24
7		787	1 do	dust	50	23
12	Nyanza	802	2 ch	fans	200	31
14	S R K	808	1 ch	sou	100	29
16		814	2 do	bro tea	200	26
22	Ferriby	832	6 ch	sou	570	29
23		835	9 hf-ch	fans	450	30
24		838	5 do	dust	375	26
28	Hanagama	850	1 ch	sou	100	26
29		853	1 do	fans	120	27
31	Wendura	859	8 hf-ch	pek	640	34
33		865	2 do	dust	146	25
39	N	883	7 hf-ch	pek sou	595	32
40		886	4 do	dust	320	27
41		889	6 ch	bro mix	546	24
46	S	904	12 hf-ch	bro tea	600	27
47	A	907	4 hf-ch	dust	320	26
48		910	6 do	bro tea	300	27
52	Rambodde	922	8 hf ch	pek sou	400	32
52a		922a	1 do	fans	70	27
61	Nillicollaywatte	949	4 ch	pek sou	328	31
62		952	2 hf ch	dust	160	26
65		955	2 do	fans	150	28
66	Auburn	964	8 ch	pek sou	624	32
67		967	1 hf-ch	fans	70	29
68		970	1 do	dust	86	25
71	Theberton	979	3 ch	pek sou	270	30
72		982	3 do	fans	300	28
75	Mahatenne	991	2 ch	pek sou	200	30
76		994	1 do	dust	100	27
77		997	1 hf-ch	red leaf	55	25
80	Kurulugalla	7	5 ch	pek sou	500	30
81	K G A, in estate mark	10	1 ch	fans	140	28
82		13	1 do	pek dust	140	26
87	Galphele B	28	5 ch	pek	500	32
88		31	3 do	sou	270	30
89		34	3 do	fans	450	27
92	Ravenoya	43	2 hf-ch	pek sou	120	30
95	Blackburn	52	1 hf ch	fans	70	31
96		55	2 do	dust	172	25
99	Kosgahahena	64	4 ch	pek sou	400	29
100		67	3 hf-ch	sou	150	26
101		70	1 do	fans	80	25
102		73	2 do	pek dust	180	25
106	Woodthorpe	85	3 ch	sou	228	30
107		88	2 hf ch	dust	132	25
119	Harangalla	124	8 ch	sou	640	31
120		127	6 do	fans	600	32
123	Meddegodda	136	6 hf-ch	pek sou	240	31
124		139	6 do	fans	390	29
125		142	1 do	dust	80	27
129	Hatdowa	154	1 ch	dust	140	27
130		157	6 do	fans	600	31
131		160	2 do	sou	150	28
134	Lyndhurst	169	12 hf-ch	pek sou	540	31
135		172	2 do	dust	170	26
143	Salawe	196	5 ch	unas	550	31
144		199	1 do	pek dust	165	25
145	Oakham	202	19 box	bro or pek	380	51 bid
152	Neuchatel	223	2 ch	bro or pek	240	34
155	Neuchatel	232	2 ch	dust	330	24
156	Hangranoya	235	5 ch	bro tea	425	28
157		238	6 hf-ch	fans	420	26
159	O K, in estate mark	244	3 ch	bro pek	273	30
160		247	3 do	pek	294	30
161		250	4 do	pek sou	323	28
162		253	1 hf-ch	dust	60	25
164	K G A, in estate mark	259	1 ch	bro tea	100	25
170	F A, in estate mark	277	4 ch	pek sou	360	30 bid
171		280	7 hf-ch	fans	476	28
172		283	5 do	dust	410	26
173	F in estate mark	286	6 hf-ch	pek sou	318	33
178	Gartmore	301	7 hf-ch	dust	630	26 bid
181	J M D M	310	6 ch	pek sou	570	30
182		313	3 do	fans	300	26
183		316	1 do	dust	150	25
186	Y, in estate mark	325	1 hf-ch	dust	90	25
190	Honiton	337	3 hf-ch	fans	150	30
191		340	4 do	dust	280	26
196	Gangwarily	355	6 hf-ch	dust	480	26
198		361	4 ch	red leaf	340	22
206	Doragalla	385	7 ch	pek sou	560	32
208	Maddagedera	391	1 ch	or pek	100	33
209		394	2 do	pek	200	31
210		397	3 do	pek sou	300	29
211	Walgampola	505	11 hf-ch	bro or pek	616	34
212		508	4 do	or pek	224	35
213		511	6 do	bro pek	336	34
215		517	10 do	pek sou	560	29
216		520	2 do	sou	112	28
227	Roseneath	553	2 hf-ch	dust	234	26
228		556	1 ch	bro mix	75	25
237	Kuralana	583	7 ch	pek	630	31
238		586	2 do 1 hf-ch	pek sou	242	28
239		589	5 ch	unas	575	26
240		591	1 do	dust	145	25
241		595	1 ch 1 hf-ch	red leaf	133	19
246	Nehoda	610	5 hf-ch	dust	425	26
247	Sangaly Toppe	613	2 hf-ch	bro tea	150	26
248		616	3 do	pek dust	270	25
249		619	3 do	red leaf	270	24
250	F	622	1 ch	unas	78	25
254	Ranasinghapatna	634	5 hf-ch	dust	450	25
255		637	2 ch	red leaf	200	27
256	Danwella	640	10 ch 1 hf-ch	pek fans	579	27 bid
258	D	646	4 ch	pek	389	32
259		649	3 do	pek sou	270	30
260		652	1 do	bro pek dust	130	26
261		655	1 do	con	55	25
266	R C T F, in estate mark	670	3 hf-ch	dust	225	25
267	A G T	673	6 ch	bro pek	660	33
268		676	7 do	pek sou	675	26
269	L	679	2 ch	fans	230	28
270		682	4 do	dust	365	23
272	Marigold	691	10 hf-ch	pek sou	500	39
274		694	5 do	pek fans	375	32

Lot,		Box.	Pkgs.		Name.	lb.	c.
278	Siriniwasa	706	2	ch	bro pek fans	190	34
279		709	2	do	dust	310	25
280		712	1	do	sou	70	25
281	H, in estate mark	715	1	hf-ch	bro pek	60	33
282		718	1	do	pek	55	31
283		721	3	do	pek sou	150	29
284		724	1	do	dust	80	25
288	Oakham	736	5	ch	pek sou	475	35
289		739	2	hf-ch	pek fans	150	27
290	D	742	3	ch	sou	246	20

[Mr. E. John.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	St. Julia	339	5	hf-ch	bro pek	275	31
2		342	3	do	pekoe	150	29
3		345	1	do	pek sou	50	26
4		348	2	do	fans	100	24
5	W, in est. mark	351	6	do	bro pek	390	34
7		357	1	do	dust	85	26
8		360	2	ch	bro mix	200	25
9	Eladuwa	363	5	do	bro pek	550	34
12		372	7	do	pek sou	630	30
13		375	1	do	mixed	128	21
16	Coslande	384	2	do	pek sou	190	31
17		387	3	do	congou	255	30
18		390	2	do	fans	220	31
27	Koslanda	417	2	do	pek sou	190	31
28		420	3	do	congou	255	30
29		423	2	do	fans	220	31
32	Kotuagedera	432	1	do	pek sou	90	29
33		435	2	hf-ch	bro pek fans	140	28
38	Galella	450	6	ch	or pek	510	43
40		456	4	do	pekoe	360	38
41		459	2	do	pek sou	180	33
43		465	3	bags	red leaf	142	21
48	Gonavy	480	4	ch	pek sou	380	33
49		483	3	hf-ch	fans	240	27
50		486	2	do	dust	160	26
51		489	1	do	congou	85	30
57	S W	507	4	ch	pek No. 2	412	32
58		510	1	do	pekoe	90	32
59		513	7	hf-ch	fans	525	31
60		516	1	do	dust	100	25
64	Mossend	528	8	do	fans	480	32
65	Kandaloya	531	12	do	fans	600	32
66		534	13	do	dust	650	26
67		537	6	do	bro tea	240	28
68	Theresia	540	2	ch	bro pek fans	200	38
69		543	5	hf-ch	dust	400	26
70		546	1	ch	sou	90	33
75	Rondura	561	2	do	dust	220	28
86	Callander	594	10	hf-ch	or pek	570	40
98	X Y Z	630	5	do	pek dust	450	25
99		633	2	do	sou	68	27
104	Little Valley	648	7	ch	or pek	595	42
108		660	8	hf-ch	bro or pek	400	48 bid
109	Kataboola	663	8	ch	unas	620	25
112	The Farm	672	5	do	dust	400	25
113	Marakona	675	2	do	dust	200	25
117	Claremont	687	4	do	fans	380	32
128	Myraganga	720	5	do	bro mix	425	26
130		726	2	hf-ch	dust No. 2	170	24
136	M G	741	6	do	fans	456	36
139	Perth	753	15	do	pek sou	525	33
140		756	4	do	dust	300	26
146	P K T	774	2	ch	unas	190	28
159	Evalgolla	813	5	hf-ch	pek sou	200	31
160		816	6	do	fans	390	32
161		819	2	do	dust	160	25
165	Ottery	831	1	ch	dust	170	28
166	B B	834	6	do	pekoe	570	30
167		837	7	do	sou	630	20
168		840	4	hf-ch	fans	260	28
177	Perth	867	7	ch	pekoe	560	36
182	Vincit	882	3	do	pek sou	270	30
183		885	1	do	bro pek fans	120	31

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

Mincing Lane, December 1st.

"Hitachi Maru."—Standard Company, St. Leonards 2, 1 cask out at 80s, 70s refused; S, 4 casks and 1 barrel out at 64s, 61s refused; PB, 1 cask out; SL T in estate mark, 1 barrel sold at 21s 6d; Standard Company, St. Leonards, 1 tierce sold at 21s 6d; S, 1 cask and 1 barrel sold at 21s 6d; PB, 1 barrel sold at 2s 6d; Gordon 2, 1 tierce out; S, 1 cask and 1 barrel out at 66s; GD T in estate mark, 1 barrel sold at 30s; Gonomatava 1, 1 barrel out; ditto 2, 1 cask out; ditto S, 1 cask and 1 barrel out; ditto PB, 1 barrel out; GMT T in estate mark, 1 barrel out; Berragalla 1, 1 barrel out; ditto 2, 2 casks out; ditto PB, 1 barrel sold at 98s; BRG T in estate mark, 1 barrel out at 35s.

CEYLON CINNAMON SALES IN LONDON.

"Formosa" CA London,2 bales and 1 parcel out at 1s 5d; 10 bales out at 1s 1d: 2 bales and 1 parcel out at 1s; 1 bale and 1 parcel out at 9½d; 1 bale and 1 parcel out at 9d; 3 bags out at 7d; 4 bags out at 4d.

"Kamakura Maru".—CPI 113 in estate mark, 3 bales out at 1s 2d; 10 bales out at 10d; 6 bales out at 9½d; 8 bales out at 8d; F in estate mark, Ekella Plantation, 10 bales out at 1s; 10 bales out at 10d; 19 bales out at 9½d; 20 bales out at 9d; 6 bales out at 8d.

"Clan Menzies".—K in estate mark, Mahawatte Plantation, 10 bales out at 9d; K in estate mark, 34 bales out at 4d.

"Diomed".—F in estate mark, Ekelle Plantation 10 bales out at 1s; 25 bales out at 10½d; 23 bales out at 9½d; 11 bales out at 9d; 4 bales out at 8½d.

"Clan McLaren".—F in estate mark, Ekella Plantation, 10 bales out at 1s 1d; 25 bales out at 10d; 13 bales out at 9½d; 2 bales out at 8½d.

"Bombay'.—H in estate mark, Ekella plantation, 5 bales out at 1s; 35 bales out at 10d; M in estate mark, Ekella Plantation, 37 bales out at 9½d; 13 bales out at 8½d; 2 bales and 1 bag out at 9d

"Hitachi Maru".—H in estate mark, Ekella Plantation, 4 bales out at 1s 1d; 15 bales out at 11½d; 7 bales out at 10d; 5 bales and 1 bag out at 9d.

"Menelaus".—F in estate mark, Ekella Plantation, 6 bales out at 1s; 36 bales out at 10d; 30 bales out at 9½d; 13 bales out at 9d; 2 bales out at 8d.

"Jumna".—DB&Co. in estate mark, Ekella Plantation London, 20 bales out at 1s; 50 bales out at 10½d; 28 bales out at 9½d; 4 bales out at 9d.

"Clan Menzies"—DBPS 396 in estate mark, Ekella Plantation London, 4 bales out at 9d; DB&Co. 54 in estate mark, Ekella Plantation New York, 4 bales out.

"Clan MacAlister".—PB&Co. 400 in estate mark, Ekella Plantation, 10 bales out at 1s; 25 bales out at 10½d; 16 bales out at 9½d; 2 bales out at 9d.

"Duke of Portland".—DB&Co. 606 in estate mark, Ekella Plantation London 1899, 1 bale out at 1s 3d; 4 bales out at 1s 2d; 4 bales out at 1s 1d; 1 bale out at 1s; 1 bale out at 9½d; 1 bale out at 9d; DB&Co 407 in estate mark, Ekella Plantation London 1899, 88 bales out at 9½d; DB&Co. 408 in estate mark, Ekella Plantation London 1899, 26 bales out at 1s; 50 bales out at 10½d; BD&Co. 408 in estatate mark, Ekella Plantation London 1899, 28 bales out at 9½d; 4 bales out at 9d.

"Duke of Norfolk".—DB&Co. 409 in estate mark, Ekella Plantation, 150 bales out; DB&Co. 408 in estate mark, 25 bales out; DB&Co. 408 in estate mark, Ekella Plantation London, O, 100 bales out; 71 bales out; DB&Co. in estate mark, C, 36 bales out; 188 bales out.

"Menelaus";—DB&Co. in estate mark, Ekella Plantation 1899, 6 bales out at 10½d; 29 bales out at 10d.

"Duke of Portland".—M in estate mark, Ekella Plantation, 1 bale out at 1s; 8 bales out at 10¾d; 14 bales out at 9½d; 13 bales out at 9d; 1 bale out at 11d; SM in estate mark, Mahatte Plantation, 1 bale out at 11d; 7 bales out at 9d.

WILD CINNAMON.

"Clan McIntyre."—F in estate mark, Ekelle Plantation, 6 bales out at 1s; 38 bales out at 10d; 29 bales out at 9½d; 5 bales out at 9d: 5 bales out at 8d; DSS in estate mark, 6 bales out at 4½d; 18 bales out at 4d; 72 bales out at 3d.

"Kamakura Maru."—HMS & Co. in estate mark, 92 bales out at 4d.

"Dardanus."—M in estate mark, 75 bales out at 3½d.

"Clan McLaren."—L in estate mark, Mahawatta Plantation, 11 bales out at 6d; 50 bales out at 3½d; 18 bales out at 3d.

"Tosa Maru."—DSS, in estate mark, 5 bales out at 6d; 12 bales out at 5d; 50 bales out at 3¼.

"Bombay."—A in estate mark, Mahawatta Plantation, 5 bales out at 7½d: K in estate mark, 7 bales out at 8d; L in estate mark, 1 bale out at 3d.

"Omrah."—HMS & Co. in estate mark, 3 bales out at 7½d; 40 bales out at 3½d; 4 bales out at 3d.

"Clan Sinclair."—KK in estate mark 43 bales out at 3½d.

"Wakasa Maru."—RS in estate mark, 27 bales out 3½d.

"Hitachi Maru."—DSS in estate mark, 1 bale out at 6d; 2 bales out at 5d; 32 bales out at 3½d.

"Clan Macalister."—DSS in estate mark, 4 bales out at 6d; 14 bales out at 4d; 62 bales out at 3d.

"Menelaus."—HMS & Co. in estate mark, 140 bales out at 4½d.

"Clan McIntyre."—MDJ in estate mark, 8 bales out at 5½d; 38 bales out at 4d; MDJ 168 bales out at 3½d; MAK in estate mark, 5 bales out at 5d; 24 bales out at 3½; R in estate mark, 48 bales out at 4d; 100 bales out at 3½; RS in estate mark, 14 bales out at 4d; RM 31 bales out at 3½d.

CINNAMON CHIPS, BARK, ETC.

"Duke of Norfolk."—HL 143 out.

"Bingo Maru."—CP J 104 in estate mark, 50 bales out at 3½d.

"Wakasa Maru."—RS in estate mark, 209 bales out at 3d.

"Dardanus."—I M in estate mark, 47 bales out at 3d; 2 104 bales out at 3½d; 3 bales out at 3d; 2 104 bales out at 2½d.

"Clan MacLaren."—W in state mark, 109 bales out at 2½d; SS in estate mark, 15 bales out at 3d; 105 bales out at 1s 3d.

"Clan Chisholm."—MM in estate mark, 11 bales out at 2½d.

"Clan MacLaren."—D in estate mark, 62 bales out in 2½d.

"Bombay."—MS in estate mark, 195 bales out at 2½d; RS in estate mark, 75 bales out at 2½d.

"Hitachi Maru."—B DSS in estate mark, 67 bales out at 2½d; JL in in estate mark, 82 bales out at 2½d.

"Glengyle."—HMS & Co. in estate mark, 156 bales out at 2½d.

"Omrah."—HMS & Co. in estate mark, 53 bales out at 2½d; 16 bales out at 3½.

"Tosa Maru."—DSS in estate mark, 33 bales out 3d; VK in estate mark, 9 bales out at 2½d.

"Clan Sinclair."—JL in estate mark, 115 bales out at 2½d.

"Menelaus."—RS in estate mark, 84 bales out at 2½d.

"Duke of Norfolk."—JL in estate mark, 940 bags out.

"Duke of Portland."—HMS & Co. in estate mark, Ekelle Plantation, 1 bale out at 10d; 4 bales sold at 9½d; 12 bales sold at 8½d, 9d; 5 bales sold at 8½d; 2 bales sold at 7½d; HMS & Co. in estate mark, 185 bales out at 3d.

"Clan McGregor."—M in estate mark, 57 bales sold at 2d; AMK in estate mark, 40 bales sold at 1¾d; 35 bales sold at 8½d.

"Ulysses."—MAK in estate mark, 10 bales sold at 2d; 1 bale sold at 3d; 11 bales sold at 11¾d.

"Hitachi Maru."—ASGD in estate mark, Kadirane, 11 bales sold at 1s 7d; 16 bales sold at 1s 5d; 6 bales sold at 1s 3d; 6 bales sold at 1s 5d; 4 bales at 1s 4d; 4 bales sold at 1s 3d; 20 bales sold at 11½d; 29 bales sold at 9½d; 2 bales sold at 1s 7d; 4 bales sold at 1s 5d; 3 bales sold at 1s 4d; 1 bale sold at 1s 3d; 1 bale sold at 1s 11d; 1 bale sold at 9d; 11 bales at 8½d; FSWS in estate mark, Kadirane, 3 bales sold at 1s 5d; 4 bales sold at 1s 4d; 1 bale sold at 1s 2d; 1 bale sold at 8½d; 2 bales sold at 8d; 1 bale sold at 8½d; 3 bales sold at 1s 5d; 4 bales sold at 1s 4d; 1 bale sold at 9d; 11 bales sold at 8½d; FSK Kaderane, 1 bale sold at 1s 7d; 5 bales sold at 1s 6d; 6 bales sold at 1s 4d; 2 bales sold at 1s 5d; 8 bales sold at 1s 3d; 2 bales sold at 10d; 12 bales sold at 9d; 1 bale sold at 8½d; 1 bale sold at 8d.

"Clan Alpine."—PBM Plantation 1, 1 bale out at 11d; 2, 3 bales at 9½d; 1 bale at 8d; 12 bales at 4d; GH De S Kondesalle, 40 bales sold at 1s 1d; 18 bales at 11d; 22 bales at 11½d; 22 bales at 10½d; 5 bales at 9d; 18 bales at 1s 1d; C H De S Rustum, 6 bales sold at 11½d; 3 bales at 11d; 1 bale at 9d; 15 bales at 1s; 7 bales at 11½d; 4 bales at 10½d; 2 bales at 9½d; C H De S Koottariavalle, 14 bales sold at 1s 1d; 5 bales at 11½d; 6 bales at 1s; 2 bales at 11½d; 1 bale at 9d.

"Tosa Maru."—C H De S Kadirane, 13 bales at 1s 1d; 8 bales 11½d; 3 bales 10½d; 3 bales 9½d; C H De S Rustum, 19 bales at 1s 11d; 3 bales 11½d; 3 bales 10½d; 1 bale 9½d; C H De S Morotto, 10 bales 1s 1d; 8 bales 11½d; 5 bales 10½d; C H De S Ratmalane, 10 bales 1s 1d; 7 bales 11½d; 7 bales 10½d; 1 bale 9½d; 3 bales 1s; 3 bales 11½d; C H De S Kuruwitte, 6 bales 1s 1d; 2 bales 1s 1d; 12 bales 11d; 14 bales 10½d; 4 bales 9½d; C H De S Salawa, 12 bales 1s; 12 bales 11d; 5 bales 10d; 5 bales 9d; C H De S Kadirane, 3 bales 1s 1d; 8 bales 11d; 4 bales 10d; 5 bales 9½d, 1 bale 1s 1d; 6 bales 11d; 5 bales 10d.

"Menelaus."—HV 618 in estate mark, Ekelle Plantation 1899, 20 bales sold at 1s 3d; 19 bales sold at 1s 2d; 18 bales sold at 1s 1d; 5 bales sold at 1s; 1 bale at 10½d.

"Glenorchy."—HV 557 in estate mark, Ekelle Plantation, 8 bales sold at 1s 2d; ditto 559, 1 bale sold at 1s 3d.

"Stentor."—Ekelle Plantation 626, 9 bales sold at 8d; 30 bales sold at 8½d.

"Jumna."—DBM Ekelle, 8 bales sold at 8½d; 7 bales and 1 parcel sold at 8d.

"Clan MacAlister."—M in estate mark, A Co. Ekelle Plantation, 2 bales sold at 1s 2d; 34 bales sold at 1s; 27 bales sold at 1s 6½d; 8 bales sold at 9½d; 5 bales sold at 9d; 5 bales sold at 9d; 5 bales sold at 9d.

"Menelaus."—M R in estate mark Kadirane Plantation, 4 bales sold at 11½d; 10 bales sold at 10d; 10 bales sold at 9½d; 5 bales sold at 9½d; 10 bales sold at 9d; 5 bales sold at 9d; 4 bales sold at 8½d.

"Bombay."—M in estate mark, ASD DD Kadirane Plantation, 5 bales sold at 1s 1d; 5 bales sold at 1s; 10 bales sold at 1s 1d: 15 bales sold at 1s; 20 bales sold at 10½d; 5 bales sold at 10d; 3 bales sold at 9½d; 7 bales sold at 9d; 4 bales sold at 8½d.

No. 1 COLOMBO, JANUARY 15, 1900. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[69,112 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
5	Halloowella	13	7 ch	dust	1050	29
6		16	8 do	red leaf	720	25
7	Battalgalla	19	19 ch	pek sou	1330	34
8	Hornsey	22	20 hf-ch	pek sou	1400	34
11	Hornsey	31	28 ch	or pek	2660	43
12		34	21 do	pek	1680	38
13	New Rassagalla	37	16 ch	bro or pek	1600	out
14		40	25 do	or pek	2470	38
15		43	40 do	pek	3800	35
16		46	24 do	pek sou	2040	33
18		52	6 do	fans	780	30
21	Mandara Newera	61	113 hf-ch	bro pek	6215	44
22		64	55 do	pek	2750	37 bid
23		67	31 do	pek sou	1395	35 bid
24		70	25 do	dust	2000	27
26	Meddakande	76	20 ch	bro or pek	2000	35 bid
27		79	12 do	bro pek	1200	34 bid
28		85	23 do	pek	2185	33 bid
29		85	22 do	pek sou	1980	32 bid
30	Hapugastenne	88	20 hf-ch	bro or pek	1100	35
32		94	48 do	pek	2400	34
33		97	33 do	dek sou	1650	32
36	Sapitiyagodde	106	58 hf-ch	or pek	2784	37
37		109	48 do	bro or pek	2880	36 bid
38		112	22 ch	pek	1716	33
39		115	35 do	pek sou	2800	32
40	Orpington	118	47 ch	bro pek	4230	35 bid
41		121	20 hf-ch	bro or pek	1200	36 bid
42		124	38 ch	pek	3230	34
43		127	20 do	pek sou	1400	32

Messrs. Forbes & Walker.

[1,011,506 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Yatiyana	235	9 ch	pek	864	32
3	B, in estate mark	241	13 ch	dust	1950	27
5	M'Golla	247	12 ch	dust	960	24
8	Ketadola	256	11 ch	bro pek	1195	34
9		259	16 do	pek	1595	32
13	Avoca	271	7 ch	pek sou	700	35
16	I K V	280	11 ch	pek fans	1320	36
19	Elfindale	289	9 ch	pek	810	28
20	O B E C, in est. mark Forest Creek	292	14 ch	bro pek	1540	42 bid
21	Wewawatte	295	18 hf-ch	bro pek	990	35
22		298	14 do	pek	700	33
25	Hatton	307	21 ch	bro pek	2310	49
26		310	30 do	pek	2700	40
28	Thedden	316	35 ch	bro pek	3500	35
29		319	16 do	pek	15 0	33
33	Frogmore	331	20 bf-ch	bro pek	1100	47
34		334	11 do	pek	825	38
36	Shrubs Hill	340	33 ch	bro pek	3135	38
37		343	53 do	or pek	4876	39
38		346	17 do	bro or pek	1700	35
39		349	32 do	bro pe No 1	3200	36
40		352	21 do	pek No. 1	1785	35
41		355	24 do	pek	2040	34
43		361	10 do	bro pek fans	780	27
44	Freds Ruhe	364	41 ch	bro pek	4100	34
45		367	34 do	pek	2380	33
46		370	15 do	pek sou	1350	31
47	W A	373	13 ch	bro pek	1300	32
49		379	10 do	pek sou	900	31
51		385	5 do	dust	750	27
52	P A N, in estate mark	388	13 ch	bro pek	715	34
64	Galkanda	424	25 ch	bro pek	2500	33
65		427	11 do	pek	990	31
69	Kosgalla	439	33 bf-ch	bro pek	1650	33
71		445	29 do	pek	1305	32
72		448	15 do	pek sou	750	30
75	Munukattia Ceylon, in estate mark	457	9 bf-ch	dust	720	25
81	Dambagastalawa	475	17 ch	bro or pek	1836	45
82		478	21 do	bro pek	2205	37 bid
83		481	16 do	pek	1408	38
86	W N P	490	14 hf-ch	bro or pek	784	34
87		493	14 do	pek	1288	34
90	T U	502	21 ch	bro or pek	1995	52
91		505	25 do	or pek	2150	46
92		508	21 do	pek	1617	42
93		511	32 do	pek sou	2176	38
94	Naseby	514	28 hf-c	bro or pek	1630	46 bid
95		517	17 do	or pek	765	55
96		520	19 do	pek	950	40
97	Glencorse	523	36 ch	bro or pek	3600	37
98		526	58 do	bro pek	5220	35
99		529	48 do	pek	3840	35
100		532	50 ch	pek sou	2250	32
101		535	6 do	pek fans	720	30
108	Gingran Oya	556	50 hf-ch	bro pek	2750	38
109		559	33 ch	pek	2970	37
110		562	18 do	pek sou	1620	34
111	O B E C, in estate mark Summer Hill	565	25 ch	bro or pek	2825	51
112		568	41 do	pek	3567	42
113	T'Villa	571	18 ch	bro or pek	1800	34
114		574	10 do	or pek	900	35
115		577	35 do	pek	3150	32
116		580	12 do	pek No. 2	1140	31
117		583	19 do	pek sou	1520	29
119	Harrington	589	25 hf-ch	bro or pek	1250	45
120		592	18 ch	or pek	1710	44
121		595	15 do	pek	1350	38
125	Dunbar	607	23 hf-ch	bro or pek	1150	54
126		610	18 do	or pek	1864	45
127		613	14 do	pek	3120	42
136	Nillo Mally O B E C, in est. mark	640	38 ch	bro pek	3800	38
137		643	18 do	bro or pek	1908	56
138		646	35 do	or pek	3150	39
139		649	16 do	pek	1344	36
140		652	11 do	pek sou	770	33
145	L G F, in estate mark	667	14 ch	sou	1470	29
146		670	19 do	dust	1520	28
148	Tymawr	676	21 hf-ch	bro pek	1155	44
149		679	22 do	or pek	1100	41
150		682	40 do	pek	1800	39
151		685	49 do	pek sou	2205	36
152		688	12 do	dust	960	28
153		691	14 do	fans	910	30
154	Anningkande, No. 1	694	11 ch	bro pek	1100	35
155		697	12 do	pek	1140	34
156	Anningkande	700	14 ch	bro pek	1400	36
157		703	20 bf-ch	bro pek	1000	35
158		706	9 ch	pek	859	34
159	Monkswood	709	18 hf-ch	bro pek	900	76
160		712	28 do	or pek	1260	56
161		715	17 ch	pek	1530	46
162	Gallawatte	718	12 ch	bro pek	1140	36
163		721	14 do	pek	1190	34
164		724	14 hf-ch	pek fans	980	33
165		727	9 ch	or pek	855	34
166		730	10 do	pek	850	32
168	Erlsmere	736	13 ch	bro pek	1300	33 bid
169		739	23 do	do	2185	38
170		743	13 do	pek	1040	38
175	Tymawr	757	20 hf-cb	bro or pek	1100	43
176		760	39 do	or pek	1950	42
177		763	43 do	pke	1935	39
178		766	23 do	pek sou	1035	36
179	B D W P	769	31 bf-ch	bro pek	2635	35 bid
180	Band D	772	8 ch	unas	704	31
181		775	12 do	sou	1056	31
185	St. Leonards	787	8 ch	bro or pek	840	35
186		790	7 do	or pek	700	34
187		793	13 do	pek	1235	31
190	Agra Oya	802	32 ch	bro pek	3200	38
191		805	22 do	or pek	1760	38
192		808	27 do	pek	2430	36
193		811	9 do	pek sou	810	33
195		817	10 do	fans	750	31
196	Ellaoya	820	25 ch	bro pek	2375	35
197		823	20 do	pek	1700	33
198	Rowley	826	30 bf-ch	bro pek	1500	37 bid
199		829	28 do	pek	1400	35
200	Middleton	832	17 bf-cb	bro or pek No. 2	952	60

Lot,		Box,	Pkgs,	Name.	lb,	c,
201		835	12 ch	bro pek	1200	48
202		838	15 do	pek	1425	43
203		841	32 do	pek sou	2070	40
205	W H R	847	21 ch	pek sou	1680	34
206		850	42 bf-ch	fans	2940	33
207		853	15 do	dust	1550	27
208	P G A	856	12 ch	bro mix	840	30
210	Dammeria	862	10 ch	bro or pek	1200	35
211		865	12 do	or pek	1200	37
212		868	14 do	bro pek	1540	38
213		871	40 do	pek	3600	37
214		874	14 do	pek sou	1260	34
215	D M, in estate mark	877	7 ch	bro pek	770	33
217	Ruanwella	883	47 cb	or pek	3995	36
218		886	36 hf-ch	bro pek	2160	35
219		889	37 ch	pek	3330	35
220		892	15 do	pek sou	1350	32
222	Ganapalla	898	24 do	or pek	2160	37
223		901	23 do	bro or pek	2070	35
224		904	32 do	bro pek	2880	34
225		907	62 do	pek	4960	33
226		910	20 do	pek sou	1500	31
227		913	15 do	bro pe fans	1500	32
228		916	12 hf-ch	dust	960	27
229	Bloomfield	919	37 ch	bro pek	4070	41
230		922	26 do	pek	2600	42
231		925	11 ch	pek sou	1045	37
232	High Forest	928	13 hf-ch	or pek No 1	754	63
233		931	21 do	or pek	1113	51
234		934	19 do	pek	874	41
235	Maha Uva	937	18 bf-ch	bro or pek	1080	42
236		940	15 do	or pek	840	38
237		943	13 cb	pek	1170	37
241	Rozella	955	11 cb	pek sou	990	32
243	Polatagama	961	83 ch	bro pek	7470	38
244		964	27 do	or pek	2160	34
245		967	35 do	pek	2975	33
246		970	11 do	pek sou	880	31
247		973	13 do	fans	1300	33
249	Gampaha	979	20 ch	bro or pek	2200	39
250		982	14 do	or pek	1330	39
251		985	20 do	pek	1600	38
252		988	15 do	pek sou	1350	36
254	Hayes	994	32 ch	pek sou	2720	32
256	Clunes	1000	14 ch	bro or pek	1400	35
257		1003	16 do	bro pek	1600	36
258		1006	21 do	or pek	1680	35
259		1009	43 do	pek	3410	34
260		1012	14 do	pek sou	1260	32
262	Hayes	1018	15 ch	bro or pek	1500	51
263		1021	17 do	bro pek	1700	37
264		1024	12 do	or pek	1080	37
265		1027	57 do	pek	4845	35
266		1030	13 do	pek sou	1105	32
268	Pallegodda	1036	17 ch	bro or pek	1700	36
269		1039	22 do	bro pek	2200	41
270		1042	16 do	or pek	1360	36
271		1045	15 do	pek	1275	35
272		1048	16 do	pek sou	1440	34
273	Dunkeld	1051	68 hf-cb	bro or pek	4080	39
274		1054	20 ch	or pek	1900	40
275		1057	16 do	pek	1440	38
276	Killarney	1060	13 ch	or pek	1170	44
277		1063	15 do	pek	1275	40
278	Gansarapolla	1066	10 ch	bro pek	900	43
279		1069	19 do	pek	850	30
282	Aberdeen	1078	56 ch	bro pek	5600	35
283		1081	48 do	pek	3696	34
284		1084	16 hf-ch	bro pek fans	1120	29
286	Galapitakande	1090	13 cb	or pek	1170	37
287		1093	32 do	bro pek	3200	37
288		1096	20 do	pek	2000	35
291	Tonacombe	1105	22 ch	or pek	1980	40
292		1108	10 do	bro or pek	1000	53
293		1111	24 do	bro pek	2400	38
294		1114	37 do	pek	3320	38
295		1117	10 do	pek sou	900	35
297	Waratenne, Invoice No. 78	1123	9 bf-ch	bro pek	765	34
298		1126	9 de	pek	720	33
299	Lynsted	1129	50 bf-cb	bro pek	3000	46
300		1132	60 do	or pek	3000	46
301		1135	37 do	peko sou	1665	39
302		1138	16 do	sou	720	38
303		1141	36 do	fans	2340	35
304		1144	10 do	dust	850	28
306	Theydon Bois	1159	7 ch	bro or pek	700	44
307		1153	10 do	bro pek	1000	37
308		1156	18 do	pek	1440	36
309		1159	10 do	pek sou	850	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
310	Ouvahkella	1162	39 cb	pek sou	3510	35
311		1165	17 do	dust	1360	27
312	St. Helies	1168	28 bf-cb	bro or pek	1540	36
313		1171	20 do	pek	1760	35
314		1174	10 do	dust	800	27
315	Queensland	1177	14 do	bro or pek	700	59
316		1180	14 do	bro pek	700	39
317		1183	17 cb	pek	1445	42
319	Palmerston	1189	16 bf-ch	bro or pek	848	55
320		1192	15 cb	pek	1275	44
321	Tunisgalla	1195	58 bf ch	bro pek	2900	35
322		1198	28 ch	pek	2240	33
323		1201	14 do	pek sou	1120	32
325	Knavesmire	1207	14 hf-cb	or pek	700	36
326		1210	32 ch	bro pek	3010	36
327		1213	31 do	pek	2665	34
328		1216	18 do	pek sou	1260	32
330		1222	23 do	pek	1960	33
332	Telbedde	1228	19 bf ch	bro or pek	1045	36
334		1234	21 cb	pek	1722	33
335		1237	10 do	pek sou	750	33
336		1240	13 cb	sou	910	32
337	Stisted	1243	50 hf cb	bro or pek	3250	33
338		1246	15 do	pek	900	33
339		1249	22 do	pek sou	1254	32
340	Old Medagama	1252	28 bf ch	bro or pek	1400	35
341		1255	9 ch	or pek	720	35
342		1258	33 do	pek	2475	32 bid
347	K P W	1273	23 hf ch	bro or pek	1540	38
348		1276	21 do	bro pek	1050	36
349		1279	79 do	pek	3555	34
350		1282	14 do	pek sou	700	32
353	Putupaula	1291	20 do	bro or pek	1300	36 bid
354		1294	34 do	bro pek	3060	34 bid
355		1297	26 do	pekoe	1950	33 bid
356		1300	12 do	pek sou	840	34 bid
357	Irex	1303	37 cb	bro pex	3700	37 bid
358		1306	24 do	pek	2160	33 bid
359		1309	15 do	pek sou	1200	32
363	Pambagama	1321	34 ch	sou	3060	30
364	Ireby	1324	32 cb	bro pek	3520	49
365		1327	22 do	pek	1980	44
366		1330	10 do	pek sou	900	42
372	Mansfield	1348	55 hf ch	bro pek	3300	43 bid
373		1351	22 ch	pek	1980	37 bid
375	Rockside	1357	13 ch	sou	1040	32
377		1363	7 do	dust	945	28
378		1366	7 do	bro pek fans	720	31
379	Kincora	1369	12 ch	bro pek	1200	41 bid
380		1372	25 do	pek	2125	36 bid
383		1381	13 hf ch	fans	910	33
384	T U	1384	23 ch	bro or pek	2438	48 bid
385		1387	25 do	or pek	2500	45
386		1390	20 do	pek	1600	42
387		1393	17 do	pek sou	1173	39
388		1396	36 hf cb	dust	2880	32
389	Castlereagh	1399	29 ch	bro pek	2900	46
390		1402	27 do	or pek	2295	42
391		1405	20 do	pek	1600	38
398	Weyungawatte	1426	28 hf ch	bro or pek	1540	38
399		1429	35 ch	bro pek	3150	35
400		1432	23 do	pek	1955	33
403	C B	1441	19 ch	bro pek	1995	34
404		1444	19 do	pek	1900	29
405	Mawiligangawatte	1447	19 hf ch	bro or pek	1045	38 bid
406		1450	14 ch	or pek	1078	36
407		1453	55 do	bro pek	5225	34
408		1456	49 do	pek sou	3430	32
409	Maragalla	1459	10 ch	fans	1300	32
413	Torwood	1471	40 ch	bro pek	3600	37
414		1474	21 do	pek	1680	34
415		1477	16 do	pek sou	1248	33
425	Weyungawatte	1507	24 bf-cb	bro or pek	1440	37
426		1510	23 ch	bro pek	2185	34
427		1513	23 do	pek	1955	33
430	Halwatura	1522	54 do	bro pek	4860	37
431		1525	66 do	or pek	5940	35
432		1528	57 do	pek	4560	35
433		1531	44 do	pek sou	3520	34
435	Chesterford	1537	37 do	bro pek	3700	38
436		1540	26 do	pek	2600	36
437		1543	20 do	pek sou	2000	34
438	Geragama	1546	14 hf-ch	bro or pek	770	36
439		1549	10 ch	pek	900	33
440	Waratenne	1552	18 hf-ch	bro or pek	990	37
441		1555	9 ch	bro pek	765	35
442		1558	12 do	pek	1020	32
443	Geragama	1561	11 ch	bro pek	935	35
444		1564	12 do	pek	1020	33
445	Angramally	1567	13 do	bro pek	1326	38
446		1570	12 do	pek	1020	40

Lot.		Box.	Pkgs.	Name.	lb.	c.
450	Stamford Hill	1582	25 hf-ch	bro pek	1500	46
451		1585	19 do	or pek	855	63
452		1588	25 ch	pek	2250	41
455	Penrhos	1597	32 hf-ch	bro or pek	1693	46
456		1600	29 do	or pek	1305	41
457		1603	47 ch	pek	3995	37
461	Cooroondoo-watte	1615	45 bf-ch	bro pek	2370	38
462		1618	54 do	pek	2780	35
463		1621	45 do	pek sou	2205	34
468	Kakiriskande	1626	12 ch	pek	1140	34
471	Gingranoya	1645	11 hf-cb	dust	1015	26
472	Forest Creek	1648	21 ch	bro or pek	2310	61
473		1651	25 do	bro pek	2750	47
474		1654	24 do	or pek	2460	44
475		1657	35 do	pek No. 1	3150	41
476		1660	35 do	pek No. 2	3500	40
488	Meemorakande	1696	6 do	dust	900	26
490	Ugieside	1702	11 do	bro mix	1100	27
491	Woodend	1705	20 do	bro pek	2000	35
492		1708	36 do	pek	3240	33
493		1711	10 do	pek sou	800	32
495	K P W	1717	36 hf-ch	bro or pek	1980	37
496		1720	30 do	bro pek	1500	35
497		1723	69 do	pek	3450	35
498		1726	23 do	pek sou	1035	32
500	Parsloes	1732	38 ch	bro pek	3800	37
501		1735	26 do	pek	2340	35
503	M	1741	10 do	bro pek	910	37
505	R C W, in est. mark	1747	15 do	bro or pek	1500	36 bid
506		1750	12 do	or pek	1080	37 bid
507	Bandarawela	1753	42 do	bro or pek	4200	40 bid
508		1756	16 do	pek	1360	37 bid
509		1759	7 do	pek sou	700	35 bid
516	Devonford	1780	46 hf-cb	bro or pek	2530	64 bid
517		1783	14 ch	pek	1190	50
524	Erlsmere	1804	15 do	bro pek	1500	38
525		1807	13 do	pek	1079	37
528	Gallawatte	1816	18 ch	bro pek	1710	36
529		1819	21 do	pek	1785	33
530	Gonapatiya	1822	17 bf-cb	bro pek	816	55
531		1825	22 do	or pek	968	49
532		1828	28 do	pek	1260	40
535	Dorankande	1837	14 ch	bro pek	1400	35
538		1846	13 do	pek sou	1170	32
539	Clyde	1849	47 do	bro pek	4465	36 bid
540		1852	14 do	bro or pek	1540	36
541		1855	32 do	pek	2880	35
542		1858	12 do	pek sou	1080	33
544	Pine Hill	1864	18 hf-ch	bro or pek	1044	47
545		1867	25 do	or pek	1400	40
546		1870	26 cb	pek	1950	37
548	H G M	1876	10 do	bro or pek	850	48
549		1879	21 do	bro pek	2100	35
550		1882	21 do	pek	1785	36
551		1885	10 do	pek sou	850	34
552		1888	8 do	bro pk fans	720	33
554	Bandaraeliya	1894	70 hf-ch	or pek	3646	39
555		1897	55 do	bro or pek	3410	37 bid
556		1900	28 cb	pek	2296	36
557		1903	14 do	pek sou	1120	33
558		1906	82 hf-ch	or pek	4264	39
559		1909	28 do	bro or pek	1736	38 bid
560		1912	20 ch	pek	1640	36
561		1915	20 do	pek sou	1600	34
562	Amoragalla	1918	78 hf-ch	or pek	3744	37
563		1921	58 do	bro or pek	3480	35
564		1924	35 ch	pek	2800	34
565		1927	38 do	pek sou	3040	32
566	Beaumont	1930	9 do	bro pek	900	36
567		1933	10 do	or pek	920	34
568		1936	8 do	pek	768	33
570	V O A	1942	15 do	bro tea	1650	24
571	Beaumont	1945	23 do	bro pek	2300	35
572		1948	41 do	or pek	3690	34
575	B D W	1957	53 cb	bro pek	5035	31
576		1960	7 do	pek fans	700	31
577		1963	7 do	dust	700	withd'n
578	Ascot	1966	54 do	bro pek	4860	34
579		1969	55 do	bro pek	4950	34
582	Malvern	1978	27 hf-ch	bro pek	1485	43
583		1981	24 do	pek	1680	37
584		1984	9 do	dust	720	27
585	Kitulgala	1987	18 do	or pek	1080	37
587		1993	21 do	pek	1575	34
590	Glendon	2002	33 do	bro pek	3465	37
591		2005	30 do	pek	2550	35
592		2008	22 do	pek sou	1760	33
593	G	2011	11 do	sou	935	32
595	Holton	2017	24 do	bro pek	2280	35
596		2020	19 do	pek	1520	34
597		2023	11 do	pek sou	880	32
606	O H S	2050	7 do	bro pek	700	32
607		2053	8 do	pek	790	31
624	Knavesmire	2104	23 do	bro pek	2185	36
625		2107	23 do	pek	1955	35
626		2110	16 do	pek	1200	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
628	Maha Uva	2116	19 bf-ch	bro or pek	1140	38 bid
629		2119	13 do	or pek	728	37 bid
630		2122	14 ch	pek	1260	38
631		2125	11 do	pek sou	880	34
635	Erracht	2137	12 do	bro or pek	1092	36
636		2140	33 do	bro pek	2475	36
637		2143	39 do	pek	2925	34
638		2146	13 do	pek sou	1040	32
639		2140	18 do	bro pk fans	1800	33
642	Springwood	2158	10 do	congou	800	30
644	Arapolakande	2164	74 do	bro pek	6660	40
645		2167	44 do	pek	3520	35
648	Mawiliganga-watte	2176	13 hf-ch	bro or pek	715	39
649		2179	24 do	or pek	1080	36
650		2182	54 do	bro pek	4860	34
651		2185	49 do	pek sou	3528	32
653		2191	9 do	dust	810	26
656	Strathspey	2200	11 ch	or pek	1100	47
657		2203	16 do	pek	1568	42
658		2206	10 do	pek sou	900	39
662	Amblangoda	2218	22 do	bro pek	2200	38
663		2221	15 do	pek	1350	36
664		2224	10 do	pek sou	900	34
666	Hopton	2230	28 do	bro pek	2800	37 bid
667		2233	20 do	pek	1800	36
668		2236	12 do	pek sou	1080	33
670		2242	21 do	bro pek	2100	37
671		2245	19 do	pek	1710	36
672		2248	12 do	pek sou	1080	33
674	Pine Hill	4	20 hf-ch	bro or pek	1160	48
675		7	52 do	or pek	2912	40
676		10	40 do	pek	3000	36
678	Palmerston	16	21 do	bro or pek	1113	53
679		19	15 ch	pek	1275	42
680	St. Heliers	22	13 hf-ch	bro or pek	715	38
681		25	25 do	bro pek	1375	36
682		28	16 do	pek	1440	35
683		31	15 do	pek sou	1425	33
684	Theydon Bois	34	7 cb	bro pek	700	37
685		37	9 do	pek	720	36
686		40	9 do	pek sou	765	33
687	Chesterford	43	40 do	bro pek	4000	38
688		46	47 do	pek	4700	35
689		49	26 do	pek sou	2600	34
690	Halwatura	52	29 do	sou	2030	32
691	Kelburne	55	10 do	fans	1000	26
693	Rajawatte	61	10 hf ch	dust	800	26
694	L B K	64	11 ch	red leaf	1100	24
696	Tunisgala	70	21 do	pek	1680	34
697		73	11 do	pek sou	880	33
698		76	48 hf-ch	bro pek	2400	35
699	St. Edwards	79	14 do	bro or pek	868	34
705	Nakiadeniya	97	12 ch	br pk No. 1	1080	36
706		100	17 do	br pk No. 2	1615	37
707		103	13 do	pek	1040	36
708	Munukattia, Ceylon in est. mark	106	22 bf-ch	or pek	1100	43
709		109	42 do	bro pek	2520	38
710		112	20 ch	pek	1600	37
711		115	10 do	pek sou	750	34
719	Mousakella	139	27 do	bro or pek	2700	36 bid
720	Geragama	142	13 hf-ch	bro or pek	715	35
721		145	10 ch	bro pek	850	36
722		148	10 do	pek	850	33
723	Waratenne	151	12 do	bro pek	1020	35
724		154	22 do	pek	1870	33
725	Yellatenne	157	18 hf-cb	bro or pek	1080	36 bid
726		160	23 cb	bro or pek	1380	35 bid
728		166	17 bf-ch	or pek	969	37 bid
731	Vogan	175	50 ch	bro pek	4750	37
732		178	40 do	pek	3400	35
736		190	18 do	or pek	1530	37
737		193	32 do	bro pek	3200	38
738		196	40 do	pek	3400	35
742	Nabalma	208	19 do	sou	1862	30
746	I in est. mark	220	29 hf-ch	br pk dust	1740	33
747	Carfax	223	15 ch	bro or pek	1500	49
748		226	17 do	or pek	1530	48
749		229	16 do	pek	1520	44
750	Ruanwella	232	43 do	or pek	3655	36
751		2251	16 do	bro pek	1600	35
752		2254	30 do	pek	2700	34
753		2257	12 do	pek sou	1080	32
761	Kilkenny	2281	24 do	bro pek	1272	34
762		2284	30 do	pek	2340	34
763		2287	28 do	pek sou	1988	32
764	Massena	2290	66 bf-ch	bro pek	3300	36
765		2293	26 do	pek	1300	34
766		2296	17 do	pek sou	850	32
769	Nonpareil	2305	22 do	bro pek	1226	44 bid
770		2308	15 do	pek	735	40
771		2311	17 do	pek sou	737	35
774	Dunkeld	2320	70 hf-ch	bro or pek	4200	40 bid
775		2323	19 ch	or pek	1805	42
776		2326	15 do	pek	1350	39

[Mr. E. John.—348,374 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
12	Harrisland	927	10 ch	bro pek	970	36
13		930	9 do	pekoe	720	36
14		933	11 do	pek sou	880	34
16	Mount Everest	939	28 hf ch	bro or pek	1540	71
17		942	30 do	or pek	1500	50
18		945	29 ch	pekoe	2900	42
19		948	15 do	pek sou	1350	39
20	Akkara Totum	951	12 do	bro pek	1080	30
21		954	9 do	pekoe	810	28
25	Bittacy	966	41 do	bro pek	4100	35 bid
26		969	34 do	pekoe	2720	38
27	Kandaloya	972	25 hf-ch	bro pek	1125	38 bid
28		975	23 do	or pek	920	39
29		978	70 do	pekoe	2800	36
31	Gonavy	984	45 do	bro pek	2250	40
32		987	13 ch	pekoe	975	37
34	Coslande	993	20 do	bro pek	1100	37
35		996	12 do	pekoe	1080	35
39	Agra Ouvah	8	36 hf-ch	bro or pek No. 1	2160	50
40		11	32 do	bro or pek No. 2	1824	45
41		14	14 ch	or pek	1288	43
42		17	8 do	pekoe	720	39
43	Glasgow	20	37 do	bro or pek	2220	51
44		23	32 do	bro pek	2560	44 bid
45		26	19 do	or pek	1235	42
46		29	18 do	pekoe	1800	39
47	Callander	32	36 hf-ch	bro or pek	2160	38 bid
48		35	18 do	or pek	1026	40
53	Ben Nevis	50	13 ch	bro pek	1404	43 bid
54		53	9 do	or pek	765	52
55		56	25 do	pekoe	2250	41
58	Agra Ouvah	65	38 hf-ch	bro or pek No. 1	2280	49
59		68	33 do	bro or pek No. 2	1881	44 bid
60		71	15 ch	or pek	1380	43
61		74	10 do	pekoe	900	40
62	Brownlow	77	28 hf-ch	bro or pek	1624	45
63		80	19 ch	or pek	1843	42
64		83	17 do	pekoe	1479	39
65	Yapame	86	25 do	bro pek	2500	37 bid
66		89	13 do	pekoe	1300	37
67		92	8 do	pek sou	800	33
73	B K	110	19 hf-ch	dust	1824	29
74	Templestowe	113	24 ch	bro or pek	2400	42 bid
75		116	20 do	or pek	1800	42
76		119	24 do	pekoe	2040	39
77	Glentilt	122	43 do	bro pek	4300	39 bid
78		125	17 do	pekoe	1700	37
79	Koslanda	128	20 hf-ch	bro pek	1100	36 bid
80		131	12 ch	pekoe	1080	34
84	Mocha	143	17 do	bro or pek	1700	55 bid
85		146	14 do	or pek	1330	51
86		149	15 do	pekoe	1350	45
87		152	12 hf-ch	fans	960	30
88	Eila	155	63 ch	bro pek	5355	36
89		158	42 do	pekoe	3570	34
90		161	30 do	pek sou	2400	32
91		164	27 hf-ch	dust	2160	26
92	Glentilt	167	35 ch	bro pek	3500	40 bid
93		170	15 do	pekoe	1500	37
96	Woodstock	179	20 do	bro pek	2000	35 bid
97		182	16 do	pekoe	1440	33
98	Bellongalla	185	44 hf-ch	bro pek	2464	33
99		188	31 ch	pekoe	2480	32
100		191	14 do	pek sou	840	30
104	Ottery	203	34 do	bro or pek	3400	37 bid
105		206	12 do	or pek	1080	36 bid
106		209	11 do	pekoe	1045	33
108	Sinna Dua	215	31 hf-ch	bro pek	1860	35 bid
109		218	21 ch	pekoe	1680	34
110		221	15 do	pek sou	1125	32
111	Eadella	224	21 do	bro or pek	2100	36
112		227	20 do	bro pek	2000	34 bid
113		230	33 do	pekoe	3300	34
114		233	8 do	pek sou	720	32
115	Gampai	236	52 hf-ch	or pek	2496	34 bid
116		239	30 do	bro or pek	1800	36 bid
117		242	21 ch	pekoe	1638	34
118		245	28 do	pek sou	2240	33
123	Mahanilu	260	41 hf-ch	or pek	2376	42
124		263	20 do	bro or pek	1240	37 bid
125		266	14 ch	pekoe	1330	40
126		269	8 do	pek sou	760	36
127	Galella	272	12 do	bro pek	1200	38 bid
128		275	10 do	pekoe	1000	36
130	Glassaugh	281	20 do	or pek	1060	63
131		284	21 hf-ch	bro or pek	1560	48 bid
132		287	19 ch	pekoe	1805	44
133	Brownlow	290	29 hf-ch	bro or pek	1711	47
134		293	20 ch	or pek	1960	42
135		296	35 do	pekoe	3080	39
142	Kotuagedera	317	41 ch	bro pek	4100	34
143		320	17 do	pekoe	1615	32
146	Dickapittia	329	34 do	bro pek	3400	36
147		332	45 do	pekoe	4500	36
148	Choughleigh	335	7 do	bro pek	700	37
150	Glassaugh	341	21 hf-ch	or pek	1113	63
151		344	27 do	bro or pek	1755	49
152		347	21 ch	pekoe	1995	45
155	H	356	8 do	bro mix	800	25
156	Birnam	359	30 hf-ch	pek sou	1890	36
157	Gangawatte	362	21 ch	or pek	1995	40
158		365	30 do	pekoe	2700	37
159	HS, in est. mark	368	9 do	bro mix	900	21
160	Westhall	371	15 hf ch	dust	1350	24
161		374	10 ch	bro pek	1000	23
166	Claremont	389	20 do	bro or pek	2000	36
167		392	16 do	pekoe	1440	35
168		395	9 do	pek sou	765	33
171	Maryland	404	7 do	bro pek	700	33
172		407	8 do	pekoe	760	33
178	Maskeliya	425	17 hf-ch	bro or pek	850	52
179		428	17 ch	or pek	1500	40
180		431	15 do	pekoe	1350	38
184	Orangefield	443	10 do	bro pek	1000	32
185		446	12 do	pekoe	1140	30
189	Ferndale	458	12 do	or pek	1080	39 bid
190		461	13 do	pek sou	1170	34
191		464	26 do	pekoe	2340	37
192	Murraythwaite	467	30 do	bro pek	2850	36
193		470	30 do	pekoe	2550	34
194	Morahela	473	34 do	bro pek	3366	34 bid
195		476	27 do	bro pek	2673	34 bid
196		479	23 do	or pek	2208	35
197		482	12 do	or pek	1152	35
198		485	13 do	pekoe	1222	34
203	Yakka	500	19 do	bro or pek	2052	36
204		503	19 do	pekoe	1710	36
205		506	37 do	pek sou	3182	34
206		509	10 do	sou	800	32
209	Poilakande	518	25 do	bro pek	2500	34
210	Laleham	521	30 do	pek sou	3000	25 bid
219	Agra Ouvah	548	58 hf-ch	bro or pek No. 2	3480	48 bid
220		551	50 do	bro or pek No. 1	2850	43 bid
221		554	22 ch	or pek	2024	43
222		557	14 do	pekoe	1260	40
223	Rondura	560	12 do	or pek	1080	41
224		563	40 do	bro pek	4000	35
225		566	43 do	pekoe	3870	34
226		569	16 do	pek sou	1410	32
228	Agra Ouvah	575	56 hf-ch	bro or pek No. 1	3360	48 bid
229		578	50 do	bro or pek No. 2	2850	44 bid
230		581	21 ch	or pek	1911	43
231		584	13 do	pekoe	1170	40
233		590	30 hf-ch	pek fans	2400	34
243	Bellongalla	620	45 do	bro pek	2520	33
244		623	20 ch	pekoe	1600	31
246	Sudugenga	629	12 do	or pek	1080	39
247		632	13 hf-ch	bro or pek	780	49
248		635	13 ch	pek sou	1105	35
251	Chapelton	644	8 hf-ch	dust	720	27
252		647	11 ch	bro mix	880	29
264	Ottery	683	30 do	bro or pek	3000	37 bid
265		686	10 do	or pek	900	39
266		689	10 do	pekoe	950	36
268	Mount Temple	695	29 hf-ch	bro pek	1537	34
269		698	43 ch	pekoe	3225	33

[Messrs. Somerville & Co.—529,029 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
2	Pindenioya	748	11 ch	bro or pek	993	34 bid
3		751	38 do	unas	3120	33
4		754	15 do	pek sou	1278	31
7	Jak Tree Hill	763	22 hf-ch	bro pek	1100	36 bid
8		766	34 do	pek	1530	34
12	Corfu	778	21 hf-ch	bro pek	1155	37 bid
13		781	44 do	pek	2200	37
14		784	16 do	pek sou	720	34
19	Dikmukalana	799	24 hf-ch	bro pek	1320	38
20		802	23 do	or pek	1150	38
21		805	23 do	pek	1150	34
22		808	19 do	pek sou	912	32
27	Glen Morgan Nilgris	823	8 ch	bro or pek	800	45 bid
28		826	31 do	or pek	2480	40
29		829	14 do	pek	1330	38
30	Glen Morgan Nilgris	832	6 ch	bro or pek fans	750	34
31	Nyanza	835	13 ch	bro pek	1300	39 bid
		838	12 do	or pek	1140	39 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
33		841	16 ch	pek	1520	36
34		844	9 do	pek sou	810	33
36	Kurulugalla	850	20 do	bro pek	2000	33 bid
37		853	12 do	pek	1080	32
42	Theberton	868	18 ch	bro or pek	1800	34 bid
43		871	34 do	pek	3060	35
50	Yspa	892	23 ch	pek sou	1955	34
51		895	20 hf-ch	dust	1700	27
57	Polduwa	913	10 ch	bro pek	1010	33
59	Meetiagoda	919	16 ch	bro pek	1600	33
64	Hanagama	934	27 ch	bro pek	2700	35
65		937	28 do	pek	2660	33
66		940	13 do	pek sou	1170	31
72	Dryburg	958	16 hf-ch	bro or pek	960	35 bid
73		961	10 ch	or pek	930	38
74		964	23 do	pek	2132	34
75		967	13 do	pek sou	910	33
77	Daluk Oya	973	14 hf-ch	bro or pek	840	36 bid
78		976	17 do	or pek	935	37
79		979	28 do	pek	1530	34
83	F F, in estate mark	991	15 hf-ch	bro pek	825	33
90	Kirrimettia	13	12 hf-ch 1 ch	pek	1265	29
95	Hangranoya	28	35 hf-ch	bro pek	1750	37
97		34	14 ch	pek	980	35
99	Narangoda	40	48 ch	bro pek	4800	34
100		43	27 do	pek	2565	33
101		46	16 do	pek sou	1440	31
102	Arduthie	49	22 do	bro pek	1100	37
103		52	29 hf ch	pek	1305	35
107	Glenalmond	64	12 ch	bro pek	1140	35
109		70	10 do	pek sou	800	32 bid
116	Carney	91	37 hf-ch	bro pek	1850	36
117		94	42 do	pek	1890	34
118		97	27 do	pek sou	1350	31
121	Warakamure	106	66 ch	bro pek	6600	34
122		109	38 do	pek	3610	32
123		112	20 hf-ch	pek sou	1800	30
124	Aberfoyle	115	90 hf-ch	bro pek	4500	36
125		118	19 do	bro or pek	1045	34
126		121	24 ch	pek	2160	36
127		124	17 do	pek sou	1615	33
130	Kelani	133	55 ch	bro pek	4400	36 bid
131		136	47 do	bro or pek	4700	36 bid
132		139	35 do	pek	2975	35
133		142	24 ch	pek sou	2160	32
134		145	12 do	dust	1500	26
135	Attiville	148	10 ch	bro pek	1008	32
126		151	15 do	pek	1360	32
137		154	8 do	pek sou	800	28 bid
140	Lower Dickoya	163	22 hf-ch	bro or pek	1232	35
141	K T G	166	31 ch	pek sou	2480	23
144	T H A De S	175	13 ch	bro pek	1303	32
145		178	15 do	pek	1425	30 bid
148	Clova	187	14 hf-ch	pek	700	33
149		190	22 do	pek sou	990	30
150	Owilikande	193	20 ch	bro pek	2000	34
151		196	12 do	pek	1140	33
153	Rothes	202	16 hf-ch	bro or pek	960	50
154		205	17 do	or pek	850	41
155		208	18 do	pek	810	37
158	R, in estate mark	217	22 hf-ch	pek sou	990	32
162	Ossington	229	10 ch	bro pek	1000	34
163	"	232	14 do	pek	1400	33
167	Warakamure B	244	13 ch	bro or pek	1430	34
168		247	24 do	bro pek	2400	33
169		250	22 do	pek	2090	32
170		253	17 do	pek sou	1530	30
171	Ladysmith	256	51 hf-ch	bro pek	2550	34 bid
172		259	44 ch	pek	3300	33 bid
173		262	21 do	pek sou	1491	32
174		265	19 hf-ch	pek fans	1235	31
175	Stockholm	268	50 ch	bro pek	5000	40 bid
176		271	31 do	pek	2635	39 bid
179	N	280	37 hf-ch	bro pek	2035	37
180		283	58 do	pek	2900	36
183		292	8 ch	bro mix No 1	720	23
185	Chetnole	298	23 ch	bro or pek	2300	36 bid
186		301	14 do	bro pek	1400	34 bid
187		304	30 do	pek	2850	34 bid
188		307	20 do	pek sou	1800	31 bid
193	Maddagedera	322	34 ch	bro pek	3400	34 bid
194		325	52 do	or pek	5200	34
195		328	28 do	pek	2800	32
196		331	20 do	pek sou	2000	31
197	Hanagama	334	26 ch	bro pek	2600	32
198		337	17 do	bro mix	1700	26
199		340	10 hf-ch	dust	900	24 bid
200	Horagoda	343	8 ch	bro or pek	800	34 bid
201		346	9 do	or pek	765	36 bid
202		349	14 do	pek	1260	33 bid
205	Kosgama	358	12 ch	bro pek	1200	35
206		361	9 do	pek	720	33
211	Kirrekelle	376	19 hf-ch	bro or pek	1064	67
212		379	31 do	or pek	1736	42
213		382	23 hf-ch	pek	2070	40
215	P T N, in estate mark	388	23 do	sou	1150	24 bid
218	Bargany	397	16 hf-ch	bro or pek	1056	43 bid
223	R K P	517	10 ch	bro pek	800	35
225		523	10 do	pek	850	33
226		526	8 do	pek sou	720	32
228	Mary Hill	532	16 hf-ch	bro pek	1040	35
229		535	13 do	pek	780	34
232	Dikmukalana	544	36 hf-ch	bro pek fans	1980	33
233		547	26 do	pek	1300	34
234		550	20 do	pek sou	1000	33
236	Monte Christo	556	38 ch	bro pek	3800	38
237	Annandale	559	18 hf-ch	bro or pek	972	59
238		562	16 do	or pek	848	46
239		565	17 do	pek	799	42
240		585	17 do	pek sou	901	38
241	Rayigam	571	42 ch	bro pek	4200	36
242		574	28 do	or pek	2296	33
243		577	27 do	pek	2268	33
247	New Valley	589	22 ch	bro or pek	2200	47
248		592	17 do	or pen	1530	41
249		595	26 do	pek	2600	37
250		508	15 do	pek sou	1350	37
252	N I T	604	13 ch	unas No. 2	1170	26
253	Ravano	607	50 hf-ch	bro pek	2950	36
254		610	48 do	pek	2160	34 bid
255		613	25 do	pek sou	1125	33
261	H J S	631	12 hf-ch	pek sou	720	33
262	Havilland	634	8 ch	pek fans	800	30
263		637	12 do	sou	1080	26
266	Glenalla	646	6 ch	dust	870	25
269	Forest Hill	655	24 ch	bro pek	2040	34
270		658	27 do	pek	2133	33
274	Ranasingha-patna	670	84 hf-ch	or pek	4200	38
275		673	53 do	bro or pek	3286	36 bid
276		676	25 ch	pek	2125	35 bid
277		679	40 do	pek sou	3200	33 bid
278	Deniyaya	682	54 ch	bro pek	5400	35
279	Selwawatte	685	18 ch	bro pek	1710	35
280	Gwernet	688	19 ch	bro pek	1900	36 bid
281		691	12 do	pek	1080	36
288		697	7 do	bro or pek	770	35 bid
286	Harangalla	706	8 ch	bro or pek	800	37 bid
287		709	16 do	or pek	1440	37 bid
288		712	42 do	pek	3360	37
289		715	9 do	bro or pek	900	36 bid
290		718	11 do	or pek	990	37 bid
291		721	39 do	pek	3120	37
292		724	7 do	bro pek fans	700	34
293	Bollagalla	727	35 ch	bro pek	3500	35 bid
294		730	23 do	pek	1840	35
295		733	12 do	pek sou	960	33
303	Orion	413	47 ch	bro pek	4700	36
304		416	24 do	pek	2280	36
305		449	22 do	pek sou	1980	33
306	Depedene	422	56 hf ch	bro pek	3360	34
307		425	55 do	pek	2750	34
308		428	44 do	pek sou	2200	32
313	Hopugasmulla	443	26 ch	bro pek	2860	33 bid
314		446	24 ch	pek	2280	32
315		442	11 do	sou	990	30
316		452	11 do	unas	1100	29
317		455	8 do	dust	1160	25
320	Roscommon	464	30 ch 1 hf-ch	bro pek sou	3069	26 bid
325	Elchico	479	63 hf-ch	bro pek	3465	34
326		482	39 do	pek	1950	33
327		485	20 do	dust	1700	25
328	Doonevale	488	27 ch	bro pek	2241	34
329		491	33 do	pek	2640	23
333	K T G	1003	8 ch	dust	720	23 bid
334	Agarsland	1006	26 hf-ch	bro or pek	1300	35 bid
335		1009	29 do	bro pek	1450	36 bid
336		1012	44 hf-ch	pek	2200	33 bid
337		1015	52 do	pek sou	2600	31
338		1018	24 do	bro pek fans	1200	out
343	Labugama	1033	43 hf-ch	bro pek	2150	36
344		1036	20 ch	pek	1900	33
345		1039	12 do	pek sou	1020	32
346	Eilandhu	1042	12 ch	bro pek	1200	83
347		1045	13 do	pek	1235	32
349	S S, in estate mark	1051	19 ch	bro pek	1900	34
350		1054	38 do	pek	3610	32
351		1057	11 do	pek sou	990	30
355	Kurunegella est. Co., Lt.	1069	16 ch	bro pek	1600	36
356		1072	12 do	pek	1200	34
359	Paragaha-kande	1081	9 ch	bro pek	900	34
360		1084	14 do	pek	1190	32
364	Ravenscraig	1096	14 ch	bro pek	1260	36 bid
365		1099	16 do	or pek	1360	36
366		1102	17 do	pek	1530	34
367		1105	13 hf-ch	fans	1040	28

Lot.		Box.	Pkgs.	Name.	lb.	c.
380	Doragalla	1144	14 ch	bro or pek	1400	39 bid
381		1147	15 do	bro pek	1500	36
382		1150	45 do	pek	3825	35
384		1 56	9 do	bro mix	10?0	25
385	Citrus	1159	26 ch	bro pe	2610	34
387		1165	29 do	pek	2060	32
388		1168	7 do	pek	7?0	30
392	Ambalawa	1180	59 hf ch 1 box	bro pek	2972	33
393		1183	48 hf-ch	pek	2059	32
394		1186	26 do	pek sou	1040	30
395		1189	16 do	pek fans	960	29
412	Mahgatenna	1240	10 ch	pek sou	974	30
418	Auburn	1258	20 ch	bro pek	2000	34
419		1261	16 do	pek	1?60	34
420		1264	13 do	pek sou	1011	32
442	G B	1310	30 hf-ch	dust	1500	26
443	I P	1333	20 ch	pek sou	1700	32
445		1339	20 hf-ch	dust	1660	6
446	Salawe	1342	26 ch	bro pek	2360	35
447		1345	16 do	pek	1600	34
448		1348	17 do	pek sou	1615	32
451	Siriniwasa	1357	22 ch	bro pek	2200	38
452		1360	24 do	pek	2280	34
453		1363	19 do	pek sou	1710	32
456	Ferriby	1372	42 hf-ch	bro pek	1890	34
457		1375	31 ch	pek	2?80	33
459		1378	22 do	pek sou	1540	31
462	Honiton	1390	4? hf-ch	bro pek	2150	35
463		1393	23 ch	pek	1955	33
464		1396	22 do	pek sou	1760	32

SMALL LOTS.

E. Benhsm & Co.

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Halloowella	1	3 ch	or pek	285	32
2		4	3 do	pek	210	31
3		7	4 do	pek sou	320	30
4		10	5 do	sou	390	29
9	Hornsey	25	4 hf-ch	bro or pek fan	260	36
10		28	3 ch	fans	270	30
17	New Rasagalla	49	3 ch	sou	255	32
19		55	3 do	dust	405	25
25	C	73	2 ch	bro mixed	240	14
31	Hapugastenne	91	11 hf-ch	bro pek	550	35
34		100	2 do	bro pek fans	130	33
35		103	3 do	dust	240	26

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
2	B, in estate mark	238	7 ch	sou	630	25
4	M'Golla	244	3 ch	sou	240	31
6		250	2 do	red leaf fan	190	21
7		253	1 do	do	95	20
10	Ketadola	262	7 ch	pek sou	660	30
11		265	1 do	fans	1?0	25
12		268	1 do	bro mix	92	22
14	Avoca	274	5 ch	bro pek fans	400	withd'n.
15	I K V	277	2 ch	bro mix	224	24
17	S G	283	7 ch	pek sou	644	30
18	Elfindale	286	5 do	bro pek	510	31
23	Wewawatte	301	1 ch	fans	70	26
24		304	1 hf-ch	bro mix	44	26
27	Hatton	313	6 ch	pek sou	480	36
30	Thedden	322	7 ch	pek sou	630	31
31		325	2 do	dust	300	29
32	Frogmore	328	11 hf-ch	or pek	440	46
35		337	1 do	dust	80	29
42	Shrubs Hill	358	7 ch	pek sou	630	33
43	W A	376	6 ch	pek	540	32
50		382	1 ch	bro mix	110	24
53	P A N, in est. mark	391	7 hf-ch	pek	350	33
54		394	5 do	pek sou	250	33
55		397	2 do	sou	100	31
56		400	2 do	dust	150	26
57		403	2 do	fans	100	30
58	Mahayaya	406	4 hf-ch	bro or pek	280	35
59		409	7 do	bro pek	413	36
60		412	10 do	pek	540	35
61		415	9 do	pek sou	477	32
62		418	2 do	sou	120	28
63		421	1 ch	dust	101	25
66	Galkanda	430	6 ch	pek sou	600	30
67		433	1 do	dust	120	23
68		436	1 do	pek fans	100	24
70	Kosgalla	442	8 hf-ch	or pek	400	37
71		451	4 do	bro pek	200	38
74		454	1 do	bro pek fan	70	26
76	Grace Land	460	2 do	bro or pek	110	43
77		463	10 hf-ch	bro pek	5?0	35
78		466	11 do	pek	550	31
79		469	12 do	pek sou	600	31
80		472	1 do	bro tea	60	28
81	Dambagastalawa	4?4	4 ch	pek sou	380	25
85		487	3 do	bro pek fans	240	28
88	W N P	496	3 ch	pek sou	270	32
89		499	3 hf-ch	bro pek fans	210	28
102	Glencorse	538	4 ch	bro tea	400	24
103		541	2 do	dust	336	25
118	T. Villa	556	4 ch 1 hf-ch	fans	514	25
122	Harrington	598	2 ch	pek	180	31
123		601	5 hf-ch	or pek fans	360	34
124		604	1 ch	dust	160	26
128	D B R	616	4 hf-ch	bro pek fans	240	3?
129		619	1 ch	pek sou	80	?5
130		622	1 hf-ch	dust	54	26
131	Lindapatna	625	6 ch	bro or pek	384	45
132		628	4 do	or pek	440	46
133		631	5 do	pek	475	38
134		634	1 do	pek son	100	34
141	Nillo Vally, O B E C in est. mark	655	2 ch	sou	140	32
142		658	2 do	fans	110	30
143		661	2 do	dust	20?	25
144	A	664	3 ch	pek dust	315	23
167	Erlsmere	733	9 hf ch	br or pek	531	41
171		745	1 ch	pek sou	88	35
172		748	1 hf-ch	dust	85	26
173	Ookoowatte	751	3 ch	pek fans	300	29
174		754	1 do	dust	100	25
182	Aigburth	778	5 hf-ch	fans	350	33
183		781	1 do	dust	90	26
184		784	2 do	congou	200	23
188	St. Leonards	796	2 ch	dust	190	25
189		799	5 do	bro mix	350	26
191	Agra Oya	814	4 ch	dust	320	30
204	G	844	2 ch	pek dust	230	24
209	P G A	859	2 ch	unas	156	29
216	D M, in estate mark	880	5 ch	pek	500	33
221	Ruanwella	895	8 do	dust	640	26
238	Maha Uva	946	1 hf-ch	pek fans	75	30
239		949	1 do	dust	90	26
240		952	1 do	congou	103	24
242	Rozella	958	8 do	dust	640	26
248	Polatagama	976	4 ch	dust	600	25
253	Gampaha	991	7 do	pek fans	665	27
255	Hayes	997	4 ch	dust	400	26
261	Clunes	1015	4 ch	dust	360	27
267	Hayes	1033	3 do	dust	390	27
280	B W D	1072	8 hf-ch	dust	600	26
281		1075	4 ch	unas	320	23
285	X	1087	3 ch	pek dust	345	24
289	Galapitakande	1099	6 ch	pek sou	600	32
290		1102	5 do	dust	375	30
296	Tonacombe	1120	7 ch	dust	630	23
305	Lynsted	1147	3 hf-ch	bro mix	132	24
318	Queensland	1186	1 do	bro pek dust	80	28
324	Tunisgalla	1204	8 hf-ch	dust	640	25
329	Knavesmire	1219	6 do	dust	480	26
331		1225	1 ch	bro tea	65	16
333	Telbedde	1231	11 hf-ch	or pek	550	36
343	Old Maddegama	1261	8 ch	pek sou	560	32
344		1264	5 do	sou	400	30
345		1267	6 hf-ch	pek fans	330	31
346		1270	5 do	fans	375	26
351	K P W	1285	2 hf-ch	dust	180	25
352		1288	2 do	bro mix	140	16
360	Irex	1312	3 ch	dust	300	24
361		1315	1 do	bro tea	62	24
362	A	1318	7 hf-ch	sou	350	29
369	Springwood	1339	4 ch	congou	320	31
370	S	1342	3 ch	bro pek	168	35
371		13 5	2 hf-ch	pek	94	33
374	Mansfield	1354	8 ch	pek sou	680	34
376	Rockside	1360	2 do	bro mix	180	26
381	Kincora	1375	4 ch	pek No. 2	380	33
382		1378	6 hf-ch	dust	480	26
392	Castlereagh	1408	4 ch	pek sou	320	35
393		1411	7 hf-ch	fans	490	32
394		1414	3 do	dust	240	25
395	Y	1417	4 ch	pek sou No. 1	320	29
396		1420	4 do	do No. 2	456	22
397		1423	2 hf-ch	red leaf	120	18
401	Weyungawatte	1435	3 ch	pek sou	255	33
402		1438	3 hf ch	dust	255	24
410	Maragalla	1462	3 ch	dust	400	24
411	Kumaradola	1465	2 do	dust	300	25
412		1468	1 do	fans	130	31

Lot.		Box.	Pkgs	Name.	lb	c,
416	Kabragalla	1480	9 hf-ch	bro tea	495	24
417		1483	3 do	dust	255	26
418	Mariawatte	1486	1 ch	pek	93	34
419	1 G A	1489	4 do	bro pek	403	34
420		1492	3 do	pek	272	33
421		1495	2 do	pek sou	181	31
422		1498	3 hf-ch	bro tea	257	23
423		1501	2 ch	red leaf	182	21
424	Dromoland	1504	2 do	red leaf	170	22
428	Weyungawatte	1516	4 do	pek sou	320	33
429		1519	4 hf-ch	dust	320	25
434	Warwick	1534	1 do	mixed	44	25
447	Angramally	1573	6 ch	pek sou	510	34
448		1576	1 do	bro mix	80	33
449		1579	2 hf-ch	dust	172	27
453	Stamford Hill	1591	8 ch	pek sou	680	36
454		1594	3 hf-ch	dust	255	27
458	Penrhos	1606	6 ch	pek sou	480	34
459		1609	3 hf-ch	pek dust	261	25
460	Dromoland	1612	1 ch	red leaf	75	24
464	Cooroondoowatte	1624	7 hf-ch	pek dust	582	28
465		1627	3 do	dust	268	24
466		1630	4 do	congou	205	30
467	Kakiriskande	1633	3 ch	bro pek	300	40
469		1639	2 do	pek sou	190	32
470	Gingranoya	1642	6 hf-ch	fans	480	32
477	Augusta	1663	3 ch	dust	450	25
478	Belgodde	1666	6 hf-ch	bro pek	300	35
479		1669	9 do	pek	450	33
480		1672	13 do	pek sou	650	31
481		1675	8 do	sou	400	30
482		1678	2 do	dust	120	25
483	Kotua	1681	2 ch	bro pek	200	36
484		1684	1 do	pek	200	33
485		1687	2 do	pek sou	100	31
486		1690	1 do	sou	90	30
487	Poengalla	1693	5 do	dust	450	25
489	Ugieside	1699	6 do	dust	450	25
494	Woodend	1714	2 do	dust	260	25
499	K P W	1729	2 hf-ch	dust	180	24
502	Parsloes	1738	7 ch	pek sou	560	32
510	B D W P	1762	1 ch	bro pek No. 2	90	24
511		1765	3 hf-ch	dust	245	25
512		1768	1 ch	mixed tea	80	28
513		1771	1 hf-ch	dust	75	25
514	B D W G	1774	6 do	dust	480	29
515	B F B	1777	4 do	unast	180	31
518	D F D	1786	4 do	bro pek	220	40
519		1789	2 ch	or pek	180	37
520		1792	7 do	pek sou	560	34
523	Erlsmere	1801	8 hf-ch	bro or pek	464	42
526		1810	3 ch	pek sou	258	34
527		1813	2 hf-ch	dust	160	25
533	Gonapatiya	1831	16 do	pek sou	688	38
534		1834	10 do	pek fans	500	28
536	Doranakande	1840	7 ch	pek	665	34
537		1843	4 do	pek No. 2	300	33
543	Clyde	1861	3 do	dust	400	25
547	Pine Hill	1873	5 do	pek sou	350	33
553	H G M	1891	3 do	dust	255	26
569	Beaumont	1939	2 hf-ch	fans	158	28
573		1951	8 do	fans	664	29
574	P G A	1954	7 ch	bro tea	630	31
580	Nella Oolla	1972	2 do	red leaf	150	20
581		1975	1 do	dust	156	25
586	Kitulgalla	1990	8 hf-ch	bro or pek	560	34
588		1996	3 do	pek sou	165	32
589		1999	2 ch	dust	240	26
594	G	2014	2 do	dust	270	25
598	Holton	2026	1 do	pek sou	62	32
599	B A	2029	5 do	red leaf	500	24
600		2032	3 do	dust	234	25
605	Ardross	2047	2 hf-ch	dust	180	24
608	O H S	2056	2 ch	pek sou	195	31
609		2059	4 do	fans	440	24
610		2062	1 do	red leaf	100	22
611	D G F	2065	1 do 1 hf-ch	bro pek	135	34
612		2068	2 ch	pek	140	33
613		2071	1 do	pek sou	78	32
614		2074	1 do	dust	68	26
615		2077	1 do	pek fans	55	30
616		2080	1 hf-ch	sou	35	27
617	Panmure	2083	6 ch	pek sou	660	34
618		2086	8 hf-ch	dust	680	26
619	Dunbar	2089	12 do	bro or pek	600	61
620		2092	11 do	or pek	539	46
621		2095	8 ch	pek	608	43
622	D B R	2098	3 hf-ch	bro pek fans	192	35
623		2101	2 ch	pek sou	122	36
637	Knavesmire	2113	3 hf-ch	dust	240	26
632	Maha Uva	2128	3 do	dust	255	25
663	K	2131	2 ch	dust	520	25
634		2134	1 do	pek sou	100	31
640	Erracht	2152	3 do	bro mix	204	27
641		2155	2 do	pek dust	334	24
643	Arapolakande	2161	4 ch	bro or pek	440	36
646		2170	7 do	pek sou	630	34
647		2173	2 do	dust	220	25
652	Mawaliganga-watte	2188	1 hf-ch	pek dust	75	25
654		2191	1 ch	fans	100	32
655	Strathspey	2197	6 do	bro or pek	622	64
659		2209	2 do	sou	194	34
660		2212	1 do	red leaf	88	26
661		2215	2 do	dust	246	26
665	Amblangoda	2227	3 do	dust	330	25
669	Hopton	2239	4 do	dust	440	26
673		1	3 do	dust	330	25
677	Pine Hill	13	8 hf-ch	pek sou	600	33
692	Pingarawa	58	2 ch	dust	200	25
695	P	67	2 do	pek sou	140	31
700	St. Edwards	82	8 hf-ch	bro pek	440	34
701		85	7 do	pek	392	33
702		88	5 do	pek sou	260	31
703		91	2 do	bro pek fans	80	33
704		94	2 do	dust	90	26
733	Vogan	181	4 ch	pek sou	320	32
734		184	7 hf-ch	dust	595	25
735		187	3 ch	bro pek fans	360	31
739		199	4 do	pek sou	320	32
740		202	7 hf-ch	dust	595	25
741		205	3 ch	bro pek fans	360	32
743	Nahalma	211	8 do	dust	616	25
754	Ruanwella	2260	6 do	dust	480	25
755	Allerton	2263	1 do	dust	120	24
760	Teevaloya	2278	3 do	dust	237	24
767	Massena	2299	3 hf-ch	fans	210	29
768		2302	1 do	dust	90	25
772	Nonpariel	2314	2 do	bro pek fans	102	34
773		2317	2 do	br pek dust	116	30

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Donside	745	5 hf-ch	dust	425	25
5	Pindenioya	757	2 ch	fans	277	28
6		760	1 do	dust	135	25
9	Jak Tree Hill	769	3 hf-ch	pek sou	120	31
10		772	4 do	fans	260	31
11		775	2 do	dust	160	25
15	Corfu	787	2 hf-ch	dust	140	26
16		790	9 do	bro pek fans	540	33
17	M S	793	4 ch	bro pek	400	32
18		796	4 do	pek	360	31
23	Aberfoyle	811	10 hf-ch	bro pek	500	32 bid
24		814	10 do	pek	500	33
25		817	10 do	pek sou	500	32
26	S L G	820	2 ch	red leaf	150	21
35	Nyanza	847	3 ch	dust	300	26
38	Kurulugalla	856	3 ch	pek sou	300	30
39	K G A, in estate mark	859	3 ch	bro tea	300	23
40		862	1 do	bro pek fans	130	26
41		865	1 do	dust	140	25
44	Theberton	874	3 ch	pek sou	270	32
45		877	1 do	fans	100	24
46	C F, in estate mark	880	4 ch	pek sou	360	33
47		883	5 do	sou	425	29
48	Allakolla	886	3 hf-ch	dust	300	24
52	L F	898	3 hf-ch	bro pek	143	3[illegible]
53		901	3 do	pek	143	31
54		904	3 do	pek sou	126	26
55		907	1 do	sou	62	18
56		910	1 do	dust	69	20
58	Polduwa	916	5 ch	pek	465	28
60	Meetiagoda	922	6 ch	pek	600	29
61		925	6 do	pek sou	600	28
62		928	1 do	con	95	24
63		931	2 do	dust	260	32
67	Hanagama	943	3 ch	sou	300	28
68		946	3 do	fans	300	29
69		949	3 do	dust	375	25
70	St. Leys	952	4 hf-ch	dust	328	26
71		955	2 ch	red leaf	204	24
76	Dryburgh	970	4 hf-ch	fans	300	32
80	Daluk Oya	982	8 hf-ch	pek sou	400	31
81		985	7 do	fans	406	29
82		988	4 do	dust	240	26
84	F F, in estate mark	994	9 hf-ch	pek	450	31
85		997	2 do	pek sou	90	29
86		1	1 do	dust	90	25
87		4	2 do	bro pek fans	130	30
88		7	1 do	bro mix	55	28
89	Kirrimettia	10	7 hf-ch	bro pek	420	32
91		16	4 ch 4 hf-ch	fans	595	24
92		19	1 ch	sou	95	25
93		22	1 do	dust	130	24
94	Hangranoya	25	42 boxes	flowery or pek	420	48

Lot.	Box.	Pkgs.	Name.	lb.	c.
96	31	10 hf-ch	or pek	400	37
98	37	5 ch	pek sou	350	33
104 Arduthie	55	11 hf ch	pek sou	495	31
105	58	2 do	dust	140	25
106 A	61	2 ch	pek dust	230	23 bid
108 Glenalmond	67	5 ch	pek	435	34
110	73	3 do	sou	206	30
111	76	3 do	fans	195	30
112	79	3 do	dust	210	25
113 G	82	3 ch	pek dust	345	23 bid
114 Clova	85	2 hf-ch	pek	80	31
115 X	88	1 ch	pek dust	115	23 bid
119 Carney	100	2 hf-ch	sou	110	28
120	103	2 do	dust	100	26
123 Aberfoyle	127	7 ch	s u	630	32
129	130	8 hf-ch	dust	400	25
138 Attivillo	157	5 ch	fans	524	26
139	160	3 do	bro mix	375	18
142 K T G	169	4 ch	fans	440	23
143	172	2 do	dust	260	22
146 T H A De S	181	4 ch	fans	400	24
147 Clova	184	13 hf ch	bro pek	650	34
152 Owilikande	199	6 ch	pek sou	540	30
156 Rothes	211	11 hf-ch	pek sou	440	34
157	214	2 do	dust	170	26
159 R, in estate mark	220	10 hf-ch	sou	400	30
160	223	1 do	dust	80	25
161	226	2 do	bro mix	90	24
164 Ossington	235	6 ch	pek sou	600	31
165	238	1 do	bro mix	125	27
166	241	1 do	dust	105	23
177 Stockholm	274	8 ch	pek sou	640	34 bid
178	277	6 hf-ch	dust	480	26
181 N	286	7 ch	pek sou	595	32
182	289	5 ch	dust	400	27
184	295	4 do	bro mix No 2	340	29
189 Chetnole	310	5 ch	sou	450	28
190	313	9 hf-ch	fans	585	27
191	316	6 ch	dust	510	25
192	319	9 bags	red reaf	553	withd n.
203 Horagoda	352	1 ch	dust	100	24
204	355	1 do	con	90	28
207 Kosgama	364	2 ch	pek sou	150	31
208	36	2 hf ch	pek fans	140	29
209	370	1 do	dust	66	25
210 Mousa Eliya	373	1 ch	fans	135	26
214 P T N, in estate mark	385	7 hf-ch	bro pek	392	26
216	391	4 do	fans	224	20 bid
217	394	1 do	dust	90	24
219 Bargany	505	5 ch	bro pek	525	36 bid
220	508	11 hf-ch	or pek	638	38 bid
221	511	6 ch	pek	570	34 bid
222	514	1 hf-ch	dust	100	24 bid
224 R K P	520	6 ch	bro or pek	600	35
227	529	2 do	dust	250	26
230 Mary Hill	538	9 hf-ch	pek sou	540	32
231	541	2 do	bro mix	180	24
235 Orion	553	2 ch	pek	175	33
244 Sangaly Tope	580	3 hf-ch	bro tea	150	27
245	583	5 do	pek dust	450	25
246	586	6 hf-ch	red reaf	540	25
251 N I T	601	3 ch	unas No. 1	330	29
256 Wewatenna	616	8 hf-ch	bro pek	480	33
257	619	4 do	pek	216	32
258	622	4 do	pek sou	200	31
259 H J S	625	8 hf-ch	bro pek	480	34
260	628	7 do	pek	420	33
264 Havilland	640	5 hf-ch	dust	400	25
265 Glenalla	643	1 ch	sou	90	28
267	649	1 do	fans	100	29
268 Forest Hill	652	11 hf ch	bro or pek	561	34 bid
271	661	8 ch	pek sou	600	31
272	664	7 hf ch	fans	483	27
273 F B	667	1 hf ch	unas	35	27
282 Gwernet	694	5 ch	pek sou	450	33
284	700	1 do	sou	90	30
285	703	2 do	dust	220	26
296 Bollagalla	736	2 hf ch	dust	180	24
297	739	3 ch	bro tea	320	24
309 Depedene	431	2 hf ch	bro mix	120	25
310	434	4 do	dust	340	26
311 N, in estate mark	437	2 ch	pek sou	180	27
312	440	7 hf ch	dust	585	23
318 M, in estate mark	458	2 ch	unas	195	27
		1 hf ch			
319	461	1 do	dust	60	25
324 Labuduwa	476	4 hf ch	pek	220	30 bid
330 Doonevale	494	3 ch	pek sou	255	27
331	497	3 hf ch	bro pek fans	180	31
332	1000	3 do	dust	240	25
339 Agarsland	1021	7 hf ch	pek fans	350	33
340	1024	3 ch	dust	355	5
		1 hf ch			

Lot.	Box.	Pkgs.	Name.	lb.	c.
341	1027	3 ch	red leaf	300	21
342	1030	1 do	unas	100	25
348 Hilandbu	1048	1 ch	bro tea	95	27
352 S S, in estate					28
mark	1060	3 ch	sou	255	27
353	1063	2 do	fans	184	25
354	1066	1 do	dust	155	31
357 Kurunegala Estates Co., Limited	1075	2 ch	pek sou	200	31
361 Paragahakande	1087	5 ch			
		1 hf ch	pek sou	600	29
362	1090	4 do	fans	360	27
363	1093	1 ch	red leaf	100	20
368 Labuduwa	1108	6 hf ch	bro pek	359	33
369	1111	3 do	pek	168	32
370	1114	9 do	pek sou	482	29
371	1117	1 do	bro mix	48	23
372	1120	1 do	congou	49	25
373	1123	1 do	fans	61	27
374 Danawakande	1126	5 hf ch	bro pek	270	35
375	1129	6 do	pek	300	33
376	1132	5 do	pek sou	250	31
377	1135	2 do	fans	112	30
378	1138	1 do	congou	43	29
379	1141	1 do	dust	75	25
383 Doragalla	1153	6 ch	pek sou	480	32
386 Ciurs	1162	4 ch	bro or pek	400	30
389	1171	2 do	bro tea	161	21
390 H A	1174	3 ch	fans	280	17 bid
391	1177	4 do	pek dust	600	24
396 San Cio	1192	3 hf ch	bro mix	141	21
397	1195	5 do	dust	310	23
398	1198	8 do	sou	386	27
410 Maligatenne	1234	3 ch	bro pek	278	31
411	1237	5 do	pek	440	30
413	1243	3 do	bro sou	267	22
414	1246	1 do	dust	120	20
415 P	1249	7 ch	unas	656	25
421 Auburn	1267	3 ch	fans	210	28
422	1270	4 do	dust	340	25
423	1273	2 ch	bro tea	140	25
439 D B G	1321	3 ch	bro mix	200	23
440	1324	6 hf ch	dust	408	25
441 G B	1327	9 hf ch	bro tea	400	27
444 I P	1336	1 ch	red leaf	82	21
449 Salawe	1351	3 ch	unas	324	30
450	1354	3 do	pek dust	480	25
454 Siriniwasa	1366	1 ch	sou	85	29
455	1369	3 do	dust	400	25
459 Ferriby	1381	6 do	sou	420	30
460	1384	11 hf ch	fans	550	30
461	1387	6 do	dust	450	25
465 Honiton	1399	2 ch	fans	200	30
466	1402	2 do	dust	280	25

[Mr. E. John.]

Lot.	Box.	Pkgs.	Name.	lb.	c.
1 A	891	2 ch	pek dust	220	24
2 Kahatapitiya	897	4 do	bro pek	162	38
3	900	1 hf ch	bro mix	46	28
4 P P P	903	3 ch	bro pek	315	34
5	906	3 do	pekoe	270	32
6	909	2 do	pek sou	180	31
7	912	1 do	dust	120	25
8 Vincit	915	3 do	bro pek	270	36
9	918	3 do	pek sou	270	30
10	921	2 do	bro pek fans	240	31
11	924	1 do	dust	160	24
15 Harrisland	936	1 hf-ch	dust	80	26
22 Akkara Totum	957	7 cb	pek sou	560	27
23	960	2 do	fans	200	27
24	963	1 do	bro mix	80	16
30 Kandaloya	981	10 hf-ch	pek sou	400	33
33 Gonavy	990	3 ch	pek sou	285	35
36 Coslande	999	3 do	pek sou	285	32
37	2	3 do	congou	255	30
38	5	3 do	fans	330	34
49 Callander	38	13 hf-ch	pekoe	689	36
50	41	2 do	pek sou	92	35
51	44	2 do	fans	150	33
52	47	2 do	dust	160	27
56 Ben Nevis	59	5 ch	pek sou	410	34
57	62	3 hf ch	dust	246	29
68 G	95	2 cb	pek dust	230	23
69 C	98	2 do			
		1 hf-ch	bro pek	294	24
70	101	2 ch	unas	193	20
71	104	3 hf-ch	pek fans	210	14
72	107	1 do	bro mix	68	12
81 Koslanda	134	3 ch	pek sou	285	34
82	137	3 do	congou	255	32
83	140	3 do	fans	330	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
94	W K	173	4 ch	pek sou	360	30
95		176	6 hf-ch	dust	420	26
101	Bellongalla	194	5 do	bro pek fans	350	31
102		197	4 do	dust	320	25
103	X	200	2 ch	pek dust	230	23
10	Ottery	212	2 do	dust	340	27
119	Wahagapitiya	248	4 do	bro pek	400	35 bid
120		251	4 do	pekoe	3-0	33
121		254	2 do	pek sou	164	32
122		257	1 do	dust	142	25
129	Galella	278	3 do	pek sou	270	33
136	Brownlow	299	9 hf-ch	bro pek fans	657	32
144	Kotuagedera	323	2 ch	pek sou	180	31
145		326	3 hf-ch	bro pek fans	210	31
149	Choughleigh	338	7 ch	pekoe	665	35
153	W H R	350	5 do	dust	500	26
154	Galella	353	3 do	sou	270	33
162	Oakwell	377	2 do	bro pek	236	35
163		380	2 do	pekoe	212	34
164		383	1 do	pek sou	103	33
169	Claremont	398	4 do	fans	400	28
170		401	6 do	pek dust	600	24
181	Maskeliya	434	4 do	pek sou	400	34
182		437	5 hf-ch	fans	300	34
186	Orangefield	449	2 ch	pek sou	190	29
187		452	2 do	pek fans	200	26
188		455	2 do	bro mix	170	23
199	Morahela	488	1 do	sou	93	31
200		491	3 hf-ch	dust	252	25
201	Roscommon	494	1 do	pekoe	54	31
20?		497	1 do	pek sou	52	28
207	Mont Clare	512	3 boxes	bro pek	60	36
227	Rondura	572	3 ch	dust	360	26
232	Agra Ouvah	587	8 do	pek sou	680	39
234		593	5 hf-ch	dust	455	28
241	St. Andrews	614	5 ch	bro tea	475	31
242	Battaluwatte	617	1 do	pekoe	45	30
245	Bellongalla	626	8 hf-ch	bro pek fans	560	28
249	Suduganga	638	1 ch	pek fans	125	31
250		641	6 do	sou	480	32
261	Hiralouvah	674	1 do	pek No. 2	95	31
262		677	1 hf-ch	fans	65	30
263		680	2 do	dust	160	24
267	Ottery	692	1 ch	dust	170	27

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, December. 8

"Clan Farquhar."—DSS in estate mark, OO, 1 barrel out; ditto O, 10 casks out; ditto 1, 5 casks out; ditto 2, 1 cask and 1 tierce out; ditto PB, 1 cask and 1 barrel out; ditto T, 4 casks and 1 barrel out.

"Austral."—Craig O, 2 casks sold at 90s; ditto 1, 6 casks out, 65s refused; ditto 2, 5 casks sold at 54s; ditto P, 1 cask sold at 90s.

"Dardanus."—Craig O, 1 barrel sold at 65s; ditto 1, 1 cask sold at 65s; ditto 2, 3 casks sold at 54s; ditto P, 1 barrel out at 70s, 58s refused.

"City of Calcutta."—Craig 1, 5 casks out.

December 15.

"Duke of Portland."—E O O, 1 barrel sold at 70s; ditto O, 1 barrel sold at 70s; ditto 1, 1 cask sold at 63s; E2 1 cask sold at 40s; ditto PB, 1 barrel sold at 65s; ditto T, 1 barrel sold at 34s 6d; ditto OO, 1 cask sold at 79s; ditto O, 2 casks sold at 71s; ditto 1, 3 casks and 1 barrel sold at 63s; ditto 2, 1 barrel sold at 40s; ditto PB 1 tierce sold at 73s; ditto T, 1 cask sold at 34s 6d; 2 bags sold at 40s, bags ovtkrs.

December 22.

"Austral."—OBEC in estate mark, Delmar 2 1 cask out.

CEYLON COCOA SALES IN LONDON.

MINCING LANE, Dec. 8.

"Staffordshire."—1 Yattawatte, 20 bags sold at 87s 6d; 51 bags sold at 87s; 2 ditto, 10 bags sold at 60s 6d; 1 bag sold at 44s, sea damaged, C3 broken, 2 bags sold at 52s; 6 bags sold at 67s.

"Kamakura Maru."—A in estate mark, 2 bags out.

"Duke of Portland."—O MAX in estate mark, estate cocoa, 11 bags out at 63s 6d; 1 ditto, 9 bags out; C ditto, 10 bags out at 55s, 50s refused.

"Hakata Maru."—Benveula, 26 bags out at 72s; Armagh I, 5 bags out at 60s; Pandappa, 2 bags out at 60s.

"Duke of Portland."—NDPS in estate mark, No. 2, 26 bags out at 64s, 60s refused.

"Bingo Maru"—Cocoa Armagh T, 40 bags out.

"Clan MacDonald."—MAKM in estate mark, 38 bags out.

"Clan Sinclair."—KK in estate mark, estate cocoa, 57 bags out.

"Dictator."—Dartry A, 19 bags sold at 65s.

"Clan MacNeil."—25 bags without reserve, more or less damaged by smoke; 2 Palli, 13 bags sold at 49s; F2 ditto, 7 bags sold at 49s.

"Clan Chisholm."—Beredewelle COC B, 4 bags sold at 49s; ditto T, 1 bag sold at 49s.

December 22,

"Tambo Maru."—Warriapolla, 6 bags sold at 85s; 2 bags sold at 75s; 15 bags sold at 80s; 1, bag sold at 75s; 3 bags sold at 76s; 2 bags sold at 52s; 8 bags sold at 53s 6d. Suduganga, 4 bags out at 80s, 75s refused; 2 bags sold at 74s; 1, bags sold at 58s; 4 bags sold at 48s. Bandarapola 1, 20 bags sold at 75s; ditto 2, 4 bags sold at 60s 6d; ditto 3, 1 bag sold at 65s; ditto T, 2 bags sold at 30s.

"Clan McNeil."—AS in estate mark, 33 bags sold at 63s.

"Duke of Norfolk."—1 MLM in estate, 26 bags sold at 64s; 2 bags out.

CEYLON CARDAMOMS SALES IN LONDON.

MINCING LANE, Dec. 8.

"Clan Macnab."—WS A & Co. in estate mark, 1 case sold at 2s 3d; ditto 2, 1 case sold at 2s 2d; 1 bag sold at 1s 8d.

"Sado Maru."—WSX A & Co. in estate mark, 1 case sold at 2s 2d; WS A & Co. in estate mark, 5 cases sold at 2s 2d.

"Salazie."—F in estate mark, AA, 21 cases out at 2s 6d; ditto OO, 12 cases sold at 1s 7d; ditto XX, 1 case sold at 1s 6d.

"Clan Stuart."—HGA in estate mark, 12 cases out at 2s.

"Clan McIntyre."—JA in estate mark, 24 cases out at 2s 2d, slightly mouldy.

"Dardanus."—St. Martins No. 2 O, 4 cases out at 3s 6d.

"Clan Stuart."—Vedehette Cardamoms B, 4 cases out at 2s 8d.

"Carthage."—FD, 1 case sold at 2s 5d; 1 case sold at 2s 2d.

"City of Khios."—BW in estate mark, 11 cases out at 2s 2d.

"Bullionist."—G in estate mark, 11 cases out at 2s 2d.

"Senator."—2 cases out.

"Orotava."—Cottaganga B, 7 cases out at 2s 1d.

"Statesman."—Elkadua B & S, 2 cases out at 2s

"Duke of Norfolk."—DBM London, 6 cases not ready.

"Clan Fraser."—AL 1, 1 case out at 2s 2d.

"Clan McIntyre."—AL A, 3 cases out.

"Austuria."—ANO 1, 6 cases out at 2s 2d.

"Hector."—AL 1 Malabar, 4 cases out at 2s 2d.

"Kanagawa Maru."—AL 1, 19 cases out at 2s 2d.

No. 2 COLOMBO, JANUARY 22, 1900. PRICE:—12½ cents each 3 copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[28,570 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Mapitigama	5	8 ch	bro or pek	840	36 bid
3		8	17 do	bro pek	1700	36 bid
4		11	21 do	pek	890	34
6	Battalgalla	17	16 ch	pek sou	1120	35
7	Halgolla	20	32 ch	bro pek	3040	34 bid
8		23	33 do	or pek	2970	34 bid
9		26	31 do	pek	2790	33
10		29	10 do	pek sou	850	32
13	Orpington	38	47 ch	bro pek	4230	34 bid
14		41	20 hf ch	bro or pek	1200	35 bid
18	Sapitiyagodde	53	70 hf ch	or pek	3360	35 bid
19		56	30 do	bro or pek	1800	35
20		59	20 ch	pek	1560	34
21		62	30 do	pek sou	2400	33

Messrs. Forbes & Walker.

[958,513 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	C H	238	35 ch	red leaf	3150	24
3	D H, in estate mark	241	15 ch	bro mix	1530	31
9	Walton	259	16 ch	pek	1600	35
10		262	36 do	pek sou	3240	33
12	Bellwood	268	18 ch	pek sou	1620	35
13		271	9 do	dust	810	25
14	New Peacock	274	13 ch	pek sou	1170	36
16		280	33 do	pek fans	1725	31
17	Nilambe	283	12 ch	bro tea	1560	26
18		286	17 do	unas	1530	33
23	Ingrogalla	301	30 ch	bro pek	3000	35
24		304	38 do	pek	3230	35
32	St. H	328	19 ch	pek	2109	31
35	O B E C, in estate mark Summer Hill	337	23 ch	bro or pek	2622	50
36		340	19 do	pek	1786	42
37		343	30 do	pek sou	2460	39
38	Mousakelle	346	42 ch	bro or pek	4200	37
39		349	30 do	or pek	3000	39
40		352	23 do	pek	2300	36
44	L	364	23 ch	or pek	1955	66
45	Grange Garden	367	48 ch	bro or pek	4800	36
46		370	39 do	pek	3900	36
59	Horagaskelle	409	13 hf ch	pek sou	738	31
61	Narangalla	415	8 ch	bro pek	800	36
63		421	11 do	pek	990	32
67	Carendon	433	17 ch	bro pek	1870	35
68		436	9 do	pek	900	33
70	Kelaneiya and Braemar	442	25 ch	bro or pek	2500	38
71		445	25 do	or pek	2500	39
72		448	20 do	pek	2000	35
73	Glenesk	451	9 ch	bro or pek	900	35
74		454	15 do	bro pek	1350	34
75		457	12 do	pek	1080	33
81	Harrington	475	24 hf-ch	bro or pek	1200	50
82		478	20 ch	or pek	1800	45
83		481	18 do	pek	1620	37
87	Dambagastalawa	493	14 ch	bro or pek	1512	46
88		496	23 do	bro pek	2415	38
89		499	16 do	pek	1408	37
97	Stisted	523	32 hf-ch	bro or pek	2080	34
98		526	16 do	or pek	960	35
100		532	30 do	pek sou	1710	32
102	Tonacombe	538	45 box	bro or pek	900	62
103		541	32 ch	or pek	2880	40
104		544	23 do	bro pek	2300	40
105		547	39 do	pek	3510	38
106		550	12 do	pek sou	1080	35
107	Ouvahkellie	553	19 ch	pek sou	1900	39
113	W'Bedde	571	22 ch	pek	1980	37
114	Agra Oya	574	22 ch	bro pek	2200	36
115		577	30 do	pek	2700	34
116		580	16 do	pek sou	1440	33
117		583	24 do	or pek	1920	35
121		595	9 do	bro mix	810	31
122	C N N	598	16 hf-ch	dust	1520	25

Lot.		Box.	Pkgs.	Name.	lb.	c.
125	G, in estate mark	607	12 ch	congou	1080	30
139	Monkswood	649	22 hf-ch	bro pek	1100	71
140		652	32 do	or pek	1440	58
141		655	22 ch	pek	1980	49
142		658	9 do	pek sou	765	45
144		664	23 hf-ch	fans	1288	38
146	Deaculla	670	15 ch	pek sou	1050	34
147	Deaculla, No. 2	673	24 ch	bro pek	1870	39 bid
148		676	30 do	pek	2100	36
149		679	19 do	pek sou	1330	34
151	Cotswald	685	10 ch	bro pek	1000	37
152		688	13 do	pek	1170	34
153		691	13 do	pek sou	975	32
156	W, in estate mark	700	13 hf-ch	bro or pek	1560	34
157	Ella Oya	703	24 ch	bro pek	2280	36
58		706	26 do	pek	2210	34
159		709	22 do	pek sou	1870	32
161	Middleton	715	28 hf-ch	bro or pek No. 2	1680	60
162		718	27 ch	bro pek	2565	47 bid
163		721	37 do	pek	3330	43
164		724	19 do	pek sou	1710	40
175	Glengariffe	757	53 hf-ch	bro or pek	2915	39
176		760	37 do	or pek	1665	40
177		763	19 ch	pek	1805	37
178		766	16 do	pek sou	1360	35
179		769	11 hf-ch	fans	715	33
182	Yatiyana	778	18 ch	bro pek	1584	35
183		781	10 do	pek	960	33
184		784	8 do	pek No. 2	800	32
186	Maligatenne	790	23 ch	bro pek	2415	33
187		793	19 do	pek	1900	31
180		796	10 do	pek sou	900	31
190	Walpita	802	41 ch	bro pek	4100	34
191		805	30 do	pek	3000	34
192		808	14 do	pek sou	1120	32
194	Hatton	814	26 ch	bro pek	2860	50
195		817	36 do	pek	3240	42
200	Glencorse	832	23 hf-ch	bro or pek	1150	34 bid
202		838	16 ch	pek	1280	33 bid
209	Patiagama	859	22 do	bro or pek	1210	48
210		862	9 do	or pek	765	38 bid
211		865	12 do	pek	960	36
214	Theydon Bois	874	11 ch	bro pek	1100	35
215		877	28 do	pek	2240	36
216		880	13 do	pek sou	1105	33
221	Knavesmire	895	18 hf-ch	or pek	900	39
222		898	21 ch	bro pek	1995	36
223		901	17 do	pek	1445	34
224		904	11 do	pek sou	770	33
226		910	16 do	pek	1200	34
228	M P	916	21 ch	sou	1995	32
229		919	9 do	dust	1260	26
230		922	5 do	pek fans	850	24
231	D M V	925	18 ch	bro pek	1710	34
232		928	25 do	pek	2000	32
242	Nakiadeniya	958	19 ch	bro pek No. 2	1805	36
243		961	11 do	pek	880	34
249	W H R	979	10 ch	pek sou	800	36
250		982	20 hf-ch	fans	1400	33
252	Pusella	988	12 ch	bro pek	1212	35 bid
253		991	14 do	or pek	1204	35 bid
254		994	20 do	pek	1580	34
256	Forres	1000	14 hf-ch	bro or pek	840	42 bid
262	Weyungawatte	1018	21 hf-ch	bro or pek	1155	37 bid
263		1021	22 ch	bro pek	1980	34
264		1024	25 do	pek	2125	33
268	Carlabeck	1036	12 ch	pek sou	1200	37
269		1039	9 hf-ch	bro pek fans	738	30
270	C C	1012	9 ch	bro pek	945	32
271		1015	9 do	pek	945	31
272		1010	10 hf ch	bro pek fans	780	29
274	Weyungawatte	1054	30 hf-ch	bro or pek	1650	36 bid
275		1057	31 ch	bro pek	2790	34
276		1060	29 do	pek	2320	33
279	Torwood	1069	40 do	bro pek	3600	37
280		1072	36 do	pek	2880	34
281		1075	24 do	pek sou	1872	33
282		1078	14 do	sou	1120	31
285	Mariawatte	1087	18 ch	pek sou	1530	33
286		1090	12 hf-ch	dust	1020	24
288	I G A	1096	7 ch	bro pek	705	33
291		1105	9 hf-ch	bro tea	771	24

Lot.		Box.	Pkgs.		Name	lb.	c.
295	Yataderia	1117	16	ch	bro or pek	1648	36
296		1120	40	do	bro pek	4000	34
297		1123	11	do	or pek	1012	34
298		1126	73	do	pek	6059	34
302	Castlereagh	1138	34	ch	bro pek	3400	44
303		1141	36	do	or pek	3060	42
304		1144	26	do	pek	2080	38
309	Ganapalla	1159	23	do	or pek	2070	37
310		1162	24	do	bro or pek	2160	36
311		1165	32	do	bro pek	2880	34
312		1168	62	do	pek	4960	33
313		1171	27	do	pek sou	2025	32
314		1174	12	do	bro pek fans	1200	31
315		1177	12	hf-ch	dust	960	25
316	Morankande	1180	13	ch	or pek	1105	39
317		1183	22	hf-ch	bro or pek	1232	36
318		1186	17	ch	pek	1530	34
319		1189	9	do	pek sou	810	32
324	Inverness	1204	14	ch	or pek	1400	45
325		1207	32	hf-ch	bro or pek	1920	45
326		1210	20	ch	pek	1800	41
327		1213	9	do	pek sou	810	38
330	Dunkeld	1222	64	hf-ch	bro or pek	3968	40
331		1225	21	ch	or pek	1995	39
332		1228	15	do	pek	1350	37
333		1231	19	do	pek sou	1710	35
334		1234	34	hf-ch	pek fans	2550	32
335		1237	18	do	dust	1710	26
336	D B E	1240	9	ch	red leaf	900	25
337	Seenagolla	1243	33	hf-ch	bro pek	1815	43
338		1246	14	ch	pek	1190	39
340	Fairlawan	1252	43	hf-ch	bro pek	2365	46
341		1255	30	do	or pek	2700	39
342		1258	19	ch	pek	1520	37
345	Bagdad	1267	13	ch	bro mix	1300	26
357	Carfax	1303	12	ch	bro or pek	1200	50
358		1306	14	do	or pek	1260	45
359		1309	13	do	pek	1235	41
361	Battawatte	1315	25	ch	bro pek	2750	36
362		1318	40	do	pek	3800	35
363		1321	13	do	pek sou	1040	33
364		1324	26	do	bro pek fans	2860	32
365		1327	16	do	dust	1760	26
366	High Forest	1330	36	hf-ch	or pek No. 1	2052	60
367		1333	30	do	or pek	1590	50
368		1336	29	do	pek	1363	43
369	Weoya	1339	10	ch	bro or pek	1100	34
370		1342	45	do	bro pek	4500	34
371		1345	40	do	or pek	3800	36
372		1348	30	do	pek	2550	34
373		1351	51	do	pek sou	4080	32
375		1357	6	do	dust	900	25
376	Hayes	1360	21	ch	bro or pek	1995	43 bid
377		1363	19	do	bro pek	1900	35
378		1366	22	do	or pek	1870	35
379		1369	54	do	pek	4590	34
380		1372	15	do	pek sou	1275	32
382	Polatagama	1378	80	ch	bro pek	7200	36
383		1381	42	do	or pek	3360	34
384		1384	50	do	pek	4250	33
386		1390	11	do	fans	1100	30
388	Dammeria	1396	23	ch	or pek	2300	35 bid
389		1399	22	do	bro pek	2420	36 bid
390		1402	18	do	pek	1620	36
393	Maha Uva	1411	29	hf-ch	bro or pek	1735	36
395		1417	20	ch	pek	1784	35
400	Pallagodde	1432	21	do	bro or pek	2100	35 bid
401		1435	23	do	bro pek	2300	40
402		1438	20	do	or pek	1700	35
403		1441	17	do	pek	1445	34
404		1444	20	do	pek sou	1800	33
409	B in est. mark	1459	13	do	unast	1250	34
410	Ruanwella	1462	26	do	or pek	2210	34
411		1465	10	do	bro pek	1000	33
412		1468	19	do	pek	1710	33
413		1471	12	do	pek sou	1080	33
415	Kirklees	1477	20	do	bro or pek	1200	37
416		1480	29	do	or pek	2900	38
417		1483	28	do	pek	2660	35
418		1486	15	do	pek sou	1200	33
419	Galpottagama	1489	9	do	bro pek	925	28
422	Mansfield	1498	55	hf-ch	bro pek	3300	43 bid
423		1501	22	ch	pek	1980	37
424	T U	1504	29	do	bro or pek	3103	45
425		1507	14	do	bro or pek	1442	44
426		1510	22	do	or pek	2090	45
427		1513	13	do	pek	988	42
428		1516	11	do	pek sou	803	39
429	Naseby	1519	45	hf-ch	bro or pek	2700	45
430		1522	27	do	or pek	1215	52
431		1525	38	do	pek	1786	40
432		1528	15	do	pek sou	795	38
433		1531	15	do	fans	1125	35
434		1534	8	do	dust	760	28

Lot,		Box.	Pkgs.		Name.	lb.	c.
435	Carberry	1537	7	ch	or pek	770	33
436		1540	29	do	bro pek	2610	34
437		1543	25	do	pek	2250	32
438		1546	10	do	pek sou	900	32
442	G K	1558	6	do	dust	840	24
446	W N	1570	44	do	bro tea	4136	30
447		1573	7	ch	fans	770	25
449	K in est mark	1579	20	do	red leaf	2000	25
450	Hentleys	1582	21	hf-ch	bro pek	1113	38
452		1588	25	ch	pek	2000	33
456	Tembiligalla	1600	30	hf-ch	bro pek	1650	37
457		1603	27	do	or pek	1350	35
458		1606	16	ch	pek	1440	34
459		1609	13	do	pek sou	1170	33
462	Tavalamtenne	1612	20	do	bro or pek	1980	36
463		1621	12	do	pek	1070	35
464		1624	11	do	pek sou	970	33
466	D gdola	1630	28	do	bro pek	2660	35
467		1633	39	do	pek	2925	33
469	Matale	1639	62	hf-ch	bro pek	3410	35
470		1642	25	ch	pek	2250	34
471		1645	18	do	pek sou	1620	33
483	Anningkande	1681	11	do	bro pek	1100	33 bid
484		1684	11	do	pek	1045	34
487	Gonapatiya	1693	29	hf ch	bro or pek	1421	52
488		1696	28	do	or pek	1204	55
489		1699	50	do	pek	2250	42
490		1702	18	do	pek sou	792	39
493	Errollwood	1711	38	do	bro or pek	1930	45 bid
494		1714	33	ch	or pek	2970	38
495		1717	37	do	pek	3330	36
496		1720	13	do	pek sou	1300	34
497		1723	17	hf-ch	or pk fans	1029	33
498		1726	15	do	dust	1125	26
500	C R D	1732	9	ch	dust	900	26
501	B D W P	1735	26	do	bro pek	2210	33
509	Agra Elbedde	1759	27	do	bro or pek	1620	50
510		1762	22	do	or pek	1100	59
511		1765	50	do	pek	3000	43
512		1768	33	do	pek sou	1650	41
513	X	1771	14	do	red leaf	770	26
526	Forest Creek	1810	18	do	bro or pek	1980	68
527		1813	18	do	bro pek	1980	55
528		1816	10	do	or pek	1900	50
529		1819	24	do	pek No. 1	2160	45
530		1822	29	do	pek No. 2	2900	41
531	Munukattia, Ceylon, in est. mark	1825	15	hf-ch	or pek	750	38
532		1828	26	do	bro pek	1560	36
533		1831	13	do	pek	1040	37
548	S W	1876	10	do	bro mix	1162	29
554	Vogan	1894	35	do	bro pek	3325	37
555		1897	29	do	pek	2610	33
573	Dooroomadella	1945	33	do	bro pek	1815	33
574		1948	15	do	pek	1350	34
575	Roeberry	1951	27	do	bro pek	2700	39 bid
576		1954	24	do	pek	2160	36
577		1957	20	do	pek sou	1640	34
578	A in est. mark	1960	25	do	bro pek	2500	40
579		1963	16	do	pek	1440	37
580		1966	11	do	pek sou	902	35
596	Scrubs	2014	42	hf-ch	bro or pek	2394	47
597		2017	29	do	bro pek	1624	44
598		2020	31	do	pek	1426	41
604	Maha Uva	2038	19	hf-ch	bro or pek	1140	36 bid
606	Nonpariel	2044	22	do	bro pek	1226	out
607	Dunkeld	2047	70	do	bro or pek	4200	38 bid
615	Halwatura	2071	55	ch	bro pek	5500	34
616		2074	57	do	or pek	5130	33
617		2077	66	do	pek	5280	32
618		2080	44	do	pek sou	3300	31
619		2083	20	do	sou	1400	30
620		2086	22	hf-ch	br pk fans	1540	30
622	Geragama	2092	13	do	bro or pek	715	35
623		2095	9	ch	bro pek	810	35
624		2098	15	do	pek	1350	32
625		2101	11	do	pek sou	1045	31
628	Waratenne	2110	25	hf-ch	bro or pek	1375	35
629		2113	10	ch	bro pek	850	34
630		2116	18	do	pek	1550	32
631		2119	11	do	pek sou	990	31
635	Devonford	2131	15	hf-ch	bro or pek	825	65
637		2137	14	ch	or pek	1260	58
638		2140	9	do	pek	765	53
639		2143	11	do	pek sou	880	44
650	Erlsmere	2176	15	hf-ch	bro or pek	870	42 bid
651		2179	30	do	bro pek	3000	36 bid
652		2182	13	do	bro pek	1300	37 bid
653		2185	24	do	pek	1920	38
656	Rowley	2194	30	do	bro pek	1500	36
657		2196	29	do	bro pek	1450	36
658		2200	24	do	pek	1200	34
659	Farnham	2203	42	do	bro pek	2310	36 bid
660		2206	27	do	or pek	1215	35
661		2209	47	do	pek	2585	34
662		2212	28	do	pek sou	1260	32

Lot		Box.	Pkgs.	Name.	lb.	c.
653	B D W P	2215	31 hf-ch	bro pek	2635	33 bid
692	K G	52	8 ch	pek	800	32
696	Maldeniya	64	16 do	bro or pek	1630	35
697		67	32 do	or pek	2880	35 bid
698		70	40 do	pek	3400	34
699		73	27 do	pek sou	2295	32
709	Yaha Ella	103	12 do	bro pek	990	35
710		106	29 do	pek	2290	32 bid
711		109	10 do	pek sou	780	31
725	Putupaula	151	16 hf-ch	bro or pek	1040	35 bid
726		154	52 ch	bro pek	4680	36 bid
727		157	30 do	pek	2250	34 bid
728		160	12 do	pek sou	840	31 bid
735	Hopton	181	28 do	bro pek	2800	36 bid
736	Summerville	184	13 do	bro pek	1352	40
737		187	22 do	pek	2090	38
742	Harrow	202	43 hf-ch	bro or pek	2580	46
743		206	36 ch	pek	3600	39
744		208	8 do	pek sou	720	36
746	Naseby	214	28 hf-ch	bro or pek	1680	42
747	Irex	217	37 ch	bro pek	3700	35 bid
748		220	24 do	pek	2160	33
749		223	15 do	pek sou	1200	32

[Messrs. Somerville & Co.— 354,851 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
6	Woodthorpe	16	8 ch	bro pek	800	37
7		19	14 do	pek	1232	33
8		22	14 do	pek sou	1120	32
11		31	10 do	bro pek	1000	37
12		34	17 do	pek	1496	33
13		37	18 do	bro pek	1440	32
15	Clontarf	52	16 do	sou	1565	29 bid
19	Ravenoya	55	17 hf-ch	bro pek	935	35
20		58	14 do	pek	700	34
23	Blinkbonnie	67	35 hf ch	bro pek	2100	44 bid
24		70	54 ch	pek	4752	38
25		73	11 do	pek sou	902	
26	Mary Hill	76	26 hf-ch	bro pek	1690	38
27		79	24 hf-ch	pek	1440	34
28		82	18 hf-ch	pek sou	1080	32
30	Lonach	88	95 do	bro pek	5225	35 bid
31		91	31 ch	pek	2635	36
32		94	14 do	pek sou	1190	34
33	Rambodde	97	22 hf-ch	bro or pek	1210	40
34		100	45 do	bro pek	2250	36
35		103	31 do	pek	1550	36
36		106	15 do	pek sou	750	33
39	Neuchatel	115	31 ch	bro pek	3255	35
40		118	24 do	pek	2040	33
41		121	9 do	pek sou	765	32
44	Neboda	130	17 do	or pek	1700	34
45		133	43 do	pek	4300	34
46		136	13 do	pek	1170	33
47		139	10 do	pek sou	800	32
50	Hangranoya	148	91 hf-ch	bro pek	4550	35
51		151	14 ch	or pek	1120	36
52		154	63 do	pek	5040	33
53		157	17 do	pek sou	1190	32
54	Kelani	160	42 do	bro pek	3360	34 bid
55		163	30 do	bro or pek	3000	35 bid
56		166	24 do	pek	2040	34
57		169	12 do	pek sou	1080	32
58	Mahatenne	172	35 do	bro pek	3500	34 bid
59		175	17 do	pek	1700	33
62	Mahatenne	184	14 do	bro pek	1378	35
63		187	9 do	pek	900	33
68	Theberton	202	19 ch			
			1 hf-ch	bro or pek	1950	35
69		205	33 ch	pek	2970	36
73	Killin	217	30 do	bro pek	3000	34 bid
74		220	21 do	pek	1890	34
81	Moragalla	241	17 do	bro pek	1700	33
82		244	20 do	pek	2000	32
83		247	14 do	pek sou	1400	31
92	California	274	8 do	bro pek	760	33
93		277	10 do	pek	950	33
97	Oolapane	289	13 do	bro pek	1300	35
100		298	14 hf-ch	dust	1050	26
102	Blackburn	304	8 ch	fans	880	30
105	Stockholm	313	55 do	bro pek	5500	33 bid
106		316	41 do	pek	3485	38 bid
107		319	10 do	pek sou	800	35 bid
110	Dartry	328	19 do	fans	1425	26
114	LowerDickoya	340	44 hf-ch			
			1 ch	bro pek	2564	34
115		343	17 do	pek	1700	34
121	Galphele	361	22 ch	bro or pek	2200	38
122		364	24 do	bro pek	2400	34
123		367	18 do	pek	1620	34
124		370	13 do	pek	1170	33
128	Hatdowa	382	36 do			
			1 hf-ch	bro pek	3470	33 bid
129		385	34 ch	pek	2550	32
130		388	31 do			
			1 hf-ch	pek sou	2360	31
134		400	7 ch	fans	700	31
135	Meddegodda	403	45 hf-ch	bro pek	2250	38
136		406	71 do	pek	3195	35
140	Hanagama	418	12 ch	or pek	1080	38
141		421	10 do	bro or pek	1000	35
142		424	39 do	pek	3126	37
143		427	9 hf-ch	dust	720	26
144	St. Catherine	430	36 ch	bro or pek	3420	44
148	Yarrow	442	68 hf-ch	bro pek	3808	36 bid
149		445	61 do	pek	3416	34 bid
156	Neboda	466	33 ch	bro or pek	3300	34
157	Colombia	469	47 hf-ch	bro or pek	2350	48
158		472	39 do	or pek	1638	40
159		475	10 do	pek dust	700	28
160	Wewetenne	478	8 ch	bro pek	710	36
161		481	13 do	pek	1031	33
162		484	23 do	pek sou	2040	32
165		493	7 do	dust	896	21 bid
172	R C F, in est mark	514	17 ch	bro pek	710	35
173		517	20 do	pek	1800	34
174		520	25 do	pek sou	2125	32
175		523	9 do	bro pek fans	900	32
177	Monrovia	529	42 ch	bro pek	4200	35
178		532	9 do	bro or pek	1035	34
179		535	42 do	pek	3990	35
180		538	18 do	pek sou	1800	32
183	Bogahagodawatte	547	23 ch	bro pek	2300	33 bid
184		550	13 do	pek	1235	34
185		553	11 do	pek sou	1045	32
199	Mossville	595	10 ch	bro pek fans	1000	27
200		598	13 hf-ch	dust	1170	24
204	Mora Ella	610	24 do	or pek	1200	42
205		613	43 do	bro or pek	2494	35 bid
206		616	36 ¾ ch	pek	2340	36
207		619	24 ch	pek sou	1800	34
211	R yigam	631	51 ch	bro pek	5100	35
212		634	37 do	or pek	2960	35
213		637	45 do	pek	3600	34
214		640	11 do	pek sou	990	32
215		643	15 hf-ch	dust	1200	27
216	Annandale	646	24 do	bro or pek	1320	59
217		647	30 do	or pek	1590	51
218		652	26 do	pek	1248	42
219		665	25 do	pek sou	1375	38
224	Forest Hill	670	20 ch	bro pek	1700	38 bid
225		673	18 do	pek	1458	32
228	Mousalando	682	11 ch	bro pek	935	34
229		685	24 do	pek	1944	32
232	Gangwarily	694	19 ch	sou	1425	31
234		700	7 do	fans	1700	33
236	Neboda	706	50 ch	bro pek	5000	34
			49 do	bro pek	4900	34
237		709	27 do	pek	2730	33
238		712	24 do	pek sou	1920	32
263	Hopewell	787	44 hf-ch	bro or pek	2552	39
264		790	24 do	bro pek	1200	35 bid
265		793	43 do	pek	1978	35
266		796	24 do	pek sou	1200	32
267		799	14 do	fans	840	33
273	F F, in estate mark	817	14 hf-ch	bro pek	770	32
277	Corfu	829	21 do	bro pek	1155	37 bid
279	Daluk Oya	835	14 do	bro or pek	840	36
280		838	16 do	or pek	880	35
283		841	28 do	pek	1540	33
285	Nyanza	853	13 ch	bro pek	1300	39
296	Lower Dickoya	886	22 hf-ch	bro or pek	1232	36
302	Bargany	904	22 do	bro or pek	1200	36 bid
303		907	11 ch	bro pek	990	34 bid
304		910	14 do	pek	1190	34 bid
312	Ranasinghapatna	934	60 hf-ch	or pek	3000	37 bid
313		937	44 do	bro or pek	2480	36 bid
314		941	20 ch	pek	1560	36
315		948	20 do	pek sou	1600	33
319	Comillah	955	8 ch	bro pek	800	34

[Mr. E. John.— 368,719 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Mel Villa	704	16 hf-ch	bro pek	800	33
3		707	14 do	pekoe	900	32
8	Sadamulla	722	14 ch	bro pek	1400	34
9		725	32 do	pekoe	3200	32
15	Vincit	743	27 do	bro pek	2430	34
16		746	15 do	pekoe	1350	33
17		749	8 do	pek sou	720	31
20	Poilak ande	758	73 do			
			1 hf-ch	bro pek	7015	34
21		761	57 ch			
			1 hf-ch	pekoe	5180	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
22		764	11 ch	dust	935	24
23	Cleveland	767	33 hf-ch	flow or pek	1815	61
24		770	31 do	pekoe	1643	42
27	Mossend	779	20 do	bro or pek	1100	43 bid
28		782	15 do	or pek	750	42
29		778	16 do	pekoe	1170	41
35	L E L	803	15 do	bro or pek	900	37 bid
36		806	27 ch 23 hf-cb	bro pek	4081	35 bid
37		809	28 ch	pekoe	2408	37
41	Woodlands	821	11 do	bro pek	1100	37 bid
42		824	10 do	pekoe	950	36
43		827	8 do	pek sou	720	33
46	Loughton	836	41 hf-cb	bro pek	2255	35
47		839	92 do	pekoe	4600	34
48		842	49 do	pek sou	2205	32
49		845	20 do	dust	1000	26
50	Galloola	848	29 ch	bro pek	2900	38
51		851	31 do	pekoe	3100	40
52		854	16 do	pek sou	1800	35
54	Tempo	860	15 do	bro pek	1575	35 bid
55		863	10 do	pekoe	850	33 bid
56		866	9 do	pek sou	765	31
58	Eila	872	42 do	bro or pek	5200	35
59	Kanangame	875	18 do	bro or pek	1800	34 bid
60		878	33 do	bro pek	3135	36
61		881	30 do	pekoe	2700	33
62		884	18 do	pek sou	1530	32
63	Lamiliere	887	68 hf-cb	bro pek	3808	49
64		890	40 ch	pekoe	3608	40
65		893	26 do	pek sou	1950	36
66		896	10 do	pek fans	750	30
67	G W	899	22 do	pek sou	2090	36
69		905	53 do	fans	4305	28
70	Uda	908	9 do	bro pek	855	26
71		911	16 do	pekoe	1184	26
72	St. John's	914	22 hf-ch	bro or pek	1320	58
73		917	23 do	or pek	1196	56
74		920	28 do	pekoe	1568	46
75		923	18 do	pek sou	972	41
76		926	17 do	pek fans	1190	37
81	M G	941	9 ch	unas	900	33
82		944	10 hf-ch	fans	760	33
83	Kotuagedera	947	31 cb	bro pek	3100	33 bid
84		950	16 do	pekoe	1620	32
88	Nahavilla	962	40 hf-cb	bro or pek	2400	39
89		965	29 do	or pek	1450	42
90		968	9 ch	pekoe	900	38
95	Syston	983	34 do	bro pek	3230	36 bid
96		986	20 do	pekoe	1700	35
97		989	12 do	pek sou	1080	33
101	Yapame	1	35 do	bro pek	3500	41
102		4	18 do	pekoe	1620	39
103		7	13 do	pek sou	1170	34
106	G L	16	11 hf ch	dust	880	26
110	Perth	28	34 cb	bro or pek	3400	34 bid
111		31	52 do	bro pek	4420	34 bid
112		34	35 do	pekoe	2695	36
113		37	13 do	pek sou	976	32
114		40	11 hf-cb	pek dust	825	26
116	Rookwood	46	53 do	or pek	2650	37 bid
117		49	42 cb	pek sou	3780	35
118	Iona	52	52 hf-cb	bro or pek	3120	50
119		55	29 cb	or pek	2610	40 bid
120		58	32 do	pekoe	1105	40
122	Glassaugh	64	27 hf-ch	or pek	1431	51
123		67	37 do	bro or pek	2405	49
124		70	27 ch	pekoe	2565	46
125		73	10 do	pek sou	1000	41
128	G B	82	16 bf-ch	bro pek	880	31
129		85	12 ch	pekoe	960	30
130	Bittacy	88	32 do	bro pek	3200	37
131		91	26 do	pekoe	2080	39
132		94	15 do	pek sou	1350	36
133		97	12 bf-ch	dust	960	27
135	Glasgow	103	42 ch	bro or pek	3570	47
136		106	50 do	bro pek	4000	44
137		109	26 do	or pek	1690	43
138		112	16 do	pekoe	1600	40
139	Fernland	115	9 do	sou	855	36
140	Rondura	118	14 do	or pek	1260	39
141		121	19 do	bro pek	1900	35
142		124	54 do	pekoe	4320	35
143		127	12 do	pek sou	960	33
145	Ben Nevis	133	17 hf-ch	bro pek	1020	46
146		136	20 do	or pek	900	52
147		139	23 ch	pekoe	2070	41
151	Dalhousie	151	25 bf-cb	bro pek	1375	41 bid
152		154	66 do	pekoe No. 1	2970	37
153		157	39 do	pekoe No. 2	1560	35
156	Glasgow	166	30 ch	bro or pek	2550	47
157		169	28 do	bro pek	2240	43
158		172	19 do	or pek	1235	42
159		175	15 do	pekoe	1500	40
160		178	7 do	pek sou	700	37
161		181	13 do	fans	1300	28
163	Akkara Totum	187	8 do	pekoe	720	31
166		196	10 ch	fans	850	22
169	Woodstock	205	20 do	bro pek	2000	34 bid
174	Bovey	220	10 do	or pek	830	35
175		223	13 hf-ch	bro pek	728	35
176		226	9 ch 1 hf-cb	pekoe	879	35
180	Meddegodda	238	42 do	bro pek	2100	38
181		241	69 do	pekoe	3105	35
194	Eladuwa	280	9 ch	or pek	855	39
195		283	24 do	pekoe	2160	35
196		286	10 do	pek sou	900	31
207	Murraythwaite	319	25 do	bro pek	2375	35
208		322	27 do	pekoe	2295	34
209		325	14 do	pek sou	1120	32
212	Maskeliya	334	16 hf-ch	bro or pek	800	52
213		337	21 ch	or pek	1890	40
214		340	16 do	pekoe	1440	38
244	M R	430	10 hf-ch	dust	900	26
245	Kadien Lena	433	15 do	bro or pek dust	1200	26
246		436	10 ch	sou	1000	30
258	Ottery	472	33 do	bro or pek	3300	37 bid
259		475	12 do	or pek	1080	38
260		478	31 do	pekoe	1235	35
262	Dundalk	484	33 hf-ch	bro pek fans	2145	31 bid
263		487	40 do	pek fans	2000	26 bid
264		490	15 ch	dust	2625	24 bid
274	Templestowe	520	31 do	bro or pek	3100	43
275		523	27 do	or pek	2430	43
276		526	43 do	pekoe	3655	39 bid
277		529	11 do	pek sou	880	36
280		538	20 hf-ch	dust	1600	26
285	Gonavy	553	69 do	bro pek	3450	39 bid
286		556	24 ch	pekoe	1800	37
290	Kolapatna	568	9 do	pekoe	720	35

SMALL LOTS.

E. Benhsm & Co.

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Yullifield	2	1 ch	bro mixed	70	81
5	Mapitigama	14	8 hf-ch	bro tea	640	25
11	Halgolla	32	2 ch	fans	230	27
12		35	2 do	dust	300	24

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	Meddetenne	235	1 bf ch	dust	55	24
	Wolleyfield	253	1 ch	bro pek	80	28
18		256	4 do	pek	352	29
31	Glenorchy	265	1 ch	unas	63	36
15	New Peacock	277	7 hf-cb	bro mix	350	23
19	Holton	289	8 hf cb	bro pek	400	36
01		292	8 do	pek	400	35
22		295	5 do	pek sou	250	33
22		298	1 do	bro pek fans	81	33
25	Ingrogalla	307	3 ch	pek sou	170	32
26		310	2 do	sou	270	28
27		313	4 do	bro pek dust	500	26
28		316	1 do	red leaf	88	25
29	M'Golla	319	3 ch	sou	240	26
30		322	4 bf-ch	dust	320	25
31		325	2 ch	red leaf	190	23
33	St. H	331	1 do	dust	140	24
34		334	1 do	dust	120	24
41	Mousakelle	355	2 ch	red leaf	180	26
42		358	4 do	sou	400	30
43		361	6 hf-ch	dust	510	26
47	Grange Garden	373	3 cb	pek sou	300	32
48	G	376	5 ch	dust	425	26
49		379	3 do	bro mix	300	24
57	Horagaskelle	403	8 hf-cb	bro pek	492	34
58		406	8 do	pek	428	32
60		412	1 ch	dust	84	24
62	Narangalla	418	6 ch	or pek	570	35
64		424	4 do	pek sou	350	31
65		427	3 do	dust	210	25
66		430	2 do	sou	190	26
69	Carendon	439	2 ch	fans	158	30
76	Glenesk	460	9 ch	pek sou	675	31
77		463	2 do	pek fan	230	28
78		466	1 do	bro tea	100	32
79		469	1 do	dust	172	25
80		472	2 do	pek fans	210	29
84	Harrington	484	2 ch	pek	180	33
85		487	8 hf-ch	or pek fans	480	35
86		490	1 ch	dust	160	25
90	Dambagastalawa	502	5 ch	pek sou	460	34
91		505	4 hf ch	bro pek fans	320	28

Lot.		Box.	Pkgs.	Name.	lb.	c.
92	T S N	508	2 hf-ch	fans	100	28
99	Stisted	529	7 do	pek	420	33
101		535	5 do	dust	400	26
108	Ouvahkellie	556	8 ch	dust	640	26
109	O K	559	6 ch	rob mix	540	35
110	Hanwella	562	1 hf-ch	bro pek	55	32
111		565	3 do	pek	170	32
113	W'Bedde	568	13 hf-ch	bro or pek	650	46 bid
118	Agra Oya	586	5 ch	dust	400	22
119		589	5 do	fans	400	32
120		592	3 do	bro or pek	300	35
123	Penylan	601	2 ch	or pek	180	35
124		604	3 do	bro pek	300	34
126	Mattakelle	610	4 ch	pek fans	440	30
127		613	3 do	bro tea No. 1	270	25
128		616	1 do	dust	85	26
143	Monkswood	661	6 ch	pek sou No. 2	510	39
145		667	6 hf-ch	dust	450	26
150	Dyakulla, No. 2	682	8 ch	dust	640	26
154	Oollooawatte	694	2 ch	sou	160	23
155		697	3 hf-ch	dust	216	27
160	Ella Oya	712	9 do	bro pek fans	585	31
165	Middleton	727	3 do	dust	240	26
166	B B, in estate mark	730	4 ch	bro pek	230	33
167		733	2 do	pek	200	31
168		736	2 do	dust	310	24
169		739	3 do	bro pek	150	31
170		742	2 do	pek	203	30
171		745	2 do	dust	260	25
172		748	3 do	bro pek	180	31
173		751	1 do	pek	100	31
174	D	754	6 ch	sou	540	27
180	Glengariffe	772	8 hf-ch	dust	640	25
181	Yatiyana	775	5 ch	or pek	570	35
185		787	1 do	pek sou No. 2	85	31
189	Maligatenne	799	2 ch	dust	230	25
193	Walpita	811	3 ch	sou	240	31
196	Hatton	820	6 ch	pek sou	480	37
197	Elfindale	823	5 ch	bro pek	500	35
201	Glencorse	835	6 ch	or pek	480	35
203		841	5 do	pek sou	400	32
204		844	3 do	sou	240	30
205		847	3 hf-ch	dust	225	26
206		850	3 do	bro pek	240	31
207	Raglan	853	6 ch	bro pek	600	34
208	Preston	856	2 hf-ch	unas	180	28
212	Patiagama	868	12 ch	bro pek fans	660	32
213	Theydon Bois	871	5 ch	bro or pek	500	41
217	T B, in est. mark	883	3 ch	fans	270	30
218		886	5 hf-ch	dust	400	25
219		889	3 do	congou	240	27
220		892	1 do	red leaf	30	21
225	Knavesmire	907	3 hf-ch	dust	240	25
233	D M V	931	6 ch	pek sou	480	30
234		934	1 do	bro tea	59	29
235		937	2 do	fans	160	27
236		940	1 do	dust	110	24
251	W H R	985	7 hf-ch	dust	630	26
256	Pusella	997	7 ch	red leaf	588	27
257	Forres	1003	6 hf-ch	pek	318	40
258		1006	2 do	fans	134	33
259		1009	1 do	dust	82	26
260		1012	4 do	red leaf	224	24
261		1015	1 do	bro mix	113	27
265	Weyungawatte	1027	4 ch	pek sou	320	31
266		1030	3 hf ch	dust	255	24
267		1033	1 ch	bro mix	76	24
273	A G	1051	2 ch	bro tea	100	29
277	Weyungawatte	1063	4 ch	pek sou	320	22
278		1066	3 hf-ch	dust	255	24
283	Torwood	1081	9 do	bro pek fans	576	32
284	N W D	1084	1 ch	bro tea	107	25
287	Mariawatte	1093	1 hf-ch	bro mix	76	24
289	I G A	1099	6 ch	pek	545	33
290		1102	5 do	pek sou	454	30
292		1105	3 do	red leaf	272	25
299	Yataderia	1129	2 ch	pek sou	164	31
300	Y	1132	2 ch	pek sou No. 1	170	29
301		1135	3 do	do „ 2	372	26
305	Castlereagh	1147	5 ch	pek sou	400	34
306		1150	8 do	fans	560	33
307		1153	3 do	dust	240	25
308	C R	1156	2 ch	bro mix	120	25
320	B P C	1192	6 ch	red leaf	480	20
321	Gansarapolla	1195	8 hf-ch	bro pek	440	32
322		1198	4 ch	pek sou	320	28
323		1201	1 do	sou	80	25
328	Inverness	1216	3 do	red leaf	300	27
329		1219	5 hf-ch	dust	435	26
339	Seenagolla	1249	5 do	fans	425	25
343	Fairlawn	1261	3 hf-ch	dust	340	27
344		1264	2 ch	bro mix	190	24
360	F P W. Maskeliya	1312	5 ch	bro mix	450	25
374	Weoya	1354	5 ch	sou	375	28
381	Hayes	1375	3 do	dust	390	24
385	Polatagama	1387	6 ch	pek sou	510	35
387		1393	3 do	dust	450	25
391	Dammeria	1405	6 ch	pek sou	540	33
392		1408	4 do	dust	360	26
394	Maha Uva	1414	12 hf-ch	or pek	672	39
396		1420	8 ch	pek sou	610	33
397		1423	1 hf-ch	do	80	32
398		1426	3 do	dust	219	25
399		1429	1 do	congou	93	27
414	Ruanwella	1474	7 ch	dust	560	25
420	Galpottagama	1492	5 do	pek	453	bid
421		1495	7 do	pek sou	595	21 bid
439	Carb°rry	1549	2 do	bro tea	180	31
440		1552	2 do	dust	280	24
441	G K	1555	6 do	bro tea	540	30
443	Condia	1561	1 do	bro pek	86	26
444		1564	6 do	pek	450	26
445		1567	2 do	sou	172	29
448	Glenanore	1576	4 do	bro pek	500	50 bid
451	Hentleys	1585	12 hf-ch	or pek	540	34
453		1591	5 ch	pek sou	365	31
454		1594	3 do	bro mix	249	24
455		1597	3 do	fans	216	26
460	Tembiligalla	1612	3 hf-ch	fans	195	26
461		1615	1 do	dust	80	24
465	Tavalamtenne	1627	1 ch	dust	118	25
468	Digdola	1636	3 do	pek sou	270	30
472	Matale	1648	6 hf-ch	fans	420	30
473		1651	6 do	dust	480	25
474	Cokoowatte	1654	1 ch	sou	95	29
475		1657	5 hf-ch	red leaf	321	23
476		1660	2 ch	pek fans	200	26
477		1663	1 do	dust	110	25
485	X	1687	4 do	red leaf	308	26
486	Nella Oolla	1690	3 do	red leaf	220	17
491	Gonapatiya	1705	8 hf-ch	pek fans	464	36
492		1708	7 do	dust	539	23
499	Errollwood	1729	6 do	pek sou No. 2	300	27
514	X X	1774	7 do	pek dust	560	25
515		1777	8 do	bro mix	480	29
516		1780	3 do	pek fans	210	30
534	Munukattia, Ceylon, in est. mark	1834	7 do	pek sou	560	32
549	S W	1879	1 ch	pek	60	32
556	Vogan	1900	7 do	pek sou	560	31
557		1903	3 hf-ch	dust	255	24
558		1906	2 ch	bro pek fans	240	28
559		1909	5 do	bro mix	400	27
581	Maskeliya	1969	5 do	fans	500	25
599	Scrubs	2023	10 hf-ch	pek sou	460	39
621	Okande	2089	3 do	dust	665	25
626	Geragama	2104	6 do	fans	420	25
627		2107	4 do	dust	340	25
632	Waratenne	2122	6 do	dust	510	25
633		2125	3 do	fans	210	26
634		2128	3 ch	bro mixed	225	23
636	Devonford	2134	1 do	bro or pek	40	54
640		2146	4 do	dust	800	26
641	D F D	2149	1 do	bro pek	55	33
642		2152	1 ch	or pek	80	39
643		2155	1 do	pek sou	75	35
654	Erlsmere	2188	7 hf-ch	pek sou	560	33
655		2191	2 do	dust	170	25
681	Belgodde	19	1 do	bro pek	50	38
682		22	2 do	pek	100	33
683		25	2 do	pek sou	100	31
684		28	1 do	sou	45	29
685		31	1 do	dust	70	25
686		34	1 do	congou	55	27
687	Peak Shadow	37	1 ch	bro mix	100	30
689		43	4 do	pek fans	400	28
690		46	1 do	dust No. 2	130	24
691	K G	49	8 hf-ch	bro pek	520	35
692	Kotna	55	2 ch	bro pek	200	34
694		58	2 do	pek	190	32
695		61	2 do	pek sou	190	30
700	Maldeniya	76	6 do	sou	510	29
701		79	2 do	congou	160	26
702		82	3 do	fans	225	28
703		85	2 do	dust	170	25
708	Yaha Ella	100	4 do	bro or pek	357	34
712		112	1 do	sou	90	29
713		115	2 do	pek fans	200	28
714		118	1 do	dust	100	25
716	New Galway	124	8 hf-ch	bro pek	480	50
717		127	8 do	pek	440	42
718		130	1 do	pek sou	50	37
719	Glenanore	133	1 ch	dust	90	25
729	Putupaula	163	5 do	sou	400	26
730		166	4 do	dust	320	25

Lot.		Box.	Pkgs.	Name.	lb.	c.
731	Pansalatenne	169	1 ch	pek sou	85	31
732		172	1 do	sou	80	29
733		175	3 do	red leaf	270	19
734		178	1 do	dust	100	22
738	Summerville	190	4 do	pek sou	344	33
739		193	6 hf-ch	dust	510	26
745	Harrow	211	3 ch	dust	290	25

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
9	Woodthorpe	25	2 ch	sou	152	29
10		28	1 hf-ch	dust	69	24
14	Primrose	40	5 hf-ch	sou	175	30
15	Allakolla	43	3 ch	hro pek	300	33
16	S F D	46	3 bf-ch	sou	165	30
17		49	3 ch	bro mix	483	24
			1 hf-ch			
21	Ravenoya	61	2 hf-ch	pek sou	108	30
22		64	1 ch	fans	155	26
29	Mary Hill	85	5 hf-ch	bro mix	450	24
37	Ramhoda	109	1 bf-cb	dust	90	24
38		112	1 do	fans	70	26
42	Neuchatel	124	1 ch	bro or pek	120	32
43		127	3 do	dust	470	24
48	Nehoda	142	4 hf-ch	dust	340	25
47	Kurunegalla est. Co. Ltd.	145	2 hf-ch	dust	180	25
60	Mahatenne	178	2 ch	pek sou	190	30
61		181	1 do	dust	100	25
64		190	2 ch	pek sou	230	30
			1 hf-ch			
65		193	1 do	dust	88	25
66		196	1 ch	red leaf	78	20
67	X L	199	2 ch	pek dust	200	23
70	Theberton	208	2 ch	sou	180	32
71		211	2 do	fans	200	26
72	A G	214	2 ch	pek dust	200	23
75	Killin	223	5 do	sou	450	30
76		226	2 do	dust	260	25
77		229	1 do	bro mix	100	22
79	St. Leys	235	3 hf-ch	dust	246	25
80		238	1 do	red leaf	53	22
84	Moragalla	250	1 ch	bro tea	112	25
89	Radage	265	5 hf-ch	bro pek	250	31
90		268	4 do	pek	200	30
91		271	1 do	pek sou	50	26
94	California	280	6 ch	pek sou	600	29
95		283	1 do	pek dust	152	24
96		286	1 do	red leaf	81	22
98	Oolapane	292	6 ch	pek	600	34
99		295	5 do	pek sou	450	32
101	Blackhurn	301	4 hf-ch	dust	312	25
103		307	3 ch	unas	264	27
104		310	1 bf-ch	sou	50	24
108	Stockholm	322	6 bf-cb	dust	480	25
109		325	1 ch	con	85	28
111	Dartry	331	4 ch	dust	368	24
112		334	6 do	bro tea	600	25
113	S L G	337	3 bf-ch	red leaf	135	20
116	Lower Dickoya	346	4 ch	pek sou	400	30
117		349	1 do	unas	101	29
118		352	4 hf-ch	dust	320	24
119		355	3 cb	hro sou	270	23
120	M G	358	2 hf-ch	hro mix	70	18
125		376	3 do	fans	450	32
127		379	1 do	pek	90	27
131	Hatdowa	391	2 ch	dust	370	25
			1 hf-ch			
132		394	1 do	bro mix	79	25
133		397	1 ch	sou	78	26
137	Meddegodda	409	5 hf-cb	pek sou	200	31
138		412	7 do	fans	455	31
139		415	2 ch	dust	160	25
145	St. Catberine	433	2 ch	pek	164	31
146		436	1 do	pek sou	86	29
147		439	2 do	dust	226	24
150	Y, in estate mark	448	2 hf ch	dust	180	24
151	Ahamad	451	3 hf-ch	bro pek	150	33
1.2		454	6 do	pek	300	31
153		457	8 do	pek sou	400	29
154		460	4 do	rek leaf	180	20
155		463	2 do	pekfans	100	22
163	Gewetenne	487	3 ch	con	204	26
164		490	1 do	pek dust	120	24
166	Glenalmond	496	6 cb	bro pek	600	34
167		499	2 do	pek	180	32
168		502	5 do	pek sou	400	30 hid
169		505	1 do	sou	80	28
170		508	1 hf ch	dust	70	24
171		511	1 do	fans	65	27
176	R C T F, in es-mark	526	3 hf-ch	dust	225	24
181	Monrovia	541	4 ch	bro tea	400	26
182		544	2 do	dust	300	24
186	Bogahagoda-watte	556	1 cb	fans	130	28
201	Mossville	601	2 cb	red eaf	180	24
208	Mora Ella	622	4 bf ch	fans	280	30
209		625	4 do	dust	340	24
210		628	1 do	sou	50	25
220	Annandale	658	10 hf-ch	sou	500	34
221		661	7 do	dust	524	26
222	R, in estate mark	664	6 hf-ch	con	238	26
223	Forest Hill	667	7 hf cb	bro or pek	371	35 bid
226		676	5 do	fans	360	26
227	Mousakande	679	4 hf-ch	bro or pek	212	34 bid
230		688	6 cb	pek sou	432	30 bid
231		691	4 hf-ch	fans	288	27
233	Gangwarily	697	5 hf-ch	dust	375	25
235		703	4 ch	red leaf	280	22
239	Neboda	715	8 hf ch	dust	680	24
268	Agarsland	802	2 hf-ch	bro pek	100	34
269		805	5 do	bro or pek	275	34
270		808	12 do	pek	552	33
271		811	6 do	pek sou	300	31
272		814	1 do	dust	73	24
274	F F, in estate estate	820	9 hf ch	pek	450	31
275		823	3 do	pek sou	135	29
276		326	2 do	bro pek fans	130	27
278	Eswatte	832	2 ch	sou	130	24
305	Bargany	913	1 bf cb	dust	94	24
306		916	8 do	bro or pek fans	560	35 hid
309	L, in estate					
311	H A	925	5 hf ch	pek	220	32
310	Donside	928	5 bf ch	dust	425	24
	patna	931	3 ch	fans	280	20
321	Comillah	931	1 ch	pek sou	100	32

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name,	lb.	c.
1	A A	701	2 ch	dust	210	23
4	Mel Villa	710	8 bf-cb	pek sou	400	30
5		713	1 do	dust	75	25
6	H F	716	2 cb	sou	180	25
7	G D S	719	4 do	pek sou	400	26
10	Sadamulla	728	6 do	sou	600	28
11		731	2 do	hro mix	200	23
12		734	1 do	dust	130	23
13		737	1 do	red leaf	100	16
14		740	1 do	congou	100	24
18	Vincit	752	3 do	pek fans	420	31
19		755	1 do	dust	160	23
25	Cleveland	773	9 bf-ch	pek sou	450	39
26		776	3 do	fans	240	34
30	Mossend	788	7 do	fans	420	35
31	L W Ceylon	791	5 do	pek sou	200	32
32		794	17 do	sou	680	25
33		797	6 do	pek dust	300	24
34		800	6 do	dust	420	25
38	L E L	812	1 do			
			1 bf-ch	pek sou	156	33
39		815	7 do	fans	560	32
40		818	5 do	dust	502	25
44	Woodlands	830	1 cb	bro mix	100	24
45		833	1 do	dust	110	26
53	Galloola	857	2 do	dust	200	25
57	Tempo	869	1 do	bro or pek	119	33
68	G W	902	5 do	bro mix	525	25
77	S J	929	4 hf ch	bro pek	240	34
78		932	3 do	pekoe	180	33
79	Nanuoya	935	1 do	dust	55	24
80		938	3 cb			
			1 bf-ch	sou	319	26
85	Kotuagedera	953	1 cb	pek sou	95	29
86		956	3 hf-ch	dust	270	24
87		959	3 do	hro pek fans	225	27
91	Nahavilla	971	1 cb	sou	90	33
92		974	5 hf ch	pek fans	350	31
93		977	3 do	dust	240	26
94		980	1 do	red leaf	50	24
100	N	998	6 do	dust	510	25
104	S	10	5 ch	sou	425	29
105		13	5 do	bro mix	450	22
107	G L	19	9 hf-ch	hro pek fans	558	30
108		22	6 ch	sou	570	27
115	Perth	43	1 bf-ch	red leaf	42	25
121	Iona	61	4 do	dust	300	26
126	Glassaugh	76	5 do	dust	475	26
127		79	1 cb	bro mix	100	26
134	Bittacy	100	3 do	hro mix	275	24
144	Rondura	130	3 do	dust	360	26
148	Ben Nevis	142	7 do	pek sou	574	35
149		115	3 hf-ch	dust	246	26
150	Dalhousie	148	3 do	or pek	135	45
154		160	6 do	fans	420	30
155		163	6 do	bro mix	360	19
162	Akkara Totum	184	6 ch	bro pek	540	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
164		190	6 ch	pek sou	480	27
165		193	1 do	fans No. 1	100	26
167		199	6 do	bro mix	480	20
168		202	1 do	dust	100	23
170	Kolapatna	208	4 do	bro pek	440	35
171		211	6 do	or pek	510	37
172		214	1 do	pekoe	80	34
177	Bovey	229	1 hf-ch	fans	75	23
178		232	1 ch	dust	140	25
179	Marakona	235	2 do	dust	200	24
182	Meddegodda	244	5 hf-ch	pek sou	200	31
183		247	6 do	fans	390	32
184		250	2 do	dust	160	24
193	Eladuwa	277	6 ch	bro pek	660	35
197		289	1 do	mixed	135	21
198	The Farm	292	2 do	dust	180	25
199	Y K L	295	6 do	pek sou	570	23
210	Murraythwaite	328	5 do	fans	600	31
211		331	3 do	dust	383	25
215	Maskeliya	343	6 do	pek sou	600	33
216		346	6 hf-ch	fans	360	31
217		349	3 do	dust	270	24

Lot.		Box.	Pkgs.	Name.	lb.	c.
221	W H	361	2 hf-ch	or pek	82	35
222		364	3 do	bro pek	174	35
223		367	6 do	pekoe	312	32
224		370	5 do	pek sou	230	31
225	M C	373	1 ch	red leaf	96	20
226	Ohiya	376	2 do	pek sou	180	32
227		379	3 hf-ch	fans	255	25
228		382	2 ch	son	180	30
248	W H	442	3 hf-ch	dust	255	28
249	Theresia	445	3 ch	bro pek fans	300	33
250		448	1 do	sou	75	32
251		451	6 hf-ch	dust	480	26
261	Ottery	481	2 ch	dust	310	25
265	Elston	493	2 do	cougon	200	25
278	Templestowe	532	7 do	bro mix	630	24
279		535	5 hf-ch	f ns	325	28
287	Gonavy	559	7 ch	pek sou	630	33
291		562	8 hf-ch	dust	640	25
293		565	3 ch	congou	205	23
299	Kol apatna	571	2 do	pek sou	170	32
228		574	2 do	dust	187	25
288	L B	577	5 do	red leaf	280	21

OBSERVER PRINTING WORKS.

No. 3 COLOMBO, JANUARY 29, 1900. PRICE:—12½ cents each copies 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[10,765 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Mapitigama	3	8 ch	bro or pek	840	42
2		6	14 do	bro pek	1400	34 bid
3		9	15 do	pek	1350	32 bid
4		12	18 do	pek sou	1530	30
7	Hornsey	21	28 ch	or pek	2520	38 bid
8		24	21 do	pek	1575	36 bid

[Messrs. Somerville & Co.—273,648 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	I P	964	22 ch	pek sou	1870	31
2		967	17 hf-ch	dust	1428	25
3	L	970	17 ch	bro mix	1700	26
4		973	12 hf-ch	dust	996	25
8	Hangran Oya	985	13 ch	pek	1105	31 bid
10		991	16 hf-ch	fans	1120	28
13	S R K	1000	12 ch	pek sou	1140	33
17	Kelani	1012	55 ch	bro pek	4400	34 bid
18		1015	13 do	bro or pek	1300	34 bid
19		1018	34 do	pek	2890	33
20		1021	17 do	pek sou	1530	31
21		1024	6 do	dust	720	25
22		1027	8 do	con	760	26
38	Jak Tree Hill	1075	22 hf-ch	bro pek	1100	37
39		1078	35 do	pek	1575	34
42	Lonach	1087	84 hf-ch	bro pek	4620	37
43		1090	31 ch	pek	2635	35
44		1093	18 do	pek sou	1530	32
57	Nyanza	1132	8 ch	bro or pek	800	42
58		1135	14 do	bro pek	1400	35 bid
59		1138	20 do	or pek	1800	36 bid
60		1141	39 do	pek	3705	34 bid
61		1144	22 do	pek sou	2090	31 bid
63		1150	7 do	dust	700	24 bid
67	Kurulugalla	1162	17 ch	bro pek	1700	30 bid
68		1165	16 do	pek	1440	29
69		1168	9 do	pek sou	900	27 bid
78	Mousa Eliya	1195	29 ch	bro pek	2900	34 bid
79		1198	23 do	pek	2070	33
82	Oakham	7	18 hf ch	bro pek	1080	38 bid
83		10	14 do	pek	1260	34 bid
90	Wilpita	31	26 ch	bro pek	2600	23 bid
91		34	19 do	pek	1900	28 bid
92		37	11 do	pe sou	1070	26 bid
94		43	8 do	fans	825	25
97	Wendura	52	9 ch	bro pek	882	34
99		58	11 do	pek sou	880	31
106	Patulpana	79	20 hf-ch	bro pek	1100	28 bid
112	Citrus	97	11 ch	bro pek	1100	31 bid
113		100	15 do	pek	1350	31
114		103	8 do	pek sou	800	28
119	New Valley	118	28 ch	bro or pek	2800	40 bid
120		112	19 do	or pek	1710	38 bid
121		124	23 do	pek	2300	35 bid
122		127	19 do	pek sou	1710	33 bid
125	N I T	136	14 ch	unas No. 2	1260	26
128	Gwernet	139	11 ch	bro pek	1100	35 bid
135	Hanrookande	163	15 hf-ch	bro pek	825	3
139	Yarrow	178	65 hf-ch	bro pek	3640	35 bid
140		181	55 do	pek	2750	33 bid
142	Yspa	187	21 ch	pek sou	1785	31 bid
143		190	19 hf-ch	dust	1610	27
151	N	214	34 hf-ch	bro pek	2145	35
152		217	52 do	pek	2600	34
156	Tiddydale	229	16 hf-ch	bro pek	800	32
157		332	20 ch	pek	1800	32
164	G A Ceylon	253	16 hf-ch	dust	1264	24
167	Ingriya	262	52 hf-ch	bro pek	2600	33 bid
168		265	49 do	pek	2352	32
169		268	39 do	pek sou	1 94	31
170		271	33 do	bro pek fans	1980	32
172	Narangoda	277	63 ch	bro pek	6300	32 bid
173		280	34 do	pek	3191	31 bid
174		283	22 do	pek sou	1980	30
175		286	13 do	dust	1105	25
177	Doraglla	294	17 ch	bro or pek	1700	36 bid
178		295	22 do	bro pek	2200	34 bid
179		298	67 do	pek	5360	35
180		301	14 ch	pek sou	1120	32
181		304	29 hf-ch	bro mix	2030	28 bid

Lot,		Box.	Pkgs.	Name.	lb.	c.
182	Kosgama	307	19 ch	bro pek	1900	34
183		310	13 do	pek	1040	32
185	Harangalla	316	8 ch	or pek	760	35 bid
186		319	7 do	bro or pek	700	34 bid
187		322	35 do	pek	2800	34 bid
188		325	16 do	sou	1200	31 bid
189		328	12 hf-ch	dust	960	27
190	J M D M	331	9 ch	bro pek	900	31 bid
191		334	15 do	pek	1425	30 bid
192		337	8 do	pek sou	760	26 bid
196	Corfu	349	22 hf-ch	bro pek	1210	37 bid
198		355	36 do	pek	1800	35 bid
200		361	10 do	bro pek fans	750	29
202	Havilland	367	7 ch	pek fans	700	27
205	Deniyaya	376	54 ch	bro pek	5400	34 bid
206		379	38 do	pek	3800	32 bid
207		382	21 do	pek sou	2100	31
209		388	6 do	dust	930	25
210	Selvawatte	391	24 ch	bro pek	2280	32 bid
211		394	16 do	pek	1440	29 bid
217	Bollagalla	412	31 ch	bro pek	3100	33 bid
218		415	19 do	pek	1520	33 bid
219		418	14 do	pek sou	1120	30
224	R T, in estate mark	433	14 ch	fans	1540	28 bid
225		436	21 do	bro mix	2205	28
226		439	15 hf-ch	dust	1200	24
227	Kuralana	442	13 ch	bro pek	1300	24 bid
228		445	9 do	pek	900	28 bid
229		448	13 do	pek sou	1235	25 bid
230	Daluk Oya	451	16 hf ch	bro or pek	960	35 bid
231		454	13 do	or pek	715	33 bid
232		457	13 do	pek	715	31 bid
237	P S P	472	47 hf ch	bro pek	2350	33 bid
237a		472a	10 ch	bro pek	930	
238		475	41 do	pek	3075	30
239		478	18 do	pek sou	1260	29
247	Attlville	502	7 ch	bro pek	703	28 bid
248		505	13 do	pek	1235	29 bid
262	M, D R, in estate mark	547	27 hf ch	pek fans	1776	29 bid
263		550	21 do	dust	1890	22 bid
264	X X X	553	20 hf ch	dust	1800	22 bid
265	Pannapitiya	556	8 ch	bro pek	800	30 bid
266		559	10 do	pek	950	29 bid
267		562	12 do	pek sou	1320	26 bid

[Mr. E. John.—262,960 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Welicoda	580	10 ch	bro tea	800	20
6	Harrisland	592	12 do	bro pek	1176	35
7		595	10 do	pekoe	800	34
8		598	12 do	pek sou	960	33
9	Oonogalaya	601	7 do	bro or pek	700	35 bid
10		604	28 do	or pek	2520	39
11		607	33 do	pekoe	2805	34
12		610	9 do	pek sou	720	32
13		613	8 do	dust	1200	25
15	N D D, in estate mark	619	25 hf-ch	fans	1875	26
17		625	8 ch	bro mix	800	17
25	Maskeliya	649	15 do	or pek	1310	42
26		652	14 do	pekoe	1226	36
31	Hiralouvah	667	28 hf-ch	or pek	1400	33 bid
32		670	18 do	bro or pek	1080	33
33		673	24 ch	pekoe	2160	33
34		676	14 do	pek sou	1190	31
38	Ferndale	688	15 do	bro or pek	1500	44
39		691	17 do	or pek	1530	37
40		694	31 do	pekoe	2790	35
41	Eadella	697	19 do	bro or pek	1900	34
42		700	17 do	bro pek	1700	33
43		703	30 do	pekoe	3000	33
44		706	9 do	pek sou	810	30
47	Sinna Dua	715	19 hf-ch	bro pek	1140	34
48		718	13 ch	pekoe	1066	33
49		721	10 do	pek sou	760	31
50	Glentilt	724	46 do	bro pek	4600	39 bid
51		727	16 do	pekoe	1600	38
52		730	11 do	pek sou	1045	35
53		733	27 hf-ch	fans	2160	26
54	Mocha	736	17 ch	bro or pek	1700	58
55		739	13 do	or pek	1170	52
56		742	18 do	pekoe	1710	45
57		745	18 do	pek sou	1530	39
60	Brownlow	754	34 hf-ch	bro or pek	1972	43
61		757	27 ch	or pek	2565	41 bid
62		760	41 do	pekoe	3567	39
63		763	19 do	pek sou	1596	36

Lot.		Box.	Pkgs.	Name.	lb.	c.
64		766	9 ch	congou	756	31
67		775	13 hf ch	dust	1105	27
68	Gangawatte	778	26 ch	or pek	2340	35 bid
69		781	40 do	pekoe	3400	34 bid
70		784	20 do	pek sou	1800	32 bid
71		787	14 hf-ch	dust	1260	26
72		790	93 do	bro or pek	5880	38 bid
74		496	18 do	pek fans	1350	28
77	Elteb	805	23 do	fans	2039	31
78	Wahagapitiya	808	9 ch	bro pek	900	34
80		814	8 do	pekoe	760	33 bid
84	Choughleigh	826	7 do	bro pek	700	34
86	Troup	832	27 do	pek sou	2430	40
87		835	16 do	sou	1440	36
88		838	10 do	bro mix	1000	31
91	Alplakanda	847	10 do	sou	840	31
92	Kandaloya	850	49 hf-ch	bro pek	2205	36 bid
93		853	25 do	bro pek	1125	36 bid
94		856	42 do	or pek	1880	36
95		859	112 do	pekoe	4480	35
96		862	20 do	pek sou	800	31
97	Ratwatte	865	41 ch	bro pek	4100	34
98		868	26 do	pekoe	2340	32 bid
99		871	10 do	pek sou	800	30
100	Galella	874	21 do	bro pek	2100	37 bid
101		877	16 do	pekoe	1600	33
103	W H G	883	24 do	pek sou	2400	36
111	Lynford	907	9 do	bro tea	900	21
114	Agra Ouvah	916	74 hf-ch	bro or pek No. 1	473	48
115		919	60 do	bro or pek No. 2	3600	43
116		922	26 ch	or pek	2444	42
117		925	16 do	pekoe	1472	40
118	Glasgow	928	40 do	bro or pek	3480	45 bid
119		931	44 do	bro pek	3520	40 bid
120		934	17 do	or pek	1105	41
121		937	12 do	pekoe	1200	40
122	Little Valley	940	12 do	or pek	1020	40
123		943	14 do	bro pek	1400	36
124		946	35 do	pek sou	2625	34
125		949	14 do	dust	1120	33
127	Kotuagedera	955	23 do	bro pek	2300	34
128		958	12 do	pekoe	1140	32
129	Dickapittia	961	34 do	bro pek	3400	36
130		964	39 do	pekoe	3900	33
131		967	12 hf-ch	fans	780	31
132	Mahanilu	970	42 do	or pek	2268	42
133		973	13 do	bro or pek	832	34 bid
135		979	13 ch	pekoe	1209	38
136		982	11 do	pek sou	990	34
137		985	11 hf-ch	fans	792	33
138	Glassaugh	988	20 do	or pek	1590	58
139		991	42 do	bro or pek	2730	46
140		994	30 ch	pekoe	2850	46
142	Galella	1000	12 do	bro pek	1200	36 bid
143	Keenagaha Ella	3	43 do 10 hf-ch	or pek	4585	33
144		6	60 ch 1 hf-ch	pekoe	4295	31
145		9	22 ch 6 hf-ch	sou	1890	23
146		12	20 ch 9 hf-ch	pek sou	2005	30
147		15	14 do	bro pek fans	915	28
148		18	11 ch	congou	725	25
149	Glentilt	21	34 do	bro pek	3400	38 bid
150		24	14 do	pekoe	1400	35 bid
151	Whyddon	27	16 do	or pek	1488	36 bid
152		30	36 do	bro pek	3600	38 bid
153		33	24 do	pekoe	2400	36
154		36	30 do	pek sou	2550	33 bid
155		39	10 hf-ch	pek fans	700	31
156		42	5 ch	dust	725	26
158	B K S	48	30 hf-ch	bro pek fans	1950	31 bid
159	Murraythwaite	51	24 ch	bro pek	2289	34
160		54	24 do	pekoe	2040	32 bid
161	Mount Everest	57	25 hf-ch	bro or pek	1375	46 bid
162		60	38 do	or pek	1900	43 bid
163		63	34 ch	pekoe	3400	35 bid
164		66	15 do	pek sou	1350	32 bid
165		69	19 hf ch	bro pek fans	1330	30
168	H F	78	46 do	pek fans	3450	38
169		81	15 ch	dust	2625	25 bid
170	Bellongalla	84	40 hf-ch	bro pek	2000	32
171		87	24 ch	pekoe	1920	31
172		90	14 do	pek sou	840	28

Messrs. Forbes & Walker.

[759,130 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Attampettia	232	9 ch	bro pek	900	35 bid
4		235	8 do	pek	760	35
6	W F, in estate mark	241	14 ch	congou	1266	29
10	V, in estate mark	253	12 ch	pek sou	1140	28
14	Palm Garden	265	8 ch 1 hf-ch	bro pek	870	33
15		268	8 ch	pek	800	31
24	Clunes	295	17 ch	bro or pek	1700	33
25		298	14 do	bro pek	1330	34
26		301	24 do	or pek	1920	34
27		304	61 do	pek	4880	34
28		307	12 do	pek sou	1200	31
31	Aberdeen	316	65 ch	bro pek	6305	34
32		319	65 do	pek	5200	34
33		322	18 do	sou	1350	31
34		325	18 hf-ch	bro pek fans	1170	31
36	Galkadua	331	17 ch	bro pek	1870	32
37		334	21 do	pek	2071	33
38		337	14 do	pek sou	1400	31
47	Talgaswella	364	37 hf-ch	bro or pek	2620	25
48		367	35 do	bro pek	2975	34
49		370	53 do	or pek	4240	34
50		373	14 do	bro pek No 2	770	32
51		376	45 do	pek	3825	33
52		379	36 do	pek sou	2880	31
53		382	11 do	fans	770	27
56	Sutton	391	23 ch	bro or pek	2576	51
57		394	35 do	or pek	3500	46
58		397	19 do	pek	1520	42
59		400	11 do	pek sou	902	38
60		403	13 do	dust	1105	26
61		406	18 do	fans	1260	33
65	Kalugalla	418	11 ch	bro pek	1100	33
69	Fred3 Ruhe	430	51 ch	bro pek	5100	33
70		433	33 do	pek	2970	33
71		436	26 do	pek sou	2340	30
78	Elfindale	457	11 ch	pek	990	29
79		460	7 do	fans	700	26
80	Glencorse	463	11 ch	bro or pek	1100	35
81		466	18 do	bro pek	1620	33
82		469	18 do	pek	1440	32
83		472	12 do	pek sou	960	31
87	Sirikandura	484	33 ch	bro pek	3300	33
88		487	38 do	pek	3840	32
89		490	24 do	pek sou	2040	30
93	P, in estate mark	502	23 ch	bro or pek	1725	44 bid
94		505	30 do	bro pek	3900	41 bid
96		511	10 do	fans	800	32 bid
98	Macaldeniya	517	42 hf-ch	bro pek	2345	37
99		520	27 do	pek	1425	36
100		523	21 do	pek sou	1090	32
104	Queensland	535	27 hf-ch	bro or pek	1485	56
105		538	22 do	bro pek	1100	40
106		541	18 ch	or pek	1620	42
107		544	39 do	pek	3315	40
108		547	14 do	pek sou	1190	34
109	N B D	550	24 ch	bro mix	2160	20
112	H G M	559	9 ch	bro or pek	765	44
113		562	16 do	bro pek	1600	34 bid
114		565	22 do	pek	1870	35
115		568	10 do	pek sou	850	33
116		571	9 do	bro pek fans	810	32
118	M'Tenne	577	19 hf ch	pek sou	859	22
119	Passara Group	580	20 ch	bro or pek	2000	37
120		583	16 do	or pek	1440	38
121		586	17 do	pek	1530	36
122		589	7 do	pek sou	700	33
131	Ella Oya	610	13 ch 1 hf-ch	bro pek	1361	34
132		613	13 ch	pek	1170	33
133		616	19 ch 1 hf-ch	pek sou	1721	31
135		622	13 ch	bro pek fans	910	30
142	Woodend	643	36 ch	bro pek	3600	34
143		646	63 do	pek	5985	33
144		649	15 do	pek sou	1275	32
146	Beausejour	655	53 hf-ch	bro pek	2120	33
147		658	31 ch	pek	2480	29 bid
151	M C, in estate mark	670	10 ch	unas	1010	33
152		673	11 do	congou	1045	28
159	Kalupahana	694	7 ch 3 hf-ch	bro mix	815	26
168	Thedden	721	30 ch	bro pek	3000	34
169		724	15 do	pek	1425	34
170		727	8 do	pek sou	720	31
179	A B F	754	12 ch	pek	1200	29
183	Great Valley Ceylon, in estate mark	766	39 ch	or pek	3510	
184		769	59 hf-ch	bro pek	3245	45
185		772	63 do	pek	5670	35
186		775	42 do	pek sou	3150	32

Lot.		Box.	Pkgs.		Name.	lb.	c.
189	Kelaneiya and Braemar	784	22	ch	bro or pek	2200	36 bid
190		787	19	do	bro or pek	1900	35 bid
191		790	18	do	pek	1800	34
194	Wewawatte	799	20	ch	bro pek	1100	32
202	Nakiadeniya	823	10	ch	bro pek No 1	900	35
204		829	11	ch	pek	810	31
223	Nillomally, O B E C, in est. mark	886	17	ch	bro or pek	1802	47
224		889	27	do	bro pek	2700	38
225		892	32	do	or pek	2880	37
226		895	19	do	pek	1596	36
227		898	15	do	pek sou	1050	33
228	B E W P	901	23	hf-ch	bro pek	2210	34 bid
229	B and D	904	10	ch	pek No. 2	760	34
230	St. Leonards-on-sea	907	10	ch	bro pek	1100	32 bid
231		910	9	do	pek	900	31 bid
234	Tymawr	919	22	hf-ch	bro or pek	1210	47
235		922	38	do	or pek	1900	44
236		925	96	do	pek	4320	42
237		928	52	do	pek sou	2600	37
240	Gallawatte	937	12	ch	bro pek	1 40	33 bid
241		940	13	do	pek	1105	33
242		943	14	do	pek sou	1190	31
245		952	9	do	dust	765	24
248	Tunisgalla	961	32	hf-ch	bro pek	2600	33
250		967	53	do	pek	2750	32
251	Ardlaw and Wishford	970	28	ch	bro or pek	3080	42 bid
252		973	34	do	bro pek	3570	40 bid
253		976	17	do	or pek	1479	39 bid
254		979	27	do	pek	2241	39
255		982	59	hf-ch	or pek	2832	36
256		985	37	do	bro or pek	2220	34 bid
257		988	19	ch	pek	1482	34
258		991	30	do	pek sou	2400	30 bid
259	Bundara Dliya	994	51	hf-ch	or pek	2652	42
260		997	33	do	bro or pek	2046	36 bid
261		1000	18	ch	pek	1476	36 bid
262		1003	16	do	pek sou	1280	36
263	Galapitakande	1006	9	ch	or pek	810	36
264		1009	22	do	bro pek	2200	36
265		1012	15	do	pek	1500	34
266		1015	8	do	pek sou	800	31
269	A M B	1024	9	ch	bro pek	774	27
270		1027	15	do	dust	1950	24
271	Irex	1030	32	ch	bro pek	3200	34 bid
272		1033	22	do	pek	1980	31 bid
273		1036	12	do	pek sou	960	30
276	O B E C, in est. mark Forest Creek	1045	14	ch	bro pek	1540	40 bid
278	Frogmore	1051	18	hf-ch	pek	990	35 bid
283	Ismalle	1066	18	ch	sou	1530	29
286		1075	18	hf-ch	dust	1530	25
287	Ireby	1078	27	ch	bro pek	2970	45 bid
288		1081	18	do	pek	1620	43
289		1084	8	do	pek sou	720	36
292	Dambagastalawa	1093	21	ch	bro pek	2205	36
294	Kotagaloya	1099	25	ch	pek	2125	33
295		1102	14	do	pek sou	1120	32
298	Mahayaya	1111	16	hf-ch	pek	896	33
301	C S G	1120	85	hf-ch	bro pek	4250	36 bid
302		1123	68	ch	pek	5440	35
303		1126	20	do	pek sou	1600	34
305		1132	11	hf ch	dust	880	27
320	Amblakande	1177	25	ch	bro pek	2500	33 bid
321		1180	23	do	pek	1955	33
323		1186	10	do	dust	1000	24
324	Coreen	1189	18	hf-ch	bro or pek	1080	42 bid
325		1192	31 / 1	hf-ch / ch	bro pek	1960	37 bid
326		1195	20	ch	or pek	1800	45
327		1198	24	do	pek	2160	38
330	Waitalawa	1207	52	hf-ch	bro pek	2600	35 bid
331		1210	72	do	pek	3600	33
332		1213	27	do	pek sou	1350	32
333	Nugagalla	1216	18	hf-ch	bro tea	900	37
334		1219	42	do	pek	2100	32
337	L G F, in est. mark	1228	15	ch	sou	1650	27
338		1231	12	do	dust	1008	26
339	T Villa	1234	10	ch	bro or pek	1000	23
341		1240	18	do	pek	1620	31
346	Caledonia	1255	12	ch	bro pek	1200	31
347		1258	12	do	pek	1200	30
348		1261	9	do	pek sou	900	28
352	Castlereagh	1273	21	ch	bro pek	2100	40 bid
353		1276	19	do	or pek	1615	40
354		1279	15	do	pek	1200	38
361	Alton	1300	11	ch	dust	1015	26

Lot		Box.	Pkgs.		Name.	lb.	c.
362	East Holyrood	1303	10	ch	pek sou	950	31
364	L, in estate mark	1309	15	ch	bro tea	1365	25
367	C O	1318	7	ch	bro tea	700	25
371	G A	1330	8	do	bro mix	720	29
373	V O A	1336	7	do	red leaf fans	700	20
374	B D W P	1339	31	hf-ch	or pek	2635	33 bid
379	W V R A	1354	13	do	fans	1040	24
384	Middleton	1369	32	do	bro or pek	1824	55 bid
385		1372	22	ch	bro pek	1980	48
386		1375	23	do	pek	1955	42
387		1378	16	do	pek sou	1440	40
388	T in est. mark	1381	7	do	bro pek	700	36
391		1390	18	do	dust	1620	24
392	St. Heliers	1393	25	hf-ch	bro or pek	1400	36 bid
393		1396	22	ch	pek	1980	32
394	Palmerston	1399	18	hf-ch	bro or pek	936	71
395		1402	20	do	bro pek	1040	46
396		1405	16	ch	pek	1360	41
404	Seenagolla	1429	34	hf-ch	bro pek	1870	37 bid
405		1432	13	ch	or pek	1105	38
410	Killarney	1447	78	hf-ch	bro or pek	4290	41
412		1453	38	ch	pek sou	3610	36
414		1459	13	hf-ch	dust	1105	27
416	Tonacombe	1465	23	ch	or pek	2070	38 bid
417		1468	9	do	bro or pek	900	52
418		1471	22	do	bro pek	2200	38
419		1474	42	do	pek	3780	37
420		1477	12	do	pek sou	1080	33
422	High Forest	1483	41	hf ch	or pk No. 1	2337	59
423		1486	37	do	or pek	1961	49
424		1489	22	do	bro or pek	1540	40
425		1492	27	do	pek	1269	41
427		1498	11	do	pek dust	1034	28
430	Weoya	1507	24	ch	bro pek	2400	33
431		1510	16	do	or pek	1520	34
432		1513	24	do	pek	2040	32
433		1516	22	do	pek sou	1760	29
436	Erracht	1525	13	do	bro or pek	1620	34
437		1528	29	do	bro pek	2030	33 bid
438		1531	55	do	pek	3850	32
439		1534	23	do	pek sou	1840	31
440		1537	15	do	bro pk fans	1500	31
443	Pallagodde	1546	15	do	bro or pek	1500	34
444		1549	22	do	bro pek	2200	40
445		1552	21	do	or pek	1785	35
446		1555	18	do	pek	1530	33
447		1558	16	do	pek sou	1440	32
449		1564	21	do	dust	1785	26
451	Dea Ella	1570	22	hf ch	bro or pek	1276	37
452		1573	36	do	or pek	1872	35
453		1576	38	do	pek	1900	34
454		1579	16	do	pek sou	704	32
457	Battawatte	1588	25	ch	bro pek	2740	39
458		1591	63	do	pek	5972	35
459		1594	37 / 1	do / hf-ch	pek sou	3010	35
462	Rockside	1603	9	ch	sou	720	30
465		1612	6	do	bro pk fans	720	30
466		1615	4	do	dust No. 2	700	25
467	Shrubs Hill	1618	60	do	bro pek	6000	35 bid
468		1621	35	do	pek	2970	33 bid
469		1624	60	do	bro pek	6000	35 bid
470		1627	21	do	pek	1785	33 bid
471		1630	11	do	pek sou	968	31 bid
472		1633	22	do	bro pk fans	1804	26
474	Cooroondoowatte	1639	16	hf-ch	bro pek	880	36
475		1642	15	do	pek	825	35
476		1645	15	do	pek sou	825	33
477	Ingrogalla	1648	12	ch	bro pek	1200	35
478		1651	14	do	pek	1190	34 bid
479	Harrington	1654	19	hf-ch	bro or pek	950	47
480		1657	14	ch	or pek	1260	38 bid
481		1660	11	do	pek A	990	36
483	Choisy	1666	52	do	bro pek	5450	38 bid
484		1669	35	do	pek No. 1	3325	37 bid
485		1672	36	do	pek No. 2	3240	34 bid
486		1675	37	do	pek sou	3145	32 bid
501	Penrhos	1720	21	do	bro or pek	1113	47
502		1723	23	do	or pek	1035	39
503		1726	42	ch	pek	3570	35
507	Chesterford	1738	37	do	bro pek	3700	40
508		1741	36	do	pek	3600	36
509		1744	25	do	pek sou	2500	33
510	Lynsted	1747	14	hf-ch	bro or pek	840	48
511		1750	50	do	bro pek	3000	41
512		1753	28	do	pek	1400	41
517	Halwatura	1768	11	ch	sou	770	29
521	Mawaliganga-watte	1780	28	do	bro pek	2660	33 bid
522		1783	14	do	pek	1050	32 bid
523		1786	30	do	pek sou	2100	30
532	L B K	1813	8	do	pek	728	32
541	Relugas	1840	6	do	dust	750	18
544	Ugieside	1849	11	do	bro mix	1100	27

Lot.		Box.	Pkgs.		Name.	lb.	c.
547	Roeberry	1858	18	ch	bro pek	1800	43
548		1861	15	do	pek	1350	36
549		1864	10	do	pek sou	820	33
550	Polatagama	1867	89	do	bro pek	8010	36
551		1870	54	do	or pek	4590	33
552		1873	92	do	pek	7820	31
553		1876	27	do	pek sou	2160	29
554		1879	32	do	fans	3040	29
556		1885	5	do	dust	750	25
578	Dehiowita	1951	8	do	pek fans	880	28
579		1954	9	do			
			1	hf-ch	fans	1310	25
585	Anningkande	1972	18	ch	pek	1710	34
586		1975	15	do	pek sou	1350	32 bid
588		1981	10	hf-ch	dust	750	25
589	Kitulgalla	1984	33	do	or pek	1815	34
590		1987	14	do	bro or pek	930	33 bid
591		1990	37	ch	pek	2775	31 bid
595	Leygrove	2002	14	do	bro pek	1470	40
600	Amhurst	2017	25	hf-ch	bro pek	1500	60 bid
601		2020	22	do	pek	1100	46 bid
607	Deyanilla	2038	30	ch	bro pek	3000	37
608		2041	13	do	pek	1170	34
617	Pine Hill	2068	25	do	bro or pek	1450	40 bid
618		2071	26	do	or pek	1456	37
619		2074	42	ch	pek	3150	34
622	Doranakande	2083	8	do	bro pek	800	34
625		2092	11	do	pek sou	990	30
626	Ardlaw and Wishford	2095	22	do	bro or pek	2200	40 bid
627		2098	36	hf-ch	or pk No. 1	1800	40 bid
629		2104	13	ch	pek	1105	38
634	Carfax	2119	14	do	bro pek	1540	36
635		2122	9	do	pek sou	900	28
636	Hopton	2125	29	do	bro pek	2900	38
637		2128	25	do	pek	2250	33 bid
638		2131	12	do	pek sou	1080	31 bid
640	Amblangoda	2137	18	do	bro pek	1800	38
641		2140	15	do	pek	1350	34 bi
642		2143	8	do	pek sou	720	32

SMALL LOTS.

E. Benham & Co.

Lot.		Box.	Pkgs.		Name.	lb.	c.
5	Mapitigama	15	4	hf-ch	bro mixed	200	25

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.		Name.	lb.	c.
1	I K V	226	2	ch	bro mix	224	22
2		229	5	do	pek fan	600	23
5	Attampitiya	233	2	ch	pek sou	170	31
7	V, in estate mark	244	5	hf-ch	bro or pek	275	32
8		247	3	ch	or pek	255	32
9		250	4	do	pek	320	31
11		256	6	hf-ch	dust	480	24
16	Palm Garden	271	4	ch			
			1	hf-ch	pek sou	447	29
17		274	1	ch	fans	127	26
18		277	1	hf-ch	congou	35	26
19	S K M	280	1	hf-ch	bro pek	65	32
20		283	1	ch	pek	93	30
21		286	1	do	pek sou	93	27
22	W, in estate mark	289	2	ch	dust	194	24
23	M, in estate mark	292	2	ch	dust	230	25
29	Clunes	310	5	hf-ch	dust	450	24
30		313	3	do	bro or pek fans	210	29
35	Galkadua	328	3	ch	bro or pek	360	34
39		340	1	do			
			1	hf-ch	con	140	26
40		343	1	ch			
			1	hf ch	fans	192	26
41		346	1	ch	dust	142	22
54	Talgaswella	385	4	hf-ch	dust	360	23
55		388	1	do	bro pek	83	22
63	J S	412	3	ch	red leaf No. 1	285	
64		415	4	do	red leaf No. 2	340	23
66	Kalugalla	421	5	ch	pek	450	31
67		424	5	do	pek sou	400	28
68		427	1	do	dust	150	24
72	W A	439	5	do	bro pek	500	31
73		442	4	do	pek	360	30
74		445	4	do	pek sou	360	26
75		448	3	ch	bro mix	330	19
76		451	3	do	dust	450	24
77	Elfindale	454	3	do	bro pek	500	31
84	Glencorse	475	3	ch	pek fans	300	28
85		478	2	do	bro tea	210	31
86		481	1	do	dust	73	24
90	Sirikandura	493	4	ch	fans	400	28
91		496	3	do	bro pek dust	420	28
92		499	2	ch	dust	320	23
95	P, in estate mark	508	4	ch	or pek	352	43
97		514	3	do	unas	210	31
101	Macaldeniya	526	4	hf-ch	unas	220	29
102		529	4	do	dust	310	24
103		532	1	do	bro tea	60	26
110	N B D	553	3	hf-ch	bro pek dust	221	25
111		556	7	do	unas	665	27
117	H G M	574	3	hf-ch	dust	255	26
123	Passara Group	592	1	do	fans	70	32
134	Ella Oya	619	8	ch	dust	680	23
145	Woodend	652	3	ch	dust	435	24
148	Beausejour	661	3	ch	pek sou	240	27
149		664	5	hf-ch	bro pek fans	300	30
150		667	4	do	dust	420	23
153	Kalupahana	676	3	hf-ch	bro or pek	174	49
154		679	5	do	bro pek	250	34
155		682	3	ch			
			6	hf-ch	or pek	541	32
156		685	4	ch			
			1	hf ch	pek	430	32
157		688	6	ch	pek sou	510	28
158		691	2	do			
			1	hf-ch	sou	214	25
160		697	1	ch	bro tea	95	25
161		700	2	hf-ch	dust	180	24
162	Hurstpierpoint	703	5	ch	bro pek	400	32
163		706	3	do	pek	252	30
164		709	2	do	pek sou	180	28
165		712	1	do	bro pek dust	121	24
166		715	1	do	fans	91	24
167		718	1	do	congou	84	25
171	Thedden	730	2	ch	pek sou	300	24
172	Munukettia Ceylon, in est. mark	733	1	ch	sou	80	29
173		736	5	hf-ch	dust	425	24
174	A B F	739	4	ch	bro pek	400	31
175		742	3	hf-ch	do	150	31
176		745	4	ch	or pek	400	32
177		748	5	hf-ch	do	250	32
178		751	1	do	do	30	32
180		757	4	hf ch	pek	200	28
181		760	1	ch	dust	140	23
182		763	1	hf-ch	dust	80	20
187	Great Valley Ceylon, in est. mark	778	6	hf-ch	sou	450	27
188		781	8	do	dust	640	26
192	Kelaneiya and Braemare	793	2	ch	sou	200	30
193		796	5	hf-ch	dust	400	25
195	Wewawatte	802	12	do	pek	600	31
196		805	1	do	fans	68	24
197		808	1	do	dust	41	20
199	Palawatte	814	6	ch	pek	600	31
200		817	2	do	pek sou	180	29
201		820	1	hf-ch	sou	48	27
203	Nakiadeniya	826	4	ch	bro pek No. 2	380	30
205	Nakiadeniya	832	4	do	bro pek No. 1	360	33
206		835	6	do	do „ 2	570	31
207		838	7	do	pek	560	30
208		841	1	hf ch	dust	81	24
209		844	1	do	red leaf	85	20
210	B F	847	4	do	bro pek	216	31
211		850	6	do	pek	282	29
212		853	7	do	pek sou	308	27
213		856	3	do	bro pek fans	162	27
214	B F	859	5	hf-ch	bro pek	270	32
215		862	6	do	pek	282	30
216		865	8	do	pek sou	344	28
217		868	3	do	bro pek fans	159	29
218	Galpottagama	871	1	ch	pek dust	125	21
219		874	4	do	fans	346	21
220		877	3	do	congou	262	21
221		880	2	do	unas	180	21
222		883	1	do	bro mix	94	21
232	St. Leonards on Sea	913	4	ch	bro mix	280	27
233		916	1	do	dust	90	23
238	Tymawr	931	3	hf ch	dust	255	24
239		934	3	do	fans	195	28
243	Ella Oya	946	7	ch	sou	560	28
244		949	8	do	pek fans	560	32
246	Gallawatte	955	2	do	bro pek	180	33

Lot.		Box.	Pkgs.	Name.	lb.	c.
247		958	3 ch	pek	255	31
249	Tunisgalla	9648	hf ch	dust	640	26
267	Galapitakande	1018	3 ch	dust	225	25
268	G M	1921	7 hf-ch	bro mix	399	20
274	Irex	1039	3 ch	dust	300	23
275		1012	1 do	bro mix	82	23
277	Frogmore	1048	9 hf ch	bro pek	405	43
279		1054	8 ch	pek sou	600	35 bid
280		1057	9 box	bro or pek	162	86
281		1060	8 do	or pek	176	58
282		1063	1 hf ch	dust	80	36
284	Ismalle	1069	5 ch	congou	390	24
285		1072	9 hf ch	fans	675	26
290	Ireby	1087	5 ch	fans	350	32
291		1090	6 do	dust	480	26
293	G O, in est. mark	1096	6 hf ch	pek	270	
266	Mahayaya	1105	6 do	bro or pek	420	34
297		1108	10 do	bro pek	580	36
299		1114	10 do	pek sou	550	31
300		1117	4 do	sou	220	28
304	C S G	1129	5 ch	bro mix	495	26
322	Amblakande	1183	8 ch	pek sou	640	31
328	Coreen	1201	5 hf ch	pek sou	250	33
329		1204	4 ch	dust	516	25
335	Nugagalla	1222	11 hf ch	pek sou	550	28
336		1225	5 do	dust	45	32
340	T'Villa	1237	6 ch	bro pek	600	32
342		1243	5 do	pek sou		27
343		1246	2 do	sou	170	26
344		1249	2 do	fans	220	26
345		1252	1 do			
			1 hf ch	dust	192	24
349	Caledonia	1264	3 ch	bro tea	300	19
350		1267	1 do	sou	100	20
351		2270	1 do			
			3 hf ch	pek dust	310	23
355	Castlereagh	1282	3 ch	pek sou	240	33
356		1285	5 hf ch	fans	350	31
357		1288	1 do	dust	80	24
358	Y	1291	1 box	red leaf	48	15
359	Tangakelle	1294	5 do	red leaf	250	23
360	Alton	1297	1 ch	pek sou	80	34
363	C, in estate mark	1306	2 do	bro tea	182	23
368	Ingurugalla	1321	1 ch	pek sou	91	30
369		1324	2 hf ch	bro tea	171	26
370		1327	1 ch	red leaf	91	24
375	B D W P	1342	1 do	bro pek No. 2	90	21
376		1345	1 do	pek No. 2	80	23
377		1348	1 do	pek sou No. 2	75	23
378		1351	3 do	dust	300	25
380	W V R A	1357	2 hf-ch	br tea	100	19
382	Mahagastota	1363	1 do	bro tea	56	28
383		1366	1 ch	red leaf	95	28
389	T in est. mark	1384	6 do	pek	570	30
390		1387	3 do	pek sou	240	28
397	Palmerston	1408	5 do	pek sou	400	35
368		1411	1 hf-ch	dust No. 1	70	26
399		1414	1 do	dust No. 2	77	25
400		1417	2 do	br or pek fans	140	34
401	O K	1420	6 ch	bro mix	510	25
402	Letchmey	1423	5 hf-ch	dust	413	25
403		1426	1 ch	pek fans	130	26
406	Seenagolla	1435	8 do	pek sou	680	33
407		1438	1 do	bro mix	85	24
408	K	1441	2 do	dust	320	25
409	Killarney	1444	6 do	or pek	540	40
411		1450	7 do	pek	595	38
413		1456	7 do	fans	490	31
415		1462	2 do	bro mix	190	29
421	Tonacombe	1480	7 do	dust	630	25
426	High Forest	1495	14 hf-ch	pek sou	644	37
428		1501	1 do	bro mix	34	25
429	Weoya	1504	3 ch	bro or pek	330	32
434		1519	3 do	dust	450	24
435		1522	4 do	mix	424	24
441	Erracht	1540	2 do	bro mix	160	25
442		1543	3 do	pek dust	525	24
443	ng od	1561	6 do	sou	540	28
450	Oea Ella	1567	1 hf-ch	bro or flo pek	56	61
455		1582	4 do	fans	220	30
456		1585	5 do	dust	400	25
460	Battawatte	1597	6 ch	bro pek fans	660	28
461		1600	5 do			
			1 hf-ch	dust	620	25
463	Rockside	1606	2 ch	bro mixed	200	25
464		1609	5 do	dust	675	25
473	Shrubs Hill	1636	4 do	bro tea	288	24
482	Harrington	1663	5 do	or pek fans	350	32
487	C	1678	7 do	sou	665	26
488	Katooloya	1681	1 hf-ch	pek sou	55	26
489	Kelburne	1684	5 ch	fans	450	25
490		1687	1 hf-ch	fans	75	24
491	Pingarawa	1690	3 ch	dust	300	23
492	Ragalla	1693	1 ch	bro tea	115	27
493		1696	6 hf-ch	fans	420	27
494		1699	3 do	dust	270	23
504	Penrhos	1729	6 ch	pek sou	480	31
505		1732	2 do	bro mixed	208	27
506		1735	4 hf-ch	fans	300	30
513	Lynsted	1756	15 do	pek sou	675	38
514		1759	3 do	congou	135	32
515		1762	4 do	dust	340	26
516		1765	4 do	fans	250	33
518	Halwatura	1771	9 do	bro pek fans	630	27
519		1774	4 do	dust	330	20
520		1777	3 do	unast	285	25
524	Mawaliganga-watta	1789	1 do	pek dust	75	24
525		1792	2 do	dust	180	23
530	L B K	1807	4 ch	bro or pek	400	35
531		1810	4 do	or pek	392	34
533		1816	1 do	pek sou	84	29
534	Kennington	1819	4 do	fans	460	27
535		1822	5 do	unast	600	27
536		1825	4 do	dust	520	24
537	Augusta	1828	1 do	sou	110	25
538		1831	4 do	dust	600	24
539	Yaha Ella	1834	1 do	pek	90	31
540		1837	1 do	pek fans	81	25
542	Relugas	1843	5 do	bro mixed	425	14
543	Ugieside	1846	6 hf-ch	dust	450	23
555	Polatagama	1882	4 ch	bro pek fans	460	30
557		1888	6 do	bro mix	510	22
562	S	1903	3 do			
			1 hf-ch	pek sou	357	29
574	Dehiowita	1939	4 do			
			1 hf-ch	bro pek	460	31
575		1942	6 ch	pek	540	29
576		1945	4 do	pek sou	320	27
577		1948	1 do			
			1 hf-ch	sou	118	25
580		1957	2 ch	red leaf	160	19
581	K	1960	12 hf-ch	or pek	586	16
584	Anningkande	1969	3 ch	bro pek	300	34
587		1978	7 do	congou	582	28
592	Kitulgalla	1993	4 do	pek sou	200	28
593		1996	3 do	dust	360	24
594		1999	2 hf-ch	bro or pek	120	31
596	Lyegrove	2005	7 do	bro pek	630	34
597		2008	2 ch	pek sou	160	31
598		2011	1 hf-ch	fans	95	26
599		2014	1 do	bro tea	50	23
602	Amhurst	2023	6 do	pek sou	240	42 bid
603		2026	1 do	dust	85	29 bid
604	Oookoowatte	2029	1 ch	dust	170	23
605		2032	1 hf-ch	pek fans	52	25
606		2035	1 ch	sou	65	24
609	Deyanilla	2044	1 do	sou	90	29
610		2047	1 hf-ch	dust	80	24
616	T'Villa	2065	1 do	fans	62	25
620	Pine Hill	2077	9 ch	pek sou	630	31
621		2080	5 hf-ch	dust	425	24
623	Doranakande	2086	4 ch	pek	380	32
624		2089	2 do	pek No. 2	180	30
628	Ardlaw and Wishford	2101	8 do	or pek	664	43
630	S W	2107	6 do	br mix	638	27
639	Hopton	2134	5 do	dust	550	24
643	Amblangoda	2146	3 do	dust	330	24

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name	lb.	c.
5	Hangran Oya	976	9 hf-ch	bro or pek	405	48
6		979	7 do	bro pek	350	34
7		982	3 ch	or pek	240	33
9		988	2 ch	pek sou	150	30
11		994	6 hf ch	dust	480	24
12		997	3 ch	bro tea	274	22
14	S R K	1003	1 ch	sou	64	23
15		1006	4 do	dust	600	24
16		1009	2 do	bro tea	200	20
23	J P E	1030	3 ch	bro pek	240	32
24		1033	1 do	bro or pek	100	32
25		1036	2 do	pek	170	30
26		1039	2 do	pek sou	180	28
27	Kahatagalla	1042	5 ch	bro pek	400	33
28		1045	2 do	bro or pek	200	33
29		1048	6 do	pek	510	30 bid
30		1051	6 do	pek sou	540	28 bid
31		1054	1 do	dust	150	21
32	R K P	1057	4 ch	bro pek	320	33
33		1060	1 do	bro or pek	100	33
34		1063	4 do	pek	340	30
35		1066	3 do	pek sou	270	28
36	Blinkbonnie	1069	7 hf-ch	fans	455	29
37		1072	6 do	dust	510	23
40	Jak Tree Hill	1081	2 hf-ch	pek sou	89	29
41		1084	3 do	con	195	29

Lot.	Box.	Pkgs.	Name.	lb.	c.
45 F, in estate mark	1096	4 ch	pek sou	232	32
46	1099	3 do	unas	241	31
47	1102	7 hf-ch	dust	490	25
48 Bidbury	1105	4 ch	bro or pek	400	34 b'd
49	1108	4 do	or pek	360	35 bid
50	1111	3 do	pek	255	35
51	1114	3 do	pek sou	240	30 bid
52	1117	1 do	dust	150	22 bid
53	1120	2 do	bro or pek No. 2	240	31
54 C F, in estate mark	1123	2 ch	pek sou	190	25
55	1126	1 do	sou	105	23
56	1129	1 do	bro mix	85	22
62 Nyanza	1147	7 hf-ch	fans	455	30
64	1153	1 ch	con	65	24
65 B A	1156	1 ch	pek sou	80	30
66	1159	1 hf-ch	fans	45	27
70 K G A, in estate mark	1171	4 ch	bro tea	400	21
71	1174	2 do	bro pek fans	280	25
72	1177	2 do	pek dust	280	23
80 Mousa Eliya	1	3 ch	pek sou	270	29 bid
81 Oakham	4	17 hf-ch	or pek	680	37
84	13	4 ch	pek sou	380	32
85	16	2 hf-ch	fans	150	25
86 S	19	8 hf-ch	dust	640	24
87	22	9 do	bro tea	450	25
88 A	25	5 hf-ch	dust	400	23
89	28	4 do	bro tea	200	25
93 Wilpita	40	1 ch	con	95	23
95	46	1 ch	dust	320	24
		2 hf-ch			21
96	49	2 ch	red leaf	180	32
98 Wendura	55	7 ch	pek	560	24
100	61	1 hf ch	dust	83	29
101 Wallasmulla	64	5 ch	pek	450	28
102	67	3 do	pek sou	240	22
103	70	4 do	dust	484	22
104	73	3 do	bro mix	270	22
105 T G A	76	1 ch	red leaf	100	29
107 Patulpana	82	12 hf ch	pek	600	27
108	85	7 do	pek sou	350	22
109	88	3 do	sou	150	
110 Welimaluwa	91	8 hf ch	pek	400	28
111	94	2 do	ou	90	26
115 Citrus	106	5 ch	bro or pek	500	38
116 H A	109	1 ch	fans	95	28
117	112	4 do	pek dust	600	23
118 Glaurhos	115	5 ch	sou	525	22 bid
123 N I T	130	5 hf ch	dust	450	24
124	133	4 ch	unas No. 1	400	26
127 Gwernet	142	7 ch	pek	630	32
128	145	3 do	pek sou	270	30
129	148	4 do	bro or pek	440	33
130 A F	151	1 ch	bro pek	255	32
		3 hf-ch			
131	154	1 ch	pek	292	31
		2 hf-ch			
132	157	1 ch	pek sou	159	28
		1 hf-ch			
133	160	1 do	dust No. 1	50	23
134	163	1 ch	dust No. 2	152	21
136 Handrookande	169	9 hf-ch	pek	450	32
137	172	3 do	pek sou	150	30
138	175	1 do	dust	70	24
141 Y, in estate mark	184	3 hf-ch	dust	270	24
144 M G, in estate mark	193	2 ch	dust	257	20
145 Labugama	196	5 hf-ch	bro pek	300	35
146	199	4 do	pek	218	30
147	202	8 do	pek sou	446	28
148	205	1 do	dust	53	23
149	208	1 do	bro mix	2	23
150	211	1 do	fans	54	24
153 N	220	6 ch	pek sou	510	28
154	223	2 hf-ch	dust	170	23
155	226	3 ch	bro mix	270	23
158 Tiddydale	235	7 ch	pek sou	630	28
159 S W J	238	2 ch	sou	170	22
160	241	3 ch	fans	345	23
		1 hf-ch			
161	244	2 ch	pek dust	350	23
		1 hf-ch			
162 G A Ceylon	247	5 ch	pek sou	360	28
163	250	10 ch	sou	620	27
165	256	1 hf-ch	fans	53	25
166	259	1 do	unas	31	27
171 Ingeriya	274	4 hf ch	dust	340	23
176 Narangoda	289	3 ch	sou	255	24
184 Kosgama	313	3 do	pek sou	225	28
193 J M D M	340	4 ch	fans	360	24
194	343	1 do	dust	150	22
195	346	2 do	con	200	22
197 Corfu	352	4 hf ch	or pek	180	37
199	358	11 do	pek sou	495	32
201	364	4 do	bro tea	160	26
203 Havilland	370	3 ch	sou	270	22
204	373	4 hf ch	dust	360	22
208 Deniyaya	385	6 ch	sou	600	22
212 Selvawatte	397	1 ch	pek sou	100	27
213	400	1 do	fans	135	24
220 F A, in estate mark	421	2 ch	pek sou	210	29
221	424	1 do	bro mix	96	26
222	427	5 hf ch	dust	445	24
223 S	430	2 ch	unas	170	29
233 Da Oya	460	6 hf ch	pek sou	300	28
234	463	5 do	fans	300	26
235	466	4 do	dust	200	23
236 P S P	469	11 hf ch	bro or pek	550	34
249 Attiville	508	5 ch	pek sou	503	25
250	511	3 do	fans	300	21 bid
251	514	5 do	bro mix	625	16 bid
268 Pannakitiya	565	2 ch	con	200	18

[Mr. E. John.]

Lot.	Box.	Pkgs.	Name.	lb.	c.
1 A B C	577	1 ch	pek sou	75	out
3 P P P	583	2 do	bro pek	200	31
4	586	1 do	pekoe	85	28
5	589	2 do	pek sou	176	27
14 Oonoogaloya	616	4 do	bro or pek No. 2	480	32
16 N D D, in estate mark	622	6 hf-ch	dust	540	23
22 Anamallai	640	3 do	dust	255	22
23 Maskeliya	643	11 do.	bro or pek	550	50
24	646	1 do	bro pek	60	36
27	655	5 ch	pek sou	500	32
28	658	6 hf-ch	bro pek fans	360	30
29	661	1 do	fans	59	26
30	664	2 do	dust	180	25
35 Hiralouvah	679	2 ch	fans	130	27
36	682	1 hf-ch	dust	180	23
37 K T	685	1 ch	pek sou	100	20
45 Eadella	709	8 hf-ch	dust	640	23
46	712	2 bags	red leaf	160	10
65 Brownlow	769	6 hf-ch	bro pek fans	408	33
66	772	9 do	pek fans	666	29
73 Gangawatte	793	3 ch	sou	279	29
75 Syston	799	2 ch	fans	240	27
76	802	2 do	dust	292	24
79 Wahagapitiya	811	4 do	bro pek	400	34
81	817	2 do	pek sou	164	29
82	820	2 do	dust	284	24
83 Caledonia	823	3 hf-ch	fans	255	26 bid
85 Choughleigh	829	5 ch	pekoe	475	32
89 W H R	841	5 do	dust	525	24
90	844	2 do	red leaf	190	18
102 Galella	880	5 do	pek sou	450	30
104 W H G	886	8 hf-ch	dust	680	24
105	889	5 ch	fans	350	27
106	892	4 do	bro mix	400	25
107 Galella	895	5 hf-ch	dust	450	25
108	898	2 bags	red leaf	72	20
109 W, in est. mark	901	4 ch	bro tea	336	23
110 Lynford	904	2 hf ch	fans	148	23
112 E K	910	5 ch	bro mix	425	22
113 Villa	913	4 do	red leaf	288	22
126 Little Valley	952	4 do	dust	340	25
141 W	997	2 do	red leaf	184	22
148a Keenagaha Ella	19	5 do	fans	510	22
,, b	20	6 do	dust	620	24
157 Whyddon	45	1 do			
		1 hf-ch	red leaf	108	23
166 Mount [illegible]eres	72	do	dust	300	23
167	75	1 do	bro mix	80	23
173 Bellongalla	93	5 do	bro pek fans	350	27
174	96	3 do	dust	225	22

No. 4 COLOMBO, FEBRUARY 5, 1900. PRICE:—12½ cents each 3 copies; 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[16,670 lb.]

Lot.		Box.	Pkgs.		Name.	lb	c.
1	Hornsey	4	15	ch	pek sou	1350	34
2	Madakande	7	28	ch	bro or pek	2200	34 bid
3		10	26	do	bro pek	2600	33 bid
4		13	31	do	pek	2945	33
5		16	32	do	pek sou	2880	31
6	Hornsey	19	28	ch	or pek	2526	33 bid
7		22	21	do	pek	1575	36 bid

Messrs. Forbes & Walker.

[453,556 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	St. Pauls	2149	38	hf-ch	pek	1976	35
2		2152	26	do	pek sou	1456	32
9	Nakiadeniya	2173	15	ch	pek	1200	33
11		2179	5	do	dust	700	23
15	Great Valley	2191	13	ch	or pek	1170	37
16		2194	27	do	bro pek	1485	43
17		2197	20	do	pek	1800	33
18		2200	12	do	pek sou	900	33
24	E D P	2218	15	hf-ch	dust	1125	24
27	Ketadola	2227	9	ch	or pek	945	30
28		2230	14	do	pek	1400	30
32	Mansfield	2242	44	hf-ch	bro pek	2640	43
33		2245	18	ch	pek	1620	38
36	Kincora	4	21	ch	bro pek	2100	37
37		7	25	do	pek	2125	35
40		16	10	hf-ch	fans	700	36
41	O B E C, in est. mark	19	28	ch	sou	2240	32
42		22	13	hf ch	fans	910	29
43		25	12	do	dust	1080	24
46	Monkton	34	55	hf-ch	bro pek	3080	35 bid
47		37	21	ch	pek	1760	33
48		40	18	do	pek sou	1476	32
52	Bidbury	52	10	ch	bro or pek	1000	34 bid
53	Tonacombe	55	24	ch	bro pek	2400	33
54	Errolwood	58	33	ch	or pek	2970	37
55	Deaculla	61	58	hf-ch	bro pek	3190	43
56		64	48	do	pek	3360	36
57	B D W	67	17	ch	bro pek	1700	33
58		70	9	do	pek	945	28 bid
59	Erlsmere	73	15	hf-ch	bro or pek	870	41
60		76	30	ch	bro pek	3000	37
61		79	13	do	bro pek	1300	36
62	Restren	82	21	ch	bro pek	2100	34 bid
64	Erlsmere	88	22	ch	bro pek	2200	39
65		91	14	do	pek	1100	37
68	Ascot	100	87	ch	bro or pek	8700	33
69		103	97	do	bro pek	8730	33
70		106	26	do	pek	2340	32
71		109	12	do	pek sou	1030	31
72		112	19	do	dust	1520	24
73	Gallawatte	115	17	ch	bro pek	1650	34
74		118	18	do	pek	1530	33
75	Radella	121	15	ch	bro pek	1650	36
76		124	13	do	pek	1300	34
86	Massena	154	88	hf-ch	bro pek	4400	35
87		157	32	do	pek	1600	33
88		160	20	do	pek sou	1000	32
98	K P W	190	40	hf-ch	bro pek	2000	35
99		193	53	do	or pek	2915	35
100		196	115	do	pek	5750	33
101		199	34	do	pek sou	1700	31
107	Glendon	217	55	ch	bro pek	5775	33 bid
108		220	51	do	pek	4335	34
109		223	18	do	pek sou	1440	32
110	G	226	15	ch	sou	1350	30
114	Allagalla	238	10	ch	dust	850	26
116	Knavesmire	244	17	hf-ch	or pek	850	37
117		247	37	ch	bro pek	3515	34
118		250	37	do	pek	3145	34
121		259	23	do	pek	1725	33
136	M T P, in estate mark	304	28	ch	sou	2240	30
137		307	15	do	pek dust	1800	24
138	Robgill	310	24	hf-ch	pek sou	1080	36 bid
139		313	16	do	dust	1280	23 bid
146	Knuckles Group	334	14	hf-ch	sou	1180	31
147		337	16	ch	dust	2300	27 bid
152	M P T, in estate mark	352	17	ch	dust	1700	26
154	Cooroondoowatte	358	15	hf-ch	pek	825	35
156	Maymolly	364	24	ch	fans	1800	29
157		367	43	do	pek sou	2795	31
158		370	20	do	dust	1700	24
159	Holton	373	11	ch	bro pek	1710	33
160		376	12	do	pek	960	33
163	Digdola	385	8	ch	bro pek	753	33
164		388	17	do	pek	1275	35
165		391	8	do	pek sou	730	30
168	Vogan	400	26	ch	or pek	2210	41
169		403	31	do	bro pek	3100	35
170		406	48	do	pek	4320	34
171		409	9	do	pek sou	720	31
172	Tembiligalla	412	15	hf-ch	bro pek	825	38
173		415	15	do	or pek	750	37
174		418	8	ch	pek	720	34
178	Stamford Hill	430	38	hf-ch	bro pek	2280	45
179		433	34	do	or pek	1530	46 bid
180		436	43	ch	pek	3870	41
181		439	12	do	pek sou	1020	34
185	Waratenne, Inv. No 1	451	13	hf-ch	bro or pek	715	34
186		454	10	ch	bro pek	850	34
187		457	14	do	pek	1190	32
188	Geragama, Inv. No. 2	460	15	hf-ch	bro or pek	825	35
189		463	12	ch	bro pek	1080	34
190		466	12	do	pek	1140	32
195	Palmerston	481	17	hf-ch	bro or pek	884	76
196		484	13	ch	pek	1170	46
198	Patiagama	490	25	do	pek	2000	34
204	H G M	508	10	ch	bro or pek	880	45
205		511	8	do	or pek	720	37
206		514	17	do	bro pek	1700	34
207		517	21	do	pek	1785	34
208		520	10	do	pek sou	850	32
209		523	8	do	bro pek fans	720	32
211	Weoya	529	23	ch	bro pek	2300	33
212		532	20	do	or pek	1900	34
213		535	21	do	pek	1785	34
214		538	47	do	pek sou	3760	31
222	Gampaha	562	13	ch	bro or pek	1950	37 bid
223		565	14	do	or pek	1330	43
224		568	24	do	pek	1920	38
225		571	13	do	pek sou	1170	35
236		574	13	do	pek fans	1170	25
227	Erracht	577	10	do	bro or pek	900	33
228		580	18	do	bro pek	1260	33
229		583	23	do	pek	1610	32
230		536	10	do	pek ou	800	30
234	Dammeria	598	7	do	bro or pek	840	36
235		601	22	do	or pek	2200	37
236		604	22	do	bro pek	2420	37
237		607	21	do	pek	2060	36
238		610	13	do	pek sou	1133	33
244	M V	628	10	do	bro mix	1000	31
245		631	7	do	fans	840	30
246	Frogmore	634	18	hf-ch	bro pek	990	41
248	Dunbar	640	20	do	bro or pek	1100	62
249		643	20	do	or pek	960	51
250		646	16	ch	pek	1280	45
254	Middleton	658	21	hf-ch	bro or pek	1197	56
255		661	13	ch	bro pek	1235	48
256		664	15	do	pek	1350	44
258	W in est. mark	670	11	do	unast	1430	34
264	Huanuco	688	20	do	bro pek	1000	26
265		691	30	do	pek	1350	27
280	Scrubs	736	16	hf-ch	bro or pek	912	43
287	Arapolakande	757	76	ch	bro pek	6840	36 bid
288		760	43	do	pek	3440	34
291	Weyungawatte	769	25	hf-ch	bro or pek	1500	34
292		772	34	ch	bro pek	3060	33
293		775	32	do	pek	2560	32
301	Maragalla	799	13	do	bro pek	1456	36 bid
302		802	10	do	or pek	1000	35
303		805	41	do	pek	4100	34
304		808	22	do	pek sou	1980	31
308	B and D	820	24	do	unast	2280	33
309	Errollwood	823	22	hf-ch	bro or pek	1218	48
310		826	13	ch	or pek	1235	42
311		829	17	do	pek	1530	38
319	Seenagolla	853	34	hf-ch	bro pek	1870	34 bid
321	Clyde	859	61	ch	bro pek	5795	37
322		862	16	do	bro or pek	1680	34
323		865	45	do	pek	4050	33
324		868	8	do	pek sou	760	33
325		871	6	do	dust	810	24

Lot.		Box.	Pkgs.	Name.	lb.	c,
326	Parsloes	874	39 ch	bro pek	3900	33 bid
327		877	24 do	pek	2160	32
330	G H	886	27 do	bro pek	2565	32
340	Summer Hill	916	23 do	bro or pek	1632	60
341		919	18 do	or pek	1584	75
342		922	19 do	pek	1672	50
343		925	26 do	fans	2392	32
346	Graceland	934	14 hf-ch	pek	700	32
350	Nugagalla	946	22 do	bro pek	1100	34
351	W in est. mark	949	23 ch	bro or pek	1725	43 bid
352		952	19 do	bro pek	3900	39 bid
354	St. Heliers	956	25 hf-ch	bro or pek	1400	33 bid
355	Tonacombe	961	23 ch	bro or pek	2070	39
356	Penrhos	964	20 hf-ch	bro or pek	1060	43
357	Old Maddegama	967	11 ch	bro or pek	825	36
358		970	11 do	or pek	715	34 bid
359		973	16 do	pek	750	33
368	Ambragalla	1000	39 hf-ch	or pek	1872	35
369		1003	25 do	bro or pek	1500	34
370		1006	37 do	bro or pek	2220	33 bid
371		1009	12 ch	pek	936	33
372		1012	14 do	pek sou	1120	33
373	Macaldeniya	1015	24 hf-ch	bro pek	1355	36
374		1018	15 do	pek	830	34
379	S S	1033	9 ch	or pek	900	35
383	Memorakande	1045	6 do	dust	900	24
386	Ardlaw and Wishford	1054	34 do	bro pek	3570	40
87	Amblakande	1057	25 do	bro pek	2500	34
88	Coreen	1060	51 hf-ch 1 ch	bro pek	1960	36
389	St. C	1063	24 do	bro or pek	2400	30
390	Dunkeld	1066	63 hf-ch	bro or pek	3780	39
391		1069	20 ch	or pek	1900	41
392		1072	15 do	pek	1350	38

[Messrs. Somerville & Co.—136,438 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
2	Dryburgh	575	13 hf-ch	bro or pek	780	34 bid
4		577	17 ch	pek	1260	32
8	G A Ceylon	589	12 do	bro mix	900	34
16	Charlie Hill	613	26 hf-ch	bro pek	1430	33
17		616	19 do	pek	1045	31
21	P S P	628	11 ch	bro mix	1130	15
22	N, in estate mark	631	10 ch	bro pek	1020	34
31	Meetiagoda	658	9 ch	bro pek	900	28
37	M	676	27 ch	pek sou	2950	28
38	Warakamure	679	36 ch	bro pek	3600	32 bid
39		682	14 do	pek	1330	32
40		685	11 do	pek sou	990	29
41	D M A	688	14 ch	bro or pek	1730	28 bid
42		691	11 do	pek	930	26
44		697	7 do	dust	1155	24
45	Doragalla	700	19 ch	bro or pek	1900	37
46		703	11 do	bro pek	1100	35
47		706	36 do	pek	3060	33
49		912	7 do	bro mix	735	22
50	Horagoda	715	9 ch	bro or pek	900	33
51		718	9 do	or pek	765	34
52		721	19 do	pek	1710	32
60	Sangaly Toppe	745	12 ch	red leaf	1140	25
61	G T	748	43 ch	pek sou	3870	32
78	N T S, in estate mark	799	27 bags	bro tea	1806	12
80	Ravenscraig	805	32 ch	bro pek	1980	34
81		808	32 do	or pek	2720	33 bid
82		811	31 do	pek	2790	33
86	Neboda	823	11 ch	bro or pek	1100	33
87		826	37 do	bro pek	3700	33
91	Neuchatel	838	33 ch	bro pek	3465	34 bid
92		841	16 do	pek	1440	33
93		844	13 do	pek sou	1105	32
96	Nyanza	853	13 ch	bro pek	1300	38 bid
97	Doragalla	856	17 ch	bro or pek	1700	36 bid
98		859	22 ch	bro pek	2200	33 bid
99		862	29 hf-ch	bro mix	2030	28 bid
100	Hapugasmulle	875	10 ch	bro pek	1100	33
10		877	11 do	mix	1045	24
105		880	7 do	dust	1015	24
116	Altiville	913	7 do	bro pek	703	29
117		916	13 do	pek	1235	27 bid
120	Rayigam	925	45 ch	bro pek	4500	34
121		928	29 do	or pek	2320	33
122		931	23 do	pek	1840	33
123		934	10 do	pek sou	900	31
124	Annandale	937	14 hf-ch	bro or pek	840	63
125		940	16 do	or pek	928	50
126		943	14 do	pek	770	42
127		946	14 do	pek sou	840	37
128	Patulpana	949	20 hf-ch	bro pek	1100	32

Lot.		Box.	Pkgs,	Name.	lb,	c,
130	Roseneath	955	26 ch	bro pek	2600	34
131		958	15 do	pek	1350	34
132		961	25 do	pek sou	2125	32
135	Deniyaya	970	54 ch	bro pek	5400	33 bid
136	Ambalawa	973	27 hf-ch	bro pek	1350	33
137		976	20 do	pek	900	31
138	M D R, in estate mark	979	27 hf-ch	pek fans	1776	27 bid
139		982	21 do	dust	1890	22 bid
143	X X X	994	20 hf-ch	dust	1800	21 bid
144	Ranasinghapatna	997	66 hf-ch	or pek	3300	36 bid
145		1	33 do	bro or pek	2046	34 bid
146		4	31 do	pek	2418	33 bid
147		7	29 ch	pek sou	2320	32 bid
148	Selvawatte	10	24 ch	bro pek	228	21 bid
149		13	16 do	pek	1400	29 bid
150	Rambodde	16	15 hf-ch	pek sou	750	32
151		19	10 ch	bro pek	930	34

[Mr. E. John.—215,257 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	W H G	105	11 hf-ch	pekoe	990	32
5	Sumtravelle	111	12 ch	unas	1200	33
6	Gangawatte	114	14 do	or pek	1400	41
7		117	18 do	pekoe	1530	37
8		120	25 hf ch	bro or pek	1500	41
9	Galloola	123	17 ch	bro pek	1700	41
10		126	17 do	pekoe	1700	34
11		129	12 do	pek sou	1200	33
13	Eila	135	60 do	bro or pek	6600	33 bid
14		138	92 do	bro pek	9200	34
15		141	48 do	pekoe	4080	33
16	Koslande	144	32 hf-ch	bro pek	1760	37
17		147	18 ch	pekoe	1620	33
21	Poilakande	159	46 hf-ch	bro pek	4370	33
22		162	26 ch	pekoe	2340	33
27	Brownlow	177	35 hf-ch	bro or pek	2030	43
28		180	27 ch	or pek	2565	39 bid
29		183	32 do	pekoe	2880	37
32	G B	192	19 hf ch	bro pek	1045	32
33		195	17 ch	pekoe	1360	31
34	Agra Ouvah	198	41 hf-ch	bro or pek No. 1	2624	47
35		201	37 do	bro or pek No. 2	2220	41 bid
36		204	31 do	or pek	1550	42
37		207	11 ch	pekoe	990	39
38	Glasgow	210	32 do	bro or pek	2720	47
39		213	31 do	or pek	2418	45
40		216	12 do	pekoe	1044	40
41		219	11 do	pek sou	1100	40
42	Ottery	222	20 do	bro or pek	2200	35 bid
43		225	13 do	or pek	1105	39 bid
44		228	21 do	pekoe	2100	35
46	Coslande	234	32 hf-ch	bro pek	1760	36 bid
47		237	18 ch	pekoe	1620	33
51	Woodstock	249	10 do	bro or pek	1000	33
55	L E L	261	41 do	bro pek	4100	37
56		264	23 do	pekoe	1840	36
63	Glassaugh	285	17 hf-ch	or pek	01	65
64		288	21 do	bro or pek	1365	44 bid
65		291	18 ch	pekoe	1710	48
69	Kadien Lena	303	18 do	or pek	1620	33
70		306	15 do	bro or pek	1500	33
71		309	20 do	pekoe	1600	33
72		312	16 do	pek sou	1360	31
75	Claremont	321	25 do	bro or pek	2375	34
76		324	21 do	pekoe	1890	32
77		327	9 do	pek sou	720	30
78		330	16 do	sou	1520	25
81	Glentilt	339	34 do	bro pek	3400	40 bid
82		342	14 do	pekoe	1400	35 bid
83	Templestowe	345	29 hf-ch	or pek	1305	42 bid
84		348	25 ch	bro or pek	2000	38 bid
85		351	29 do	pekoe	2465	39
86	Whyddon	354	16 do	or pek	1483	35 bid
87		357	36 do	bro pek	3600	36 bid
88		360	30 do	pek sou	2550	34
89	Glentilt	363	51 do	bro pek	5100	37 bid
90		366	21 do	pekoe	2100	36 bid
91	Mount Everest	369	34 do	pekoe	3400	37
92	Morahela	372	17 do	bro pek	1564	35 bid
93		375	20 do	pekoe	1664	33
94		378	22 do	bro or pek	2178	33 bid
95		381	13 do	sou	1026	30 bid
96	W H	384	18 do	pek sou	1513	30 bid
97		387	39 hf-ch	pek fans	2808	27 bid
98		390	6 ch	dust	1032	24 bid
99	Woodstock	393	20 do	bro or pek	2000	32 bid
100	Myraganga	396	125 do	bro pek	11500	34 bid
101		399	24 hf-ch	bro or pek	1440	33 bid
102		402	116 ch	pekoe	9860	33 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
103		405	43 ch	pek sou	3010	32
104		408	20 hf-ch	fans	1300	27
105	Morahela	411	17 ch	bro pek	1564	34 bid
106		414	14 do	bro or pek	1386	33 bid
107		417	15 do	or pek	1380	34
108		420	30 do	pekoe	2520	33
109		423	14 do	pekoe	1176	33
112	B D	432	21 hf-ch	bro pek fans	1344	30
113	Glentilt	435	46 ch	bro pek	4600	38 bid
114	Ferndale	438	13 do	bro or pek	1270	40
115		441	21 do	or pek	1890	37
118	Y K	450	8 do	sou	760	out
119		453	9 do	dust	1205	15 bid

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
3	Galpa	2155	4 ch	bro or pek	356	38
4		2158	3 do	bro pek	270	36
5		2161	6 do	or pek	522	34
		2164	8 do	pek	640	32
8		2170	1 do	dust	62	24
10	Nakiadenia	2176	8 do	pek sou	640	30
12	N D	2182	1 ch	bro pek	91	32
13		2185	1 do	pek	80	31
21	M	2209	3 hf ch	pek sou	110	23
22	Karowkettia	2212	4 ch	bro pek	410	30
23		2215	6 do	pek	548	29
25	D P	2221	4 ch	sou	255	29
26	Ketadola	2224	1 ch	bro or pek	100	32
29		2233	6 do	pek sou	540	28
30		2226	1 do	fans	140	24
31		2239	2 do	bro mix	181	18
35	Mansfield	1	7 do	dust	630	23
38	Kincora	10	4 ch	pek No 2	380	32
39		13	2 hf-ch	dust	160	24
44	Tennehena	28	1 ch 1 hf-ch	bro pek	146	33
45		31	2 ch 1 hf-ch	pek	244	28
49	Monkton	43	7 ch	pek sou No. 2	581	29
50		46	2 ch	bro tea	178	18
51		49	4 hf-ch	dust	300	24
63	Erlsmere	85	11 ch	bro or pek	638	37 bid
66		94	3 do	pek sou	255	33
67		97	2 do	dust	170	24
77	Radella	127	6 ch	pek sou	540	32
78		130	3 do	bro pek fans	450	27
79	Doomba	133	2 ch	congou	200	26
80	D B G	136	2 ch	red leaf	200	26
81	Non Pariel	139	2 hf-ch	pek	96	34
82		142	5 do	bro pek	280	38
83		145	2 do	pek sou	97	33
84		148	1 do	fans	80	34
89	Massena	163	6 hf-ch	fans	420	24
90		166	1 do	dust	90	21
102	K P W	202	4 hf-ch	pek sou	180	30
103		205	3 do	dust	225	24
111	G	229	1 ch	bro pek fans	120	30
112		232	3 do	dust	405	24
113	Allagalla	235	4 ch	bro mix	300	32
115		241	6 do	fans	360	32
119	Knavesmire	253	5 ch	pek sou	350	31
120		256	4 hf-ch	dust	320	24
122		262	1 ch	unas	120	26
123		265	1 do	unas	58	26
12	Wyamita	274	4 ch	bro pek	400	33
12		277	5 do	pek	450	32
125		280	5 do	pek sou	400	31
129	Sunnycroft	283	7 hf-ch	bro tea	490	20
130	A	286	8 hf-ch	sou	400	30
140	B N, in est. mark	316	1 hf-ch	bro or pek	48	33
141		319	1 do	or pek	44	32
142		322	1 do	bro pek	73	32
143		325	1 do	pek	68	31
144		328	1 do	pek sou	76	31
145		331	1 do	fans	52	32
148	Ardross	340	2 hf-ch	dust	170	23
151	M P T, in est. mark	349	5 ch	sou	500	24
153	Cooroondoowatte	355	8 hf ch	bro pek	440	37
155		361	7 do	pek sou	385	33
161	Holton	379	8 ch	pek sou	640	31
162	B A	382	2 ch	dust	150	23
166	Digdola	394	2 ch	dust	300	23
167		397	2 do	unas	161	21
175	Tembiligalla	421	3 ch	pek sou	270	32
176		424	1 hf-ch	fans	60	24
177		427	1 do	dust	80	22
182	Stamford Hill	4	3 ch	red leaf	315	26
183		445	1 hf-ch	do	58	25
184		448	6 do	dust	510	25
191	Angramally	469	6 ch	bro pek	612	37
192		472	6 do	pek	5 0	33
193		475	4 do	pek sou	344	32
194		478	1 hf-ch	dust	80	24
197	Patiagama	487	4 ch 1 hf-ch	or pek	390	34
199		493	8 do	pek sou	640	31
200		496	4 do	dust	320	22
201		499	5 do	bro pek fans	300	28
202		502	2 do	sou	224	15
203		505	1 do	bro mix	59	26
210	Weoya	526	2 ch	bro or pek	220	32
215		541	2 do	dust	300	25
231	Erracht	589	3 ch	pek sou No. 2	240	27
232		592	5 do	bro pek fans	500	31
233		595	2 do	dust	334	22
239	D M	613	3 do	bro pek	330	34
240		616	2 do	pek	180	31
241	M A	619	3 do	bro mix	348	31
242		622	4 do	dust	360	24
243	M V	625	5 do	sou	179	29
247	Frogmore	637	8 do	pek	600	38
251	D B R	649	4 hf-ch	bro pek fans	240	37
252		652	1 ch	pek sou	86	33
253		655	1 hf-ch	dust	84	24
257	W in est. mark	667	4 ch	fans	480	39
266	Huanuco	694	17 hf-ch	pek sou	685	27
267		697	3 do	sou	132	26
268		700	5 do	fans	400	26
269	Glencorse	703	1 ch	unast	104	28
270	Doomba	706	1 do	unast	81	32
281	Scrubs	739	11 hf-ch	bro pek	616	39
282		742	13 do	pek	598	38
283		745	8 do	pek sou	368	35
284		748	2 do	br or pek fans	140	32
285		751	4 do	dust	328	26
286	Arapolakande	754	5 ch	bro or pek	550	35
289		763	5 do	pek sou	450	31
290		766	2 do	dust	220	24
294	Weyungawatte	778	4 do	pek sou	320	32
295		781	4 hf-ch	dust	320	24
296	Kumaradola	784	1 ch	fans	95	25
297		787	1 hf-ch	dust	65	23
305	Maragalla	811	1 ch	fans	130	28
306		814	1 hf-ch	dust	90	23
307	B & D	817	3 ch	sou	252	29
312	Agra Elbedde	832	2 hf-ch	bro or pek	120	45
313		835	1 do	or pek	55	49
314		838	3 do	pek	180	37
315		841	2 do	pek sou	130	34
316	X X	844	1 do	pek fans	70	27
317		847	1 do	pek dust	85	24
318		850	1 do	bro mixed	70	24
320	P in est. mark	856	2 ch	pek dust	256	28
328	Parsloes	880	6 do	pek sou	480	32
329		883	1 do	unast	110	27
331	G H	889	2 do	pek	172	31
332		892	4 do	pek sou	372	30
333		895	1 hf-ch	dust	70	23
334	G B	898	3 ch	bro or pek	285	50
335		901	2 do	pek	131	28
336	Kelburne	904	4 do	bro tea	400	28
337	L N S in est. mark	907	1 hf-ch	bro pek	36	33
338		910	1 do	dust	52	23
339		913	2 ch	pek sou	180	27
344	Graceland	928	2 hf-ch	bro or pek	120	37
345		931	12 do	bro pek	660	34
347		937	10 do	pek sou	500	30
348		940	1 do	sou	45	28
349		943	1 do	red leaf	45	18
352	W in est mark	955	4 ch	or pek	352	41
360	Old Maddegama	976	5 do	pek sou	375	31
361		979	2 do	sou	150	2
362		982	3 hf-ch	bro pek	225	33
363		985	2 do	dust	150	24
364	Luckyland	988	10 do	bro or pk	550	41 bid
365		991	5 do	or pek	250	34 bid
366		994	6 do	pek sou	270	31
367	K	997	ch	sou	100	33
375	Macaldeniya	1021	13 hf-ch	pek sou	660	33
376		1024	3 do	unast	120	32
377		1027	2 do	dust	160	26
378	B D W	1030	9 do	red leaf	383	24
380	S S	1036	10 do	or pek	600	35
381	Foengalla	1039	5 ch	dust	450	24
382		1042	1 hf-ch	red leaf	44	18
384	Memorakande	1045	1 do	bro mix	28	24

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	X Z	568	3 ch	sou	285	20
3	Dryburg	574	5 ch	or pek	445	40
5		580	8 do	pek sou	560	30
6		583	2 hf-ch	fans	150	25
7	G A Ceylon	586	1 hf-ch	dust	53	20
9	Labugama	592	7 hf ch	bro pek	350	32
10		595	7 ch	pek	665	30
11		598	7 do	pek sou	595	30
12		601	3 do	bro or pek	360	31
13	B, in estate mark	604	1 ch	bro pek	78	18
14		607	1 hf-ch	pek	27	18
15		610	1 ch	pek sou	74	16
18	Charlie Hill	619	1 hf-ch	pek sou	55	26
19		622	3 do	pek fans	225	25
20	P S P	625	6 ch 1 hf-ch	sou	665	25
23	N, in estate mark	634	7 ch	pek	630	31
24		637	2 do	bro mix	240	18
25	Alutkelle	640	12 hf-ch	bro pek	600	32
26		643	10 hf-ch	pek	500	30
27		646	4 do	pek sou	200	27
28		649	1 do	dust	63	24
29		652	1 do	fans	47	27
30	R, in estate mark	655	2 ch 5 hf ch	bro pek	450	34
32	Meetiagoda	661	4 ch	pek	400	26
33		664	3 do	pek sou	300	23
34		667	1 do	fans	100	18
35		670	1 do	dust	150	14
36	S P A	673	5 hf-ch	bro pek	250	32
43	D M A	694	3 ch	bro pek	306	29
48	Doragalla	709	7 ch	pek sou	560	31
53	Horagoda	724	1 ch	dust	100	24
54	O	727	2 ch	bro pek	220	31
55		730	2 do	pek	172	20
5		733	11 hf-ch	pek sou	600	20 bid
5		736	2 ch	red leaf	182	19
58	Sangaly Toppe	739	3 hf-ch	bro tea	225	23
59		742	5 do	pek dust	450	24
62	Ratgoda	751	4 ch	bro pek	480	41
63		754	3 do	pek	357	36
64		757	2 ch 1 hf-ch	pek No. 2	241	34
65		760	1 ch	pek dust	81	24
68	Aswetta	769	5 ch	bro mix	410	17
74	J M S, in estate mark	787	4 ch	bro pek	420	30
75		790	2 do	pek	176	31
76		793	1 do	unas	95	20
77		796	1 hf-ch	dust	75	20
79	M T S, in estate mark	802	5 bags	fans	446	12
83	Ravenscraig	814	7 ch	pek sou	630	29
84		817	1 do	bro mix	90	16
85		820	3 hf-ch	fans	240	24
88	Neboda	829	7 ch	pek	630	31
89		832	7 do	pek sou	560	31
90		835	2 do	dust	170	24
101	Hapugasmulle	868	4 ch	pek	380	30
102		871	5 do	unas	500	27
103		874	3 do	sou	270	24
106	Bidbury	883	4 ch	bro or pek	400	38
107		886	4 do	or pek	360	35
108		889	3 do	pek sou	240	33
109		892	1 do	dust	150	24
110	Glanrhos	895	5 ch	sou	525	27
118	Attiville	919	3 ch	fans	300	23
119		922	5 do	bro mix	625	15
129	F H	952	3 hf-ch	bro mix	171	13 bid
133	Roseneath	964	2 ch hf ch	dust	403	24
134		967	1 do	bro mix	80	18

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	W H G	99	7 hf-ch	or pek	420	33
2		102	11 do	bro pek	660	33
4		108	1 do	sou	85	30

Lot.		Box.	Pkgs.	Name.	lb.	c.
12	Gallo la	132	3 ch	dust	330	24
18	Koslande	150	7 do	pek sou	665	31
19		153	2 do	fans	220	31
20		156	1 do	dust	155	23
23	K P	165	3 hf-ch	dust	294	22
24		168	6 do	fans	468	28
25		171	4 ch	bro tea	315	20
26		174	2 do	congou	179	28
30	Brownlow	186	8 hf-ch	bro pek fans	560	24
31	Galgawatte	189	1 ch	red leaf	66	14
45	Ottery	231	1 do	dust	170	26
48	Coslande	240	7 do	pek sou	665	31
49		243	2 do	fans	220	31
50		246	1 do	dust	155	23
52	Woodstock	252	3 do	pekoe	270	31
53		255	1 do	pek sou	100	30
54		258	1 hf-ch	dust	75	23
66	Glassaugh	294	3 do	dust	285	27
79	Claremont	333	8 ch	fans	4[illegible]0	28
80		336	7 do	dust	560	23
110	M[illegible]rahela	426	8 do	sou	67[illegible]	31
111		429	2 hf-ch	dust	168	22
116	Ferndale	444	6 ch	pek sou	540	33
117		447	4 do	dust	506	24

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, Jan. 12.

"Batavia."—IG in estate mark, 4 bags sold at 29s; 2 bags sold at 36s; sea damaged and repked.

"Hitachi Maru."—Standard Co., St. Leonard's, Plantation Ceylon 2, 1 cask sold at 75s; PB 1 barrel sold at 75s; Gordon 2, 1 tierce sold at 65s.

[Coffee strong and higher prices for next three to four years eertain.—Wheat should advance.—Sugar easy tendency and new crop cotton.]

No Cardamom sales this week.

CEYLON COCOA SALES IN LONDON.

"Kawachi Maru."—New Peradeniya I, 13 bags sold at 83s; 1 bag sold at 64s; ditto 2, 6 bags sold at 70s 6d; ditto 3, 1 bag sold at 63s; 2 bags sold at 36s; North Matale, 89 bags sold at 90s; ditto 88 bags sold at 80s; Marakona I, 67 bags sold at 84s; II, 9 bags sold at 65s: III, 5 bags sold at 49s; IIII, 1 bag sold at 48s; Pansalatenna, 10 bags sold at 85s; 2, 10 bags sold at 75s; T, 3 bags sold at 60s; Wariapolla, 45 bags sold at 95s 6d; ditto 81 bags sold at 88s; 20 bags sold at 89s; ditto 4 bags sold at 80s; 8 bags sold at 70s 6d; ditto 6 bags sold at 58s.

"Shanghai."—Wiharagama, 26 bags sold at 88s 6d; 2, 17 bags sold 81s.

"Java."—Yattawatta, 125 bags sold at 85s 6d; 2, 15 bags sold at 58s; broken, 2 bags sold at 60s.

"Derbyshire.—Asgeria A, 28 bags sold at 82s; B, 3 bags sold at 68s; Ingurugalla A1, 23 bags sold at 82s; A2, 12 bags sold at 74s; T, 2 bags sold at 58s 6d; Allagala, 10 bags sold at 76s; A2, 1 bag sold at 62s; B1, 3 bags sold at 69s; 1 bag sold at 64s; B2, 1 bag sold at 58s 6d.

"Shanghai."—Bandarapola 1, 16 bags sold at 69s 6d; 2, 1 bag sold at 61s 6d; 3 2 bags sold at 61s 6d; T, 2 bags sold at 43s.

"Java."—DBM 1, 27 bags sold at 63s 6d.

"Java."—MA in estate mark, Estate Cocoa, 74 bags sold at 74s 6d; AA in estate mark, 66 bags sold at 64s 6d; DN in estate mark, 23 bags sold at 64s 6d; DMA & Co., in estate mark, 15 bags out at 76s, 74 refused.

No. 5 COLOMBO, FEBRUARY 12, 1900. PRICE :—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[22,640 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Battalgalla	5	15 ch	pek sou	1350	33
2	Hornsey	8	26 do	or pek	2210	28
3		11	21 do	pek	1575	25
4		14	8 do	fans	720	30
5	Mandara Newera	17	14 hf-ch	bro pek	840	48
6		20	15 do	or pek	840	43
7		23	19 do	pek	950	39
8		26	15 do	bro pek	825	39 bid
9	Torrington	29	59 ch	bro pek	5310	34 bid
10		32	15 do	bro or pek	900	34 bid
11		35	31 do	pek	2480	33 bid
12		38	58 do	pek sou	4640	31 bid

Messrs. Forbes & Walker.

[323,941 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Kosgalla	1084	28 hf-ch	bro pek	1400	31
6		1090	27 do	pek	1215	30
7		1093	16 do	pek sou	800	29
12	Galkanda	1108	9 ch	bro pek	900	31
20	Nillomally	1132	23 do	bro pek	2300	41
21		1135	22 do	or pek	1980	40
22		1138	11 do	bro or pek	1100	48
23		1141	10 do	pek	840	40
24		1144	12 do	pek sou	840	35
27	Passara Group	1153	14 do	bro or pek	1400	40
28		1156	12 do	or pek	1080	39
30		1162	7 do	pek sou	700	34
32	D in est. mark	1168	30 hf-ch	sou	1350	27
33		1171	31 do	fans	1705	31
35	Glengariffe	1177	46 do	bro pek	2530	38 bid
36		1180	28 do	or pek	1260	40
37		1183	21 ch	pek	1953	37 bid
38		1186	14 do	pek sou	1120	34
46	A S G	1210	9 hf-ch	dust	810	27
47		1213	8 ch	dust No. 2	880	21
48	Hayes	1216	16 do	bro or pek	1520	43
49		1219	25 do	bro pek	2500	36
50		1222	32 do	or pek	2720	35
51		1225	105 do	pek	8925	34
52		1228	18 do	pek sou	1530	31
53		1231	14 do	dust	1760	26
57	Avoca	1243	23 do	bro or pek	2530	51
58		1246	30 do	bro pek	3180	43
59		1249	21 do	pek	1890	41
62	A in est mark	1258	8 do	bro pek	850	34
63		1261	10 do	pek	1000	32
65	Dooroomadella	1267	13 do	bro pek	1274	31
66		1270	12 do	pek	1080	29
69	Springwood	1279	14 do	congou	1120	29
73	Rowley	1291	27 hf-ch	bro pek	1350	37
74		1294	26 do	pek	1300	35
75		1297	16 do	pek sou	800	32
78	Pallawatte	1306	13 ch	bro pek	1235	35 bid
79		1309	15 do	pek	1275	33
81	C P H Galle in est. mark	1315	15 do	pek	1350	31
83	Naseby	1321	13 hf-ch	bro or pek	767	58
84		1324	15 do	or pek	690	62
85		1327	15 do	pek	690	44
86	Siri andura	1330	15 do	bro pek	1450	35
87		1333	15 do	pek	1350	33
91	Tonacombe	1345	19 do	or pek	1710	41
92		1348	7 do	bro or pek	700	53
93		1351	15 do	bro pek	1500	38
94		1354	31 do	pek	2790	38
95		1357	9 do	pek sou	810	35
96	Middleton	1360	32 hf-ch	bro or pek	1824	57
97		1363	16 ch	bro or pek	912	55 bid
98		1366	16 do	bro pek	1520	46
99		1369	16 do	pek	1440	42
100		1372	16 do	pek sou	1440	38
102	Doranakande	1378	10 do	bro pek	1000	33
105		1387	8 do	pek sou	720	30
107	Forest Creek	1393	20 do	bro or pek	2000	62 bid
108		1396	21 do	bro pek	2100	45 bid
109		1399	22 do	or pek	2200	42 bid
110		1402	32 do	pek No. 1	2880	43
111		1405	36 do	pek No. 2	3600	40
112	Halwatura	1408	39 do	bro pek	3900	34
113		1411	38 do	or pek	3420	34
114		1414	50 do	pek	4000	33
115		1417	47 ch	pek sou	3525	31
116		1420	15 do	sou	1050	28
117		1423	8 hf-ch	bro pk fans	736	28
119	Geragama	1429	9 ch	bro pek	855	34
120		1432	15 do	pek	1425	32
121	Penrhos	1435	20 hf-ch	bro or pek	1060	45
122		1438	22 do	or pek	990	39
123		1441	35 ch	pek	2975	35
127	Glencorse	1453	10 do	bro or pek	1000	36
128		1456	11 do	bro pek	1056	35
130		1462	11 do	pek	990	32
136	Theydon Bois	1480	17 do	bro pek	1700	38
137		1483	28 do	pek	2240	37
138		1486	15 do	pek sou	1275	33
139	Queensland	1489	14 hf-ch	bro or pek	700	65
140		1492	14 do	bro pek	700	42
141		1495	20 ch	pek	1700	40
142	Palmerston	1498	14 hf-ch	bro or pek	728	73
143		1501	14 do	bro pek	728	44
144		1504	14 do	pek	1260	35
145	Knavesmire	1507	27 ch	bro pek	2565	35
146		1510	26 do	pek	2210	35
147		1513	17 do	pek	1275	33
150	Deaculla	1522	40 hf-ch	bro pek	2200	40 bid
151		1525	43 do	pek	3010	38
152		1528	23 do	pek sou	1610	25
159	St. Edwards	1549	17 ch	bro or pek	935	34
165	Munukattia, Ceylon, in mark	1567	50 hf-ch	bro or pek	2750	40
166		1570	16 ch	bro pek	1280	36
172	Maha Uva	1588	27 do	br or pek	1620	37
173		1591	13 do	or pek	728	41
174		1594	22 ch	pek	1980	39
175		1597	9 do	pek sou	720	35
176	Polatagama	1600	51 do	bro pek	4590	36
177		1603	27 do	or pek	2160	34
178		1606	32 do	pek	2720	33
179		1609	13 do	pek sou	1040	30
180		1612	15 do	fans	1425	31
182	Clunes	1618	18 do	bro or pek	1710	34
183		1621	18 do	bro pek	1620	34
184		1624	20 do	or pek	1600	34
185		1627	61 do	pek	4880	32
186		1630	10 do	pek sou	940	30
187	Erracht	1633	14 do	bro or pek	1260	34
188		1636	16 do	bro pek	1120	34
189		1639	24 do	pek	1632	32
190		1642	19 do	pek sou	1425	30
191		1645	8 do	bro pk fans	800	32
193	Seenagolla	1651	13 hf-ch	bro or pek	715	49
194		1654	14 do	or pk No. 1	770	53
195		1657	18 do	pek	990	44
196	Telbedde	1660	15 ch	bro or pek	1575	36
197		1663	12 do	or pek	1224	35
198		1666	13 do	pek	1170	33
203	Weyunga-watte	1681	29 hf-ch	br or pek	1740	35
204		1684	28 ch	pek	2520	34
205		1687	20 do	pek	1600	32
213	Castlereagh	1711	22 ch	bro pek	2200	44
214		1714	22 do	or pek	1870	40
215		1717	20 do	pek	1600	38
216	D C	1720	9 ch	bro pek	900	33
231	Dooroomadela	1765	15 ch	pek	1350	31 bid
232	Pine Hill	1768	21 hf-ch	bro pek	1218	44 bid
233		1771	25 do	or pek	2000	40
234		1774	45 do	pek	3375	37
237	Arapolakande	1783	76 ch	bro pek	6840	37 bid
238	Ugieside	1786	63 ch	pek sou	5040	29
240		1792	7 do	bro mix	735	27
241	Putupaula	1795	15 hf-ch	bro or pek	900	34 bid
242		1798	56 do	bro pek	5040	36 bid
243		1801	39 do	pek	2925	33
244		1804	21 do	pek sou	1470	31
250	Ingrogalla	1822	12 ch	or pek	1200	35
251		1825	17 do	pek	1445	36
253	Talgaswela	1831	15 do	bro pek	1275	35
255		1837	20 do	or pek	1600	34
256		1840	22 do	pekoe	1760	32 bid
257		1843	10 do	pek sou	800	30
259	Farnham	1849	10 do	or pek	1000	40
260		1852	15 do	pekoe	1350	35
261		1855	9 do	pek sou	765	31
265	Bandaraeliya	1867	38 hf-ch	or pek	1900	39
266		1870	79 do	bro pek	4582	38 bid
267		1873	17 do	pekoe	765	36
274	Roeberry	1894	18 ch	bro pek	1800	45
275		1897	15 do	pekoe	1350	38
278	I A	1906	7 do	bro pek	700	43

Lot.		Box.	Pkgs.	Name.	lb	c,
279		1909	10 ch	bro or pek	1000	51
280		1912	9 do	pekoe	810	39
285	Farnham	1927	18 do	bro pek	1710	35 bid
286		1930	11 do	or pek	880	39
287		1933	18 do	pekoe	1710	34
288		1936	12 do	pek sou	900	32
294	F & F	1954	20 do	bro or pek	2190	40 bid

[Messrs. Somerville & Co.—187,532 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
8	Fairfield	43	10 ch	bro pek	1000	36
11		52	11 hf-ch	dust	990	26
13	Hanagama	58	17 ch	br pek	1700	35
14		61	32 do	pek	3040	32
22	Welgampola	85	17 hf-ch	pek	952	30
31	Nyanza	112	7 ch	bro or pek	700	44
32		115	12 do	bro pek	1200	36
33		118	14 do	or pek	1330	36 bid
34		121	23 do	pek	2300	36
35		124	13 do	pek sou	1170	32
37	Paradise	130	25 hf-ch	bro pek	1925	34
38		133	14 ch	pek	1400	33
39		136	19 do 1 hf-ch	pek sou	1855	30
50	Kirrikelle	169	22 hf-ch	bro pek	1386	38 bid
51		172	50 do	or pek	2800	40 bid
52		175	40 ch	pek	3760	38
53	Rambodde	178	23 hf-ch	bro or pek	1265	39
54		181	52 do	bro pek	1600	37
55		184	36 do	pek	1800	35
56		187	14 do	pek sou	700	32
63	Glen Morgan Nilgris	203	7 ch	bro or pek	700	38 bid
64		211	8 do	bro or pek	800	37 bid
65		214	10 do	or pek	900	33 bid
66		217	11 do	pek	880	34 bid
71	Attiville	232	8 ch	bro pek	803	29
72		235	12 do	pek	1200	28
77	Hopewell	250	25 hf-ch	bro or pek	1400	36
78		253	79 do	pek	3634	34
79		256	20 do	pek sou	900	32
80		259	17 do	fans	1020	30
85	Tientsin	274	24 ch	pek sou	1920	34
86		277	8 do	dust	1040	25
92	Marigold	295	68 hf-ch	bro pek	3740	44
93		298	19 do	pek	950	40
97	Ravana	310	64 hf-ch	bro pek	3520	35
98		313	58 do	pek	2610	35
99		316	30 do	pek sou	1350	32
100	Kurulugalla	319	13 ch	bro pek	1300	40
102		325	9 do	bro pek	900	3[illegible]
103		328	8 do	pek	720	30
108	Lenach	343	92 hf-ch	bro pek	5060	36
109		346	33 ch	pek	2805	36
110		349	18 do	pek sou	1530	33
111	Harangalla	352	18 ch	or pek	1620	36 bid
112		355	19 do	bro or pek (unbulked)	1900	34
113		358	49 do	pek	3920	35
114		361	9 do	sou	720	31
115	Monte Christo	364	45 ch	bro pek	4500	37
116		367	8 do	fans	960	30
117		370	6 do 1 hf-ch	dust	940	26
123	Medde Uva	388	47 hf ch	bro pek	2350	33 bid
124		391	41 ch	pek	3075	32 bid
125		394	18 do	pek sou	1260	30
126	L	397	13 do	bro pek	1300	29
127	Forest Hill	400	20 do	bro pek	1700	33 bid
128	Oaklands	403	11 do	bro or pek	990	33
131		412	12 do	pek sou	900	29
132	Warakamure	415	36 ch	bro pek	3600	32 bid
133	Harangalla	418	24 ch	bro pek	2280	37
134		421	32 do	pek	2560	35
135		424	10 do	bro pek fans	1000	32
136	Yarrow	427	41 ch	bro pek	4100	35 bid
137		430	30 do	pek	3000	32 bid
139	Neuchatel	436	33 ch	bro pek	3465	35
144	N	451	52 hf-ch	pek	2600	33
145	Rayigam	454	34 ch	bro pek	3400	34
146		457	29 ch	or pek	2320	33 bid
147		460	19 do	pek	1520	33
148		463	13 do	pek sou	1170	31
149		466	19 hf-ch	dust	1520	27
150	R	469	27 hf ch	dust	2430	22
151	S V	472	16 ch	pek	1400	29
152		475	27 hf-ch	pek fans	1776	27 bid
153		478	14 do	dust	1260	21
154	Lyndhurst	481	57 hf-ch	bro pek	5135	35
155		484	45 do	pek	2250	32

[Mr. E. John.—148,055 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Yakka	465	16 ch	bro or pek	1728	32
5		468	16 do	pekoe	1440	34
6		471	15 ch	pek sou	1290	32
7		474	11 do	sou	880	29
15	Oono gal·ya	498	22 do	or pek	1980	41
16		501	10 do	bro or pek	1000	35
17		504	20 do	pekoe	1700	36
18		507	10 do	pek sou	800	34
19	Gangawatte	510	40 do	pekoe	3400	37
20		513	19 do	pek sou	1710	34
21	Mount Everest	516	15 do	pek sou	1350	35
22	Eila	519	100 ch	bro pek	8500	35
23		522	19 hf-ch	dust	1520	26
24	Mocha	525	20 ch	bro or pek	2000	64
25		528	16 do	or pek	1520	51
26		531	15 do	pekoe	1500	43
28	Ohiya	537	13 hf-ch	bro or pek	780	49
29		540	16 do	bro pek	960	39
30		543	15 ch	pekoe	1350	35
34	Bellongalla	555	28 hf ch	bro pek	1400	33
35	Ottery	558	21 ch	bro or pek	2310	34 bid
36		561	18 do	or pek	1530	40
37		564	20 do	pekoe	2000	37
42	Yapame	579	25 do	bro pek	2500	44
43		582	16 do	pekoe	1440	37
44		585	10 do	pek sou	900	33
46	Mahanilu	591	34 do	or pek	1870	42
47		594	15 do	bro or pek	975	35 bid
48		597	10 do	pekoe	930	40
49		600	8 do	pek sou	720	37
55	S G	618	34 do	unas	3060	32
60	M G	633	10 hf-ch	fans	750	31
61	Poilakande	636	60 ch	bro pek	6000	33
62		639	36 do	pekoe	3240	33
76	Glassaugh	681	27 hf-ch	or pek	1431	64
77		684	30 do	bro or pek	1950	45 bid
78		687	24 ch	pekoe	2280	43
79		690	8 do	pek sou	800	39
80	W H	692	43 do	sou	1431	27
81		696	33 hf-ch	bro pek fans	2145	31
82		699	15 ch	dust	2625	25
83	Maskeliya	702	23 do	or pek	2070	40
84		705	20 do	pekoe	1700	37
91	W H	726	13 hf-ch	bro pek	847	31
96	Westhall	741	11 do	dust	990	24
103	Glentilt	762	33 ch	bro pek	3300	37 bid
104		765	13 do	pekoe	1300	37 bid
106		771	16 hf-ch	fans	1280	27
107	Ferndale	774	12 ch	bro or pek	1200	39
108		777	18 do	or pek	1620	39
109		780	20 do	pekoe	1800	35
112	Wewa	789	8 do 1 hf-ch	bro pek	840	30 bid
113		792	18 ch	pekoe	1300	28 bid
114		795	6 do 1 hf-ch	bro pek fans	855	23 bid

SMALL LOTS.

[Messrs. Forbe, & W[illegible]ker]

Lot		Box	Pkgs.	Name.	lb.	c.
1	C H	1075	4 ch	red leaf	360	23
2	Gingran Oya	1078	2 hf-ch	fans	156	25
3		1081	3 do	dust	270	24
5	Kosgalla	1087	6 do	or pek	300	31
8		1096	4 do	bro pek X	200	31
9		1099	1 do	bro pek fans	70	26
10		1102	4 do	bro tea	200	24
11		1105	2 do	dust	140	24
13	Galkanda	1111	4 ch	pek	360	29
14		1114	2 do	pek sou	180	27
15		1117	1 do	dust	120	24
16		1120	1 do	bro pek fans	100	26
19	Dromoland	1129	3 do	red leaf	255	19
25	Nillomally	1147	2 hf ch	fans	140	30
26		1150	2 ch	dust	200	24
29	Passara Group	1159	7 do	pek	630	35
31		1165	1 hf-ch	fans	75	31
34	D in est. mark	1174	8 do	dust	640	24
39	Glengariffe	1189	9 do	fans	603	31
40	D in est. mark	1192	3 do	bro or pek	180	32
41		1195	8 do	sou	560	30
42		1198	2 do	dust	160	22
43		1201	5 do	bro mix	300	17
44	A S G	1204	10 do	or pek	500	32
45		1207	9 do	red leaf	495	23
54	Cooroondoo-watte	1234	9 do	bro pek	495	35
55		1237	12 do	pek	660	34
56		1240	8 do	pek sou	440	32
60	Avoca	1252	6 ch	pek sou	564	35
61		1255	5 hf-ch	bro pek fans	400	28
64	A in est. mark	1264	1 do	bro pek fans	80	26
67	Dooroomadella	1273	2 ch	pek sou	194	26
68		1276	8 hf-ch	fans	560	25
70	Springwood	1282	1 ch	red leaf	95	24

Lot		Box.	Pkgs.	Name.	lb.	c.
71	Gallawatte	1285	1 ch	bro pek	95	30
72		1288	2 do	pek	170	28
76	S W	1300	4 hf-ch	dust No. 1	200	25
77		1303	3 do	dust No. 2	150	24
80	C P H Galle, in est. mark	1312	6 ch	bro pek	560	32
82		1318	4 do	pek sou	320	27
88	Sirikandura	1336	7 do	pek sou	595	30
89		1339	5 do	bro pek fans	472	31
90		1342	7 do	dust	150	24
101	Middleton	1375	3 hf-ch	dust	240	27
103	Doranakande	1381	3 ch	pek	285	33
104		1384	3 do	pek No. 2	270	31
106		1390	1 do	dust	112	25
118	Halwatura	1426	6 hf-ch	dust	570	24
124	Penrhos	1444	6 ch	pek sou	480	31
125		1447	3 hf-ch	pek dust	261	25
129	Glencorse	1459	4 ch	bro pek	400	35
131		1465	7 do	pek sou	588	30
132		1468	2 do	pek sou	180	30
133		1471	2 do	pek fans	236	30
134		1474	1 do	bro tea	100	33
135		1477	1 do	dust	160	24
148	U S A	1516	2 do	bro mixed	170	23
149	Springwood	1519	5 do	congou	450	28
153	B D W P	1531	4 do	bro pek No. 2	355	20
154		1534	5 do	pek	400	21
155		1537	1 do	pek sou	80	20
156		1540	2 do	mix tea	120	20
157		1543	7 do	dust	595	24
158		1546	1 do	dust No. 2	80	21
160	St. Edwards	1552	9 do	bro pek	504	34
161		1555	12 hf-ch	pek	672	31
162		1558	5 do	pek sou	280	30
163		1561	1 do	bro pek fans	70	29
164		1564	1 do	dust	89	25
167	Munukettia, Ceylon, in est. mark	1573	6 ch	pek sou	480	30
181	Polatagama	1615	2 do	dust	300	24
192	Erracht	1648	1 do	pek dust	175	24
199	Telbedde	1669	3 do	pek sou	255	30
200		1672	1 do	fans	125	30
201		1675	1 do	dust	152	24
202	Ellamulla	1678	2 bags	red leaf	95	22
206	Weyungawatte	1690	4 ch	pek sou	320	30
207		1693	4 hf-ch	dust	320	25
228	Beverley	1756	9 do	bro pek	495	34
229		1759	1 do	sou	50	30
230		1762	1 do	fans	70	30
235	Pine Hill	1777	8 hf-ch	pek sou	560	32
236		1780	2 do	red leaf	140	24
239	Ugieside	1789	8 ch	dust	600	23
245	Mount Pleasant	1807	9 hf-ch	bro pek	540	33
246		1810	8 do	pek	400	30
247		1813	10 do	pek sou	500	29
248		1816	2 do	fans	110	28
249		1819	1 box	golden tips	5	R4
252	Feverley	1828	1 hf-ch	bro or pek	58	45
254	Talgswela	1834	6 do	bro or pek	330	34
258	Farnham	1846	6 ch	bro pek	660	34 bid
262	Aigburth	1858	5 do	sou	400	28
263		1861	1 hf ch	fans	70	29
264		1864	5 ch	bro mix	500	20
268	Bandaraeliya	1876	12 hf-ch	pek sou	492	32
269	Allerton	1879	1 ch	bro pek fans	80	27
270		1882	1 do	red leaf	80	20
271		1885	1 do	dust	123	24
272	Mahaoya	1888	1 do	pek sou	75	28
273		1891	1 do	fans	90	24
276	Roeberry	1900	10 do	pek sou	820	33
277		1903	5 do	dust	500	26
281	I A	1915	6 do	pek sou	492	33
282	B D W, P	1918	2 do	mix tea	160	27
283		1921	1 hf-ch	mix tea	70	25
284	Farnham	1924	7 do	bro or pek	455	36 bid
289		1939	8 ch	pek fans	560	28
290		1942	4 do	dust	320	25
291	C R E	1945	2 do	bro pek fans	200	28
292		1948	4 do	bro mix	400	24
293		1951	3 do	red leaf	270	18

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name	lb.	c.
1	Allakolla	22	3 ch	sou	270	24
2		25	4 ch	red leaf	360	19
3		28	3 hf-ch	dust	270	25
4	B'watte	31	2 ch	bro pek fans	250	30
5		34	3 do	bro mix	300	19
6	Mousa Eliya	37	2 ch	fans	270	27
7		40	2 do	dust	330	22
9	Fairfield	46	5 ch	pek	450	33
10		49	3 hf-ch	bro mix	150	32
12		64	3 do	red leaf	120	23
15	Hanagama	64	2 ch	sou	190	24
16	Welgampola	67	4 hf-ch	pek	224	29
17		70	8 hf-ch	pek sou	442	27
18		73	1 do	sou	50	25
19		76	2 do	fans	112	26
20		79	1 do	dust	60	24
21		82	8 do	bro or pek	448	35
23		88	3 do	or pek	168	32
24		91	4 do	sou	212	25
25		94	1 do	dust	60	24
26		97	2 do	unas	112	27
27		100	3 do	pek sou	168	28
28	Tientsin	103	2 ch	bro or pek	200	30
29		106	3 do	pek	255	30
20		109	1 do	pek sou	65	27
36	Nyanza	127	3 ch	fans	300	32
40	Paradise	139	9 hf-ch	dust	675	24
41	P	142	3 ch	unas	300	27
42		145	2 do	fans	248	27
43		148	1 hf-ch 2 ch	bro mix	176	24
44		151	3 hf-ch	dust	255	24
45	D A L, in estate mark	154	3 ch	bro pek	300	32
46		157	3 do	pek	285	30
47		160	3 do	pek sou	285	27
48		163	2 do	bro mix	180	21
49		166	2 do	dust	300	22
57	Ramboda	190	3 hf ch	fans	210	28
67	Glen Morgan Nilgris	220	3 ch	bro or pek fans	345	26
68	Galatotta	223	5 ch	bro pek	550	28
69		226	1 hf ch 3 ch	pek	285	26
70		229	1 do	pek sou	150	23
	Attiville	238	1hf-ch 3 ch	pek sou	300	24
		241	3 do	fans	325	26
75		244	2 do	bro mix	200	18
76	Ukuwela	247	7 ch	bro tea	630	21
81	Hopewell	262	4 hf-ch	dust	320	25
82		265	2 do	bro tea	120	20
83	Maddagadera	268	1 ch	bro pek fans	100	27
91	Marigold	292	3 hf-ch	flowery pek	183	61
94		301	12 do	pek sou	60[illegible]	37
95		304	8 do	pek fans	600	33
96		307	4 do	mix	232	29
101	Kurulugalla	322	6 ch	pek	540	30
104		331	2 do	pek sou	200	26
105	K G A, in estate mark	334	5 ch	bro tea	480	18
106		337	1 do	bro pek fans	100	28
107		340	1 do	dust	154	24
122	Medde Uva	385	11 hf-ch	bro or pek	550	35
129	Oaklands	406	1 ch	bro pek	147	32
130		409	1 hf-ch 1 ch	pek	80	30
138	Y, in estate mark	433	3 ch	dust	420	24
140	W, in estate mark	439	1 ch	bro pek	1[illegible]0	32
141		442	1 do	pek	110	30
142		445	4 do	pek sou	350	29
143		448	2 do	dust	230	24
156	Lyndhurst	487	14 hf ch	pek sou	6[illegible]0	29
157		490	4 do	dust	240	26

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name,	lb.	c.
1	M	456	1 hf-ch	bro pek	33	34
2		459	1 do	or pek	48	34
3	A A	462	2 ch	dust	220	22
27	Mocha	534	8 hf-ch	fans	640	33
31	Ohiya	546	3 ch	pek sou	285	31
32		549	2 hf-ch	fans	170	25
33		552	2 ch	sou	180	29
38	Ottery	567	1 do	dust	170	27
39	M V	570	2 do	pek sou	180	26
40		573	2 do 1 hf-ch	fans	310	27
41		576	3 do	dust	240	24
45	Yapame	588	9 do	fans	675	30
54	S G	615	1 ch	dust	125	30
56		621	4 do	sou	320	28
57	C	624	5 do	bro pek	450	28
58		627	6 do	pekoe	510	27
59	M G	630	5 do	unas	500	28
85	Maskeliya	708	5 do	pek sou	500	34
86		711	7 hf-ch	bro pek fans	420	32
87	G B	714	5 do	dust	400	26
88		717	10 do	fans	650	30
89		720	6 ch	sou	480	31
90		723	4 do	bro mix	280	25
92	W H	729	11 hf-ch	pekoe	583	31
93		732	5 do	pek sou	235	30
94		735	4 do	dust	364	25
95		738	1 do	pekoe	54	31
97	Westhall	741	4 ch	bro mix	420	21
98	Tempo	747	4 do	bro or pek	412	33
99		750	4 do	bro pek	360	33

Lot,		Box.	Pkgs.		Name.	lb.	c.
100		753	6	ch	pekoe	498	32
101		756	4	do	pek sou	300	30
102		759	2	do	sou	144	28
105	Glentilt	768	6	do	pek sou	570	34
110	Y K	783	1	box	golden tips	8	R7
111	Anamallai	786	2	hf-ch	dust	180	25
115	Wewa	798	3	ch	red leaf	264	16
116	D D	801	5	do	red leaf	421	13

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, Jan. 12.

"Hitachi Maru."—Standard Co. St. L 2, 1 tierce sold at 32s ; ditto S, 1 cask and 1 barrel sold at 32s ; ditto P B, 1 barrel sold at 32s.

"Bingo Maru."—OBEC, in estate mark, Kondesalle OO, 1 cask sold at 83 ; ditto O, 1 cask sold at 75s ; ditto 1, 2 casks and 1 barrel sold at 59s ; ditto PB, 1 barrel sold at 46s ; ditto PB, 1 tierce sold at 77s ; ditto T, 1 cask sold at 41s.

"Austral."—OBEC, in estate mark, Delmar O 2, 1 cask sold at 53s.

"Bingo Maru."—Roehampton 1 barrel sold at 73s ; ditto 1, 4 casks and 1 tierce sold at 73s ; ditto 2, 1 cask sold at 45s ; ditto PB, 1 tierce sold at 88s ; ditto T, 1 cask sold at 41s ; ditto 1, 1 bag sold at 60s.

"Ulysses."—MAK 2, in estate mark, 4 casks and 1 barrel sold at 55s.

[Coffee Futures (like cotton) have risen 50% in value. The Bears have had their Waterloo. Coffee which has been declining five years should keep up the next three years.

Sugar :—Views are mixed but tendency rather bearish. Wheat should rise from present low prices.]

COCOA.

"Shanghai."—OO MAK in estate mark, 10 bags sold at 75s ; 4 bags sold at 65s 6d ; sea damaged and bulked ; ditto 45 bags sold at 75 ; ditto 13 bags sold at 65s 6d ; sea damaged and bulked; ditto A MK in estate mark, 35 sold at 70s 6d.

"Clan MacLean,"—O DBM, 15 bags sold at 66s.

"Kawachi Maru."—A Grove, London, 59 bags sold at 84s ; 1, 2 bags sold at 60s 6d ; B, 1 bag sold at 51s.

"Derbyshire.—Palli London, F 63 bags out at 86s 6 ; ditto 2 14 bags out; ditto 3 bags sold at 56s.

"Kawachi Maru."—Udapolla A, 59 bags sold at 83s 6d ; ditto B, 11 bags sold at 68s ; ditto C, 3 bags sold at 53s 6d ; ditto C, 2 bags sold at 50s ; Hylton OO, 25 bags sold at 86s ; ditto O, 2 bags sold at 64s.

"Shanghai."—Beredewelle COC Ex. No. 1, 11 bags sold at 90s ; ditto 1, 32 bags sold at 86s ditto B, 2 bags sold at 44s 6d ; ditto T, 1 bag sold at 55s 6d.

"Hakata Maru."—Beredewelle C O C 1, 20 bags out.

"Clan Ogilvy."—1 Yattawatte, 40 bags sold at 78s 6d; 20 bags sold at 79s 6d ; 20 bags sold at 80s 6d ; 27 bags sold at 81s 6d ; ditto 2, 10 bags sold at 65s ; broken, 1 bag sold at 60s.

"Clan McLean."—Ross 1, 34 bags sold at 84s 6d ; ditto 2, 23 bags sold at 83s 6d ; ditto 3, 3 bags sold at 65s 6d ; ditto T 1, 8 bags sold at 68s 6d ; ditto T 2, 6 bags sold at 68s 6d ; ditto B 1, 1 bag sold at 65s ; ditto B 2, 3 bags sold at 56s ; Kepitigalla, 47 bags sold at 87s; 3 bags sold at 67 6d.

"Matiana."—Yattawatte 2, 10 bags sold at 65 6d.

"Kawachi Maru."—Yattewatte 9 bags sold at 65s 6d.

"Derbyshire."—HK 1, 25 bags sold at 83s 6d; ditto 2, 3 bags sold at 68s ; ditto T, 2 bags sold at 57s 6d.

"Clan Ogilvy."—A Estate Cocoa, 34 bags sold 67s 6d, 11 bags sold at 66s 6d ; ditto B Estate Cocoa, 38 bags sold at 68s ; 23 bags sold at 67s ; ditto MA 35 bags sold at 68s ; ditto BSP in estate mark, 14 bags sold at 73s ; 3 bags sold at 63s 6d.

"Silvia."—MS in estate mark, Estate Cocoa 20 bags sold at 70s ; 46 bags sold at 71s.

"Tonkin."—JL in estate mark, Estate Cocoa 42 bags sold at 69s ; ditto O, 78 bags sold at 68s 6d ; ditto 1, 38 bags sold at 69s.

"Matiana."—L in estate mark, Estate Cocoa 60 bags sold at 66s.

"Clan McLean."—HMG & CO., in estate mark, Estate Cocoa, 20 bags sold at 60s 6d ; 62 bags sold at 70 ; O, 20 bags sold at 70s ; ditto AS in estate mark, 40 bags sold at 69s ; 20 bags sold at 69s 6d ; 30 bags sold at 69s ; ditto MS in estate mark, Estate Cocoa 19 bags sold at 67s ; ditto S in estate mark, Estate Cocoa 101 bags sold at 68s.

CARDAMOMS.

"Clan Ogilvy."—FF S 1, in estate mark, 1 case and 1 box sold at 3s 9d ; ditto 2, 2 cases sold at 3s 2d ; ditto 3, 1 case and 1 box out at 2s 5d ; ditto 4, 1 box sold at 1s 6 ; ditto 1a, 1 case sold at 3s 3d ; ditto 2a, 1 case sold at 2s 6d ; 3a, 1 case sold at 1s 7d.

"Clan McLean."—Delpotonoya, 1 case sold at 3s 8d, and 1 case sold at 3s 9d ; 3 cases sold at 3s 4d ; 1 case sold at 3s 5d ; ditto 5 cases sold at 2s 10d ; 1 case sold at 2s 2d and 1 case sold at 2s 3d.

"Tonkin."—PBM, 26 cases sold at 1s 9d ; 5 cases sold at 1s 7d ; ditto 2, 4 cases sold at 1s 6d ; ditto 3, 1 box sold at 1s 5d ; PBM 5 boxes sold at 2s 4d ; ditto 1 case sold at 3s 11d 4 cases sold at 2s 6d.

"Bingo Maru."—New Peacock O, 2 boxes sold at 2s 9d ; ditto 1, 2 cases sold at 2s 6d : 1 case sold at 2s 3d ; ditto 2, 1 box sold at 2s 3d ; ditto B, 2 cases sold at 2s ; ditto S, 2 cases sold at 1s 8d ; ditto seed, 1 case sold at 2s 2d ; ditto O, 1 bag sold at 2s 2d ; ditto B&S, 1 bag sold at 1s 6d.

"Clan Stuart."—New Peacock 3, 1 case sold at 1s 10d.

"Duke of Devonshire."—Mousakanda 2, 2 cases sold at 2s 4d, 2 cases sold at 2s 3d.

"Orestes."—L in estate mark, Mysore 1, 2 cases and 1 bag sold at 3s 4d ; ditto 2, 6 cases sold at 2s 9d ; ditto 3, 3 cases sold at 2s 2d ; ditto 4, 1 case sold at 1s 8d ; Nilwatte H, 2 cases sold at 1s 4d ; 10 cases sold at 1s 5d.

"Kawachi Maru."—Kurugama, Mysore 1, 2 cases sold at 2s 6d ; ditto 2, 2 cases sold at 1s 7d.

"Bingo Maru."—Wariyagalla, Mysore A, 4 cases sold at 3s 1d ; ditto Mysore B, 4 cases sold at 2s 7d ; ditto Mysore C, 1 case sold at 1s 7d ; ditto Mysore D, 5 cases sold at 1s 8d ; ditto Mysore seed, 1 case sold at 2s 5d.

"Musician."—JL in estate mark, Mysore No. 1, 4 cases sold at 2s ; ditto No. 3, 4 cases sold at 3s 9d ; ditto No. 3, 2 cases sold at 3s 7d ; 4 cases at 3s 10d.

"Clan Menzies."—JL in estate mark, SM Mysore, 5 cases sold at 1s 8d.

"Clan Ogilvy."—1 MLM in estate mark, seed, 4 cases sold at 2s 6d.

"Senator."—Midlands O, 4 cases sold at 3s 6d ; ditto 1, 9 cases sold at 2s 11d : 3 cases sold at 2s 10d ; ditto 2, 2 cases sold at 1s 9d ; ditto B&S, 1 case sold at 1s 7d ; Midlands, 1 bag sold at 2s 2d.

"Duke of Norfolk."—Midlands O, 7 cases sold at 3s 5d ; Midlands 1, 9 cases sold at 3s ; ditto 2, 1 case sold at 1s 8d ; OBEC Dangkande, 4 cases sold at 3s 2d ; 3 cases sold at 2s 10d ; 2 cases sold at 1s 9d ; 2 cases sold at 1s 10d.

"Tambo Maru."—Elkaduwa O, 4 cases sold at 3s 4d ; ditto 1, 5 cases sold at 2s 7d ; Katooloya EX, 1 case sold at 3s 6d ; ditto AA, 4 cases sold at 3s ; ditto B, 4 cases sold at 1s 7d ; Ditto C, 1 case sold at 1s 7d.

"Kawachi Maru."—Elkaduwa O, 5 cases sold at 3s 3d ; ditto 1, 4 cases sold at 2s 6d ; ditto 2, 1 case sold at 1s 10d ; ditto B & S, 1 case sold at 1s 7d ; seed, 1 bag sold at 2s 3d.

"Clan Ogilvy."—Pitakande Group No. 1, 5 cases sold at 3s ; ditto 2 cases sold at 3s 1d ; ditto 2, 5 cases sold at 2s 4d ; ditto 3, 1 case sold at 1s 6d ; seed, 1 case sold at 2s 2d.

"Bingo Maru."—Yattawatte No. 1, 2 cases sold at 1s 11d ; ditto No. 2, 1 case sold at 1s 11d ; ditto seed, 1 case sold at 2s 2d ; ditto OBEC in estate mark, Dankande 2 cases sold at 2s 9d ; ditto 1 case sold at 2s 8d ; ditto, 2 cases sold at 1s 9d.

No. 6 COLOMBO, FEBRUARY 19, 1900. PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[9,945 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Battalgalla	6	16 ch	pek sou	1440	35
2	Halgolle	9	27 ch	bro pek	2565	34
3		12	25 do	or pek	2250	33 bid
4		15	27 do	pek	2430	32
5		18	9 do	pek sou	765	30

Messrs. Forbes & Walker.

[445,206 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	N	1957	7 cb	bro mix	910	26
2		1960	27 do	unas	2700	29
4	Abamad	1966	17 hf-cb	pek	850	30
16	Ettapolla	2002	16 do	bro pek	896	33
20	Mousakelle	2014	27 ch	bro or pek	2700	42
21		2017	27 do	or pek	2700	38
22		2020	20 do	pek	2000	36
25	K P W	2029	22 hf-cb	pek	990	31
26	Pambagama	2032	37 cb	sou	3478	24 bid
28	Passara Group	2038	20 ch	bro or pek	2000	38
29		2041	11 do	or pek	990	40
30		2044	13 do	pek	1170	37
33	Woodend	2053	23 ch	bro pek	2300	34
34		2056	46 do	pek	4140	32
35		2059	12 do	pek sou	960	30
37	Yabalatenne	2065	17 cb	bro pek	1717	35
38		2068	15 do	pek	1425	33
39	Grange Garden	2071	37 ch	bro or pek	3700	38
40		2074	25 do	pek	2500	36
47	Ellaoya	2095	26 cb	bro pek	2600	34 bid
48		2098	23 do	pek	2070	33
49		2101	17 do	pek sou	1530	31
51		2107	14 do	bro pek fans	910	30
54	Carlabeck	2116	8 cb	pek sou	800	38
56	C B	2122	10 ch	bro pek	1050	30
57		2125	15 do	pek	1575	27 bid
59	Kelaneiya and Braemar	2131	22 ch	bro or pek	2200	43
60		2134	20 do	or pek	2000	37
61		2137	18 do	pek	1800	35
65	Cotswold	2149	9 ch	bro pek	900	49
66		2152	10 do	pek	900	34
70	Gallawatte	2164	11 cb	bro pek	1045	34
71		2167	18 do	pek	1530	32 bid
73	Kakiriskande	2173	12 cb	pekoe	1140	30
75	Ireby	2179	32 ch	bro pek	3520	46
76		2182	20 do	pek	1800	43
77		2185	10 do	pek sou	900	38
81	Stamford Hill	2197	25 hf-ch	bro pek	1500	41 bid
82		2200	21 do	or pek	945	60
83		2203	28 ch	pek	2520	40
86	Vogan	2212	54 ch	or pek	4590	38
87		2215	48 do	bro pek	4800	35 bid
88		2218	78 do	pek	7020	33
89		2221	9 do	pek sou	720	29
90		2224	12 hf-ch	dust	1020	24
91		2227	7 cb	bro pek fans	840	30
92	Hentleys	2230	25 hf-ch	bro pek	1325	34
93		2233	17 do	or pek	765	34
94		2236	23 ch	pek	2210	31
97	St. Leonards	2245	12 do	bro pek	1260	34
98		2248	8 do	pek	800	31
110	Strathspey	34	9 ch	bro or pek	945	53 bid
111		37	14 do	or pek	1400	47
112		40	20 do	pek	2000	41
113		43	10 do	pek sou	950	38
117	C L, in estate mark	55	11 ch	sou	990	35
118		58	30 do	fans	3000	32
120	Holton	64	14 ch	bro pek	1330	34
121		67	12 do	pek	960	32
130	Kelvin	94	14 ch	sou	1120	25
133	Morankande	103	17 ch	or pek	1445	36
134		106	30 hf-ch	bro or pek	1680	34
135		109	24 ch	pek	2160	32
136		112	17 do	pek sou	1530	30
138	Dea Ella	118	20 hf-ch	bro or pek	1100	39
139		121	28 do	or pek	1540	35
140		124	33 bf-ch	pek	1650	33
141		127	16 do	pek sou	800	32
142	Kirklees	130	30 cb	bro or pek	1800	37
143		133	32 do	or pek	3200	36 bid
144		136	24 do	pek	2160	32
145		139	11 do	pek sou	880	30
149	Pallagodda	151	12 cb	bro or pek	1200	34
150		154	23 do	bro pek	2300	41
151		157	17 do	or pek	1530	35
152		160	17 do	pek	1530	33
153		163	18 do	pek sou	1620	31
154	Maba Uva	166	27 hf-ch	bro or pek	1620	36
155		169	14 do	or pek	784	43
156		172	22 cb	pek	1980	39
157		175	9 do	pek sou	720	33
160	Bloomfield	184	38 ch	bro pek	4180	38
161		187	27 do	pek	2700	38
163		193	9 hf-ch	pek fans	720	31
164	Macaldeniya	196	17 do	bro pek	1015	39
165		199	14 do	pek	705	34
166		202	14 do	pek sou	705	30
168	Palmerston	208	14 hf-cb	bro or pek	700	86
169		211	15 cb	pek	1350	45
171	St. Heliers	217	30 hf-ch	bro or pek	1680	34
172		220	20 cb	pek	1800	32
174	Digdola	226	12 ch	bro pek	1080	36
175		229	13 do	pek	975	32
176	Beaumon	232	20 cb	bro pek	2060	34
177		235	37 do	or pek	3330	33
181	Pusella	247	12 ch	pekoe	948	32
190	B D W P	274	26 cb	bro pek	2210	34
191		277	31 do	bro pek	2635	34
194	Walpita	286	33 ch	bro pek	3300	33
195		289	24 do	pek	2400	32
196		292	12 do	pek sou	960	29
200	Maligatenne	303	17 cb	bro pek	1870	32
201		307	15 do	pek	1500	31
214	Horagaskelle	346	12 hf-ch	pek sou	700	30
215	K P W	349	48 do	bro pek	2880	34
216		352	62 do	bro or pek	3410	35
217		355	90 do	pek	4950	32
218		358	32 do	pek sou	1600	28
223	Middleton	373	16 hf-cb	bro or pek	912	54 bid
224		376	17 ch	bro pek	1700	46 bid
225		379	17 do	pek	1530	41 bid
226	O'Bodde	382	17 do	bro pek	1955	35
227		385	12 do	or pek	1200	38
228		388	14 do	pek	1330	33
231	Ascot	397	47 do	bro or pek	4700	33
232		400	73 do	bro pek	6570	33
233		403	26 do	pek	2340	32
235		409	14 do	dust	1120	26
236	W in est. mark	412	29 do	unast	3190	33
237	Chesterford	415	46 do	bro pek	4600	38
238		418	49 do	pek	4900	34
239		421	34 do	pek sou	3400	31
240		424	24 do	fans	2160	31
243		433	30 hf-ch	dust	2400	27
244	Harrow	436	38 do	bro or pek	2280	43
245		439	31 ch	pek	3100	39
246		442	12 do	pek sou	1080	36
253	Fine Hill	463	25 hf-cb	bro or pek	1450	41
258	Carberry	478	20 ch	bro pek	1800	33
259		481	15 do	pek	1350	31
266	Harrington	502	26 bf-ch	bro or pek	1300	54
267		505	20 cb	or pek	1900	43
268		508	17 do	pek A	1530	40
272	Digdola	520	35 do	pek	2625	31 bid
280	Freds Ruhe	544	40 do	bro pek	4000	33
281		547	41 do	pek	3690	32
282		550	39 do	pek sou	3510	29
283	W A	553	10 do	bro pek	1000	31
284		556	9 do	pek	810	30
285		559	12 do	pek sou	1080	28
291	Walton	577	14 do	bro pek	1568	42
292		580	10 do	or pek	1000	37
293		583	29 do	pek	2900	33
294		586	20 do	pek sou	1800	31
298	Bandara Eliya	598	45 bf-cb	or pek	2070	37
299		601	69 do	bro pek	3864	38
300		604	79 do	bro pek	4582	37
301		607	27 do	pek	1134	35
302		610	26 do	pek sou	1170	34
303	Ambragalla	613	68 do	or pek	3264	34
304		616	42 do	bro or pek	2520	34 bid
305		619	25 ch	pek	1950	33
306		622	28 do	pek sou	2240	31
307	Stisted	625	48 hf-ch	bro or pek	3072	34
309		631	26 do	pek	1560	32
310		634	38 do	pek sou	2052	30
319	Geragama	661	27 hf-ch	bro or pek	1485	34
320		664	15 cb	bro pek	1170	33 bid
321		667	22 do	pek	2091	32
322		670	9 do	pek sou	855	29

Lot		Box.	Pkgs.	Name.	lb.	c.
326	Talgaswela	682	5 ch			
			16 hf-ch	bro pek	1405	35
327		685	13 ch	or pek	1040	33
328		688	9 do	bro pek	765	35
330		694	12 do	pek	960	32
331		697	18 do	pek sou	1440	30
332	Maldeniya	700	16 do	bro or pek	1680	34 bid
333		703	39 do	or pek	3510	35
334		706	61 do	pek	5185	33
335		709	43 do	pek sou	3655	31
339	T Y	721	7 do	bro pek fans	700	28
340	St. Heliers	724	25 hf-ch	bro or pek	1400	35

[Messrs. Somerville & Co.—229,238 lb.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	M Ceylon	493	25 ch	pek fans	2000	25
2	Kosgahahena	496	13 ch	bro pek	1365	28 bid
3		499	16 do	pek	1600	28
8	Ferriby	514	18 ch	bro pek	1710	34
9		517	23 do	pek	1955	32
10		520	14 do	pek sou	1050	30
16	Charlie Hill	538	20 hf-ch	bro pek	1100	32
17		541	14 do	pek	770	28
21	Maligatenne	553	8 ch	pek	717	28
22		556	8 do	pek sou	747	27
25	Hanagama	565	12 ch	bro pek	1200	34
26		568	29 do	pek	2755	32
27		571	19 do	pek sou	1710	29
31	Warakamure	583	67 ch	bro pek	6700	32
32		586	34 do	pek	3230	30
33		589	24 do	pek sou	2160	28
34	Hangranoya	592	46 hf-ch	bro pek	2530	34
35		595	24 ch	or pek	1920	38
36		598	35 do	pek	3150	33
37		601	17 do	pek sou	1275	31
38		604	17 hf-ch	fans	1190	29
47	Rahatungoda	631	10 ch	bro pek	1000	37 bid
51	Blinkbonnie	643	30 hf-ch	bro pek	1800	44
52		646	41 ch	pek	3608	38
54	H J S	652	32 hf-ch	pek sou	1920	30
60	Florida	670	15 ch	bro pek	1500	27 bid
61		673	18 do	pek	1728	25 bid
63		679	22 do	bro mix	1485	10 bid
68	K	694	36 ch	pek sou	3240	27 bid
69		697	12 do	dust	960	22
71	Kuralana	703	20 ch	unas	2050	26 bid
			1 hf-ch			
72	Kayigam	706	43 ch	bro pek	4300	34
73		709	26 do	or pek	2080	34
74		712	17 do	pek	1360	32
75		715	11 do	pek sou	990	31
76		718	15 hf-ch	dust	1200	26
77	Mora Ella	721	48 hf-ch	bro pek	2784	36
78		724	38 ¾ ch	pek	2470	36
79		727	21 ch	pek sou	1500	32
81	Califonia	733	9 ch	pek	855	28
82		736	7 do	pek sou	700	25
90	Morrovia	760	37 ch	bro pek	3700	34
92		766	30 do	pek	2850	33
93		769	14 do	pek sou	1400	30
108	Wendura	814	9 ch	pek sou	720	30
110	P T M, in estate mark	820	8 ch	bro pek	720	30 bid
112		826	10 do	pek sou	900	27 bid
116	Ellatenne	838	10 ch	bro pek	1000	34
117		841	12 do	pek	1200	31
119	Kirklees	847	15 ch	pek sou	1200	33
120	Maddagedera	850	20 ch	bro pek	2000	34
121		853	30 do	or pek	3000	32 bid
122		856	18 do	pek	1800	30 bid
123		859	18 do	pek sou	1800	28 bid
124		862	14 do	bro pek fans	1400	27
126	M	868	16 ch	pek	1504	30 bid
127	Manickwatte	871	37 hf-ch	or pek	1776	36 bid
128		874	25 do	bro or pek	1500	34 bid
129		877	13 ch	pek	1014	33 bid
130		800	15 do	pek sou	1200	31 bid
143	Roseneath	919	19 ch	bro pek	1900	35
144		922	10 do	pek	900	34
145		925	19 do	pek sou	1520	31
148	New Valley	934	24 ch	bro or pek	2400	46
149		937	17 do	or pek	1530	43
150		940	22 do	pek	2200	37
151		943	20 do	pek sou	1800	35
153	N I T	941	11 ch	unas No. 2	990	24
154	Annandale	952	20 hf-ch	bro or pek (paper lined)	1160	66
155		955	19 do	or pek (paper lined)	1083	49
156		958	18 do	pek	990	42
157		961	15 do	pek sou	900	39
158	Kelani	964	35 ch	bro pek	2800	34 bid
159		967	17 do	bro or pek	1700	54 bid
160		970	22 do	pek	1870	32 bid
161		973	20 do	pek sou	1800	29 bid

Lot.		Box.	Pkgs.	Name	lb.	c.
166	N	988	39 hf-ch	bro pek	2145	35
167		991	41 do	pek	2050	33
169	Siriniwasa	997	24 ch	bro pek	2200	40
170		1	28 do	pek	2800	34
171		4	19 do	pek sou	1710	31
174	Honiton	13	38 hf ch	bro pek	1680	33 bid
175		16	21 ch	pek	1785	32
176		19	21 do	pek sou	1860	29 bid
186	Kirrikelle	49	22 hf-ch	bro pek	1386	40 bid
187	I P	52	22 ch	pek sou	1936	31
188		55	15 hf-ch	dust	1260	25
189	Deniyaya	58	20 ch	or pek	2000	37
190		61	27 do	bro pek	2700	33 bid
191		64	25 do	pek	2500	33
192		67	19 do	pek sou	1900	30
193		70	9 do	sou	900	28
194	W, in estate mark	73	13 ch	bro or pek	1560	33 bid
195	Columbia	76	15 hf-ch	bro or pek	750	44
198	Kelanwita	85	35 ch	bro pek	3500	32 bid
203	Pindenioya	100	24 ch	bro pek	2983	34
204		103	20 do	pek	1700	32
205		106	19 do	pek No. 2	1523	31
206		109	15 do	pek sou	1050	29 bid

[Mr. E. John.—213,473 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	D N D, in estate mark	804	10 hf-ch	fans	750	29
5	G T	816	9 ch	pekoe	810	30
6		819	12 do	sou	1080	31
7		822	8 hf-ch	dust	760	25
8	Dickapittia	825	30 ch	bro pek	3000	37 bid
9		828	36 do	pekoe	3600	34 bid
10	Loughton	831	41 hf-ch	bro pek	2255	34
11		834	56 do	pekoe	2800	30
12		837	26 do	pek sou	1170	28
17	Perth	852	21 ch	bro or pek	2100	37
18		855	31 do	bro pek	2635	35
19		858	12 do	pekoe	900	34
22	Kandaloya	867	34 do	bro pek	1530	37
23		870	30 hf-ch	or pek	1200	35 bid
24		873	97 ch	pekoe	3880	33 bid
25		876	20 hf-ch	pek sou	[illegible]	30
26	Kotuagedera	879	44 do	bro pek	4400	34
27		882	25 do	pekoe	2375	32
30	Brownlow	891	33 hf-ch	bro or pek	1881	40 bid
31		894	25 ch	or pek	2375	40
32		897	31 do	pekoe	2728	38
33	H	900	11 do	bro mix	1100	25
34	Glasgow	903	45 do	bro or pek	3825	42 bid
35		906	25 do	or pek	1875	51
36		909	21 do	pekoe	1827	40
37		912	13 do	pek sou	1300	38
38	Agra Ouvah	915	47 hf-ch	bro or pek No. 1	3008	48
39		918	42 do	bro or pek No. 2	2520	42 bid
40		921	18 ch	or pek	1674	41
41		924	11 do	pekoe	990	40
43	Dalhousie	930	18 hf-ch	bro pek	990	46
44		933	46 do	pekoe No. 1	2070	35
45		936	25 do	pekoe No. 2	1125	33
47	Glassaugh	942	21 do	bro or pek	1365	45 bid
49	Iona	948	57 do	bro or pek	3420	44 bid
50		951	29 ch	or pek	2755	47
51		954	17 do	pekoe	1530	40
53	Poilakande	960	18 do			
			1 hf-ch	bro pek	1850	33
54		963	15 ch	pekoe	1530	32
55		966	10 hf-ch	dust	825	24
56	Glasgow	969	40 ch	bro or pek	3400	43 bid
57		972	23 do	or pek	1725	49
58		975	23 do	pekoe	2001	41
59		978	15 do	pek sou	1500	38
60		981	13 do	fans	1300	32
68	B D	5	30 hf-ch	bro pek fans	1950	31 bid
69		8	36 do	pek fans	2700	28
70		11	12 ch	dust	2064	25
75	Bellongalla	26	20 hf-ch	bro pek	1000	33
76		29	25 ch	pekoe	2000	32
77	Lunugalla	32	20 hf ch	bro pek	1000	34
78		35	15 ch	pekoe	1200	34
79	Harrisland	38	13 do	bro pek	1284	35
80		41	9 do	pekoe	720	34
81		44	13 do	pek sou	1040	33
83	Templestowe	50	25 do	bro or pek	2000	41 bid
84	St. John's	53	25 hf-ch	bro or pek	1550	60
85		56	25 do	or pek	1500	61
86		59	25 do	pekoe	1400	42
87		62	14 do	pek fans	1008	37
88	Lamiliere	65	35 ch	bro pek	3500	40 bid
89		68	40 do	pekoe	3600	39
90		71	26 do	pek sou	1950	35
94	W H	83	52 hf-ch	pek fans	3900	28
95		86	8 ch	dust	1376	25 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
96	Ottery	89	20 ch	bro or pek	2200	35
97	Doonhinda	92	22 do	bro pek	2420	38 bid
98		95	26 do	pekoe	2600	38
101	Glentilt	104	21 do	pekoe	2100	36 bid
102		107	13 do	pekoe	1300	36 bid
103	Sudugenga	110	15 do	or pek	1360	38
104		113	15 hf ch	bro or pek	900	52
105		116	18 ch	pek sou	1530	33
111	Elkaduwa	134	9 do	or pek	855	37
113		140	27 do	pekoe	2430	32
114		143	8 do	pek sou	720	28
117	Orangefield	152	11 do	bro pek	1100	31
118		155	12 do	pekoe	1140	29
123	Ferndale	170	13 do	bro or pek	1170	37 bid
124		173	11 do	pekoe	990	36
125	Murraythwaite	176	28 do	bro pek	2660	35
126		179	28 do	pekoe	2380	33
127		182	13 do	pek sou	1105	29
130	Maryland	191	7 do	bro pek	700	31
131		194	8 do	pekoe	760	30
132	Bittacy	197	27 do	bro pek	2700	43 bid
133		200	24 do	pekoe	1920	44
134	Myraganga	203	50 do	bro pek	4750	35
135		206	20 do	pekoe	1920	34
136		209	29 do	pek sou	2320	33
137	Eadella	212	21 do	bro or pek	2100	34
138		215	20 do	bro pek	2000	33
139		218	35 do	pekoe	3500	32
140		221	14 do	pek sou	1260	30
141	Glasgow	224	42 do	bro or pek	3570	43 bid
142	S G	227	40 hf-ch	bro pek fans	2520	32 bid
143	Arncliff	230	21 ch	bro or pek	2100	34 bid
144		233	66 do	bro pek	6600	34 bid
145		236	21 do	pekoe	1575	36

SMALL LOTS.

E. Benham & Co.

Lot.	Box.	Pkgs.	Name.	lb.	c.
Halgolle	21	3 ch	fans	345	24
	24	1 do	dust	150	24

[Messrs. Forbes & Walker]

Lot		Box	Pkgs.	Name.	lb.	c.
3	Ahamad	1963	8 hf ch	bro pek	400	30
5		1969	13 do	pek sou	650	2
6		1972	2 do	pek fans	120	25
7		1975	3 do	fans	165	24
8		1978	4 do	red leaf	200	20
9		1981	2 do	do	90	21
10		1984	1 do	dust	70	23
11	D G F in est. mark	1987	2 ch 1 hf ch	bro pek	200	32
12		1990	2 ch 1 hf-ch	pek	225	32
13		1993	1 ch 1 hf-ch	pek sou	125	30
14		1996	1 oo	pek fans	52	27
15		1999	1 do	dust	58	25
17	Ettapolla	2005	9 hf-ch	pekoe	504	32
18		2008	5 do	sou	280	28
19		2011	1 do	dust	60	23
23	Mausakelle	2023	4 ch	sou	400	31
24		2026	6 hf-ch	dust	510	27
27	Pambagama	2035	5 hf-ch	dust	310	26
31	Passara Group	2047	2 ch	pek sou	200	33
32		2050	1 do	fans	65	28
36	Woodend	2062	2 ch	dust	280	24
10	Grange Garden	2077	2 ch	pek sou	200	35
42		2080	2 hf-ch	dust	170	
50	Ella Oya	2104	4 ch	dust	340	
52	Kabragalla	2110	5 hf-ch	bro tea	275	
53		2113	3 do	dust	255	26
55	Carlabeck	2119	6 hf-ch	bro pek fans	492	29
58	C B	2128	5 hf-ch	bro pek fans	385	28
67	Cotswold	2155	8 ch	pek sou	600	31
68		2158	2 do	sou	150	28
69		2161	2 hf-ch	dust	160	27
72	Kakiriskande	2170	3 ch	bro pek	300	36
74		2176	3 do	pek sou	285	28
78	Wyamita	2188	3 ch	bro pek	300	34
79		2191	2 do	pekoe	180	31
80		2194	2 do	pek sou	160	29
84	Stamford Hill	2206	7 ch	pek sou	595	35
85		2209	3 hf-ch	dust	255	28
95	Hentleys	2239	5 ch	sou	400	28
96		2242	4 hf-ch	fans	296	26
99	St. Leonards	1	2 ch	bro mix	140	25
100		4	1 do	dust	90	24

Lo		Box.	Pkgs.	Name.	lb.	c.
108	Opalgalla	28	2 ch	red leaf	120	18
109		31	6 hf-ch	dust	504	21
114	Strathspey	46	1 ch	sou	103	32
115		49	3 do	dust	357	27
116		52	1 do	red leaf	100	24
	C L, in estat mark	61	4 ch	red leaf	360	2
122	Holton	70	5 do	pek sou	400	30
123	B A	73	1 ch	dust	80	26
124		76	5 do	red leaf	500	18
125	Bambragalla	79	5 hf ch	bro or pek	300	38
126		82	8 do	or pek	400	37
127		85	5 do	pek	250	34
128		88	5 do	pek sou	250	31
129	Pambagama	91	1 do	dust	62	22
131	Kelvin	97	6 ch	pek fans	600	27
132	Teevaloya	100	4 ch	dust	508	26
137	K	115	1 ch	sou	100	33
146	Kirklees	142	3 ch	congou	210	30
147		145	2 do	pek fans	230	29
148		148	6 do	dust	540	28
158	Maha Uva	178	1 hf-ch	pek fans	75	28
159		181	3 do	dust	255	28
162	Bloomfield	190	5 ch	pek sou	500	37
167	Macaldeniya	205	1 hf-ch	dust	90	26
170	Palmerston	214	3 ch	pek sou	240	39
173	St. Heliers	223	6 hf-ch	dust	480	27
178	Beaumont	238	7 hf-ch	fans	595	27
179	Pusella	241	5 ch	bro pek	505	34
180		244	8 do	or pek	696	37
182	Y	250	3 hf-ch	pek sou No. 1	255	28
183		253	2 do	do No. 2	242	24
184	M E, in estate mark	256	2 do	pek dust	161	27
185	H F, in estate mark	259	6 ch	bro pek	600	30
186	Ismalle	262	7 ch	sou	595	28
187		265	5 hf-ch	fans	375	26
188		268	5 do	dust	425	27
189		271	1 ch	congou	80	25
192	Ookoowatte, No 1	280	2 hf-ch	dust	230	26
193		283	3 do	pek fans	315	28
197	Walpita	295	2 ch	sou	180	25
198		298	1 do	fans	100	27
199		301	3 do	dust	480	42
202	Maligatenne	310	5 ch	pek sou	475	29
203		313	1 do	dust	130	25
204	O H S	316	4 do	bro pek	400	30
205		319	6 do	pek	570	27
206		322	3 do	pek sou	255	25
207		325	3 do	fans	324	24
208		328	1 do	red leaf	100	18
212	Horagaskelle	340	6 hf-ch	bro pek	382	32
213		343	7 do	pek	382	31
219	K P W	361	3 do	dust	255	26
229	O'Bodde	391	8 ch	pek sou	680	30
230	Roscrea	394	11 hf-ch	bro or pek	638	39
234	Ascot	406	6 ch	pek sou	540	29
241	Chesterford	427	2 do	congou	180	28
242		430	3 do	bro tea	300	31
247	Harrow	445	2 hf-ch	dust	170	26
248		448	1 do	fans	75	30
260	Carberry	484	4 do	pek sou	360	29
261		487	3 do	bro or pek	330	33
262		490	1 do	bro tea	90	27
263		493	2 do	dust	280	25
264	G K	496	2 do	bro tea	180	28
265		499	4 do	dust	560	26
269	Harrington	511	4 do	pek B	360	36
270		514	9 hf-ch	or pek fans	630	36
271		517	2 ch	dust	280	27
273	Nella Olla	523	1 do	red leaf	75	17
274	M F	526	4 do	bro pek	420	32
275		529	2 do	pek	160	30
276		532	2 do	pek sou	112	29
277	Wolleyfield	535	1 do	bro pek	110	30
278		538	2 do	pek	255	28
279		541	1 do	pek sou	83	25
286	W A	562	3 do	dust	480	26
287		565	1 do	bro mix	100	23
295	Walton	589	2 do	fans	260	29
296		592	2 do	dust	180	26
308	Stisted	628	6 hf-ch	or pek	360	34
311		637	5 do	dust	400	26
323	Geragama	673	5 do	fans	400	26
324		676	3 do	dust	240	26
325	B in est. mark	679	2 do	fans	123	28
329	Talgaswela	691	7 do	bro pek No. 2	350	30

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Kosgahahena	502	5 ch	pek sou	500	21 bid
5		505	5 do	sou	370	23
6		508	2 hf-ch	fans	190	25
7		511	3 do	pek dust	255	24

Lot.		Box.	Pkgs.	Name.	lb.	c.
11	Ferr.by	523	3 ch	sou	270	22 bid
12		526	4 do	fans	380	26
13		529	3 hf-ch	dust	240	26
14	F F	532	4 ch	bro tea	340	15 bid
15		535	1 hf-ch	dust	90	23
18	Charlie Hill	544	1 hf-ch	pek sou	55	23
19		547	3 do	pek fans	225	25
20	Maligatenne	550	4 ch	pek	717	30
23		559	2 do	pek sou	747	22
24	P	562	6 ch	unas	581	24
28	Hanagama	574	2 ch	sou	179	24
29		577	2 do	fans	224	26
30		580	2 do	bro pek	382	26
39	Hangranoye	607	3 hf-ch	bro sou	187	27
40	B, in estate mark	610	3 ch	pek sou	240	26
41		613	1 do	bro mix	98	18
53	Blinkbonnie	649	8 ch	pek sou	656	33
62	Florida	676	3 ch	pek sou	288	22
64		682	7 hf-ch	fans	665	21
70	K	700	5 ch	red leaf	434	11 bid
80	California	730	6 ch	bro pek	570	31
83		739	1 do	dust	136	24
84		742	1 do	red leaf	90	14
91	Monrovia	763	6 ch	bro or pek	690	33
94		772	3 do	bro tea	300	21
95		775	1 do	pek dust	160	24
106	Wendura	808	7 ch	bro pek	686	33
107		811	6 do	pek	480	22
109		817	1 hf-ch	dust	84	25
111	P T M, in estate mark	823	6 ch	pek	540	26 bid
113		829	2 do	fans	184	23
114		832	1 do	unas	99	22
114a		832a	1 do	unas a	90	19 bid
115		835	2 do	dust	232	22
118	Ellatenne	844	6 ch	pek sou	480	28 bid
125	Maddagedera	865	5 ch	bro mix	500	24
131	Manickwatth	883	3 hf-ch	dust	270	24
132		886	1 do	red leaf	100	24
133	W H G	889	1 ch	bro pek	105	28 bid
134		892	1 hf-ch	pek	50	26
135		895	1 ch	pek sou	80	22
136		898	1 hf-ch	dust	96	23
137		901	1 do	bro mix	20	23
138	Summerville	904	4 ch	pek sou	344	31 bid
139	M & B	907	1 ch	bro pek	93	28
140		910	1 hf-ch	pek	58	26
141		913	1 ch	pek sou	96	22
142		916	1 hf ch	dust	59	23
146	Roseneath	928	1 hf ch	bro mix	62	19
147	W	9[illegible]1	3 ch	pek sou	2[illegible]5	28 bid
152	N I T	946	4 ch	unas No. 1	440	26
162	D B R. in estate mark	976	2 hf ch	bro pek	108	28
163		979	1 ch	pek	94	26
161		982	2 hf-ch	pek sou	96	22
165		995	1 ch	dust	107	23
168	N	994	3 ch	pek sou	255	28
172	Siriniwasa	7	3 ch	bro pek fans	315	31
173		10	2 do	dust	300	25
178	Honiton	22	3 hf ch	fans	150	27
178		25	2 ch	dust	280	25
207	Pindenioya	112	2 ch	dust	283	24

[Mr. E. John.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	D N D, in estate mark	807	4 hf-ch	dust	360	24
3		810	10 do	bro mix	600	13
4	G T	813	2 ch	bro pek	200	34
13	Loughton	840	9 hf-ch	dust	450	25
14		843	4 do	bro pek fans	200	28
15		846	4 do	pek fans	200	27
16		849	2 do	pek sou fans	80	26
20	Perth	861	3 ch	pek sou	210	31
21		864	4 hf-ch	pek dust	300	29
28	Kotuagedera	885	2 ch	pek sou	190	26
29		888	5 hf-ch	bro pek fans	375	30
42	Dalhousie	927	12 do	or pek	540	43
46		939	4 do	dust	300	30
48	Glassaugh	945	10 do	or pek	530	64
52	Iona	957	4 do	bro or pek fans	320	28
71	Danwella	14	8 do	or pek	361	35
82	Harrisland	47	2 do	dust	168	25
91	Lameliere	74	9 do	pek fans	675	28
99	Doonhinda	98	7 ch	pek sou	665	34
100		101	3 do	dust	330	27
106	Suduganga	119	2 do	pek fans	200	33
107		122	5 do	sou	400	31
112	Eladuwa	137	6 do	bro pek	660	38
115		146	2 do	mixed	280	19
116	The Farm	149	3 do	dust	225	26
119	Orangefield	158	3 do	pek sou	285	26
120		161	1 do	bro mix	90	20
121		164	2 do	pek fans	180	19
122		167	1 do	dust	140	21

Lot,		Box.	Pkgs.	Name.	lb.	c.
128	Murraythwaite	185	2 do	fans	240	27
129		188	2 do	dust	320	24

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent).

MINCING LANE, Jan. 26.

"Orissa."—WAG P, in estate mark, 3 casks and 1 barrel out at 44s, 41s refused.

Coffee closed firm for futures, which are 50 per cent dearer than the lowest, and we still expect to see prices dearer and for the next three years. News from China, Northern Afghanistan and Warren look serious. Wheat should rise. Cotton Manchester strong.

CEYLON COCOA SALES IN LONDON.

"Bingo Maru."—Palle, London F, 26 bags out at 90s; 86s 6d refused; ditto, 1, 15 bags out; ditto, 2, 20 bags out at 65s; ditto, T, 4 bags sold at 60s; Pathregalla, London 1, 67 bags sold at 84s 6d; ditto, 2, 8 bags sold at 65s 6d; ditto, T, 5 bags sold at 60s; MAKM, Estate Cocoa, 36 bags sold at 69s; MAK, Estate Cocoa, 50 bags sold at 71s; Kaduwella No. 1, 60 bags out at 80s, 75s refused; ditto, 2, 12 bags no bid.

"Clan Ogilvy."—A MAK, in estate mark, Estate Cocoa, 96 bags sold at 71s, 96s refused.

"Derbyshire."—Meegama A, 80 bags out at 90s; ditto 85s refused; No. 1, 23 bags sold at 74s 6d; ditto B 1, 7 bags sold at 64s 6d; ditto B, 5 bags sold at 66s 6d.

"Bingo Maru."—Meegama A, 21 bags sold at 90s; ditto No. 1, 14 bags sold at 75s 6d; ditto B 1, 2 bags sold at 64s; ditto B, 1 bag sold at 66s; ditto Benveula No. 1, 15 bags sold at 78s 6d; ditto Armagh A, 11 bags out at 80s; ditto 73 refused; B, 18 bags sold at 72s; ditto T, 5 bags sold at 59s; ditto Pondappe, 20 bags sold at 83s; ditto B, 3 bags sold at 66s 6d; ditto T, 2 bags sold at 59; ditto, 1 bag sold at 67s; ditto, Yattawatte, 40 bags sold at 91s; ditto, 20 bags sold at 90s 6d; 85 bags sold at 90; ditto 2. 17 bags sold at 60s; ditto broken, 12 bags sold at 65s; Dynevor A, 18 bags sold at 81s 6d; ditto B, 41 bags sold at 76s; ditto C, 6 bags sold at 66s; ditto O, 4 bags sold at 58s 6d; ditto, Ingurugalla, 60 bags sold at 84s [6d; ditto T, 3 bags sold at 65s; Maousawa AA, 33 bags sold at 84s 6d; ditto, A, 4 bags sold at 68s 6d; ditto C, 2 bags sold at 65s; ditto, Ukuwella, 18 bags sold at 83s 6d; ditto L, in estate mark, 6 bags sold at 77s; ditto, 4 bags sold at 66s 6d; ditto, Kepitigalla, 20 bags sold at 84s; ditto, 13 bags sold at 82s 6d; ditto, 15 bags sold at 72s 6d; ditto, 2 bags sold at 61s; ditto, Lower Haloya, 16 bags sold at 83s 6d; ditto, Bandarapola, 21 bags sold at 79s 6d; ditto 2, 1 bag sold at 66s; ditto T, 2 bags sold at 63s 6d.

"Clan Alpine."—DB, 10 bags sold at 70s; ditto MacNeil, Delgolla, 20 bags sold at 66s.

"Malacca."—Polwatta, 12 bags sold at 85s; ditto 13 bags sold at 77s.

"Bingo Maru."—OBEC, in estate mark, Kondesalle, Ceylon, OE, 19 bags sold at 79s; ditto, 101 bags sold at 80s.

"Musician."—HMS & Co, in estate mark, 135 bags sold at 79s; ditto, 5 bags sold at 66s.

"Bingo Maru."—Hylton OO, 61 bags sold at 84s; ditto O, 12 bags sold at 76s; ditto S, 5 bags sold at 63s 6d.

"Cambodge."—M, in estate mark, 26 bags sold at 68s.

"Musician."—B, in estate mark, Estate Cocoa 22 bags sold at 68s.

"Bingo Maru."—H, in estate mark, London, 100 bags out at 71s 6d; ditto MA, in estate mark, 35 bags sold at 83s; ditto B, in estate mark, 20 bags sold at 68s 6d; ditto L, in estate mark, 55 bags sold at 68s 6d.

No. 7 — Colombo, February 26, 1900. — Price:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[55,339 lb.]

Lot.		Box.	Pkgs.		Name.	lb	c.
1	Mapitigama	7	8	ch	bro or pek	840	34 bid
2		10	18	do	bro pek	1764	35
3		13	21	do	pek	1890	33
4		16	12	do	pek sou	960	32
9	Torrington	31	55	ch	bro pek	4950	34 bid
0		34	23	hf-ch	bro or pek	1380	34 bid
11		37	29	ch	pek	2 75	33 bid
12		40	42	do	pek sou	3570	32 bid
14		46	17	hf-ch	pek fans	1105	28

Messrs. Forbes & Walker.

[744,860 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	New Peacock	727	8	ch	pek sou	720	35
3		733	20	do	pek fans	1500	30
5	Cooroondoowatte	739	14	hf-ch	pek	770	34
7	Carendon	745	12	ch	bro pek	1320	32
8		748	8	do	pek	800	31
12	Sirikandura	760	13	ch	bro pek	1300	35
13		763	11	do	pek	990	33
18	Dambagastalawa	778	32	ch	bro or pek	3520	38
19		781	41	do	bro pek	4264	45
20		784	25	do	pek	2250	38
21	Mansfield	787	53	hf ch	bro pek	3180	39
22		790	24	ch	pek	2160	38
24	Allinton	796	2	hf-ch	bro pek	1200	32
25		799	18	do	pek	900	32
26		802	14	do	pek sou	700	29
28	D M V	808	17	ch	bro pek	1615	30
29		811	25	do	pekoe	1875	29
33	Kelaneiya and Braemar	823	22	ch	bro or pek	2200	40
34		826	18	do	or pek	1800	37
35		829	15	do	pek	1500	36
42	P, in estate mark	850	30	ch	bro or pek	1620	48
43		853	25	do	bro pek	2500	39
44		856	17	hf-ch	or pek	850	46
47	Nil Mally O B E C, in est. mark	865	31	ch	bro pek	3100	37
48		868	13	do	bro or pek	1300	47
49		871	27	do	or pek	2150	39
50		874	9	do	pek	756	38
51		877	15	do	pek sou	1050	33
53	Kincora	883	55	ch	bro pek	5500	34
54		886	25	do	pek	2125	33
61	Gonapatiya	907	15	hf-ch	bro pek	765	47 bid
62		910	21	do	or pek	945	48
63		913	25	do	pek	1200	40 bid
64	Monkswood	916	34	hf-ch	bro pek	1700	60 bid
65		919	49	do	or pek	2205	58
66		922	23	ch	pek	2800	50
67		925	8	do	pek sou	720	41 bid
69		931	17	do	fans	1020	36
71	wle	937	21	hf-ch	bro pek	1050	35
72		940	22	do	pek	1100	32
73	North Cove	943	14	ch	pek	1260	43
75		949	8	hf-ch	dust	720	27
76	Tymawr	952	20	hf-ch	bro or pek	1100	44 bid
77		955	22	do	or pek	1100	47
78		958	50	do	pek	2250	42
79		961	29	do	pek sou	1305	36
81	Aigburth	967	20	hf-ch	bro pek	1000	32 bid
82		970	26	ch	pek	2600	32
83		973	16	do	pek sou	1520	28
		976	10	do	sou	950	24
88	Torwood	985	42	ch	bro pek	3780	36
89		988	41	do	pek	3280	33
94		991	23	do	pek sou	1794	31
78	Ardlaw and Wishford	1006	45	ch	bro or pek	4950	33
95		1009	70	hf-ch	or pek No. 1	3290	42
96		1012	17	ch	or pek	1394	38
97		1015	25	do	pekoe	2050	36
98	C S G	1018	70	hf ch	bro pek	3500	36

Lot,		Box.	Pkgs.		Name.	lb.	c.
99		1021	51	ch	pek	4080	36
100		1024	18	do	pek sou	1440	31
102	O B E C est. mark, Forest Creek	1030	22	ch	bro or pek	2200	58 bid
103		1033	23	do	bro pek	2300	41
104		1036	23	do	or pek	2800	48
105		1039	32	do	pek No. 1	2880	44
106		1042	36	do	pek No. 2	3600	40
108	S	1048	28	ch	bro pek	1680	37
109		1051	57	hf-ch	pek	3249	35
110		1054	17	do	pek sou	1020	30
111	Matale	1057	55	do	bro pek	3025	34 bid
112		1060	22	ch	pek	1760	33
113		1063	12	do	pek sou	960	31
115	Great Valley Ceylon, in est. mark	1069	19	ch	or pek	2035	39
191		1072	37	hf ch	bro pek	3035	44
117		1075	28	ch	pek	2520	36
118		1078	18	do	pek sou	1350	31
121	Glencorse	1087	20	ch	bro pek	1800	34
122		1090	13	do	bro or pek	1235	35
123		1093	17	do	pek	1360	32
124		1096	13	do	pek sou	1040	29
128	Nabalma	1108	18	ch	sou	1728	27
131	Glendon	1117	50	ch	bro pek	5000	35
132		1120	42	do	pek	3780	35
133		1123	25	do	pek sou	2125	31
134		1126	17	do	sou	1615	28
136	B D W	1132	17	ch	bro pek	1700	31 bid
137		1135	9	do	pek	945	26 bid
138	G B	1138	12	ch	pek	960	29 bid
144	Gallawatte	1156	13	ch	bro pek	1235	34
145		1159	12	do	pek	1020	32
146		1162	13	do	pek sou	1105	28
147		1165	13	do	pek fans	910	28
148	Naseby	1168	21	hf-ch	bro or pek	1293	49
149		1171	16	do	or pek	736	54
153	Digdola	1183	22	ch	pek	1650	33
154	Penrhos	1186	23	hf-ch	bro or pek	1219	38
155		1189	26	do	or pek	1170	39
156		1192	37	ch	pek	3145	33
159	Amblangoda	1201	15	ch	bro pek	1500	38
160		1204	14	do	pek	1260	34
163	Amblakande	1213	17	ch	bro pek	1700	33
164		1216	18	do	pek	1530	33
167	Cooroondoowatte	1225	16	hf-ch	pek	880	33
169	Dunbar	1231	26	hf-ch	bro or pek	1300	62
170		1234	27	do	or pek	1296	53
171		1237	18	ch	pek	1440	46
180	Hatton	1264	24	ch	bro pek	2520	48
181		1267	30	do	pek	2700	42
184	Agra Elbedde	1276	36	ch	bro or pek	2160	37
185		1279	26	do	or pek	1560	36
186		1282	48	do	pek	2880	37
187		1285	30	do	pek sou	1650	36
190	Clyde	1294	92	ch	bro pek	8740	35
191		1297	69	do	pek	6210	31
192		1300	19	do	pek	1995	32
193		1303	10	do	pek sou	950	31
194		1306	5	do	dust	725	26
196	Galapitakande	1312	13	ch	or pek	1300	35
197		1315	28	do	bro pek	2040	34 bid
198		1318	22	do	pek	2260	34
196		1321	7	do	pek sou	700	32
206	Arapolakande	1342	64	ch	bro pek	5760	35
207		1345	39	do	pek	3120	32
210	Weyungawatte	1354	36	hf-ch	bro or pek	1980	34
211		1357	28	ch	bro pek	2660	33
212		1360	28	do	pek	2240	31
215	M wiligangawatte	1369	46	ch	bro pek	4600	33
216		1372	19	do	pek	1330	31
217		1375	35	do	pek sou	2625	28 bid
219	Mariawatte	1381	22	ch	pek sou	1870	31
220		1384	13	hf ch	dust	1040	26
223	Arapolakande	1393	72	ch	bro pek	6480	37
224		1396	42	do	pek	3360	33 bid
227	Castlereagh	1405	27	ch	bro pek	2700	40
228		1408	29	do	or pek	2465	40
229		1411	19	do	pek	1520	39
231		1417	13	hf ch	fans	910	32
233	Tavalamtenne	1423	21	ch	bro or pek	2078	33
34		1426	11	do	pek	990	36

Lot		Box.	Pkgs.	Name.	lb.	c.
237	Tembili-galla	1435	33 hf ch	bro pek	1815	36
238		1438	31 do	or pek	1550	35
239		1441	14 ch	pek	1200	32
245	Erracht	1459	21 ch	bro or pek	1890	33
246		1462	28 do	bro pek	2100	32 bid
247		1465	36 do	pek	2700	29
248		1468	16 do	pek sou	1200	27
251	High Forest	1477	48 hf cb	or pek No. 1	2640	61
252		1480	44 do	or pek	2200	51
253		1483	52 do	pek	2392	46
254	Polatagama	1486	65 ch	bro pek	5850	35
255		1489	35 do	or pek	2800	33
256		1492	46 do	pek	3910	32
257		1495	19 do	pek sou	1520	28
258		1498	18 do	fans	1710	28
261	Dammeria	1507	25 ch	or pek	2500	37
262		1510	31 do	bro pek	3410	39
263		1513	23 do	pek	2070	36
264		1516	13 do	pek sou	1170	32
268	Weoya	1528	12 ch	bro or pek	1320	32
269		1531	52 do	bro pek	5200	32
270		1534	32 do	or pek	3040	34
271		1537	64 do	pek	5440	31
272		1540	72 do	pek sou	5760	28
273		1546	11 do	dust	1650	26
274	Clunes	1546	16 ch	bro or pek	1600	33
275		1549	13 do	bro pek	1235	33
276		1552	16 do	or pek	1280	33
277		1555	48 do	pek	3840	31
278		1558	9 do	pek sou	855	28
279		1561	9 do	dust	765	25
286	Galkadua	1582	17 ch	bro pek	1870	32
287		1585	20 do	pek	2000	32
288		1588	12 do	pek sou	1200	27
292	Dunkeld	1600	62 bf-ch	bro or pek	3720	41
293		1603	28 ch	or pek	2660	39
294		1606	21 do	pek	1890	37
295		1609	10 do	pek sou	900	34
296	Killarney	1612	52 hf-ch	bro or pek	3120	40
297		1615	23 ch	pek sou	2185	38
298	Inverness	1618	20 do	or pek	2000	48
299		1621	45 bf-cb	bro or pek	2700	43
300		1624	27 ch	pek	2430	41
303	Ganapalla	1633	16 do	or pek	1440	33
304		1636	18 do	bro or pek	1620	34
305		1639	35 do	bro pek	3150	31 bid
306		1642	50 do	pek	4000	31
307		1645	26 do	pek sou	1950	27
308		1648	13 do	bro pk fans	1300	28
309	Palmerston	1651	15 bf-cb	bro or pek	750	74
310		1654	13 ch	pek	1131	46
313	Theydon Bois	1663	7 do	bro or pek	700	37 bid
314		1666	14 do	bro pek	1400	34
315		1669	26 do	pek	2080	35
316		1672	14 do	pek sou	1190	33
321	Ouvahkellie	1687	7 do	pek sou	700	41
323	Patiagama	1693	9 do	or pek	765	39
324		1696	15 do	bro or pek	825	48
325		1699	17 do	pek	1360	34
326		1702	10 do	pek sou	800	31
327	Queensland	1705	7 do	bro or pek	700	53
328		1708	11 do	or pek	990	43
329		1711	8 do	bro pek	720	39
330		1714	20 do	pek	1700	39
331		1717	9 do	pek sou	765	33
332	H G M	1720	17 do	bro pek	1700	33 bid
333		1723	21 do	pek	1890	34
334		1726	10 do	pek sou	850	31
335		1729	10 do	bro pek fans	900	31
337	C B	1735	22 do	bro or pek	2417	39 bid
338		1738	25 do	pek	2500	37
339	Ingrogalla	1741	13 do	bro pek	1300	34
340		1744	20 do	pek	1700	35
342	Yatiyana	1750	12 do	bro pek	1032	32
343		1753	12 do	pek	1152	31
348	H N in est. mark	1768	7 ch	bro pek	700	28
349		1771	9 do 1 hf-cb	pek	905	27 bid
351		1777	18 do	fans No. 1	1170	26 bid
352		1780	16 do	dust	1360	25
353	Anningkande	1783	23 ch	bro pek	2300	34 bid
354		1786	12 do	br pk No. 2	1200	33
355		1789	18 do	pek	1710	33
356		1792	10 do	pek sou	900	30
358	Malvern	1798	33 hf-cb	bro pek	1815	42
359		1801	36 ch	pek	2520	38
360		1804	16 do	pek sou	1120	34
361	Agra Oya	1807	23 do	bro pek	1955	35
362		1810	23 do	bro pek	2300	34
363		1813	21 do	pek	1890	34
364		1816	10 do	pek sou	900	32
365	Devonford	1819	24 hf-ch	bro or pek	1320	63
366		1822	11 ch	or pek	990	60
367		1825	11 do	pek	935	50
379	Middleton	1861	21 hf-ch	bro or pek	1176	51 bid
380		1864	21 ch	bro pek	2100	44
381		1867	18 do	pek	1620	44
382		1870	22 do	pek sou	1960	38
384	A M B	1876	20 ch	bro pk sou	2340	25
393	Tyrells	1913	7 do	bro or pek	700	33 bid
398	Warwick	1918	19 hf ch	bro or pek	1140	43 bid
399		1921	20 ch	bro pek	2000	43 bid
400		1924	40 hf-ch	pek	3600	37 bid
401		1927	23 ch	pek sou	2070	33 bid
404	Lynsted	1936	14 hf-ch	bro or pek	840	61
405		1939	58 do	bro pek	3480	41
406		1942	12 do	pek	1080	43
409	Waratenne	1951	22 do	bro or pek	1110	32
410		1954	20 ch	bro pek	1700	31 bid
411		1957	30 do	pek	2700	30
412		1960	7 do	pek sou	700	27
415	Ranwatte	1969	11 do	bro pek	1100	33 bid
420	Passara	1984	23 do	bro or pek	2300	38
421		1987	10 do	or pek	900	40
422		1990	14 do	pek	1260	36
425	Manawella	1999	13 hf-ch	bro or pek	832	33 bid
426	Doranakande	2002	15 ch	bro pek	1500	31
430	M U	2014	30 do	or pek	3000	34 bid
431		2017	30 do	pek	3000	31 bid
432		2020	15 do	pek sou	1350	30
433	Shrubs Hill	2023	27 do	bro pek	2700	34 bid
434		2026	62 do	pek	5270	31 bid
435		2029	45 do	bro pek	4500	34 bid
436		2032	39 do	pek	3276	31 bid
437		2035	26 do	bro pek	2600	33 bid
438		2038	14 do	pek	1120	31 bid
439		2041	11 do	pek sou	935	29
440		2044	19 do	bro pk fans	1520	25
447	C B	2065	15 do	pek	1575	25
454	Augusta	2086	6 do	dust	900	24
455	Woodend	2089	23 do	bro pek	2300	32
456		2092	37 do	pek	3330	31
457		2095	9 do	pek sou	720	27
459	Talgaswela	2101	7 do	bro or pek	735	32
460		2104	12 do	or pek	960	32
464		2116	14 do	pek	1120	30
465		2119	10 do	pek sou	800	27
471	Wewawatte	2137	18 hf-ch	bro pek	990	32
472		2140	14 do	pek	700	28
474	H in est. mark	2146	45 do	or pek	2250	45 bid
475		2149	11 ch	bro pek	1100	36 bid
476	Putupaula	2152	52 do	bro pek	4680	34
477	Kelani	2155	42 do	bro pek	3360	33
478		2158	30 do	bro or pek	3000	33
487	Pine Hill	2185	23 do	bro pek	1380	39
488		2188	34 ch	or pek	2040	40
489		2191	40 do	pek	3000	36
492	Pallagodde	2200	27 do	bro or pek	2700	32 bid
493		2203	39 do	bro pek	3900	40
494		2206	3 do	or pek	3060	34
495		2209	34 do	pek	2890	33
496		2212	40 do	pek sou	2600	30
497		2215	13 hf-ch	dust	1105	26
498	Fairlawn	2218	40 hf-ch	bro pek	2200	41
499		2221	26 ch	or pek	2340	37
500		2224	13 do	pek	1040	34
503	B and D	2233	20 do	sou	850	29
504		2236	23 do	unast	2208	25
505	Yataderia	2239	21 do	bro or pek	2184	35 bid
506		2242	39 do	bro pek	3978	33 bid
507		2245	16 do	or pek	1472	32 bid
508		2248	58 do	pek	4664	30
511	L in est. mark	7	20 do	or pek	1700	42
512		10	17 do	bro pek	1671	34 bid
516	Vogan	22	48 do	or pek	3840	36
517		25	40 do	bro pek	4000	33 bid
518		28	71 do	pek	6035	32 bid
519		31	9 do	pek sou	720	29
520		34	10 bf-ch	dust	650	24

[Messrs. Somerville & Co.—324,344 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Neboda	115	18 ch	bro or pek	1800	32
2		118	61 do	bro pek	6100	32
3		121	16 do	pek	1440	30
4		124	17 do	pek sou	1360	28
6	Citrus	130	34 ch	bro pek	3400	34
7		133	34 do	pek	3055	30
8		136	8 do	pek sou	800	28
10	Waverley	142	20 ch	pek sou	1940	37
11	W V Y	145	50 ch	pek	1050	24 bid
13	Clova	151	20 hf-ch	bro pek	1000	30 bid
14		154	17 do	pek	850	25 bid
15		157	29 do	pek sou	1305	24
18	Bidbury	166	12 ch	or pek	1080	41
19		169	8 do	bro or pek	800	34
20		172	12 do	pek	1020	37
21		175	10 do	pek sou	900	32
22	Ambalawa	178	28 hf-ch	bro pek	1400	31
23		181	17 do	pek	765	31

Lot		Box.	Pkgs.	Name.	lb.	c.
25	Bogahagoda-watte	187	17 ch	bro pek	1700	31
26		190	11 do	pek	1045	29
27		193	8 do	pek sou	760	26
29	Ellandhu	199	10 ch	bro pek	1000	31
30		202	10 do	pek	950	27
31	St. Catherine	205	29 ch	bro or pek	2755	34
36	D	220	10 ch	bro pek	1000	34
36	Theberton	229	17 do	bro or pek	1700	36
40		232	40 do	pek	3600	35
42	Woodthorpe	238	7 ch	bro pek	700	36
43		241	12 do	pek	1056	35
44		244	13 do	pek sou	1040	31
46	Killin	250	20 cb	bro pek	2000	32 bi
47		253	17 do	pek	1530	31
49	Aberfoyle	259	20 ch	bro pek	2000	31 bid
50		262	10 do	pek	950	32
51		265	11 do	pek sou	990	29
52	Dikmukalana	268	44 hf-ch	bro or pek	2490	30
53		271	29 do	pek	1450	29 bid
54		274	28 do	dust	1400	23
55	Dryburgh	277	14 hf-ch	bro or pek	810	34
60	Ravenoya	292	20 hf-ch	bro pek	1100	35
65	Daluk Oya	307	12 hf-ch	bro or pek	720	39
66		310	15 do	or pek	825	35
67		313	27 do	pek	1485	32
83	Kurunegalle est. Co.	361	18 ch	bro pek	1600	34
84		364	7 do	or pek	700	36
85		367	16 do	pek	1600	33
89	Mahagoda	379	7 ch	pek	700	23
92	Kotigala	388	10 ch	bro pek	1150	23 bid
93		391	7 do	pek	755	21 bid
94		394	7 do	pek sou	735	19 bi
97	Elebico	403	50 do	bro pek	2750	31 bid
98		406	25 hf ch	pek	1250	35 bid
103	L nach	421	95 bf-ch	bro pek	5225	35
104		424	36 ch	pek	3060	35
105		427	21 do	pek sou	1785	32
106	L	430	9 do	bro mix	90	25
113	Yarrow	451	53 hf ch	bro pek	296	24 bid
114	.	454	50 do	pek	2500	35
116	Carney	460	27 hf-cb	bro pek	1350	37
117		463	41 do	pek	1845	32
118		466	17 do	pek sou	850	28
121	Harangalla	475	28 ch	bro pek	2660	35 bid
122		478	53 do	pek	4240	34
123		481	9 do	sou	720	29
124		484	15 hf ch	dust	1200	27
132	Neucbatel	508	28 ch	bro pek	2800	35
133		511	26 do	pek	2210	33
134		514	13 do	pek sou	1010	29
135	Ravenscraig	517	20 hf-ch	bro pek	1100	34
136		520	23 do	or pek	1150	34
137		523	12 ch	pek	1080	33
138	Paragahakande	526	7 ch	bro pek	700	30
139		529	8 do	pek	720	27
144	Meddegoda	544	38 hf-ch	bro pek	1900	36
145		547	56 do	pek	2520	34
149	Depedene	559	86 hf-ch	bro pek	5160	33
150		562	77 do	pek	3850	32
151		565	60 do	pek sou	3000	30
154	Galphele	574	20 ch	bro or pek	2000	37
155		577	17 do	pek	1550	34
156		580	25 do	bro pek	2500	33
157	Galphele B	583	13 ch	pek	1170	32
161	Hanwella	595	13 hf-ch	bro pek	715	30 bid
164	Wewatenne	604	8 ch	bro pek	776	33
165		607	11 do	pek	302	30 bid
167	Salawe	613	24 ch	bro pek	2640	32
168		616	13 do	pek	1235	32
169		619	10 do	pek sou	950	28
171	Yspa	625	19 ch	pek dust	1615	31
172		628	12 hf-ch	pek pek	1020	26
173	Mahatenne	631	45 ch	bro pek	4500	32 bid
174		634	24 do	pek	2400	31
178	Kerenvilla	646	10 ch	bro pek	1000	26 bid
179		649	11 do	pek	1045	26
180		652	7 do	pek sou	700	25
184	Monkton	664	24 hf-ch	bro pek	1344	25
185		667	9 do	pek	738	32
195	F, in estate mark	697	10 hf-ch	dust	730	26
196	Rothes	700	12 hf-ch	bro or pek	720	41 bid
197		703	14 do	or pek	700	42
198		706	17 do	pek	765	37
200	R, in estate mark	712	20 hf ch	pek sou	900	29
204	Paradise	724	25 hf ch	bro pek	1375	33
205		727	11 ch	pek	1150	31
			1 hf-ch			
206		730	8 ch	pek sou	760	29
208	Lower Dickoya	736	22 ch	bro pek	2200	33
209		739	17 do	pek	1700	3
210	Tiddydale	745	19 ch	pek	1710	30
211		748	9 do	pek sou	810	24
213	Nyanza	751	15 ch	bro pek	1500	36
214		754	17 do	or pek	1615	38
215		757	30 do	pek	3000	35
216		760	15 do	pek sou	1350	32
224	Ingeriya	784	66 hf-cb	bro pek	3300	31 bid
225		787	49 do	pek	2352	31
226		790	36 do	pek sou	1656	28
227		793	30 do	bro pek fans	1740	30
229	Kosgama	799	21 ch	bro pek	2100	32 bid
230		802	12 do	pek	960	31
235	Horagoda	817	16 ch	pek	1440	32
240	Rayigam	832	35 ch	bro pek	3500	33
241		835	24 do	or pek	1992	32 bid
242		838	14 do	pek	1120	31 bid
243		841	9 do	pek sou	810	29
244		844	11 hf-ch	dust	880	26
250	M Ceylon	862	32 ch	pek sou	2560	26 bid
251	Ranasingha-patna	865	84 hf ch	or pek	4200	37
252		868	46 do	bro or pek	2852	35
253		871	34 ch	pek	2720	34
254		874	35 do	pek sou	2800	32
255	Mousakande	877	44 hf ch	bro pek	2464	31 bid
256		880	8 ch	fans	720	29 bid
258		886	14 ch	pek	1260	30 bid
264	Oakham	904	10 do	pek	900	34
267	H J S	913	14 ch	bro pek	1950	29 bid
			11 hf ch			
268		916	34 do	pek	1700	26 bid
269		919	46 ch	pek sou	4300	24
274	Ooragalla	934	18 cb	bro or pek	1800	36 bid
275		937	16 do	bro pek	1600	34
276		940	39 do	pek	3315	34
278		946	10 hf ch	bro mix	700	27
279	Florida	949	15 cb	bro pek	1500	27 bid
280		952	22 do	bro mix	2063	20
282	G B	958	30 bf ch	dust	1500	27
285	Rayigam	967	31 cb	or pek	2545	31 bid
286	V L	970	50 hf ch	bro or pek	3000	31 bid
287	H W	973	52 hf cb	bro pek	2600	32 bid
288		976	56 cb	or pek	5040	31 bid
289		979	44 do	pek	3520	30 bid
290	Blackburn	982	10 hf ch	fans	700	27
292	Bargany	2068	24 hf-ch	bro or pk	1320	39 bid
293		2071	13 ch	or pek	1300	35 bid
294		2074	18 do	pek	1530	32 bid

[Mr. E. John.—231,176 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Birnam	230	39 ch	pek sou	2496	32
4	Chapelton	245	14 do	bro mix	1120	28
5	Gangawatte	248	39 hf-cb	or pek	2145	38
6		251	37 ch	pekoe	3145	35
7		254	13 do	pek sou	1170	33
8		257	37 hf-cb	bro or pek	2220	41 bid
10	Brownlow	263	21 do	bro or pek	1218	41
11		266	22 ch	or pek	2090	39
12		269	21 do	pekoe	1827	37
13		272	11 hf-ch	bro pek fans	770	33
14	Glassaugh	275	23 do	or pek	1219	61
15		278	24 do	bro or pek	1560	44
16		281	22 ch	pekoe	2090	44
18	L E L	287	22 do	pekoe	1870	37
22	Kuruwatthai	299	18 do	pekoe	1530	28 bid
23		302	8 do			
			22 hf-ch	bro or pek	1900	31 bid
30	L W Ceylon	323	18 do	sou	720	21
31	Glentilt	326	30 ch	bro pek	3000	38 bid
32		329	14 do	pekoe	1400	34 bid
33	Cleveland	332	29 hf-cb	flow or pek	2145	53
34		335	38 do	pekoe	2014	40
37	Templestowe	344	27 do	bro or pek	2160	38 bid
38		347	23 do	or pek	1610	41 bid
39		350	31 do	pekoe	2635	38
40		353	11 do	bro mix	880	27
41	Mocha	356	22 do	bro or pek	2200	62
42		359	11 do	or pek	990	50
43		362	19 do	pekoe	1805	44
44		365	20 do	pek sou	1700	37
45	Eila	368	81 do	bro pek	6885	33 bid
46		371	51 do	pek sou	4335	28 bid
47	Ben Nevis	374	27 hf-ch	bro pek	1620	45
48		377	18 do	or pek	810	51
49		380	20 ch	pekoe	1800	39
52	Rondura	389	20 do	bro pek	2000	33
53		392	23 do	or pek	2070	33
54		395	56 do	pekoe	4480	32
55		398	29 do	pek sou	2320	28
57	Fernlands	404	9 do	sou	900	24
58	Agra Ouvah	407	73 hf-ch	bro or pek	4526	42 bid
59		410	16 ch	or pek	1488	42
60		413	11 do	pekoe	990	39
61	Glasgow	416	40 do	bro or pek	3400	44
62		419	23 do	or pek	1725	58

Lot.		Box.	Pkgs.	Name.	lb.	c.
63		422	18 ch	pekoe	1566	41
64		425	13 do	pek sou	1300	38
73	Agra Ouvah	452	43 bf-ch	bro or pek No. 1	2750	44
74		455	36 do	bro or pek No. 2	2160	39 bid
75		458	18 ch	or pek	1674	42
76		461	11 do	pekoe	1012	39
77		464	9 do	pek sou	765	36
78		467	28 hf-ch	pek fans	2380	30
80	Ottery	473	18 ch	bro or pek	1980	37
81		476	10 do	or pek	850	44
82		479	19 do	pekoe	1900	35
84	Gonavy	485	47 hf-ch	bro pek	2350	37
85		488	18 ch	pekoe	1350	36
87	Gampai	494	42 hf-ch	or pek	2016	33 bid
88		497	25 do	bro or pek	1500	33 bid
89		500	16 ch	pekoe	1248	32 bid
90		503	17 do	pek sou	1360	31 bid
97	W H	524	30 bf-ch	bro pek fans	1950	30 bid
98		527	8 ch	dust	1376	23 bid
99	Claremont	530	27 do	bro or pek	2565	34
100		533	12 do	pekoe	1080	32
101		536	10 do	sou	1000	21
104	Ferndale	545	13 do	or pek	1170	55 bid
105	Maskeliya	548	14 bf-ch	bro or pek No. 1	700	62
106		551	20 do	bro or pek No. 2	1000	60
107		554	17 cb	or pek	1530	40
108		557	15 do	pekoe	1350	35
111	M T C C	566	12 do	pek sou	1200	35
112	Evalgolla	569	46 bf-ch	bro pek	2300	32 bid
113		572	70 do	pekoe	3150	32 bid
117	S G	684	19 do	bro pek fans	1140	29 bid
118		687	36 do	pek fans	2592	26 bid
124	Glassaugh	605	21 do	bro or pek	1365	40 bid
125	Mabanilu	608	37 do	or pek	2035	39 bid
226		611	13 do	bro or pek	718	37
127		614	11 ch	pekoe	1045	37
128		617	8 do	pek sou	744	34
129		620	12 bf-ch	fans	864	29 bid
133	Kadien Lena	632	12 do	bro or pek dust	960	27
134		635	8 ch	congou	800	23
143	M R	662	8 hf-ch	dust	720	27
144	Glassaugh	665	21 do	or pek	1113	60
145		668	22 do	bro or pek	1430	44
146		671	20 ch	pekoe	1900	44
151	Dickapittia	686	80 do	bro pek	3000	55 bid
152	Ovoca	689	15 hf-ch	bro or pek	825	45 bid
153		692	8 ch	pekoe	720	35 bid
155	Anchor, in est: mark	698	7 do	bro or pek	700	50 bid
158		707	19 do	pek sou	1710	36
159	Kanangama	710	28 do	bro or pek	2940	32
160		713	32 do	bro pek	3040	33
161		716	33 do	pekoe	2970	31
162		719	21 do	pek sou	1785	27
163		722	19 do	pek fans	1710	27
164		725	15 hf-ch	dust	1200	25
168	S G	737	10 ch	dust	1300	24 bid
169	Keenagaha Ella	740	33 do	or pek	1815	33 bid
170		743	30 do	pekoe	2400	30 bid
171		746	13 do	pek sou	1040	28
172		749	15 do	sou	1125	21 bid
173	Glassaugh	752	30 bf-cb	bro or pek	1950	42 bid

SMALL LOTS.

E. Benham & Co.

Lot	Box.	Pkgs.	Name.	lb.	c.
13		cb	bro mix	630	23

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	New Peacock	730	6 hf ch	bro mix	300	26
4	Cooroondoowatte	736	11 hf-ch	bro pek	605	35
6		742	9 do	pek sou	495	30
9	K D A	751	1 cb 1 hf-ch	bro pek	150	
10		754	1 cb 1 bf ch	pek	160	28
11		757	1 ch 1 bf cb	pek sou	150	26
14	Sirlkandura	766	7 cb	pek sou	630	29
15		769	2 do 1 hf ch	bro pek fans	318	30
16		772	2 ch	dust	250	25
17		775	2 do	red leaf	170	22
23	Mansfield	793	8 do	pek sou	680	33
27	Galkanda	805	1 hf ch	dust	85	26
30	D M V	814	6 ch	pek sou	480	27
31		817	1 do	fans	65	25
32		820	1 hf-ch	bro tea	45	22
36	Kelaneiya and Braemar	832	3 ch	sou	300	29
37		835	5 hf-ch	dust	400	26
38	Palmgarden	838	6 ch	bro pek	690	34
39		841	6 do	pek	600	31
40		844	4 do	pck sou	400	28
41		847	1 hf-ch	fans	80	25
45	P, in estate mark	859	5 hf-ch	fans	350	31
46		862	2 cb	unas	168	32
52	Nillo Mally O B E C, in est. mark	850	4 ch	fans	280	29
55	B K, in estate mark	889	2 ch	bro pek	240	28
56		892	1 do	pekoe	90	26
57		895	2 do	dust	330	24
58		898	2 do	bro pek	220	28
59		901	1 do	pek	100	26
60		904	1 do	dust	85	25
68	Monks Wood	928	4 ch	pek sou No 2	340	37
70		934	5 hf-ch	dust	400	27
74	North Cove	946	3 ch	pek sou	300	35
80	Aigburth	964	1 hf-ch	bro or pek	70	32
85		979	1 do	fans	75	29
86		982	6 do	bro mix	360	25
101	C S G	1027	8 hf-ch	dust	640	27
107	St. Pauls	1045	5 ch	bro or pek	365	35
114	Matale	1066	4 ch	sou	400	28
119	Great Valley Ceylon, in est. mark	1081	7 ch	sou	525	27
120		1084	8 do	dust	640	28
125	Glencorse	1099	2 ch	pek fans	240	30
126		1102	1 do	bro tea	110	23
127		1105	1 do	dust	180	26
129	Nahalma	1111	4 hf-ch	dust	320	24
135	G	1129	2 ch	dust	270	25
150	Naseby	1174	16 do	pek	600	48
151	Digdola	1177	7 ch	bro or pek	595	37
152		1180	6 do	bro pek	600	33
157	Penrhos	1195	5 ch	pek sou	385	31
158		1198	4 hf-ch	fans	308	28
161	Amblangoda	1207	5 ch	pek sou	450	36
162		1210	2 do	dust	220	27
165	Amblakande	1219	8 ch	pek sou	640	30
166	Cooroondoowatte	1222	9 hf-ch	bro pek	495	36
168		1228	10 do	pek sou	550	30
172	D B R	1240	5 do	bro pek fans	300	34
173		1243	3 cb	pek sou	240	33
174		1246	1 hf-ch	dust	82	27
175	Grace Land	1249	11 hf-ch	bro pek	605	34
176		1252	13 do	pekoe	650	30
177		1255	9 do	pek sou	450	28
178		1258	1 do	congou	55	22
179		1261	1 do	red leaf	45	20
182	Hatton	1270	5 ch	pek sou	425	34
183		1273	4 do	dust	600	27
188	X X	1288	4 ch	fans	280	30
189		1291	5 do	dust	425	26
195	A	1309	8 hf-cb	sou	400	28
200	Galapitakande	1324	4 ch	dust	300	26
205	Arapolakande	1339	4 ch	bro or pek	440	33
208		1348	5 do	pek sou	450	29
209		1351	2 do	dust	220	25
213	Weyungawatte	1363	7 ch	pek sou	595	28
214		1366	7 hf ch	dust	560	26
218	Mawiiligangawatte	1378	4 hf cb	dust	360	26
221	C N	1387	5 ch	bro tea	500	26
222	Arapolakande	1390	5 ch	bro or pek	550	33
225		1399	3 do	pek sou	270	29
226		1402	2 do	dust	220	25
230	Castlereagh	1414	7 ch	pek sou	560	32
232		1420	5 hf ch	dust	400	26
235	Tavalamtenne	1429	6 ch	pek sou	570	29
236		1432	1 do	dust	117	25
240	Tembiligalla	1444	6 do	pek sou	540	29
241		1447	1 hf ch	fans	70	27
242		1450	1 do	dust	80	26
249	Erracht	1471	1 ch	bro pek fans	125	26
250		1474	3 do	dust	438	25
259	Polatagama	1501	3 ch	dust	450	24
260	Dammeria	1504	4 do	bro or pek	480	35
265		1519	2 do	dust	180	28

Lot.		Box.	Pkgs.		Name	lb.	c.
266	D M	1522	3	ch	bro pek	330	31
257		1525	5	do	pekoe	500	28
285	Galkadua	1579	3	do	bro or pek	360	24
289		1591	1	do	fans	120	26
290		1594	1	do	congou	80	23
291		1597	1	hf-ch	dust	107	24
301	Inverness	1627	7	ch	pek sou	630	35
202		1630	5	hf-ch	dust	425	28
311	Palmerston	1657	1	ch	pek sou	85	36
312		1660	1	hf-ch	bro mixed	40	32
322	Ouvahkellie	1690	7	do	dust	560	27
336	H G M	1732	5	do	dust	425	23
341	Yatiyana	1747	3	ch	or pek	321	33
344		1756	5	do	pek No. 2	500	28
345		1759	1	do	pek sou	84	27
346		1762	1	do	unast	103	26
350	H N in est. mark	1774	6	do	pek sou	510	27
357	Anningkande	1795	6	hf-ch	dust	450	25
383	Farnham	1873	7	hf-ch	bro or pek	455	32 bid
385	Durbas	1879	1	ch	pek	99	31
386	Pingarawa	1882	3	do	dust	300	25
387	Ragalla	1885	6	hf-ch	dust	510	26
388	Stafford	1888	8	ch	bro or pek	480	56
389		1891	4	do	or pek	360	51
390		1894	5	do	pek	400	44
391		1897	2	do	pek sou	160	39
392		1900	1	hf-ch	fans	65	30
394	Angramally	1906	5	ch	bro pek	510	35
395		1909	6	do	pek	528	37
396		1912	4	do	pek sou	360	35
397		1915	1	hf-ch	dust	85	28
402	Warwick	1930	6	do	pek fans	360	29
403		1933	3	do	dust	255	25
407	Lynsted	1945	5	do	pek sou	400	38
408		1948	5	do	dust	425	27
413	Waratenne	1963	4	do	fans	300	26
414		1966	3	do	dust	225	26
423	Passara	1993	4	do	pek sou	400	32
424		1996	1	do	fans	75	28
427	Doranakande	2005	3	do	pek	270	30
428		2008	6	do	pek sou	540	28
429		2011	1	do	dust	106	25
441	Shrubs Hill	2047	3	do	bro tea	180	20
445	Allerton	2059	2	do	bro pek fans	200	26
446		2062	1	do	dust	120	23
453	Augusta	2083	1	do	sou	105	25
458	Woodend	2098	2	do	dust	280	24
461	Talgaswela	2107	5	do	bro pek	425	33
462		2110	3	hf-ch	br pek No. 2	150	33
463		2113	3	ch	br pek No. 2	270	32
466		2122	4	do	dust	360	24
467		2125	1	hf-ch	bro mix	95	22
468		2128	9	do	fans	585	28
473	Wewawatte	2143	1	hf-ch	fans No. 1	69	24
485	New Galway	2179	9	do	bro pek	540	49
486		2182	11	do	pek	605	40
490	Pine Hill	2194	9	ch	pek sou	630	32
491		2197	4	hf-ch	dust	340	27
501	Fairlawn	2227	5	do	dust	425	27
502	F L in est mark	2230	3	ch	bro mix	270	23
509	Yataderia	1	1	do	pek sou No. 1	95	27
510		4	1	do	pek sou No. 2	125	24
513	L in est. mark	13	4	do	pek fans	429	33
514	Aigburth	16	1	hf-ch	bro or pek	70	29
515		19	1	do	fans	75	26

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.		Name.	lb.	c.
5	Neboda	127	3	hf-ch	dust	255	25
9	Citrus	139	4	ch	bro or pek	400	25
12	W V Y	148	4	ch	pek sou	412	26
16	Clova	160	3	hf-ch	red leaf	150	15
17		163	3	do	fans	135	out
34	San Cie	184	3	hf-ch	bro mix	147	15
28	B gahagoda-watte	196	1	ch	bro pek fans	120	23
32	St. Catherine	208	3	ch	pek	240	29
33		211	1	do	pek sou	78	28
34		214	2	hf-ch	dust	148	26
35		217	2	do	red leaf	142	17
37	D	223	5	ch	pek	475	28
38		226	5	do	pek sou	440	26
41	Theberton	235	1	ch	fans	100	22
45	Woodthorpe	247	3	ch	sou	183	28
48	Killin	256	6	ch	pek sou	540	28
55	Dryburgh	280	4	ch	or pek	344	35 bid
58		286	9	do	pek sou	630	34
59		289	4	hf-ch	fans	292	28
61	Ravenoya	295	12	hf-ch	pek	600	32
62		298	1	do	pek sou	55	30
63		301	1	do	sou	50	26
64		304	1	ch	fans	140	23

Lot.		Box.	Pkgs.		Name.	lb.	c.
68	Glenolmand	316	6	ch	bro pek	606	32
69		319	3	do	pek	270	31
70		322	5	do	pek sou	400	30
71		325	1	do	sou	80	28
72		328	1	hf-ch	dust	70	24
73		331	1	do	fans	65	28
74	Labuduwa	334	3	hf-ch	bro pek	200	34
75		337	3	do	or pek	165	34
76		340	4	do	pek	211	31
77		343	8	do	pek sou	443	28
78		346	2	do	unas	116	26
86	Kurunegle est. Co.	370	3	ch	pek sou	300	29
87		373	1	do	bro mix	100	20
88	Mahagoda	376	2	ch	bro pek	200	26
90	A D, in estate mark	382	2	ch	bro mix	180	22
91	W, in estate mark	385	2	ch	red leaf	180	26
95	Kotigala	397	3	ch	sou	300	25
96		400	5	do	fans	515	21
107	L	433	6	hf-ch	dust	480	25
112	Citrus	448	3	ch	dust	456	25
115	Y, in estate mark	457	2	hf ch	dust	180	25
119	Carney	469	6	hf-ch	bro pek fans	300	27
120		472	3	do	sou	150	26
125	S N T	487	2	ch	bro pek	200	30 bid
126		490	1	do	pek	90	23
127		493	1	do	pek sou	85	27
140	Paragahakande	532	2	ch	pek sou	200	27
141		535	2	do	fans	180	23
142		538	1	do	dust	130	24
143		541	2	do	red leaf	200	19
146	Meddegoda	550	4	hf ch	pek sou	160	28
147		553	5	do	fans	325	27
148		556	2	do	dust	160	23
152	Depedene	568	2	hf ch	bro mix	125	18
153		571	5	do	dust	425	25
158	Galphele B	586	4	ch	pek sou	400	29
159		589	1	ch	sou	100	28
160		592	3	do	fans	405	26
162	Hanwella	598	7	hf ch	pek	350	23
163		601	2	do	pek sou	108	27
166	Wewatenne	610	8	ch	pek sou	680	28
170	Salawe	622	2	ch	pek dust	294	26
181	Kerenvilla	655	2	ch	pek fans	200	26
182		658	1	do	red leaf	100	20
183		661	2	hf ch	pek dust	172	24
186	Monkton	670	7	ch	pek sou	560	29
187		673	4	do	pek sou No. 2	316	28
188		676	1	do	dust	138	25
189	Sangaly	679	1	hf ch	bro tea	75	27
190		682	2	do	pek dust	190	25
16		685	6	ch	red leaf	540	25
192	F A, in estate mark	688	2	ch	pek sou	190	28
193		691	3	hf-ch	dust	270	26
194	F, in estate mark	694	6	ch	pek sou	384	29
199	Rothes	709	8	hf-ch	pek sou	320	32
199a		709a	1	do	dust	85	25
201	R, in estate mark	715	9	hf ch	sou	360	28
202		718	1	do	dust	80	25
203		721	1	do	bro mix	45	23
207	Paradise	733	7	hf ch	dust	490	25
210	Tippydale	742	11	hf ch	bro pek	650	31
217	Nyanza	763	4	ch	fans	400	27
228	Ingeriya	796	3	hf-ch	dust	252	24
231	Kosgama	805	4	ch	pek sou	300	29
232		808	2	hf-ch	fans	140	25
233	Horagoda	811	6	ch	bro pek	600	31 bid
234		814	7	do	or pek	595	32
236		820	5	do	pek sou	425	29
237		823	1	do	dust	100	24
238		826	1	ch	con	85	24
239	Donside	829	6	hf ch	dust	510	24
245	Danawkande	847	6	hf ch	bro pek	293	35
246		850	9	do	pek	450	31
247		853	6	do	pek sou	300	29
248		856	2	do	fans	106	27
249		859	1	do	dust	48	25
257	Mousakande	883	9	hf ch	fans	630	26
259	Mossville	889	6	ch	bro pek fans	600	26
260		892	6	do	dust	540	25
261		895	2	do	red leaf	180	20
265	Oakham	907	3	ch	pek sou	285	31
266		910	1	hf ch	pek fans	80	28
277	Doragalla	943	5	ch	pek sou	425	30 bid
281	G B	955	7	hf ch	bro tea	350	27
283	B F	961	2	ch	bro mix	196	18
284		964	3	hf ch	dust	285	25
295	Bargany	2077	1	ch	dust	95	25
296		2080	1	do	red leaf	75	27

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
1	N	236	7 hf-ch	dust	597	27
3	Chapelton	242	7 do	dust	630	25
9	Gangawatte	260	2 ch	bro flow pek	140	33
17	L E L	281	6 hf-ch	bro or pek	515	28
19		290	5 ch	pek sou	375	32
20		293	8 hf-ch	or pek fans	520	30
21		296	6 do	dust	569	26
24	Kuruwatthai	305	1 ch	pek sou	80	28
35	Cleveland	333	10 hf ch	pek sou	509	36
36		341	4 do	fans	300	28
50	Ben Nevis	383	7 ch	pek sou	581	26
51		386	3 hf ch	dust	219	26
56	Rondura	401	2 ch	dust	340	24
65	Theresia	428	3 do	bro pek fans	300	33
66		431	1 do	sou	80	31
67		434	6 hf-ch	dust	480	26
68	Eltofts	437	5 ch	bro mix	550	22
69	Caledonia	440	5 hf-ch	dust	400	25
70	S, in est. mark	443	1 ch	bro pek	100	27
71		446	1 do	pekoe	65	27
72		449	1 do	pek sou	75	27
79	Agra Ouvah	470	5 hf ch	dust	500	26
83	Ottery	482	1 ch	dust	170	23
86	Gonavy	491	4 do	pek sou	400	32
91	Gampai	506	2 hf-ch	dust	180	25
92		509	1 do	red leaf	68	25
102	Claremont	539	3 ch	fans	300	27
103		542	4 do	pek dust	470	23
109	Maskeliya	560	3 hf-ch	dust	270	27
110		563	8 do	bro pek fans	480	34
114	Evalgolla	675	5 do	pek sou	200	28
115		578	7 do	fans	455	28
116		581	3 do	dust	240	25
154	Ovoca	695	6 ch	pek sou	540	34
156	Anchor, in est. mark	701	4 do	or pek	320	39 bid
157		704	9 do	pekoe	675	27
166	Kanangama	728	8 hf-ch	congou	480	26

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent).

MINCING LANE, Feb. 2nd.

"Bingo Maru."—Mousagalla A, 1 tierce sold at 113s; ditto B, 2 casks, 1 barrel, and 1 tierce sold at 81s; ditto C, 1 tierce out at 55s; 48s refused; ditto PB, 1 tierce out at 95s; 80s refused; ditto T, 2 barrels out.

"Austral."—Craig 1, 3 casks sold at 82s 6d.

"Dardanus."—Craig 2, 3 casks sold at 65s 6d.

"Omrah."—WHC, in estate mark, OO, 1 barrel out; 80s refused; ditto O, 1 cask and 1 barrel sold at 73s; ditto 1, 1 barrel out; ditto P, 1 barrel out; ditto T, 1 barrel sold at 40s; ditto 2, 1 bag sold at 53s; ditto, Olivers OO, 1 tierce sold at 100s; ditto O, 4 casks, 1 tierce, and 1 barrel sold at 86s 6d; ditto, 1 cask sold at 64s; ditto 2, 1 barrel sold at 52s; ditto P, 1 cask out at 103s; 96s refused; ditto T, 1 tierce sold at 42s; ditto Olivers, 1 bag sold at 60s; overtakers.

COFFEE futures firm, quiet. Prices are still certain to rise; also Wheat. Cotton American Oct. and Nov. is 42-64 and looks dear. Sugar supply too heavy.

CEYLON COCOA SALES IN LONDON.

"Malacca."—OPBM, 34 bags out at 76s, 70 refused.

"Machaon."—Etta Polla, Ceylon, in estate mark, London pices, 3 bags sold at 60s 6d.

"Malacca."—Dea Ella in estate mark, Ceylon, 2 bags sold at 50s.

"Machaon."—Goonambil, A, 95 bags sold at 86s 6d; ditto B, 19 bags sold at 67s 6d.

"Malacca."—Goonambil A, 24 bags sold at 84s; ditto B, 5 bags sold at 66s 6d; OGH in estate mark A, 14 bags sold at 83s 6d; ditto B, 4 bags sold at 63s 6d.

"Malta."—Inguragalla A, 20 bags out at 86s 83s 6d resused; ditto A 2, 11 bags sold at 76s 6d; T, 2 bags sold at 60s 6d.

"Malacca."—Rockhill AA, 36 bags sold at 79s; ditto A, 2 bags sold at 65s 6d; ditto B, 6 bags sold A 67s 6d; ditto C, 2 bags sold at 60s 6d; Maousava, Aa 17 bags sold at 83s 6d; ditto A, 2 bags sold at, 65s 6d; ditto B, 10 bags sold at 55s; ditto C, 2 bags sold at 60s 6d.

"Machaon."—MFW Estate, in estate mark, 29 bags sold at 8s.

"Sanuki Maru."—Asgiria, A, 20 bags sold 84s 6d; 32 bags sold at 84s.

"Malacca."—OBEC, in estate mark, Kondesalle, Ceylon OF, 83 bags, no bid; ditto IF, 28 bags out at 83s 8 bags sold 66s; ditto O, 20 bags sold at 83s 6d; ditto 1, 5 bags sold at 67s.

"Malta."—G in estate mark, estate cocoa, 105 bags out at 70s; O H, in estate mark estate cocoa, 122 bags sold at 70s; O J, in estate mark 10 bags out; L in estate mark 1, estate cocoa 105 bags sold at 69s; 1, MAK in estate mark estate cocoa 40 bags sold at 69s; 74 bags out.

"Malacca."—1, C in estate mark estate cocoa 15 bags out; FF in estate mark, estate cocoa 146 bags sold at 67s.

"Java."—DM in estate mark, 2 bags out; DMA & Co. in estate mark, 1 bag out; D in estate mark 3 bags out.

"Clan Chisholm."—O, MAK in estate mark 15 bags sold at 63s.

"Clan McLean."—HMS & Co. in estate mark estate cocoa, 1 bag out; ditto 1, 1 bag out.

"Malacca."—Warapolla, 22 bags sold at 95s; 100 bags sold at 83s; 2 bags sold at 69s; ditto 10 bags sold at 66s and 16 bags sold at 63s 6d; Suduganga, 35 bags sold at 87s 6d; 5 bags sold at 75s 6d and 8 bags sold at 76s 6d; ditto 13 bags sold at 61s.

"Machaon."—Batagalla A, 22 bags sold at 78s; ditto 19 bags sold at 77s; ditto 1 bag sold at 56s; ditto B, 26 bags sold at 78 6d; 7 bags out; 9 bags sold at 60s 6d; ditto C, 16 bags sold at 61s.

"Glenshiel."—North Matale, 83 bags out; ditto 1 bag sold at 66s; ditto Aloowiharie A, 44 bags out at 90s; ditto, 41 bags out at 87s; ditto O, 4 bags sold at 85s; ditto OO, 2 bags sold at 60s 6d; ditto B, 9 bags sold at 62s 6d; ditto A, 1 bag sold at 66s.

"Sanuki Maru."—KRDG 1, 80 bags out at 87; ditto 2, 8 bags sold at 65s 6d; 2 T, 5 bags sold at 62s; ditto, NO Glenury, 10 bags out at 83s 6d.

"Java."—M, in estate mark, Estate Cocoa, 1 bag out at 53s.

CEYLON CARDAMOMS SALES IN LONDON.

"Glenshiel."—APM in estate mark, 9 cases sold at 1s 6d; 2 cases sold at 2s 2d; 10 cases sold at 2s 1d; 1 DBM, 14 cases out at 1s 10d; ditto 2, 2 cases sold at 1s 6d; ditto 3, 1 case sold at 1s 4d; ditto 3, 3 cases sold at 2s 2d, ditto 3, 3 cases sold at 2s 1d; APM in estate mark, 4 cases sold at 3s 9d.

"Sanuki Maru."—M in estate mark, Maha Uva Mysore O, 3 cases sold at 3s 2d; ditto 1, 4 cases sold at 2s 7d; 2 cases sold at 2s 8d; ditto 2, 1 case sold at 2s; ditto 3, 1 case sold at 1s 6d.

"Clan McNeil."—AL I, 18 cases out at 2s.

"Glenshiel."—DBM, 1 case out at 2s 9d.

"Tamba Maru."—Knuckles Group, Madulkelle, Mysore A, 4 cases out at 3s 5d; ditto B, 5 cases out at 2s 4d; ditto C, 1 case sold at 1s 6d; 2 cases out at 2s 7d; 3 cases sold at 1s 6d; 1 bag sold at 2s 4d seed.

"Malacca."—Knuckles Group, Madulkelle, Mysore A, 4 cases out at 3s 3d; ditto B, 3 cases out at 2s 2d; C. 1 case sold at 1s 6d; 1 case sold at 1s 4d; 1 case sold at 1s 7d; 4 cases sold at 1s 6; ditto seed, 1 case sold at 2s 4d; Lebanon Group, Mysore A, 5 cases out at 3s 3d; ditto B, 4 cases sold at 2s 3d; ditto C, 3 cases sold at 1s 6d.

"Kawachi Maru."—FA & Co., in estate mark, 1, 1 case sold at 3s 10d; ditto 2, 1 case out.

"Sanuki Maru."—FA & Co., in estate mark, LC, 4 cases sold at 3 10d; slight mouldy, 2 cases sold at 2s 3d.

"Malacca." I DBM, 12 cases out at 2s; Duck

wari A1, 2 cases sold at 4s 3d; ditto B1, 4 cases sold at 3s 10d; ditto C1, 6 cases sold 3s 1d; ditto D1, 2 cases sold at 2s; ditto A Splits, 1 case sold at 3s 7d; ditto B, 2 cases sold at 3s 2d; ditto C, 2 cases sold at 2s 9d; 1 case sold at 2s 8d; ditto D, 1 case sold at 1s 9d; ditto seed 2 cases sold at 2s 5d.

"Glenshiel."—No. 1 G, in estate mark, 2 cases sold at 1s 11d; 9 cases sold at 1s 10d.

"Orestes."—Mysore Midlands O, 6 cases out at 3s 8d; ditto 1, 7 cases out at 3s; ditto 2, 1 case sold at 1s 8d; B & S, 1 case sold at 2s 4d.

"Bingo Maru."—Midlands O, 5 cases sold at 3s 4d; ditto 1, 5 cases sold at 3s 4d; ditto 2, 1 case sold at 1s 9d; B & S, 1 case sold at 1s 6d; Kelvin Ex., 1 case out; ditto AA, 2 cases out at 3s 6d; 2 cases out at 2s 8d; ditto A, 3 cases sold at 2s 8d; ditto B, 4 cases out at 1s 6d; Cottaganga AA, 1 case out at 3s; ditto A, 2 cases sold at 2s 2d; 3 cases out at 2s 1d; ditto B, 2 cases sold at 1s 6d.

"Tamba Maru."—Kotagala A, 6 cases sold at 2s 6d.

"Malacca."—Elkaduwa O, 5 cases sold at 3s 3d; ditto 1, 5 cases sold at 2s 6d; ditto 2, 1 case sold at 1s 7d; ditto B & S, 1 case sold at 1s 5d; seed 2 cases sold at 2s 3d; OBEC in estate mark Nillomally Mysore OO, 1 case sold at 2s 6d; ditto OO, 4 cases sold at 2s 2d; ditto O, 1 case sold at 1s 6d; seed 2 cases sold at 2s 4d; OBEC in estate mark, Dangkande, 3 cases sold at 2s 10d; and 1 case sold at 1s 7d; Kotooloya Ex., 3 cases sold at 3s 7d; ditto AA, 10 cases sold at 2s 11d: ditto A, 3 cases sold at 2s 6d; ditto B, 2 cases sold at 1s 6d; 7 cases sold at 1s 7d; ditto C, 3 cases sold at 2s 4d.

No. 8 Colombo, March 5, 1900. Price:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[15,315 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Battalgalla	8	11 ch	pek sou	990	35
2	Hornsey	11	27 ch	or pek	2430	39
3		14	21 do	pek	1575	36
4		17	12 do	pek sou	1080	35
5	New Rasagalla	20	14 ch	bro or pek	1400	34
6		23	13 do	bro pek	1300	33 bid
7		26	12 do	or pek	1080	33 bid
8		29	7 do	pek	3515	32
9		32	19 do	pek sou	1651	31

Messrs. Forbes & Walker.

[394 996 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	B, in estate mark	43	10 ch	sou	900	28
2		46	7 do	dust	1050	26
3	Karabusnawa	49	28 hf ch	bro pek	1400	33
4		52	14 do	pek	7a0	31
8	Thedden	64	56 ch	bro pek	3240	.3
9		67	16 do	pek	1440	30
12	V, in estate mark	76	10 ch	pek sou	950	26 bi
16	Lindapatna	88	8 ch	pek	760	37, ic
21	Fr gmore	103	21 hf ch	bro pek	1155	41 id
22		106	11 do	pek	825	41
24	Munukattia Ceylon, in est. mark	112	16 hf-ch	or pek	800	42
25		115	32 do	bro pek	1920	38
26		118	20 ch	pek	1650	38
27		121	11 do	pek sou	1045	33
28	Florence	124	24 do	pek	2112	37
29		127	20 do	pek sou	1700	33
30		130	16 do	sou	1360	30
31	Sutton	133	34 hf-ch	bro or pek	1904	66
32		136	43 ch	or pek	4300	48
33		139	25 do	pek	2000	47
35	Erlsmere	145	23 ch	bro pek	2300	36
36		148	18 do	pek	1440	37
42	Errollwood	166	25 hf ch	bro or pek	1375	47
43		169	17 ch	or pek	1615	40 bid
44		172	16 do	pek	1440	41
45		175	9 do	pek sou	900	35
47	Farnham	181	13 ch	bro pek	1235	35
49		187	8 do	or pek	720	35
50		190	9 do	pek	810	34
51		193	17 do	pek	1530	32
52		196	20 do	pek No. 2	1600	30
53		199	14 do	pek sou	1190	28
54		202	13 do	pek sou	1040	28
56	Gonapatiya	208	15 hf-ch	bro or pek	765	52
57		211	22 do	or pek	990	48
58		214	25 do	pek	1200	40
59		217	15 do	pek sou	828	35
60		220	16 do	pek fans	992	32 bid
61	Kitulgalla	223	29 hf-ch	or pek	1740	33
62		226	13 do	bro or pek	910	30
63		229	32 ch	pekoe	2500	29
66	Glengariffe	238	49 hf ch	bro pek	2695	38
67		241	35 do	or pek	1575	38
68		244	27 ch	pek	2541	35
69		247	15 do	pek sou	1250	32
70		250	16 hf-ch	fans	1024	31
71		253	9 do	dust	720	26
72	Nugagalla	256	18 hf ch	bro pek	900	35 bid
73		259	39 do	pek	1950	30 bid
74	Irex	262	37 ch	bro pek	3700	33
75		265	30 do	pekoe	2400	33
76		268	12 do	pek sou	960	30
78	Ruanwella	274	50 ch	or pek	4250	34
79		277	25 do	bro pek.	2500	32
80		280	41 do	pek	3 90	30
81		283	22 do	pek sou	1980	29
82		286	11 do	dust	880	25
89	St. Heliers	307	13 hf ch	bro or pek No. 1	715	38
90		310	22 do	bro or pek	1232	34 bid
91		313	20 do	pek	1800	33
92		316	9 do	pek sou	855	29
93	Lauderdale	319	11 ch	red leaf	1045	23
95	Tonacombe	325	20 ch	or pek	1800	40
96		328	8 do	bro or pek	800	48
97		331	25 do	bro pek	2500	38
98		334	44 do	pek	3960	37
99		337	13 do	pek sou	1170	33
101	Weyungawatte	343	32 hf-ch	bro or pek	1920	33 bid
102		346	35 ch	bro pek	3325	33
103		349	28 do	pek	2240	31
106	West Holyrood	358	20 ch	pek sou	1600	38
107		361	24 hf-ch	fans	1620	31
108		364	13 do	dust	1105	26
109	P G A	367	18 ch	bro pek	1620	23
110		370	24 do	pek	1800	21
119	Mawiligangawatte	397	35 ch	bro pek	3500	31 bid
120		400	15 do	pek	1095	29 bid
121		403	31 do	pe sou	2 5	27 bid
123	El T b	409	24 hf-ch	fans	1440	34
125	Gallawatte	415	12 ch	bro pek	1 40	34
126		418	14 do	pek	1 90	31
127	Roeberry	4 1	27 ch	bro pek	2700	40
128		424	15 do	bro or pek	1 00	52
129		427	26 do	pek	2340	40
130		430	15 do	pek sou	1230	33
131	Palmerston	433	15 hf-ch	bro or pek	750	76
133		436	12 ch	pek	1080	48
134	Macaldeniya	442	23 hf-ch	bro pek	1455	36
135		445	20 do	pek	1030	34
136		448	15 do	pek sou	750	33
137	Queensland	451	14 hf-ch	bro pek	700	46
138		454	13 do	bro or pek	7 5	56
139		457	25 do	pek	2125	41
143	High Forest	469	60 hf-ch	or pek No. 1	3600	56
144		472	56 do	or pek	3192	49
145		475	18 do	bro or pek	1314	40
146		478	24 do	pek	1248	44
147	Battawatte	481	30 ch	bro or pek	3300	36 bid
148		484	27 do	pek	2565	36
149		487	13 do	pek sou	1040	33
150	Seenagolla	490	13 hf-ch	or pek No. 1	715	39
151		493	14 do	or pek	770	38
152		496	13 do	pek	715	34
153		499	14 do	pek sou	770	31
155	Morankande	505	11 hf-ch	bro or pek fans	825	28
157	Aberdeen	511	69 ch	bro pek	6693	33
158		514	49 do	pek	3920	30
159	Gansarapola	517	21 ch	bro pek	1995	30 bid
160		520	19 do	pek	1710	29
161	A'Leigh	523	25 ch	pek sou	2125	43
164	Mahayaya (Venesta Chests)	532	13 hf ch	pek	72	30
168	Arapolakande	544	64 ch	bro pek	5760	36
169		547	39 do	pek	3120	31 bid
175	Middleton	565	20 hf-ch	bro or pek	1 00	55 bid
176		568	20 ch	bro pek	2000	48
177		574	12 do	pek	1080	45
179	Cooroondoowatte	577	16 hf-ch	pek	880	35
180		580	16 do	pek sou	880	33
185	Oldmadegama	595	10 do	bro or pek	700	40 bid
186		598	24 hf-ch	or pek	1560	34 bid
187		601	11 do	or pek	715	33 bid
188		604	26 ch	pek	1950	30 bid
189		607	10 do	pek sou	7 0	28 bid
195	Kakiriskande	625	12 do	pek	1140	30
197	Waitalawa	631	50 hf-ch	bro pek	2500	36
198		634	70 do	pek	3500	33
199		637	22 do	pek sou	11 0	29
200		640	10 do	dust	900	26
201	Penrhos	643	3 do	bro or pek	1219	38
202		646	28 do	or pek	1260	37
203		6 9	47 ch	pek	3995	33
206	Vogan	658	70 do	bro pek	6650	35
207		6 1	60 do	pek	5400	33
208		6 4	9 hf-ch	dust	765	25
209		6 7	10 ch	bro pk fans	1 50	28
210	Tymawr	670	70 hf-ch	bro pek	1 00	41 bid
211		673	61 do	pek	2745	39
212		676	31 do	pek sou	1 0	36
215	Erlsmere	685	24 ch	bro pek	2400	37
216		688	16 do	pek	1280	38
219	Harrington	697	25 hf-ch	bro or pek	1250	45 bid
220		700	20 ch	or pek	1900	43
221		703	23 do	pek A	2070	40
225	Maha Uva	715	24 hf-ch	bro or pek	1440	35
226		718	13 ch	or pek	728	39
227		721	18 do	pek	1620	36
230	Ganapalla	730	10 do	or pek	900	36

Lot,		Box.	Pkgs.		Name.	lb.	c.
231		733	12	ch	bro or pek	1080	34
232		736	23	do	bro pek	2 70	32
233		729	36	do	pek	2880	30
234		742	20	hf-ch	dust	1600	25
235	Glengariffe	745	46	do	bro pek	2530	37 bid
236	Great Valley, Ceylon, in est. mark	748	20	ch	or pek	1800	39
237		751	35	hf-ch	bro pek	2090	43
238		754	34	ch	pek	3000	36
239		757	17	do	pek sou	1360	32
240	Gonapatiya	760	25	hf-ch	pek	1 00	39 bid
249	Geragama	787	13	do	bro pek	1170	33
250		790	22	do	pek	1930	31
251	Halwatura	793	32	do	bro pek	32 0	31
252		796	38	do	or pek	34 0	31
253		799	50	do	pek	4250	28 bid
254		8 2	46	do	pek sou	3620	26 bid
255		805	22	do	sou	1840	25 bid
256		808	12	hf-ch	bro pk fans	840	25
266	C F G	838	25	do	bro or pek	1400	33 bid
267		841	60	do	or pek	3000	34
273	Chesterford	859	58	do	bro pek	5800	38
274		862	47	do	pek	4700	34
275		865	33	do	pek sou	3300	32
276	Agra Elbedde	868	63	hf-ch	bro or pek	3465	50 bid
278	Memorakande	874	5	ch	dust	750	26
280	H in est. mark	880	45	hf-ch	or pek	2250	41 bid
281		883	11	ch	bro pek	1100	34 bid
282	Ireby	886	29	do	bro pek	3 90	43
283		889	19	do	pek	1710	42
284		892	9	do	pek sou	810	38
287	L in est mark	901	17	do	bro pek	1671	33 bid
288	H N in est. mark	904	18	hf-ch	fans No. 1	1170	26 bid

[Mr. E. John.—160,949 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
6	Lunugalla	770	18	ch	pekoe	1440	30
8	Vincit	776	18	do	bro pek	1620	33
9		779	13	do	pekoe	11 0	30
13	Tempo	791	10	do	bro pek	950	3 bid
14		794	10	do	pekoe	820	31 bid
17	Coslande	803	18	hf-ch	br pek	990	36
18		806	11	ch	pekoe	990	35
22	Galloola	818	21	do	bro pek	2100	40
23		821	20	do	pekoe	2000	37
24		824	13	do	pek sou	1300	32 bid
26	Mount Everest	830	22	hf-ch	bro or pek	1210	49 bid
27		833	44	do	or pek	22 0	4 bid
28		836	36	ch	pekoe	3600	36 bid
29		839	14	do	pek sou	1260	35 bid
30	Yapame	842	36	do	bro pek	3600	38
31		845	25	do	pekoe	2250	37
32		848	16	do	pek sou	1360	31 bid
33	Choughleigh	851	12	do	bro pek	1200	34
34		854	11	do	pekoe	990	33
38	Wahagapitia	866	9	do	bro pek	900	32 bid
39		869	9	do	pekoe	810	33
45	Glentilt	887	31	do	bro pek	3100	38 bid
46		890	14	do	pekoe	1400	37
47	Uda	893	17	do	br pek	1615	45
48		896	32	do	pekoe	2368	35
49	Koslande	899	18	hf-ch	bro pek	940	38
50		902	11	ch	pekoe	990	35
54	Yakka	9 4	14	do	bro or pek	1512	34 bid
55		917	12	do	pekoe	1152	34
56		920	25	do	pek sou	2250	30
57		923	11	do	sou	8 0	27
58	Pollakande	926	56	do	bro pek	5600	32
59		929	42	do	pekoe	3 80	33
60	M G	932	7	do	unas	700	27
62	N B	938	11	hf-ch	dust	935	27
63	H S, in est. mark	941	15	ch	bro mix	1500	24
64	Callander	944	40	hf-ch	bro or pek	2400	37 bid
65		9 7	23	do	or pek	1311	36
70	St. John's	962	30	do	bro or pek	1860	52 bid
71		965	29	do	or pek	1508	62
72		968	32	d	pekoe	1856	47
73	Whyddon	971	28	ch	bro pek	2800	34 bid
74		974	14	do	pekoe	1260	34 bid
77	Little Valley	983	10	do	bro pek	1000	34 bid
78		986	33	do	pekoe	2475	32 bid
79		989	10	do	pek sou	800	30 bid
80		992	17	hf-ch	bro or pek	9 5	46
82	Glassaugh	998	23	do	or pek	1219	69
83		1	23	do	bro or pek	1495	60
84		4	20	ch	pekoe	1800	45
85	Kotuagedera	7	28	do	bro pek	2800	33 bid
86		10	21	do	pekoe	1995	30
87	Y	13	9	do	red leaf	8 0	23
89	Ferndale	19	13	do	or pek	11 0	38
90		22	12	do	pekoe	1080	35

Lot.		Box.	Pkgs.		Name.	lb.	c.
91	Hiralouvah	25	33	hf-ch	or pek	1650	withd'n
92		28	24	ch	pekoe	2160	withd'n
93		31	20	hf-ch	bro or pek	1200	withd'n
94		34	10	ch	pek sou	850	withd'n
97	Y K	43	11	do	dust	1650	24
102	Murraythwaite	58	22	do	bro pek	2090	33
103		61	22	do	pekoe	1870	33
104	Delpotnaoya	64	15	hf-ch	dust	1050	26
106	Bovey	70	30	do	or pek	1350	35
108		76	25	do	pekoe	1250	32
109	Ferndale	79	12	ch	bro or pek	1200	36 bid
110		82	11	do	or pek	990	38
112	Keenagaha Ella	88	33	hf-ch	or pek	1815	34 bid
113		91	30	ch	pekoe	2400	30 bid
114	C T N	94	27	do	pek sou	2106	30 bid
115		97	20	do	sou	1440	27 bid
118	Ouvah, K	106	23	do	pek sou	2001	38 bid
119	Eadella	109	18	do	bro or pek	1800	31 bid
120		112	19	do	bro pek	1900	32 bid
121		115	28	do	pekoe	2800	30 bid
125	M R	127	36	hf-ch	pek fans	2592	28
130	Ouvah, B	148	16	ch	pek sou	1360	35 bid
133	M R	157	35	hf-ch	bro pek fans	2170	29 bid
134	Gonavy	160	50	do	bro pek	2500	36 bid
135		163	19	ch	pekoe	1425	34 bid
139	B D	175	30	hf-ch	bro pek fans	1950	30
140		178	19	do	bro pek fans	1140	30

[Messrs. Somerville & Co.—233 821 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
3	Dryburgh	7	17	ch	pek	1394	31
6	Gangwarily	13	19	do	sou	1425	25
7		19	11	do	fans	1 0	27
10	P T N, in estate mark	28	20	hf ch	pek sou	1000	24
15	A S W	43	6	hf ch	pek sou	7 0	18
17	Mary Hill	49	21	hf ch	bro pek	1365	35 bid
18		52	20	do	pek	12 0	34
19		55	15	do	pek sou	900	29 bid
24	Kirrikelle	70	55	hf-ch	bro or pek	3465	34 bid
25		73	12	ch	or pek	12 0	39 bid
26		76	40	do	pek	3600	38 bid
27	S R K	79	14	ch	pek sou	1330	29 bid
30	K P W	88	23	hf ch	pek sou	1035	28
31	Kurulugalla	91	17	ch	bro pek	1700	22
32		94	31	do	pek	2790	28 bid
33		97	10	do	pek sou	1000	23
37	Illukettia	109	19	ch	bro pek	2090	21
38		112	20	do	pek	2000	26 bid
39		115	10	do	pek sou	1000	25
46	R C T F, in estate mark	136	15	ch	bro pek	1500	32
47		139	16	do	pek	1440	29
48		142	21	do	pek sou	1785	26
51	P	151	19	cb	pek sou	1600	29
52	Jak Tree Hill	154	19	hf-ch	bro pek	950	38
53		157	29	do	pek	1305	33
57	Auburn	169	19	ch	bro pek	1900	33
58		172	14	do	pek	1204	33
59		175	10	do	pek sou	840	30
62	Nillicollay-watte	184	13	hf-ch	bro pek	728	34
63		187	15	ch	or pek	1230	34
64		190	12	do	pek sou	1128	30
65	Warakamure	193	47	ch	bro pek	4700	32
66		196	32	do	pek	3040	30
67		199	21	do	pek sou	1890	27
68	Lonach	202	80	cb	bro pek	4400	35
69		205	31	do	pek	2635	35
70		208	18	do	pek sou	1530	32
71	Rambodde	211	15	hf-ch	bro or pek	9 0	36
72		214	43	do	bro pek	2150	34
73		2 7	33	do	pek	1650	33
77	Monte Christo	229	41	ch	bro pek	4 00	34 bid
78		232	21	do	or pek	1890	35 bid
79		235	24	do	pek	2160	32 bid
80	Agra Ouvah	238	27	hf-ch	bro or pek	1795	35
81		241	16	do	or pek	800	35
82	Avisawella	244	24	ch	bro pek	2400	32 bid
83		247	24	do	pek	2040	29 bid
84		250	25	do	pek sou	2180	27 bid
86	Glasgow	256	8	ch	or pek	704	34
87	Narangoda	259	49	ch	pek pek	4900	33
88		262	33	do	pek	3135	29
89		265	17	do	pek sou	1530	28
91	Hatdowa	271	28	cb	bro pek	2660	32
92		274	28	do	pek	2 00	28 bid
93		277	23	do	pek sou	1725	27
99	Oaklands	295	11	ch	or pek	1045	34
100		298	12	do	bro pek	1176	30 bid
101		301	16	do	pek	1360	31
102	K	304	12	hf ch	dust	1020	25
104	Polgahakande	310	15	ch	bro or pek	1575	31
105		313	25	do	bro pek	2125	32 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
106	Labugama	316	37 hf ch	bro pek	1850	34
107		319	20 ch	pek	1900	30
108		322	16 do	pe. sou	1360	28
110	Ambalawa	328	28 hf-ch	bro pek	1456	31
111		331	19 do	pek	855	30
112	Dartry	334	21 ch	fans	1575	26
115	Silverton	343	47 hf-ch	bro pek	2350	33 bid
116		346	33 ch	pek	2475	30 bid
117		349	91 hf-ch	bro pek	4732	33 bid
118		352	46 ch	pek	3450	30 bid
126	R I T	376	9 ch	pek	900	27
128	Rayigam	382	28 ch	bro pek	2800	33
129		385	18 do	or pek	1530	33
130		388	13 do	pek	1105	31
131		391	8 do	pek sou	720	29
135	Medde Uva	403	12 ch 1 hf-ch	bro or pek	1566	24 bid
136		406	13 ch	bro pek	1284	27 bid
137		409	12 do	pek	1200	26 bid
141	Doregalla	421	17 ch	bro or pek	1700	38
142		424	13 do	bro pek	1235	38
143		427	40 do	bro pek	3400	34
144		430	10 do	pek	800	32
145		433	10 hf-ch	bro mix	700	24
146	Maddegedera	436	26 ch	bro pek	2600	32
147		439	34 do	or pek	3400	30
148		442	26 ch	pek	2600	28
149		445	31 do	pek sou	3100	26
150		448	9 hf ch	dust	720	24
151		451	12 ch	bro mix	1140	24
154	Mahaousa	460	19 hf-ch	dust	1615	24
155	Baigany	463	24 hf ch	bro or pek	1320	40 bid
156		466	13 do	or pek	1300	38
157		469	18 do	pek	1530	34 bid
158	Yarrow	472	53 hf-ch	bro pek	2968	34 bid
159	Kelani	475	35 ch	bro pek	2800	34
160		478	17 do	bro or pek	1700	33 bid
161		481	22 do	pek	1870	31 bid
162		484	20 do	pek sou	1800	27 bid
169	K G A	505	10 ch	bro pek	1150	32
174	F L D, in estate mark	520	9 ch 1 hf-ch	bro tea	860	out
175		523	9 ch	unas	955	19
175a			8 do	unas	880	16
176		526	23 hf-ch	dust	2070	22 bid
177	K O T	529	7 ch	pek	755	25
178	H, in estate mark	532	18 ch	pek	1620	28 bid
179	Annanda'e	535	15 hf-ch	bro or pek	870	58 bid
180		538	22 do	or pek	1254	45
181		541	17 do	pek	884	42
182		544	22 do	pek sou	1276	38
183	M G S	547	13 ch	dust	1287	22 bid
184	B T	550	15 ch	pek dust	1495	22 bid
185	G A L	553	7 ch	pek sou	735	22 bid
186	Clova	556	17 hf-ch	pek	850	28

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
10	New Rasagalla	35	3 ch	fans	330	29

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
5	Karabusnawa	55	6 hf ch	pek sou	300	28
6		58	2 do	sou	100	26
7	N B	61	5 hf ch	bro tea	375	23
10	Thedden	70	6 ch	pek sou	540	27
11		73	2 do	dust	300	25
13	V, in estate mark	79	5 hf ch	dust	400	26
14	Lindapatna	82	6 ch	bro or pek	390	43
15		85	6 ch	or pek	600	40
17		91	2 do	dust	160	26
18	P	94	2 ch	fans	200	28
19		97	3 do	dust	480	24
20	Frogmore	100	12 hf ch	or pek	480	44
23		109	1 do	dust	80	26
34	Roscrea	142	11 ch	bro or pek	605	47
37		151	6 do	pek sou	540	33
38		154	3 do	dust	240	25
39	A G	157	11 hf-ch	bro pek	660	42 bid
40		160	9 do	pek	450	36 bid
41		163	2 do	pek sou	180	32
46	Farnham	178	6 ch	bro pek	630	33
48		184	6 do	or pek	570	34

Lot.		Box.	Pkgs.	Name.	lb.	c.
55		205	1 ch	dust	90	26
64	Kitulgalla	232	3 hf-ch	pek sou	180	26
65		235	2 ch	dust	240	24
77	Irex	271	3 do	dust	300	25
87	Teevaloya	301	4 ch	pek	360	31
88		304	3 do	dust	334	24
94	Spring Valley	322	2 ch	fans	236	32
100	Toua ombe	340	6 hf-ch	dust	540	26
104	Weyungawatte	352	8 ch	pek sou	640	28
105		355	5 hf ch	dust	400	25
111	P G A	373	10 ch	sou	650	23
112		376	7 hf ch	dust	560	25
113	A G	379	4 ch	pek sou	400	28
114		382	2 do	dust	274	26
115		385	1 do	bro tea	100	26
116	K W	388	4 ch	bro tea	476	25
117		391	1 do	dust	151	25
118		394	1 do	red leaf	130	24
122	Mawiliganga-watte	406	4 hf-ch	dust	360	25
124	R E W	412	6 hf-ch	pek	258	30
133	Palmerston	439	4 hf-ch	dust	340	30
140	N B D	460	7 ch	bro mix	630	20
141		463	7 do	unas	665	22
142		466	5 hf-ch	bro pek fans	325	29
154	S	502	3 ch	sou	276	26
156	Morankande	508	3 hf-ch	dust	270	24
162	Mahayaya (Venesta Chests)	526	5 hf-ch	bro or pek	350	34
163		529	8 do	bro pek	472	36
165		535	8 do	pek sou	440	28
166		538	2 do	sou	116	26
167		541	1 do	dust	100	25
178	Cooroondoo-watte	574	10 hf-ch	bro pek	550	37
190	Oldmadegama	610	5 do	s u	275	23
191		613	6 hf-ch	bro pek	480	31
192		616	2 ch	dust	200	25
193	D	619	6 do	sou	510	24
194	Kakriskande	622	3 do	bro pek	290	37
196		628	2 do	pek sou	160	27
204	Penthos	652	5 do	pek sou	400	28
205		655	3 hf-ch	pek dust	213	24
213	Nella Oolla	697	3 ch	red leaf	235	22
214	Erlsmere	682	9 ch	bro or pek	510	46
217		691	5 do	pek sou	450	35
218		694	2 do	dust	160	26
222	Harrington	706	7 hf ch	or pek fans	490	31
223		709	3 ch	pek B	270	32
224		712	1 do	dust	150	26
228	Maha Uva	724	1 hf-ch	pek fans	75	27
229		727	3 do	dust	275	27
247	W D R	781	2 hf-ch	bro pek	110	33
248	Tempoe	784	4 ch	pek	340	30 bid
257	Halwatura	811	3 hf-ch	dust	285	26
258	V	814	4 ch	or pek	372	31 bid
259	C & E	877	5 hf-ch	pek	250	28 bid
260	X X X	820	1 do	pek	53	26
277	Poengalla	871	4 do	dust	360	27
279	Relugas	877	4 do	dust	500	24
285	Ireby	895	5 hf ch	fans	300	[illegible]
286		898	5 do	dust	400	27

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Penrith	1	6 ch	unas	432	3
2	A B C	4	2 ch 3 hf ch	bro pek	328	21 bid
4	Dryburgh	10	9 ch	pek sou	630	27
6	Gangwarily	16	5 hf-ch	dust	400	25
8		22	6 ch	red leaf	450	21
9	P T N, in estate mark	25	8 hf-ch	bro pek	418	26
11		31	4 do	fans	236	23
12		34	1 do	dust	82	22
13	A S W	37	3 hf ch	bro pek	150	26
14		40	4 do	pek	200	23
16		46	3 do	fans	135	20
20	Mary Hill	58	3 hf-ch	bro mix	27	21
21	Mahatenne	61	4 ch	pek sou	360	26 bid
22		64	1 do	dust	100	26
23		67	1 hf ch	red leaf	56	20
28	S R K	82	4 ch	dust	600	25
29		85	1 do	bro tea	100	23
34	K G A, in estate mark	100	3	bro tea	300	18
35		103	1 do	bro pek fans	130	26
36		106	1 do	pek dust	150	25
40	Illukettia	118	2 ch	sou	172	23
41	C, in estate mark	121	13 hf-ch	pek sou	650	26
42	S	124	7 hf ch	dust	590	25
43		127	7 do	br tea	350	25
44	A	130	3 hf-ch	dust	240	25
45		133	4 do	bro tea	200	25

Lot,		Box.	Pkgs.	Name.	lb.	c.
49	R C T F, in estata mark	145	4 ch	bro pek fans	400	27
50		148	3 hf-ch	dust	210	24
54	Jak Tree Hill	160	2 hf ch	pek sou	80	27
55		163	3 do	fans	195	27
60	Auburn	178	2 hf-ch	dust	160	24
61		181	3 do	fans	210	26
74	Rambodde	220	15 hf-ch	pek sou	675	29
75		223	1 do	dust	90	25
76		226	2 do	fans	140	27
85	Avisawella	253	6 ch	fans	600	27
90	Narangoda	263	4 ch	dust	340	25
94	Hatdowa	280	6 ch	fans	600	28
95		283	4 do	sou	300	22
96	K, in estate mark	286	2 ch	bro or pek	208	34
97		289	7 do	unas	637	27
98		29[illegible]	2 hf-ch	dust	170	26
103	K	307	5 ch	red leaf	434	18
109	Labugama	325	2 ch	bro pek fans	240	28
113	Daitiy	33[illegible]	5 ch	dust	450	24
114		340	6 do	bro tea	570	24
119	W, in estate mark	355	1 hf-ch	bro or pek	60	37
120		358	1 do	bro pek	53	39
125	R I T	3[illegible]	5 ch	bro pek	525	30
127		379	2 do	sou	176	21
132	Medde Uva	394	1 box	golden tips	6	R4
133		39[illegible]	3 hf-ch	flowery pek	122	48 bid
134		40[illegible]	3 ch	or pek	303	34
153	Mahaousa	475	8 hf ch	pek fans	560	27
164	P. tulpana	490	2 hf ch	bro pek	640	30
165		493	9 do	pek	450	26
166		496	7 do	pek sou	350	25
167		499	4 do	sou	189	21
168	Welimaluwa	502	2 hf ch	bro mix	100	21
173	F L D, in estate mark	517	6 ch 1 hf-ch	pek	671	20
187	Clova	559	3 hf ch	fans	135	23

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
1	R, in est. mark	755	3 hf-ch 1 qr-ch	unas	209	23
2	Bellongalla	758	10 ch	pek sou	600	25
3		761	5 hf-ch	bro pek fans	350	26
4		764	2 do	dust	180	24
5	Lunugalla	767	12 do	bro pek	600	32
7		773	5 ch	pek sou	300	26
10	Vincit	782	7 do	pek sou	630	26
11		785	6 do	bro pek fans	660	28
12		788	1 do	dust	145	24
15	Tempo	797	9 do	pek sou	657	28
16		800	9 do	sou	675	25
19	Coslande	809	4 do	pek sou	380	31
20		812	1 do	congou	95	28
21		815	1 do	fans	110	29
25	Galloola	827	2 do	dust	200	26
35	W H	857	8 hf-ch	bro pek	521	31
36		860	1 do	pekoe	55	29
37		863	4 do	dust	364	25
40	Wahagapitia	872	2 ch	dust	284	26
44	Alpitkande	884	8 do	sou	672	25
51	Koslande	905	4 do	pek sou	380	31
52		908	1 do	congou	95	28
53		911	1 do	fans	110	29
61	M G	935	8 hf-ch	fans	608	28
66	Callander	9[illegible]0	12 do	pekoe	600	24
67		953	5 do	pek sou	225	31
68		956	2 do	fans	150	28
69		959	2 do	dust	160	25
75	Whyddon	977	8 ch	pek sou	640	32
76		980	2 do	dust	280	26
81	W H R	995	5 do	dust	500	25
88	Anamallai	16	1 hf-ch	dust	85	24
95	Hiralouvah	37	2 do	fans	130	27
96		40	1 do	dust	90	24
98	Y K	46	1 box	or pek	15	42
99	Oakwell	49	5 ch	bro pek	580	35 bid
100		52	5 do	pekoe	500	32
101		55	2 do	pek sou	186	30
105	Pelpotanoya	67	2 hf-ch	sou	100	23
107	Bovey	73	11 do	bro pek	638	33 bid
111	K T	85	1 ch	sou	95	15
122	Eadella	118	4 do	pek sou	360	27
123		121	7 hf-ch	dust	560	25
124	M R	124	7 ch	bro pek fans	630	31 bid
126	Elseland	130	2 do	bro or pek	200	27
127		133	7 do	bro pek	630	31
128		136	7 do	pekoe	630	26
129		139	6 do	pek sou	480	24
131	Akkara Totum	151	6 do	fans	540	23
132		154	1 do	dust	100	23
136	Gonavy	166	4 do	pek sou	380	33
137		169	4 hf-ch	dust	320	25
138		172	2 ch	congon	150	25
141	Marakona	181	1 do	dust	160	24

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent).

MINCING LANE, Feb. 9th.

"Sanuki Maru."—Mousagalla A, 1 barrel sold at 106s; ditto B, 3 casks sold at 93s; ditto C, 1 tierce sold at 62s; ditto PB, 1 tierce sold at 101s; ditto 1 tierce sold 44; Gowrakellie 1. 1 cask sold at 107s; ditto 2, 4 casks and 1 tierce out; ditto S, 1 cask sold at 56s; ditto PB, 1 tierce sold at 117s; GKK T, in estate mark, 1 barrel sold at 16s; ditto GKE 2, 1 tierce and 1 barrel sold at 52s 6d; ditto S, 1 cask sold at 36s; ditto PB, 1 barrel sold at 56s; Wiharagalla F, 1 cask and 1 barrel sold at 106s 6d; ditto B, 3 casks and 1 barrel sold at 93s; ditto 2, 4 casks and 1 tierce sold at 88s; ditto S, 1 tierce sold at 50s; ditto PB, 1 cask sold at 117s; WHG T, in estate mark, 1 cask sold at 45s.

COFFEE should still advance. Wheat fall as supplies heavy. Cotton is doubtful. Sugar stocks big.

CEYLON COCOA SALES IN LONDON.

"Sanuki Maru."—Hylton OO, 44 bags sold at 84s 6d; 36 bags sold at 74s 6d; ditto B, 6 bags sold at 50s 6d; ditto Brown, 1 bag sold at 57s; ditto S, 3 bags sold at 61s 6d; ditto S, 2 bags sold at 55s 6d; L in estate mark, 50 bags sold at 65s; O S, in estate mark, 54 bags sold at 69s 6d.

"Omra."—Bellagolla, in estate mark, 17 bags sold at 82s 6d; Ratwatte Ceylon, in estate mark, 5 bags sold at 57s 6d; Ettapolla, Ceylon, in estate mark, 18 bags sold at 83s 6d; Arampolla, Ceylon, 7 bags sold at 81s; ditto B, 7 bags sold at 74s 6d; A Wewelmadde, Ceylon, in estate mark, 1, 30 bags sold at 83s 6d; ditto 2, 6 bags sold at 68s 6d; ditto T, 5 bags sold at 69s.

"Machaon."—Gangaroowa, A, 20 bags sold at 84s; B, 43 bags sold at 83s 6d.

"Sanuki Maru."—Elangapitiya A, 24 bags sold at 84s; T, 2 bags sold at 57s 6d; Marakona 1, 73 bags sold at 81s; II, 9 bags sold at 61s 6d; III, 4 bags sold at 49s 6d; Pansalatenne 1, 24 bags sold at 83s 6d; 8 bags sold at 69s; 2, 2 bags sold at 54s; 2, 1 bag sold at 51s; 1 bag sold at 57s; 1 bag sold at 50s; Benveula 1, 3 bags out; 2 bags sold at 60s 6d; 8 bags sold at 59s 6d.

"Glenshiel,"—56 bags out at 88s.

"Sanuki Maru.—Coodoogalla, 42 bags sold at 80s; Kepitigalla, 12 bags out at 85s; 3 bags sold at 62s; ditto 5 bags sold at 61s 6d; 8 bags sold at 51s 6d.

"Glenshiel."—D B & Co., 427, in estate mark, 26 bags out at 82s 6d; ditto B, 16 bags sold at 68s; ditto C, 13 bags out at 79s; ditto B, 23 bags sold at 70s.

OBSERVER PRINTING WORKS.

No. 9 COLOMBO, MARCH 12, 1900. PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[11,875 lb.]

Lot.		Box.	Pkgs.	Name.	lb	c.
1	Hornsey	9	15 ch	pek sou	1350	35
3	Halgolle	15	29 ch	bro pek	2900	31
4		18	27 do	or pek	2565	31
5		21	24 do	pek	2400	31
6		24	15 do	pek sou	1350	29

Messrs. Forbes & Walker.

[545,003 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Andraneniya	910	12 ch	bro pek	1200	31
7	Sirikandura	925	10 do	bro pek	1050	33
8		928	11 do	pek	1045	33
12	O B E C, in est. mark Stellenberg	940	29 ch	pek sou	2465	30
13		943	9 do	dust	1305	26
14	Nakiadeaniya	946	32 ch	bro pek	3040	35
15		949	28 do	pek	2240	32
16		952	12 do	bro pek fans	1200	30
17	Kincora	955	29 ch	bro pek	2900	34 bid
18		958	61 do	pek	5185	33
19		961	9 do	pek No. 2	855	27
24	Rockside	976	6 ch	dust	810	27
30	Galkanda	994	16 ch	bro pek	1600	30
31		997	9 do	pek	810	28
35	Summer Hill	1009	44 hf ch	bro or pek	3080	47 bid
36		1012	34 ch	pek	2958	39 bid
37		1015	32 do	pek sou	2624	38 bid
46	Naseby	1042	30 hf-ch	bro or pek	1800	48 bid
47		1045	16 do	or pek	736	53
48		1048	16 do	pekoe	752	43
49		1051	18 do	pek sou	828	39
56	Nansfield	1072	51 hf ch	bro pek	3060	37 bid
57		1075	24 ch	pek	2160	35
58		1878	9 do	pek sou	765	34
59	Agra Oya	1081	15 ch	bro pek	1500	34
60		1084	15 do	or pek	1275	32
61		1087	20 do	pek	1800	31
63	Ella Oya	1093	22 ch	bro pek	2200	34
64		1096	17 do	pek	1530	32
65		1099	12 do	pek sou	1080	30
67		1105	12 do	bro pek fans	720	28
68	Talgaswela	1108	11 ch	bro or pek	1100	35
69		1111	15 do	bro pek	1275	33
70		1114	23 do	or pek	1955	32
71		1117	25 do	pek	2000	31
72		1120	23 do	pek sou	1840	29
75	Nilloom lly O B E C, in est. mark	1129	25 ch	or pek	2250	38
76		1132	23 do	bro pek	2300	40
77		1135	10 do	bro or pek	1000	45
78		1138	10 do	pek	840	36
79		1141	10 do	pek sou	700	34
82	Deyanilla	1150	18 ch	bro pek	1300	36 bid
83		1153	13 do	pek	1170	33 bid
87	Knavesmire	1165	29 hf-ch	or pek	1450	35
88		1168	33 ch	bro pek	3435	34
89		1171	38 do	pek	3230	34
90		1174	25 do	pek	1875	32
91	El Teb	1177	19 hf-ch	dust	1520	26 bid
92	Glendon	1180	42 ch	bro pek	3990	33 bid
93		1183	33 do	pek	2805	33
94		1186	23 do	pek sou	1840	32
95		1189	15 do	sou	1350	29
99	Tambiligalla	1201	48 hf ch	bro or pek	2640	36
100		1204	20 ch	pek	1800	33
104	C Co.	1216	8 ch	bro pek	800	29
105		1219	8 do	pek	760	26
108	Devonford	1228	21 hf-ch	bro or pek	1155	80
109		1231	12 ch	pek sou	960	42 bid
110	Monkswood	1234	24 hf ch	bro pek	1700	70
111		1237	26 do	bro pek	1300	67
112		1240	36 do	or pek	1728	57 bid
113		1243	24 ch	pek	2400	45
114		1246	8 do	pek sou	720	41
115	Anningkan-de	1249	23 ch	bro pek	2300	33
119	Dunbar	1261	23 hf-ch	bro or pek	1150	63
120		1264	23 do	or pek	1104	50
121		1267	16 ch	pek	1280	42
125	Ingrogalla	1279	10 ch	bro pek	1000	34
126		1282	15 do	pek	1275	35
127	Munukattia Ceylon, in est mark	1285	9 hf-ch	dust	720	26
128	Doranakan-de	1288	9 ch	bro pek	900	33
131		1297	8 do	pek	720	28
137	O B E C, in est. mark, Forest Creek	1315	21 ch	bro or pek	2100	54 bid
138		1318	24 do	bro pek	2400	43
139		1321	22 do	or pek	2200	48
140		1324	33 do	pek No. 1	2970	40 bid
141		1327	41 do	pek No. 2	4100	39
142	Holton	1330	15 ch	bro pek	1425	34
143		1333	12 do	pek	960	33
147	Stamford Hill	1345	45 hf-ch	bro pek	2700	36 bid
148		1348	33 hf-ch	or pek	1485	46 bid
149		1351	33 do	pek	2970	37 bid
150		1354	10 ch	pek sou	850	34
152	Corfu	1360	20 hf-ch	bro pek	1100	34 bid
153		1363	52 do	pek	2600	32 bid
154		1366	20 do	pek sou	900	30
158	Digdola	1378	20 ch	pek	1500	32
159		1381	9 do	pek sou	765	28
160	K P W	1384	40 hf ch	bro pek	2100	33
161		1387	46 do	or pek	2530	33
162		1390	79 do	pek	4345	31
165	Beausejour	1399	37 do	bro pek	1691	32
166		1402	26 ch	pek	1950	29
169	Kennington	1411	6 ch	fans	720	26
174	Torwood	1426	56 ch	bro pek	5040	34 bid
175		1429	30 do	pek	2520	33
176		1432	25 do	pek sou	2000	30
177		1435	10 do	sou	800	27
178	Castlereagh	1438	26 ch	bro pek	2600	42
179		1441	27 do	or pek	2295	39
180		1444	21 do	pek	1680	38
181	St. Paul	1447	41 ch	bro pek	2624	34 bid
182		1450	52 hf ch	pek	2808	33 bid
183		1453	24 ch	pek sou	1236	31
184	L G F, in est. mark	1456	12 hf-ch	sou	1200	27
185		1459	17 do	dust	1420	20
186	Palmerston	1462	14 hf ch	bro pek	700	54
187		1465	14 do	bro or pek	700	78
188		1468	14 ch	pek	1260	47
189	Queensland	1471	14 hf-ch	bro pek	700	39
190		1474	13 do	bro or pek	715	60
191		1477	8 ch	or pek	720	41
192		1480	20 do	pek	1800	38
196	Theydon Bois	1492	12 ch	bro pek	1200	35
197		1495	19 do	pek	1520	35
198		1498	13 do	pek sou	1105	33
202	St. Heliers	1510	28 hf-ch	bro or pek	1568	36
203		1513	18 do	pek	1520	34
208	Loinorn	1528	21 ch	pek sou	1995	39 bid
209		1531	16 hf ch	dust	1200	27 bid
210	Polatagama	1534	71 ch	bro pek	6390	33
211		1537	57 do	or pek	4560	32
212		1540	74 do	pek	6290	30
213		1543	22 do	pek sou	1760	28
214		1546	37 do	fans	3515	29
216	Dammeria	1552	6 ch	bro or pek	720	35
217		1555	24 do	or pek	2400	34
218		1558	29 do	bro pek	3190	34
219		1561	23 do	pek	2300	33
220		1564	13 do	pek sou	1170	31
224	Erracht	1576	26 ch	bro or pek	2470	32
225		1579	28 do	bro pek	2100	31
226		1582	36 do	pek	2700	29 bid
227		1585	19 do	pek sou	1520	27
230	Gampaha	1594	37 ch	bro or pek	4070	38
231		1597	23 do	or pek	2185	38
232		1600	30 do	pek	2400	36
233		1603	11 do	pek sou	990	33
234	Pallagodda	1606	24 ch	bro or pek	2400	32
235		1609	33 do	bro pek	3300	39
236		1612	29 do	or pek	2610	34
237		1615	25 do	pek	2250	33
238		1618	33 do	pek sou	2970	31
239	Maha Uva	1621	27 hf ch	bro or pek	1620	35 bid
240		1624	13 do	or pek	728	41
241		1627	20 ch	pek	1800	34
242		1630	12 do	pek sou	960	31

Lot		Box.	Pkgs.	Name.	lb.	c.
249	Clunes	1651	16 ch	bro or pek	1690	32
250		1654	15 do	bro pek	1425	31
251		16 7	20 do	or pek	1600	32
252		1660	50 do	pek	4000	30
253		1663	9 do	pek sou	855	27
260	Ganapalla	1684	10 ch	or pek	900	34
261		1687	13 do	bro or pek	1170	33 bid
262		1690	40 do	pek	3200	30
263		1693	10 do	pek sou	750	28
264		1696	24 do	bro pek	2160	29
265		1699	7 do	bro pek fans	700	28
267	Carfax	1705	15 do	bro or pek	1500	47
268		1708	31 do	or pek	2790	43
269		1711	20 do	pek	1800	40
270	Dunkeld	1714	63 hf-ch	bro or pek	3780	39
271		1717	33 ch	or pek	3135	57
272		1720	25 do	pek	2250	37
277	Barrington	1735	13 do	unast	1170	23
278	Putupaula	1738	19 hf-ch	bro or pek	1140	33
279		1741	65 ch	bro pek	5850	32 bid
280		1744	34 do	pek	2550	32
281		1747	17 do	pek sou	1190	29
285	Arapolakande	1759	66 do	bro pek	5940	34 bid
286		1762	40 do	pek	3200	32 bid
294	Waratenne	1786	13 hf-ch	bro or pek	715	31
295		1789	14 ch	pek	1190	29
296	Oreen	1792	10 do	bro or pek	1050	45 bid
297		1795	16 do	bro pek	1760	36 bid
298		1798	18 do	or pek	1620	41 bid
299		1801	21 do	pek	1890	36
300	Ketadola	1804	10 do	bro pek	1000	29
301		1807	12 do	pek	1140	26 bid
302		1810	8 do	pek sou	720	24
306	Kallawatte	1822	56 hf-ch	or pek	2800	48 bid
307	Deaculla	1825	41 do	bro pek	2205	39 bid
308		1828	34 ch	pek	2380	37
309		1831	15 do	pek sou	1050	33
310		1834	12 hf-ch	dust	960	26
311	North Cove	1837	13 ch	pek sou	1300	27
314	B D W P	1846	21 hf-ch	bro pek	1680	32
322	Tymawr	1870	47 do	or pek	2350	39 bid
323		1873	21 do	bro or pek	1155	40 bid
324		1876	53 do	pek	2385	38
325		1879	35 do	pek sou	1575	35
326	Ascot	1882	74 ch	bro pek	6660	31 bid
327		1885	32 do	bro or pek	3200	33
328		1888	21 do	pek	1890	30 bid
329		1891	16 do	pek sou	1440	28
333	Gallawatte	1903	13 do	bro pek	1235	33
334		1906	19 do	pek	1615	32
337	Harrow	1915	40 do	bro or pek	2400	41
338		1918	38 ch	pek	3800	37
339		1921	12 do	pek sou	1080	34
341	Dunkeld	1927	21 hf-ch	pek fans	1470	28
342		1930	13 do	dust	1170	26
343	Clyde	1933	36 ch	bro pek	3420	35
344		19 6	25 do	pek	2250	32
345		1939	9 do	bro or pek	945	31
351	Pine Hill	1957	19 hf-ch	bro or pek	1235	40
352		1960	36 do	or pek	2160	37 bid
353		1963	40 ch	pek	3000	35
371	Robgill	2017	17 do	pek sou	1445	36
372	Telbedde	2020	7 do	bro or pek	770	33
374		2026	8 do	pek	720	32
375	Ardlaw and Wishford	2029	16 do	bro or pek	1728	36
376		2032	45 hf-ch	or pek No.1	2250	41
377		2035	24 ch	or pek	1992	36
378		2038	27 do	pek	2349	36
386	Morankande	2062	20 hf-ch	bro or pek	1120	34
387		2065	15 ch	or pek	1275	35
388		2068	22 do	pek	1980	32
389		2071	13 do	pek sou	1170	30
390	High Forest	2074	52 hf-ch	or pek No.1	2860	66
391		2077	41 do	or pek	2050	46
392		2080	40 do	pek	1840	42
393	Seenagolla	2083	12 do	bro or pek	720	38
394		2086	14 do	or pek No.1	770	40
395		2089	14 do	pek	770	37
397	S P	2095	27 do	or pek	1350	34
398		2098	117 ch	bro pek	5850	32
399		2101	83 do	pek	6225	29 bid
400		2104	22 do	pek sou	1584	27 bid
401		2107	7 do	fans	840	27
402		2110	5 do	fans	750	25
403	Old Maddegama	2113	24 hf-ch	or pek	1560	34 bid
404		2116	26 ch	pek	1950	31 bid
405		2119	10 do	pek sou	700	29 bid

[Messrs. Somerville & Co.—209,136 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Wilpita	562	12 ch	bro pek	1200	30
2		565	11 ch	pek	1000	28
6	Dikmukalana	577	35 hf-ch	bro pek	1925	34 bid
7		580	30 do	or pek	1500	32 bid
8		583	29 do	pek	1460	31
9		586	22 do	pek sou	1056	29
10	Harangalla	589	33 ch	bro pek	3135	35
11		592	33 do	pek	2640	34
12	Kelani	595	35 do	bro pek	2800	34 bid
13		598	16 do	bro or pek	1600	35
14		601	31 do	pek	2635	31
15		604	24 do	pek sou	1800	29
16	Ravana	607	42 hf-ch	bro pek	2310	34
17		610	42 do	pek	1890	32
18		613	24 do	pek sou	1080	30
19	Yahalatenne	616	22 ch	bro pek	2200	34
20		619	26 do	pek	2600	33
21		622	10 do	pek sou	800	30
28	Nyanza	628	10 ch	bro pek	1000	34 bid
24		631	12 do	or pek	1080	38 bid
25		634	17 do	pek	1700	3[illegible] bid
26		637	8 do	pek sou	760	32
30	T H A de S	649	22 ch	bro pek	2200	23 bid
31		652	21 do	pek	2945	26
32		655	8 do	pek sou	800	24
37	Kosghahena	670	10 ch	bro pek	10 0	28 bid
38		673	16 do	pek	1600	27
44	Kirrikelle	691	52 ch	bro or pek	3276	37 bid
45		694	37 do	or pek	3700	37 bid
46		697	48 do	pek	4464	36 bid
47	Polgahakande	700	23 ch	bro pek	1955	33 bid
48		703	44 do	pek	3520	29 bid
54	Rahatungoda	721	21 hf ch	bro pek	1050	45 bid
55		724	20 do	or pek	1000	39 bid
56		727	28 do	pek	1400	36 bid
58	Colombia	733	23 hf-ch	bro or pek	1150	46
59		736	50 do	or pek	2250	39 bid
60		739	39 do	pek	1755	38 bid
63	Welgampola	748	13 hf-ch	pek	728	28
64		751	14 do	pek sou	784	27
71	Yarrow	772	71 hf-ch	bro pek	3976	34
72		775	72 do	pek	3600	33
75	H J S	784	22 hf-ch	pek	1320	29
77	Hapugasmulle	790	15 ch	bro pek	1650	29 bid
78		793	18 do	pek	1710	28
81	Marigold	802	49 hf ch	bro pek	2695	42
83		808	17 do	pek sou	850	37
85	Nuawella	814	51 hf-ch	bro pek	2805	31 bid
86		817	60 do	pek	2640	31
87		820	10 ch	pek sou	850	28
88	Tientsin	823	16 ch	pek sou	1280	36
89		826	7 do	dust	910	26
91	Bollagalla	832	23 ch	bro pek	2300	33 bid
92		835	19 do	pek	1520	32
93		838	14 do	pek sou	1120	29
101	Mora Ella	862	14 hf ch	or pek	700	37
102		865	29 do	bro or pek	1682	34
103		868	29 ½ ch	pek	1885	33
104		871	19 ch	pek sou	1425	31
105	New Valley	874	25 ch	bro or pek	2500	42
106		877	25 do	or pek	2250	39 bid
107		880	25 do	pek	2500	36
108		883	20 do	pek sou	1800	34
110	N I T	889	16 ch	unas No. 2	1440	24
111	Siriniwasa	892	23 ch	bro pek	2415	38
112		895	28 do	pek	2800	34
113		898	20 do	pek sou	1800	31
117	Hanagama	910	14 ch	bro pek	1400	31 bid
118		913	36 do	pek	3420	29
121	Hopewell	922	15 hf-ch	bro or pek	795	37
122		925	15 do	bro pek	750	35
123		928	75 do	pek	3450	33
124		931	46 do	pek sou	2070	31
127	Avisawella	940	36 ch	bro pek	3600	29 bid
128		943	41 do	pek	3485	30 bid
129		946	43 do	pek sou	3440	28
130		949	6 do	dust	840	25
131	Rayigam	952	27 ch	bro pek	2700	33
132		955	19 ch	or pek	1615	33
133		958	12 do	pek	996	31
134		961	8 do	pek sou	720	29
135		964	13 hf-ch	dust	1040	26
136	Selvawatte	767	15 ch	bro pek	1500	26 bid
137		970	9 do	pek	900	26
140	Blinkbonnie	979	28 hf ch	bro pek	1680	47
141		982	41 ch	pek	3608	38 bid
143	Raveuscraig	988	27 ch	or pek	2295	33 bid
144		991	11 do	bro pek	990	34
145		994	23 do	pek	2070	32
147		1	9 hf ch	fans	720	26
152	Silverton	16	75 hf-ch	bro pek	3750	31 bid
153		19	33 ch	pek	2475	31
154	Deniyaya	22	32 ch	pek pek	3200	33 bid
155		25	25 do	pek	2500	33 bid
156	G, in estate mark	28	13 ch	dust	1277	21 bid
162	Rookwela	46	12 ch, 1 hf-ch	bro or pekfans	1566	26

Lot.		Box.	Pkgs.	Name.	lb.	c.
164	A D R	52	7 ch	or pek fans	700	25 hid
165	Elchico	55	56 hf ch	bro pek	3080	31 bid
166		58	25 do	pek	1250	29 bid

[Mr. E. John.—214,262 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	D N D, in estate mark	184	11 hf-ch	fans	825	28
4	Bellongalla	193	13 ch	pekoe	1040	30
7	Coslande	202	19 hf-ch	bro pek	1045	37
8		205	15 ch	pekoe	1530	33 hid
12	Glentilt	217	29 do	bro pek	2900	42
13		220	13 do	pekoe	1300	39
14	Koslande	223	19 hf-ch	bro pek	1045	36
15		226	17 ch	pekoe	1530	33 bid
19	S J	238	12 do	bro pek	1200	33 bid
20		241	8 do	pekoe	800	30
24	Mocha	253	24 do	bro or pek	2400	52 hid
25		256	11 do	or pek	990	50
26		259	20 do	pekoe	1900	43
27		262	10 do	fans	750	31
28	Ohiya	265	12 do	pek sou	1080	31
31	Gangawatte	274	16 do	or pek	1600	39
32		277	27 hf-ch	bro or pek	1755	40
33		280	26 ch	pekoe	2210	37
34		283	8 do	pek sou	720	34
36	Dickapittia	289	28 do	bro pek	2800	34 hid
37		292	40 do	pekoe	4000	31 hid
39	Brownlow	298	30 hf-ch	bro or pek	1710	45
40		301	31 ch	or pek	3100	40
41		304	43 do	pekoe	3870	38
42		307	11 do	pek s u	935	33
43	Nahavilla	310	46 do	bro pek	4600	39 bid
44		313	21 do	pekoe	2100	35
45		316	21 do	pek sou	2100	32
46	Glasgow	319	45 do	bro or pek	3825	45
47		322	26 do	or pek	1872	49
48		325	15 do	pekoe	1305	41
49		328	11 do	pek sou	1100	39
50	Agra Ouvah	331	79 hf-ch	bro or pek	4977	43
51		334	22 ch	or pek	2090	42
52		337	12 do	pekoe	1080	38
54	Rondura	343	31 do	bro pek	3100	33
55		346	25 do	or pek	2250	34 bid
56		349	55 do	pekoe	4400	29 bid
57		352	44 do	pek sou	3520	28
58		355	7 do	dust	840	26
59	Agra Ouvah	358	69 hf-ch	bro or pek	4416	46
60		361	34 do	or pek	1870	46
61		364	20 do	pekoe	1040	39
62	S G	367	10 ch	dust	1700	24 bid
63	Bellongalla	370	10 do	pekoe	800	29
69	Yakka	388	13 do	bro or pek	1404	34
70		391	8 do	or pek	768	35
71		394	18 do	pekoe	1620	32
73	B D	400	22 do	pek fans	3080	27 bid
74		403	8 do	dust	1360	24 bid
76	Claremont	409	19 do	bro or pek	1805	34
77		412	10 do	pekoe	900	31
78		415	9 do	sou	855	24
80	Keenagaha Ella	421	13 hf-ch	bro pek fans	910	29
81	Maskeliya	424	20 ch	or pek	1800	37 bid
82		427	15 do	pekoe	1350	36
87	W H	442	60 hf-ch	pek fans	4500	28 bid
92	Morahela	457	17 ch	bro pek	1564	36
93		460	17 do	or pek	1564	34
94		463	19 do	pekoe	1596	32
95		466	23 do	pekoe	1932	31
98		475	22 do	pek fans	2288	32
99		478	22 do	pek fans	2200	32
102	D	487	10 do	pek fans	1400	27 bid
103	Mahanilu	490	37 hf-ch	or pek	2035	39
104		493	12 do	fans	864	30
105	Sudugonga	496	15 ch	or pek	1350	36 bid
106		499	12 hf-ch	bro or pek	720	46 bid
107		502	16 ch	pek sou	1360	31 bid
110	Glassaugh	511	21 hf-ch	or pek	1113	69
111		514	23 do	bro or pek	1495	47
112		517	20 ch	pekoe	1900	46
113		520	9 do	pek sou	936	42
114	Galella	523	23 do	bro pek	2300	38
115		526	19 do	pekoe	1900	34
117		532	9 hf-ch	dust	810	27
122	Ferndale	547	23 ch	bro or pek	2300	37 hid
123		550	12 do	pek sou	1080	30 bid
124	Mount Temple	553	136 hf-ch	bro pek	6800	31
125		556	56 ch	pekoe	4200	30
126		559	32 do	pek sou	2304	29
127	Fernlands	562	9 do	sou	900	34
128	Glentilt	565	23 do	bro pek	2300	39 hid
129		568	12 do	pekoe	1200	38 hid
131		574	17 hf-ch	fans	1360	27
132	G T B	577	31 ch	bro pek fans	2015	} 30 hid
			30 hf-ch	bro pek fans	1950	

Lot.		Box.	Pkgs.	Name.	lb.	c.
133	Ottery	580	21 ch	bro or pek	2310	36
134		583	22 do	or pek	1870	38 bid
135		586	39 do	pekoe	3900	34 hid

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
2	Hornsey	12	8 ch	fans	680	28
7	Halgolle	27	3 ch	fans	330	27
8		30	2 do	dust	300	25

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	G O, in estate mark	907	12 hf-ch	unassorted	540	24
3	Andradeniya	913	6 ch	pek	600	31
4		916	2 do	pek sou	180	28
5		919	1 hf ch	sou	50	25
6		922	1 do	pek dust	80	25
9	Sirikandura	931	6 ch	pek sou	540	28
10		934	3 do	bro pek fans	292	28
11		937	1 do	dust	125	24
20	Kincora	964	9 do	fans	630	30
21		967	3 do	dust	270	24
22	Rockside	970	7 ch	sou	560	26 hid
23		973	3 do	bro mix	270	23
25		979	5 do	bro pek fans	600	29
32	Galkanda	1000	5 ch	pek sou	450	26
33		1003	1 do	bro pek fans	100	25
34		1006	2 do	dust	240	24
50	St. Edwards	1054	10 ch	bro or pek	610	33
51		1057	11 do	bro pek	616	32
52		1060	10 do	pek	560	29
53		1063	5 do	pek sou	265	28
54		1066	1 hf-ch	bro pek fans	50	29
55		1069	2 do	dust	100	25
62	Agra Oya	1090	7 ch	pek sou	630	28
66	Ella Oya	1102	1 ch	dust	75	26
73	Springwood	1123	7 ch	congou	595	25
74	S W	1126	1 do	red leaf	95	21
80	Nilloomally, O B C, in est. mark	1144	2 hf ch	dust	190	25
81	Shruhs Hill	1147	1 ch	pek	85	30
84	Deyanilla	1156	4 ch	fans	360	28
85		1159	2 hf-ch	dust	160	24
86		1162	1 ch	sou	90	27
96	G	1192	3 do	dust	405	25
97		1195	1 do	bro pek fans	120	28
98	P P	1198	2 ch	bro tea	192	19
101	Temhiligalla	1207	4 ch	pek sou	360	28
102		1210	3 hf ch	fans	180	26
103		1213	1 ch	dust	90	27
106	C Co.	1222	4 ch	pek sou	380	24
107		1225	1 do	dust	138	24
116	D, in estate mark	1252	8 hf-ch	sou	360	24
117		1255	13 do	fans	650	27
118		1258	6 do	dust	600	24
122	D B R	1270	5 hf ch	bro pek fans	300	32
123		1273	2 ch	pek sou	160	35
124		1276	1 hf ch	dust	76	26
129	Doranakande	1291	4 ch	pek	380	32
130		1294	4 do	pek No. 2	360	29
144	Holton	1336	8 ch	pek sou	640	30
145	B A	1339	3 ch	dust	240	25
146		1342	2 do	red leaf	200	22
151	Stamford Hill	1357	4 hf-ch	dust	340	27
155	Corfu	1369	6 do	bro pek fans	450	27
156	Digdola	1372	4 ch	bro pek	400	34
157		1375	4 do	bro or pek	340	36
163	K P W	1393	13 hf ch	pek sou	585	28
164		1396	2 do	dust	189	25
167	Beausejour	1405	5 ch	pek sou	400	27
168		1408	4 hf-ch	bro pek fans	240	28
170	Kennington	1414	5 ch	unas	450	24
171		1417	4 do	dust	436	26
172	Kabragalla	1420	3 hf ch	dust	255	25
173		1423	7 do	bro tea	385	20
193	Queensland	1483	3 hf-ch	bro pek dust	240	27
194	N B D	1486	7 ch	bro mix	630	24
195		1489	6 do	unas	570	24
199	T B, estate mark	1501	5 ch	dust	500	24
200		1504	3 do	fans	300	27
201		1507	3 do	congou	240	25
204	O F, in estate					

Lot.		Box.	Pkgs.	Name.	lb.	c.
	mark	1516	4 ch	bro pek	370	29
205		1519	5 do	pekoe	425	28
206		1522	2 hf-ch	pek sou	131	26
207		1525	3 ch	pek dust	290	23
215	Polatagama	1549	3 hf-ch	dust	450	24
221	Dammeria	1567	2 ch	dust	180	27
222	D M	1570	2 ch	bro pek	220	31
223		1573	2 do	pek	200	29
228	Erracht	1588	2 ch	bro pek fans	208	26
229		1591	2 do	dust	330	24
243	Maha Uva	1633	1 hf-ch	pek fans	75	27
244		1636	3 do	dust	255	27
254	Clunes	1666	4 ch	dust	340	25
266	B W D	1702	9 hf-ch	dust	675	28
273	Bodawa	1723	4 do	bro pek	216	32
274		1726	3 do	pek	141	31
275		1729	4 do	pek sou	188	29
276	B P C	1732	6 ch	red leaf	480	20
282	Putupaula	1750	2 do	sou	170	24
283		1753	8 hf-ch	dust	640	25
284	Arapolakande	1756	5 ch	bro or pek	550	32 bid
287		1765	5 do	pek sou	450	28
288		1768	2 do	dust	220	25
302	Ketadola	1813	1 ch	fans	125	25
304		1816	1 do	bro mix	92	21
312	B D W G	1840	4 hf-ch	dust	360	27
313		1843	3 do	red leaf	135	20
315	B D W P	1849	4 do	bro pek	340	32
316		1852	1 ch	bro pek No. 2	80	24
317		1855	1 do	pek No. 2	80	19
318		1858	2 hf-ch	dust	170	25
319		1861	2 do	dust	170	25
320		1864	1 do	dust No. 2	75	21
330	Ascot	1894	8 ch	dust	640	25
331	Ookoowatte	1897	1 do	sou	90	24
332		1900	3 hf-ch	pek fans	325	26
340	Harrow	1924	3 do	dust	270	25
346	Clyde	1942	3 do	pek sou	285	28
347		1945	1 do	dust	150	24
348	P Matale	1948	5 do			
			1 hf-ch	bro pek	532	31
349		1951	1 ch	pek	90	27
350		1954	2 do			
			1 hf-ch	nnast	255	26
354	Pine Hill	1966	9 ch	pek sou	630	33
355	Kotua	1969	3 do	bro pek	300	31
356		1972	3 do	pek	300	28
357		1975	3 do	pek sou	300	27
358		1978	1 do	sou	100	25
373	Telbedde	2023	6 do	or pek	630	33
396	Seenagolla	2092	3 hf-ch	dust	240	26

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
3	Wilpita	568	5 ch	pek sou	465	23
4		571	2 do	fans	200	24
5		574	1 do	dust	150	22
22	Wattegedelly	625	4 hf-ch	dust	340	26
27	Nyanza	640	4 ch	dust	400	26
28	A D L, in estate mark	643	3 ch	pek	285	27
29		646	2 do	pek sou	190	24
33	T H A de S	658	4 ch	fans	455	23
34		661	4 do	bro mix	390	18
35		664	1 do	dust	145	21
36	Jak Tree Hill	667	2 hf-ch	dust	160	25
39	Kosgahahena	676	5 ch	pek sou	500	24
40		679	4 do	sou	360	19
41		682	2 hf-ch	fans	150	22
42		685	4 do	pek dust	340	20
43	Attiville	688	3 ch	fans	300	24
49	Polgahakande	706	5 ch	bro or pek	550	30
50		709	7 do	pek sou	560	26
51		712	2 do	sou	160	24
52		715	3 do	dust	420	23
53	S L G	718	5 hf-ch	red leaf	225	17
57	Rahatungoda	730	5 hf ch	pek dust	400	27
61	Welgampola	742	6 hf ch	or pek	336	32
62		745	10 do	bro pek	560	34
65		754	3 do	sou	150	22
66		757	6 do	dust	360	25
67		760	2 do	fans	100	25
68	Wevatenne	763	8 hf ch	bro pek	432	33
69		766	7 do	pek	350	29
70		769	7 do	pek sou	364	27
73	Yarrow	778	2 hf-ch	bro mix	140	20
74	Y, in estate mark	781	4 hf-ch	dust	360	25
76	H J S	787	5 hf ch	dust	375	25
79	Hapugasmulle	796	4 ch	sou	360	27
80		799	3 do	mix	285	21
82	Marigold	805	12 hf-ch	pek	600	41
84		811	3 do	pek fans	225	29
90	G A Ceylon	829	7 ch	bro mix	490	21
94	Bollagalla	841	2 ch	bro tea	220	21
95		844	1 hf ch	dust	90	23
96		847	1 ch	red leaf	100	18
97	Batgodde B	850	2 ch	bro pek	222	45
98		853	2 ch	pek	146	37
99		856	2 do	pek No. 2	124	34
100		859	1 do	pek dust	92	25
109	N I T	886	2 ch	unas No. 1	220	24
114	Siriniwasa	901	2 ch	bro pek fans	200	27
115		904	2 do	dust	310	24
116		907	1 do	sou	90	20
119	Hanagama	916	3 ch	pek sou	270	24
120	M G	919	3 ch	pek sou	300	25
125	Hopewell	934	7 hf-ch	fans	420	28
126		937	7 do	dust	560	25
138	Selvawatte	973	1 hf ch	fans	85	25
139		976	1 ch	dust	105	22
142	Blinkbonnie	985	8 ch	pek sou	656	34
146	Ravenscraig	997	4 ch	pek sou	360	29
148	W, in estate mark	4	2 hf ch	bro pek	120	31
149		7	2 do	pek	110	27
150		10	5 do	pek sou	250	23
151		13	1 ch	dust	120	22
157	L F	31	7 hf ch	bro pek	365	27
158		34	6 do	pek	308	24
159		37	3 do	pek sou	147	20
160		40	2 do	red leaf	97	16
161		43	1 do	dust	74	22
163	Rookwela	49	9 hf ch	or pek fans	630	25 bid
167	Elchico	61	9 hf ch	con	450	23

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
2	D N D, in estate mark	187	4 hf ch	dust	360	25
3	Bellongalla	190	12 do	bro pek	600	31
5		196	4 do	bro pek fans	280	26
6		199	2 do	dust	140	24
9	Coslande	208	2 ch	pek sou	190	31
10		211	1 do	congon	95	26
11		214	1 do	fans	110	27
16	Koslande	229	2 do	pek sou	190	31
17		232	1 do	congou	95	26
18		235	1 do	fans	110	27
29	Ohiya	265	3 hf-ch	fans	270	27
30		271	4 ch	sou	360	25
35	Gangawatte	286	2 hf-ch	bro flow pek	150	32
38	Dickapittia	295	2 ch	sou	200	22
64	Bellongalla	373	8 do	pek sou	560	27
65	Lunugalla	376	12 hf-ch	bro pek	600	31
66		379	7 ch	pekoe	560	30
67		382	2 hf-ch	fans	140	28
68		385	1 do	dust	90	23
72	Yakka	397	8 ch	pek sou	640	28
75	Myra	406	1 do	pek sou	80	24
79	Claremont	418	2 do	fans	200	27
83	Maskeliya	430	6 do	pek sou	600	32
84		433	9 hf-ch	fans	540	31
85		436	2 ch	dust	180	27
96	Morahela	469	7 do	sou	560	29
97		472	6 do	sou	480	28
100		481	2 do	unas	184	25
101		484	3 hf-ch	dust	222	25
108	Suduganga	505	1 ch	pek fans	100	30
109		508	7 do	sou	560	27
116	Galella	529	6 do	pek sou	540	31
119	H B P	538	4 do	bro pek	200	29
120		541	4 do	pekoe	200	25
121		544	5 do	pek sou	250	23
130	Glentilt	571	5 do	pek sou	475	32
136	Ottery	589	2 do	dust	340	26

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent*).

MINCING LANE, Feb. 16th.

"Clan Chisholm."—Meegama A, 37 bags sold at 83s 6d; 1, ditto 19 bags out at 75s; B 1, 4 bags sold at 71s 6d; B, 3 bags sold at 57s 6d; Yattawatte 1, 80 bags sold at 85s 6d; 60 bags sold at 66s 6d; 15 bags sold at 87s; 2, 21 bags sold at 65s; Broken, 3 bags sold at 60s; 1, 3 bags sold at 64 6d.

"Hakata Maru."—Ross, 1, 40 bags sold at 83s; 14 bags sold at 82s 6d; 2, 9 bags sold at 60s; Brown 2 bags sold at 57 6d; Black 2 bags sold at 42s.

"Clan McLeod." FM Katugastota, in estate

mark, 29 bags 82s 6d; 83 bags sold at 81s 6d; 15 bags sold at 61s.

"Chisholm."—FM Katugastota, in estate mark, 32 bags sold at 81s, 5s bags sold at 61s 6d; 2 bags sold at 62s 6d.

"Omrah."—Bandarapola 1, 15 bags sold at 78s; 2, 1 bag sold at 65s; T, 1 bag sold at 51s.

"Clan McLeod."—Bandarapola 1, 6 bags out at 78s; 70 refused, 1 bag sold at 62s 6d; 2, 2 bags sold at 65s; T, 1 bag sold at 40s.

"Hakata Maru"—CDG, 10 bags sold at 73s 6d; Old Haloya No. 1, 20 bags sold at 80s 6d; 20 bags sold at 82s 6d; 21 bags sold at 82s 6d; 5 bags sold at 74s; 10 bags out at 71s; 4 bags out.

"Japan."—1 MM, in estate mark, Estate Cocoa, 163 bags sold at 63s; S, in estate mark, 100 bags sold at 65s; S, in estate mark, 30 bags sold at 65s; S, in estate mark, 14 bags sold at 60s 6d; OO SS, in estate mark, Estate Cocoa, 3 bags sold at 66s.

"Malta."—O J, in estate mark, 10 bags sold at 67.

"Clan McLeod."—D M A & Co., in estate mark, 15 bags sold at 73s.

"Clan Chisholm."—O PBM 9 bags sold at 70s 6d; ditto 1, 23 bags sold at 68s; 1 bag sold at 50s.

"Omrah."—Goodwood Estate Ceylon, in estate mark, 14 bags out at 72s refused; ditto B, 11 bags sold at 65s; ditto C, 5 bags sold at 46s 6d.

"Hakata Maru."—A PBM 1, 34 bags sold at 68s.

"Kawachi Maru."—FM & Co., Port Station Kola Estate, 1 bag sold at 70s.

"Shropshire."—HK 1, 12 bags sold at 80s 6d; ditto 2, 3 bags sold at 66s; ditto 1 bags sold at 55s.

"Clan McLeod."—Palli London 1, 70 bags out at 85s; ditto 1, 23 out at 83s; ditto 2, 21 bags sold at 66s; ditto 1, 5 bags sold at 61s.

"Clan Chisholm.—Palli London 1, 64 bags out; ditto 1, 27 bags out at 85s; ditto 2, 13 bags sold at 66s; T, 3 bags sold at 61s.

"Malta."—1 A K M K, in estate mark, Estate Cocoa. 60 bags sold 70s.

CEYLON CARDAMOMS SALES IN LONDON.

"Omrah.—Nellaoola" O, 2 cases sold at 2s 10d; ditto 1, 3 cases sold at 2s 3d; ditto 2, 1 case sold at 1s 5d: ditto seed, 1 case sold at 2s 2d; ditto, 1 case sold at 2s 2d; ditto B&S 1 case sold at 1s 5d; Nagalla O, 2 cases sold at 2s 10d; ditto 1 3 cases sold at 2s 1d; ditto 2, 1 case sold at 1s 5d; ditto B&S, 1 case sold at 1s 5d; ditto seed, 1 case sold at 2s 3d.

"Hakata Maru."—Wattakelly No. 1, 4 cases sold at 2s 5d; ditto No. 2, 2 cases sold at 1s 9d; ditto No. 3, 1 case sold at 1s 9d; ditto No. 4, 1 case sold at 1s 8d; ditto seed, 1 case sold at 1s 2d.

Dellugolla Estate, Ceylon, in estate mark, 9 cases sold at 3s; ditto 1, 17 cases out at 25s; ditto 2, 11 cases sold at 1s 9d; ditto B, 2 cases sold at 1s 7d; ditto 9 cases sold at 1s 6d; ditto S, 12 cases sold at 1s 5d; ditto seed, 1 case sold at 2s 2d; PBM 2, 1 case sold at 2s 2d; ditto 1, 1 case sold at 2s 3d.

"Glenshiel."—1 PBM, 2 cases sold at 1s 7d, 7 cases sold at 1s 6d.

"Bingo Maru."— VHD Malabar, 33 cases out at 1s 10d; 1 Nawanagalla No. 1, 2 cases sold at 4s 2d; ditto No. 2, 3 cases sold at 3s; ditto No. 3, 3 cases sold at 1s 6d; ditto No. 4, 1 case sold at 1s 10d ditto seeds, 2 cases sold at 2s 3d.

"Clan Stuart."—HGA, in estate mark, 6 cases sold at 1s 5d, 1 case sold at 1s 6d.

"Clan Menzies."—HGA, in estate mark, Malabar, 9 cases sold at 1s 6d.

"Nestor."—HGA, in estate mark, Malabar, 4 cases sold at 1s 7d; 2 cases sold at 1s 8d; 2 cases sold at 1s 7d

"Clan McIntyre."—DSS, in estate mark, Malabar, 2 cases sold at 1s 7d.

"Shropshire."—HGA in estate mark, Malabar, 2 cases sold at 1s 7d.

"Bingo Maru."—HGA, in estate mark, Malabar, 2 cases sold at 1s 8d.

"Kanagawa Maru."—HGA, in estate mark, Malabar. 15 cases sold at 1s 8d.

"Orestes."—L, in estate mark, Mysore 1, 2 cases and 1 bag out.

No. 10 COLOMBO, MARCH 19, 1900. { PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[15,518 lb.]

Lot.		Box.	Pkgs.		Name.	lb	c.
1	Hornsey	10	30	ch	or pek	2700	37
2		13	17	do	pek	1360	34
3	Hapugastenne	16	16	ch	bro pek	1600	34
4		19	16	do	or pek	14·8	35
5		22	34	do	pek	2890	30 bid
6		25	16	do	pek sou	1600	30
10	Mandara Newera	37	36	hf-ch	bro pek	1980	40 bid
11		40	20	do	pek	1000	37 bid

Messrs. Forbes & Walker.

[441,299 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
11	Dambagastalawa	2152	12	ch	pek sou	1200	34
13	Attampettia	2158	9	ch	bro pek	963	33 bid
14		2161	8	do	pek	720	32
17	Avoca	2170	18	ch	bro or pek	1980	61
18		2173	32	do	bro pek	3520	44
19		2176	24	do	pek	2280	37 bid
20		2179	7	do	pek sou	700	35
27	Glen Esk	2200	11	ch	bro pek	990	30
29		2206	3	do	pek	720	28
32	Glencorse	2215	10	ch	bro or pek	1000	35
33		2218	17	do	bro pek	1530	32
34		2221	14	do	pek	1260	30
35		2224	13	do	pek sou	1010	27
39	Glengariffe	2236	46	hf-ch	bro pek	2530	40
40		2239	23	ch	pek	2139	35
41		2240	25	hf-ch	or pek	1125	37
42		2245	17	ch	pek sou	1360	33
43		2248	13	hf-ch	fans	832	30
45	E D P	4	20	hf ch	dust	1500	26
46	Abbotsleigh	7	20	ch	pekoe	1760	45
47		10	35	do	pek sou	2975	39
48	Stisted	13	42	hf-ch	bro or pek	2730	36
50		19	17	do	pek	1020	31
51		22	29	do	pek sou	1653	29
53	Loinorn	28	49	ch	pek	4410	47 bid
54	L	31	23	ch	or pek	2070	59
59	Middleton	46	15	hf ch	bro or pek	855	67
60		49	25	ch	bro pek	2500	54
61		52	20	do	pek	1800	47
62		55	22	do	pek sou	1980	40
63	H G M	58	25	hf-ch	bro or pek	1625	46
64		61	10	ch	or pek	780	40
65		64	32	do	bro pek	2656	35
66		67	42	do	pek	3150	33
67		70	24	do	pek sou	1680	31
68		73	12	do	bro pek fans	1080	23
70	St. H	73	14	ch	pek	1540	26
72	Vogan	85	51	ch	bro pek	5100	40
73		88	53	do	pek	4505	33
74		91	11	do	pek sou	880	28
75	Tambiligalla	94	20	hf ch	bro or pek	1100	37
76		97	10	ch	pek	900	33
79	Hentleys	106	18	hf-ch	bro pek	954	33
81		112	20	ch	pek	1700	29
88	Woodend	133	13	ch	bro or pek	1300	33
89		136	16	do	or pek	1440	35
90		139	47	do	pek	4230	32
91		142	12	do	pek sou	960	28
93	Rowley	148	24	hf ch	bro pek	1200	37
94		151	21	do	pek	1050	33
95	Dyakulla No. 2	154	30	hf-ch	bro pek	1650	41
96		157	28	do	pek	1960	35
97		160	14	ch	pek sou	840	32
98	Tonacombe	163	32	do	or pek	2880	37
99		166	9	do	bro or pek	900	49
100		169	21	do	bro pek	2100	43
101		172	52	do	pek	4680	37
102		175	12	do	pek sou	1080	31
103	Farnham	178	22	ch	bro pek	2090	36
104		181	16	do	or pek	1360	35
105		184	21	do	pek	1890	32
106		137	20	do	pek sou	1500	31
108	Erlsmere	193	24	ch	bro pek	2520	43
109		196	23	do	pek	1840	40
110		199	9	do	pek sou	855	38
112	Strathspey	205	9	ch	bro or pek	945	49 bid
113		208	14	do	or pek	1400	47
114		211	23	do	pek	2300	41
115		214	11	do	pek sou	1100	39
119	Walpita	226	32	ch	bro pek	3200	35
120		229	22	do	pek	2200	33
121		232	11	do	pek sou	880	30
123	Penrhos	238	21	hf-ch	bro or pek	1113	40 bid
124	Hayes	241	7	ch	bro or pek	700	45
125		244	7	do	bro pek	700	35
127		250	9	do	pek	765	32
128	Hayes	253	11	ch	bro or pek	1100	48
129		256	30	ch	bro pek	3000	35
130		259	22	do	or pek	1870	35
131		262	65	do	pek	5525	31
132		265	11	do	pek sou	935	29
133	Halwatura	268	38	ch	or pek	3420	32
134	Macaldeniya	271	17	hf-ch	bro pek	1010	39
135		274	16	do	pek	865	34
136		277	16	do	pek sou	800	30
139	Palmerston	286	17	hf ch	bro or pek	867	67
140	C B	289	26	ch	pek sou	2340	35
145	P A N	304	36	hf ch	bro pek	2160	30 bid
146		307	20	do	pekoe	1100	29
149	Erracht	316	15	ch	bro or pek	1350	33
150		319	14	do	bro pek	1050	32
151		322	18	do	pek	1350	30
152		325	10	do	pek sou	800	26
155	Bloomfield	335	13	ch	pek sou	1235	38
157	B, in estate mark	340	19	ch	unas	1995	27
158	Kirklees	343	31	ch	bro or pek	1860	38
159		346	21	do	or pek	2100	38
160		349	43	do	pek	4085	33
161		352	32	do	pek sou	2560	30
162	W N P	355	25	hf ch	bro or pek	1400	35
163		358	12	do	bro pek fans	900	28
164		361	27	ch	pek	2430	31 bid
166	Parsloes	367	35	ch	bro pek	3500	32
167		370	23	do	pek	2070	30
174	Pussella	391	7	ch	bro pek	721	34
175		394	11	do	or pek	957	33
176		397	14	do	pek	1120	30
177	Weyungawatte	400	30	hf-ch	bro or pek	1800	32
178		403	34	ch	bro pek	3060	31
179		406	36	do	pek	2880	30 bid
184	Beaumont	421	20	ch	bro pek	2100	33
185		424	39	do	or pek	3627	31
187	Shrubs Hill	430	46	ch	bro pek	4600	33
188		433	65	do	pek	5525	32
189		436	10	do	bro pek	1000	32 bid
190		439	28	do	pek	2324	32
192		445	16	do	bro pek fans	1200	27
194	Ganapalla	451	11	ch	or pek	990	35
195		454	12	do	bro or pek	1080	32
196		457	40	do	pek	3200	29
197		460	15	do	pek sou	1125	27
198		463	23	do	bro pek	2070	30
200		469	10	hf-ch	dust	800	25
206	Yaha Ella	487	7	ch	bro pek	700	35
207		490	17	do	pek	1530	31
215	Holton	514	17	ch	bro pek	1615	33
216		517	13	do	pek	1010	34
217		520	11	do	pek sou	850	31
219	Queensland	526	13	hf ch	bro or pek	715	61
220		529	18	ch	pek	1530	38
221		532	8	do	pek sou	720	34
225	Palmerston	544	15	hf ch	bro or pek	750	92
227		550	16	ch	pek	1360	50
228	Theydon Bois	553	13	do	bro pek	1300	36
229		556	25	do	pek	2000	32
230		559	11	do	pek sou	935	30
231	Tsevaloya	562	5	ch	dust	890	20 bid
232	Nilloom Ily O B E C, in est mark	565	13	ch	bro or pek	1300	55
233		568	32	do	bro pek	3200	41
234		571	24	do	or pek	2160	40
235		574	20	do	pek	1680	38
239	Tymawr	586	21	hf-ch	bro or pek	1155	41
240		589	47	do	or pek	2350	40
241	A M B	592	15	ch	dust	2100	24
242		595	16	do	fans	1520	25
243	Mousakellie	598	28	ch	bro or pek	2800	45
244		601	22	do	or pek	2200	39
245		604	18	do	pek	1800	36

Lot.		Box.	Pkgs.	Name.	lb.	c.
218	Knavesmire	613	33 ch	bro pek	3135	34
249		616	27 do	pek	2295	33
250		619	17 do	pek sou	1190	29
251		622	16 hf-ch	dust	1280	26
252		625	18 ch	pek	1350	31
253	Knavesmire	628	30 hf ch	or pek	1500	35
254		631	28 ch	bro pek	2660	33
255		634	29 do	pek	2465	33
256		637	20 do	do	1500	30
257	Chesterford	640	51 ch	bro pek	5100	44
258		643	55 do	pek	5500	34
259		646	39 do	pek sou	3900	32
260	Waratenne, Invoice No. 7	649	10 ch	bro pek	900	32
261		652	9 do	pek	810	29
262	H, in estate mark	655	11 ch	bro pek	1100	33
263	L B K	658	22 ch	red leaf	2090	23
264	Passara	661	15 ch	bro or pek	1500	39
265		664	13 do	or pek	1170	39
266		667	12 do	pek	1080	37
270	Harrington	679	19 hf ch	bro or pek	950	57
271		682	21 ch	or pek	1995	43
272		685	19 do	pek	1710	39
276	Maligatenne	697	14 ch	bro pek	1540	30
277		700	13 do	pek	1300	27
280	Kincora	709	29 ch	bro pek	2900	33
281	Summer Hill	712	34 do	pek	2958	38 bid
282	Hatton	715	27 ch	bro pek	2835	54
283		718	30 do	pek	2700	41
285	Loinorn	724	16 hf ch	dust	1200	28
286	Dunkeld	727	45 do	bro or pek	2700	41
287		730	19 ch	or pek	1805	39
288		733	18 do	pek	1620	37
289	Massena	736	77 hf-ch	bro pek	3850	33
290		739	25 do	pek	1250	30
291		742	16 do	pek sou	800	28
294	Torwood	751	56 ch	bro pek	5040	34 bid
295	Harrow	754	40 hf-ch	bro or pek	2400	4[illegible]
296	Dea Ella	757	15 do	bro or pek	900	38
297		760	32 do	or pek	1760	35 bid
298		763	28 do	pek	1400	30
303	Deyanilla	778	18 ch	bro pek	1800	34 bid
304	Clyde	781	9 do	bro or pek	945	31
305	Ascot	784	26 do	bro pek	2340	31 bid
306		787	14 do	bro or pek	1400	31 bid
309		796	7 do	bro pk fans	700	28
311	Leygrove	802	10 do	bro pek	1100	35
312		805	8 do	pek	720	33
313	Cotswold	808	10 do	bro pek	1000	43
314		811	13 do	pek	1170	32
315		814	13 do	pek sou	975	29
320	B W D P	829	24 do	bro pek	2040	31
323	Scrubs	838	16 hf-ch	bro or pek	992	58
324		841	12 do	bro pek	720	49
325		844	14 do	pek	700	45
326		847	25 do	pek sou	1250	41
327	Mariawatte	850	20 ch	pek sou	1700	28
328		853	12 hf-ch	dust	960	25
329	Mawaliganga-watte	856	25 ch	bro pek	2500	31
331		862	21 do	pek sou	1575	28
333	New Peacock	868	9 do	pek sou	810	31
335		874	25 hf-ch	pek fans	1875	28
337	I K V	880	7 ch	pek sou	840	25
340	Frels Ruhe	889	51 do	bro pek	5100	33
341		892	45 do	pek	4050	30
342		895	22 do	pek sou	2070	29
348	B D W	913	36 do	bro pek	3420	28
349		916	14 do	pek sou	1260	26
351	R C V in est. mark	922	6 do	bro pk fans	720	28
352	Battawatte	925	32 do	bro or pek	3500	38
353		928	27 do	pek	2565	35
354		931	31 do	pek sou	1040	31

[Messrs. Somerville & Co.—205,007 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Ossington	64	19 ch	bro pek	1900	29 bid
2		67	27 do	pek	2700	28 bid
3		70	10 do	pek sou	1010	24 bid
9	Ferriby	88	23 ch	bro pek	2185	32
10		91	38 do	pek	3230	30
11		94	25 do	pek sou	1875	27 bid
12		97	6 do	fans	780	26
13	Mahatenne	100	34 ch	pek pek	3400	32
14		103	19 do	pek	1900	30
15	Kallebokka	106	35 ch	bro pek	3675	34
16		109	16 do	pek	1440	34
19	Lenach	118	76 hf-ch	bro pek	4180	33 bid
20		121	28 ch	pek	2380	34
21		124	17 do	pek sou	1445	31
26	Tiddydale	139	19 do	pek	1710	28 bid
27		142	9 ch	pek sou	765	23
29	Carney	148	34 hf-ch	bro pek	1700	34
30		151	37 do	pek	1665	30 bid
31		154	16 do	pek sou	800	28
38	Hanagama	175	10 ch	pek	950	29
39		178	12 do	pek sou	1069	24
43	Citrus	190	24 ch	bro pek	2400	32
44		193	24 do	pek	2160	28 bid
45		196	7 do	pek sou	700	23 bid
49	Forest Hill	208	20 ch	bro pek	1700	32 bid
50		211	21 do	pek	1827	29 bid
51	Havilland	214	10 ch	pek fans	1100	27
57	Theberton	232	17 ch	bro pek	1700	34
58		235	41 do	pek	2690	34
60	Eilandua	241	11 ch	bro pek	1100	32
61		244	11 do	pek	1045	29
62	Handrookande	247	17 hf-ch	bro pek	935	34
66	Bargany	259	18 ch	pek	1530	31
67	St. Catherine	262	11 ch	bro or pek	1210	32 bid
68		265	13 do	or pek	1170	35
72	Meddegedera	277	34 ch	or pek	3400	29 bid
74	Lyndhurst	283	85 hf-ch	bro pek	4675	33
75		286	51 do	pek	2550	30
78	Woodthorpe	295	8 ch	bro pek	800	37
79		298	13 do	pek	1144	31 bid
80		301	15 do	pek sou	1200	30
83	Primrose	310	8 ch	bro pek	800	36
84		313	14 do	pek	1232	31 bid
85		316	15 do	pek sou	1200	30
88	Monrovia	325	32 ch	bro pek	3200	33
90		331	21 do	pek	2945	31 bid
91		334	13 do	pek sou	1300	28
94	Daluk Oya	343	21 hf ch	or pek	1155	33 bid
95		346	33 do	pek	1815	31
96	Yahalatenne	349	19 ch	bro pek	1900	32 bid
97		352	12 do	pek	1200	32
98	K	355	17 ch	unas	1615	20
100	Bogahagoda-watte	361	15 ch	bro pek	1500	30
101		364	11 do	pek	1045	
104	Galphele	373	22 ch	bro pek	2200	33
105		376	15 do	bro or pek	1500	36
106		379	19 do	pek	1710	33
107	Do B	382	12 ch	pek	1080	32
110	Annandale	391	17 hf-ch	bro or pek	969	53 bid
111		394	18 do	or pek	1026	44
112		397	17 do	pek	952	38 bid
113		400	19 do	pek sou	1102	26
114		403	10 do	dust	820	23
116	Kurunegalle est. Co. of Ceylon	409	12 hf-ch	bro pek	720	33
117		412	9 ch	pek	900	32
120	Doragalla	421	12 ch	bro pek	1200	37
121		424	33 do	pek	2640	35
122		427	19 do	pek sou	1615	31
123		430	17 hf-ch	bro mix	1190	26
124	Haiangalla	433	28 ch	bro pek	2660	34
125		436	38 do	pek	3040	33
126	Ravenoya	439	18 hf-ch	bro pek	990	33
127		442	18 do	pek	900	31
130	Ingriya	454	56 hf-ch	bro pek	2800	30
131		455	51 do	pek	2448	31
132		457	45 do	pek sou	2070	29
133		460	29 do	bro pek fans	1740	36
135	Roseneath	466	22 ch	bro pek	2200	36
136		469	9 do	pek	810	34
137		472	21 do	pek sou	1785	30
140	Lower Dickoya	481	21 hf ch	bro or pek	1176	35 bid
141		484	16 ch	bro pek	1600	32
142		487	13 do	pek	1300	31
147	Tavalamtenne	502	20 ch	bro or pek	2060	32 bid
148		505	8 do	pek	710	30 bid
153	Honiton	520	31 hf ch	bro pek	1550	32
154		523	17 ch	pek	1445	31
155		526	20 do	pek sou	1600	27
159	Rayigam	538	34 ch	bro pek	3400	33
160		541	22 do	or pek	1870	32 bid
161		544	11 do	pek	880	30 bid
162		547	10 do	pek sou	900	29
163	Silverton	550	75 hf-ch	bro pek	3750	30 bid
166	T H A de S	559	22 ch	bro pek	2200	26
169	Killin	568	24 ch	bro pek	2400	32 bid
170		571	25 do	pek	2250	29 bid
174	Neboda	583	16 ch	bro or pek	1600	31
175		586	55 do	bro pek	5500	30 bid
176		589	15 ch	pek	1350	29 bid
177		592	20 do	pek sou	1600	28
179	Rambodde	598	26 hf ch	bro pek	1430	36 bid
180		601	27 do	pek	1350	35
181		604	17 do	pek sou	765	31

[Mr. E. John.—167,839 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Glasgow	601	38 ch	bro or pek	3230	51
5		604	18 do	or pek	1350	49

Lot		Box.	Pkgs.	Name.	lb.	c.
6		607	14 ch	pekoe	1218	45
7		610	11 do	pek sou	1100	40
8	Kandaloya	613	38 hf-ch	bro pek	1710	39
9		616	30 do	or pek	1200	31 bid
10		619	102 do	pekoe	4080	32
12		625	18 do	fans	900	27
13		628	21 do	dust	1050	25
15	Eila	634	100 ch	bro or pek	10000	33 bid
16		637	59 do	pekoe	5015	30 bid
17		640	20 do	fans	2400	28 bid
18	Templestowe	643	40 do	bro or pek	3200	44
19		646	26 do	or pek	1820	43
20		649	46 do	pekoe	3910	37 bid
21		652	16 do	fans	1440	32
22	St. John's	655	18 hf-ch	bro or pek	1116	64
23		658	24 do	or pek	1218	69
24		661	20 do	pekoe	1160	47
25		664	18 do	pek sou	1008	42
26		667	15 do	pek fans	1110	34
27	Agra Ouvah	670	15 do	pek sou	750	38
28		673	21 ch	pek fans	1785	31
30	Callander	679	43 hf-ch	bro or pek	2580	38
31		682	31 do	or pek	1705	35
32		685	24 do	pekoe	1200	34
36	Gonavy	697	29 do	bro pek	2950	39
37		700	22 ch	pekoe	1650	35
39	Oonogalaya	706	10 do	bro or pek	1000	40
40		709	9 do	bro or pek No. 2	1080	32
41		712	23 do	or pek	2070	37
42		715	24 do	pekoe	2160	35
43		718	16 do	pek sou	1440	32
44	D D	721	36 do	pek fans	2700	28
45	Bellongalla	724	17 hf-ch	bro pek	850	30
46		727	15 ch	pekoe	1200	29 bid
50	Peilakande	739	30 do 1 hf-ch	pekoe	2750	31
51		742	8 do	dust	720	25
53	L E L	748	18 ch	bro pek	1890	40
54		751	24 do	pekoe	2029	33
56	W H	757	40 hf-ch	pek fans	3000	27 bid
57	Mahanilu	760	23 do	or pek	1193	40
58		763	26 do	bro pek	1508	40
59		766	17 ch	pekoe	1581	37
60		769	10 do	pek sou	950	36
61		772	8 hf-ch	dust	760	26
62		775	19 do	bro pek fans	1178	34
63		778	11 do	fans	792	33
64	G B	781	16 do	bro pek	880	29
65		784	14 do	pekoe	1120	29
69	Sudugange	796	15 ch	or pek	1315	35
70		799	16 do	pek sou	1360	30
71	Galella	802	29 do	bro pek	2900	39
72		805	25 do	pekoe	2500	33 bid
73		808	10 do	pek sou	900	30
74	Dickapittia	811	28 do	bro pek	2800	36
75	Cleveland	814	41 hf-ch	flow or pek	2255	54
76		817	41 do	pekoe	2332	40
79	Koslande	826	17 ch	pekoe	1530	32 bid
80	Mirahela	829	33 do	pekoe	2772	32
81		832	29 do	bro or pek	2900	33
83	Dalhousie	838	20 hf-ch	bro pek	1200	53
85		844	58 do	pek No. 1	2610	32 bid
86		877	33 do	pek No. 2	1320	32 bid
88	Kotuagedera	853	15 ch	bro pek	1500	32 bid
89		856	8 do	pekoe	760	29 bid
92	Troup	865	17 do	pek sou	1615	37
93		868	7 do	bro mix	700	32
94	H S, in est. mark	871	7 do	bro mix	700	20
95	Murraythwaite	874	19 do	bro pek	1805	34
96		877	19 do	pekoe	1615	32
97		880	9 do	pek sou	765	29
100	Ferndale	889	23 do	bro or pek	2300	37
101		892	16 do	or pek	1440	38
102		895	14 do	pekoe	1260	35
103		898	12 do	pek sou	1080	31
104	Maryland	901	8 do	bro pek	800	32
105		904	8 do	pekoe	760	29
108	Galloola	913	22 do	bro pek	2200	38
109		916	22 do	pekoe	2200	36
110		919	12 do	pek sou	1200	31
112	G K	925	15 do	dust	2550	25
113	Whyddon	928	28 do	bro pek	2800	34 bid
114	Sadamulla	931	11 do	bro pek	1100	30
115		934	15 do	pekoe	1500	27
116		937	6 do	pek sou	600	24

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
7	Hapugastenne	28	3 ch	sou	255	26
8		31	6 hf ch	fans	390	31
9		34	3 do	dust	255	25

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	B B B, in estate mark	2122	6 ch	dust	54	2
2	O B E C, in est. mark, Sinnapittia	2125	7 ch	sou	490	26
3	Yelatenne	2128	9 do	bro or pek	540	33
4		2131	7 do	or pek	399	33
5		2134	6 hf ch	pek	318	31
6		2137	1 do	pek sou	50	29
7		2140	1 do	fans	75	27
8		2143	1 do	dust	80	25
9		2146	1 ch	unas	63	27
10		2149	1 box	fans	18	26
12	Dambagastalawa	2155	8 hf-ch	bro pek fans	640	28
15	Attampettia	2164	2 ch	pek sou	160	29
16		2167	1 hf-ch	dust	80	26
21	Avoca	2182	5 ch	bro pek fans	400	28
22	A B F	2185	6 ch	bro pek	600	34
23		2188	6 do	pek	600	28
24		2191	6 do	pek sou	600	26
25		2194	2 do	congou	200	23
26		2197	1 do	dust	85	25
28	Glen Esk	2203	6 ch	bro or pek	570	31
30		2209	8 do	pek sou	600	27
31		2212	1 do	pek fans	120	27
36	Glencorse	2227	1 ch	pek fans	120	27
37		2230	1 do	bro tea	115	28
38		2233	1 do	dust	175	25
44	E D P	1	7 ch	sou	630	28
49	Stisted	16	10 hf-ch	or pek	600	34
52		25	2 do	dust	172	26
55	Hill side, P C H, Galle in est. mark	34	3 ch	bro pek	300	31
56		37	5 do	pek	450	29
5		40	7 do	pek sou	630	25
58		43	5 do	sou	400	25
69	H G M	76	5 hf ch	dust	425	25
71	St. H	82	1 ch	dust	100	26
77	Tembiligalla	100	3 ch	pek sou	270	29
78		103	1 hf-ch	fans	70	26
80	Hentleys	109	12 hf ch	or pek	540	31
82		115	3 ch	pek sou	210	25
83		118	4 hf ch	pek dust	340	26
84	Maldeniya	121	6 ch	sou	540	25
85		124	5 do	fans	375	26
86		127	6 do	dust	540	25
87		130	1 do	congou	80	22
92	Woodend	145	2 ch	dust	280	25
107	Erlsmere	190	10 hf-ch	bro or pek	550	55
111		202	2 do	dust	160	26
116	Strathspey	217	2 ch	sou	170	32
117		220	2 do	dust	288	27
118		223	1 do	red leaf	86	23
122	Walpita	235	2 ch	sou	180	25
126	Hayes	247	7 ch	or pek	595	35
137	Macaldeniya	280	2 hf ch	unas	110	27
138		283	2 do	dust	160	27
141	W L	292	2 do	fans	127	27
142		295	1 do	pek dust	74	25
143	Ookoowatte	298	2 ch	pek fans	220	27
144		301	1 hf-ch	dust	100	24
147	P A N	310	12 hf ch	pek sou	660	28
148		313	3 do	dust	240	25
153	Erracht	328	1 ch	bro pek fans	131	27
154		331	1 do	dust	150	24
156	B, in estate mark	337	6 ch	pek fans	480	28
165	W N P	364	3 ch	pek sou	300	27
168	Parsloes	373	5 do	pek sou	400	28
169		376	1 do	dust	144	26
170	St. Johnswood	379	9 hf ch	bro pek	477	33
171		382	9 do	pek	450	32
172		385	6 do	pek sou	300	27
173		388	1 do	fans	114	26
180	Weyungawatte	400	6 ch	pek sou	480	2
181		412	4 hf-ch	dust	320	25
182	N W D	415	2 ch	bro tea	216	23
183	Dromoland	418	5 ch	red leaf	422	19
186	Beaumont	427	6 hf ch	fans	516	27
191	Shrubs Hill	442	5 ch	pek sou	425	28
193		448	3 do	bro tea	189	23
199	Ganapalla	466	7 ch	bro pek fans	695	27
201	Belgodde	472	6 hf ch	bro pek	300	35
202		475	6 do	pek	300	30
203		478	6 do	pek sou	300	27
204		481	2 do	sou	100	25
205	Yaha Ella	484	3 ch	bro or pek	330	33
208		492	4 ch	pek sou	360	29
209		496	1 do	pek fans	105	27
210		499	1 do	dust	100	23
211	Kotua	502	3 ch	bro pek	300	34
212		505	3 do	pekoe	300	29

Lot.		Box.	Pkgs.	Name.	lb.	c.
213		508	3 ch	pek sou	390	27
214		511	1 do	dust	130	25
218	B A	523	1 do	red leaf	100	21
222	N B D	535	4 ch	bro mix	340	22
223		538	4 do	unas	380	21
224		541	1 do	bro pek fans	66	28
226	Palmerston	547	6 ch	or pek	425	57
236	Nilloomally, O B E C, in est. mark	577	4 ch	pek sou	180	30
237		580	3 do	sou	210	28
238		583	2 hf-ch	fans	140	28
246	Mousakellie	607	3 ch	sou	300	28
247		610	6 hf-ch	dust	510	27
267	Passara	670	5 ch	pek sou	500	31
268		673	1 do	fans	75	29
269	Wellington	676	1 ch	pek sou	85	29
273	Harrington	688	2 ch	pek	190	32
274		691	5 hf-ch	or pek fan	350	30
275		694	1 ch	dust	160	26
278	Maligatenne	703	5 ch	pek sou	475	25
279		706	1 do	dust	112	24
284	Halton	721	5 ch	pek sou	425	36
292	Massena	745	3 hf-ch	fans	210	27
293		748	1 do	dust	80	23
299	Tea Ella	766	9 do	pek sou	450	29
300		769	7 do	fans	420	29
301		772	4 do	dust	320	26
302	K	775	1 ch	sou	100	28
307	Ascot	790	6 do	pek	540	29
308		793	7 do	pek sou	630	27
310		799	6 hf-ch	dust	480	26
316	Cotswold	817	2 ch	sou	150	22
317		820	2 hf-ch	dust	160	26
318	Kitulgalla	823	1 do	bro pek	60	28
319		826	1 do	pek sou	60	25
321	B D W P	832	2 ch	bro pek No. 2	180	22
322		835	1 do	pek No. 2	80	21
330	Mawaliganga-watte	859	9 do	pek	657	29
332		865	2 hf-ch	pek dust	150	25
334	New Peacock	871	6 do	bro mix	300	26
336	I K V	877	1 ch	bro mix	112	22
336a			1 do	bro mix	112	20
338	Hill Side	883	2 do	bro pek	200	30
339		886	1 do	pek sou	900	25
342	W A	898	4 do	bro pek	400	29
344		901	5 do	pek	450	29
345		904	4 do	pek sou	360	27
346		907	2 do	dust	330	25
347		910	1 do	bro mix	135	20
350	B D W	919	1 do	dust	150	26

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
4	Ossington	73	2 ch	dust	218	23
5		76	1 do	bro mix	106	21
17	Kallebokka	112	1 ch	pek sou	110	29
18		115	2 hf-ch	dust	170	26
22	California	127	6 ch	bro pek	570	31
23		130	7 do	pek	665	27
24		133	6 do	pek sou	570	21
25	Tiddydale	136	11 hf-ch	bro pek	550	33
28	S W J	145	5 ch	sou	425	18
32	Carney	157	1 hf-ch	sou	50	24
33	R K P	160	6 ch	bro or pek	600	31
34		163	9 do	bro pek	720	32
35		166	6 do	pek	510	29
36		169	6 do	pek sou	540	25
37	Hanagama	172	5 ch	bro pek	500	32
40		181	3 do	sou	270	19
41		184	2 do	fans	234	18
42		187	1 do	dust	150	25
46	Citrus	199	2 ch	bro or pek	200	23
4		202	2 do	pek dust	320	26
		205	ch	fans	100	16
52	Havilland	217	4 ch	sou	360	27
53		220	7 hf ch	dust	560	26
54	Sangaly Toppe	223	2 hf-ch	bro tea	150	27
55		226	2 do	dust	190	26
56		229	4 ch	red leaf	380	23
59	Theberton	238	1 ch	pek fans	100	23
63	Handrookande	250	9 hf-ch	pek	450	29
64		253	3 do	pek sou	150	27
65		256	1 do	dust	70	25
69	St. Catherine	268	8 ch	pek	640	31
70		271	2 do	pek sou	152	28
71		274	1 do	dust	104	24
73	A A	280	5 hf-ch	bro tea	225	20
76	Lyndhurst	289	9 hf-ch	pek sou	405	27
77		292	3 do	dust	225	26
81	Woodthorpe	304	5 ch	sou	380	26
82		307	3 hf ch	dust	180	25
86	Primrose Hill	319	4 ch	sou	304	26
87		322	3 hf-ch	dust	210	24

Lot.		Box.	Pkgs.	Name.	lb.	c.
89	Monrovia	323	6 ch	bro or pek	690	31
92		337	2 do	bro tea	200	23
93		340	1 do	pek dust	165	24
99	K	358	2 hf ch	dust	160	22
102	Bogahagoda-watte	367	7 ch	pek sou	665	22
103		377	2 do	bro pek fans	250	25
108	Galphele B	385	5 ch	pek sou	500	29
109		388	[illegible] do	fans	300	25
115	Kurunegalle est. Co. of Ceylon	406	6 hf ch	or pek	360	34
118		415	2 ch	pek sou	200	27
119	Doragalla	418	12 hf-ch	bro or pek	660	38
128	Ravenoya	445	3 hf ch	pek	900	28
134	Ingeriya	463	3 hf ch	dust	165	26
138	Roseneath	475	2 hf ch	dust	200	26
139		478	1 do	bro mix	55	21
149	Tavalamtenne	508	5 ch	pek sou	400	23
150		511	1 do	dust	90	
151	Avisawella	514	7 ch	pek	595	
152		517	8 do	pek sou	610	26
156	Honiton	529	3 hf-ch	fans	165	27
157		532	3 do	dust	210	26
158	W	535	6 bags	red leaf	530	15
164	M	553	1 ch	bro or pek	100	30
165		556	1 hf-ch	dust	78	25
167	St. Leys	562	2 hf ch	red leaf	112	15
168		565	1 do	dust	81	24
171	Killin	574	5 ch	pek sou	425	2
172		577	2 do	dust	260	25
173		580	4 do	bro mix	360	15
178	Neboda	595	4 ch	dust	340	24
182	Rambod'e	607	1 hf ch	dust	90	25
183		610	6 do	fans	420	20

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
1	A A	592	3 ch	dust	300	23
2	O M	595	7 hf-ch	pek fans	490	26
3	Nugahena	598	1 ch	pekoe	90	28
11	Kandaloya	622	13 hf-ch	pek sou	520	29
14		631	4 do	bro tea	160	24
29	Agra Ouvah	676	3 ch	dust	300	26
33	Callander	688	6 hf-ch	pek sou	270	30
34		691	2 do	fans	160	29
35		694	2 do	dust	160	26
38	Gonavy	703	8 ch	pek sou	650	34
47	Bellongalla	730	5 do	pek sou	350	27
48		733	3 hf-ch	bro pek fans	210	25
49		736	1 do	dust	90	21
52	L E L	745	10 do	bro or pek	550	54
55		754	4 do	dust	360	26
66	G L	787	3 ch	sou	270	23
67		790	7 hf-ch	dust	560	26
68		793	5 do	bro pek fans	325	29
77	Cleveland	820	12 do	pek sou	660	37
78		823	4 do	fans	320	29
82	Morahela	835	7 ch	sou	560	29
84	Dalhousie	841	14 hf-ch	or pek	630	58 bid
87		850	5 do	fans	350	27
90	Kotuagedera	859	1 ch	pek sou	95	27
91		862	5 hf-ch	bro pek fans	375	26
98	Murraythwaite	883	2 ch	fans	240	27
99		886	2 do	dust	320	24
106	Marakona	907	1 do	dust	150	25
107	Farm	910	3 do	dust	225	26
111	Galloola	922	2 do	dust	200	25
118	Sadamulla	943	3 do	red leaf	288	20

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent).

MINCING LANE, Feb. 23rd.

"Hakata Maru."—GA Ouvah A, 1 barrel sold at 108s; ditto 1, 1 cask sold at 104s; ditto 2, 5 casks and 1 tierce sold at 90s; ditto 3, 2 casks and 1 barrel sold at 65s; ditto 1 PB, 1 tierce sold at 103s; JB Ouvah 1, 1 cask sold at 103s; ditto 2, 3 casks sold at 87s; ditto 3, 1 tierce sold at 56s; ditto 1 PB, 1 barrel sold at 85s.

"Patroclus."—Meeriabadde F, 1 barrel sold at 110s; ditto 1, 1 cask and 1 barrel sold at 106s; ditto 2, 4 casks sold at 91s; ditto 3, 1 tierce sold at 59s; ditto PB, 1 cask sold at 118s; MBT, in estate mark, 1 barrel sold at 40s; Meeriabedde, 1 bag sold at 77s.

"Java."—MDS O, 2 casks and 1 barrel sold at 60s; ditto 1, 4 casks sold at 53s; ditto 2, 2 casks

sold at 44s; ditto PB, 1 barrel sold at 55s; ditto T, 2 casks and 1 barrel sold at 44s; MD S, 3 barrels sold at 43s; ditto T. 1 barrel sold at 34s.

"Patroclus."—Poonagalla A, 1 barrel sold at 114s; ditto B, 3 casks sold at 193s; ditto C, 1 tierce sold at 63s; ditto PB, 1 tierce sold at 122s.

COFFEE (Santos) closed firm. This article is still digesting the 60 per cent. rise. Regarding the size of mild coffee crops in Central America, We hear from good judges that all the Central American ports will be short this year, so later on we again anticipate higher prices. Maize, corn, and oats should rise. Wheat depends on the weather as stocks, are heavy. Cotton, the next crop may be 10,000,000 to 15,000,000 bales. American sugar looks tired as stocks are too big.

CEYLON COCOA SALES IN LONDON.

"Shropshire."—Palli, London 1, 24 bags out at 92s, 85s refused; ditto T, 10 bags out; ditto 2, 6 bags sold at 63s 6d; ditto T, 2 bags sold at 60s 6d.

"Hakata Maru."—A Grove, London, 43 bags out; ditto C, 2 bags sold at 71s 6; ditto L, 2 bags sold at 61s; MA D B & Co.. KI, in estate mark, 20 bags out at 73s, 63s refused.

"Machaon."—MS in estate mark, Estate Cocoa, 90 bags sold at 68s.

"Hakata Maru."—Hylton OO, 43 bags sold at 83s; ditto O, 3 bags sold at 70s 6d; ditto S, 3 bags sold at 62s 6d; ditto Brown, 1 bags sold at 58s; ditto Black, 3 bags sold at 33s; MO, in estate mark, 40 bags sold at 77s; ditto 1, 22 bags sold at 71s.

"Shropshire."—Kotuwa 1, 25 bags sold at 81s 6d; ditto 2, 3 bags sold at 63s 6d.

"Glenshiel."—Alluviharie 44 bags out at 88s; Dickeria, 12 bags out 88s.

"Machoan."—Ettapolla, Ceylon, in estate mark, London 1, 37 bags out at 86s, 82s refused; E Ella, Ceylon, in estate mark, London, 20 bags sold at 80s; M, Estate Ceylon, in estate mark, London, 50 bags out at 86s, 81s 6d refused.

"Malacca."—Dea Ella, Ceylon, in estate mark, London, 1, 25 bags out at 81s 6d, 85s refused.

"Shropshire."—Allagalla 1, 29 bags sold at 74; 2, 4 bags sold at 66s 6d.

No Cardamoms sales this week.

OBSERVER PRINTING WORKS.

No. 11 COLOMBO, MARCH 26, 1900. { PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[23,024 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
2	Mapitigama	14	13 hf-ch	hro or pek	715	38
3		17	15 ch	hro pek	1425	34 bid
4		20	18 do	pek	1620	32
5		23	9 do	pek sou	720	29 bid
8	Hornsey	32	29 ch	or pek	2610	38
9		35	18 do	pek	1440	35
10	eddakande	38	24 ch	bro or pek	2400	37
11		41	15 do	hro pek	1500	36
12		44	31 do	pek	2945	34
13		47	24 do	pek sou	2160	29
14	Sapitiyagodde	50	21 hf ch	bro pek	1176	36 bid
15		53	18 do	or pek	828	34 id
16		56	20 do	pek	840	33 bid
17		59	18 do	pek sou	810	31 bid

Messrs. Forbes & Walker.

[541,556 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Wewewatte	931	21 hf-ch	hro pek	1176	32
2		937	16 do	pek	800	30
6	Cooroondoowatte	949	16 hf ch	pek	880	34
7		952	14 do	pek sou	770	29
11	St. Paul's	964	54 hf-ch	hro pek	3672	32 bid
12		967	66 do	pek	3828	35
13		970	43 do	pek sou	2193	30
14		973	12 do	dust	1080	30
15	Munukattia Ceylon, iu est. mark	976	18 hf-ch	or pek	900	44
16		979	30 do	hro pek	1800	39
17		982	19 ch	pek	1520	37
18		985	9 do	pek sou	855	32
19	Glencorse	988	13 ch	bro or pek	1300	34
20		991	20 do	hro pek	1800	32
21		994	15 do	pek	1350	30
22		997	13 do	pek sou	1040	27
25	Putupaula	1006	59 ch	bro pek	5310	36
26		1009	45 do	pek	3375	31
27		1011	18 do	pek sou	1260	29
28	Matale	1015	51 hf ch	bro pek	2805	35
29		1018	23 ch	pek	1955	33
30		1021	15 do	pek sou	1200	30
32	Ettapolla	1027	16 hf-ch	bro pek	896	32
35	D M V	1036	13 ch	hro pek	1196	29
36		1039	16 do	pek	1184	27
41	V, in estate mark	1054	14 ch	hro pek	1400	31
42		1057	11 do	pek	880	30
43		1060	10 do	pek sou	950	27
46	Carberry	1069	15 ch	pek	1350	29
51	G K	1084	9 ch	bro tea	810	25
52		1087	5 do	dust	700	24
53	Naseby	1090	38 hf ch	bro or pek	2280	62
54		1093	25 do	or pek	1175	63
55		1096	19 do	pek	893	45
56		1099	17 do	sou	714	40
57		1102	11 do	dust	979	30
58	Ingrogalla	1105	12 ch	hro pek	1200	36
59		1108	14 do	pekoe	1190	34
63	Penrhos	11 0	22 hf ch	bro or pek	1166	45
64		1123	27 do	or pek	1215	39
65		1126	47 ch	pek	3995	33
68	Nakiadeniya	1135	18 ch	bro pek	1710	32
69		1138	19 do	pek	1520	31
70		1141	18 do	bro pek fans	1800	31
71		1144	5 do	dust	700	27
72	Monkswood	1147	19 hf-ch	bro pek	1045	72
73		1150	28 do	or pek	1400	70
74		1153	17 do	pek	1700	49
75		1156	10 do	pek sou	900	42
76		1159	24 do	fans	1440	39
81	Gonapatiya	1174	20 hf ch	bro pek	1020	56
82		1177	29 do	or pek	1305	49 bid
83		1180	38 do	pek	1824	43
84		1183	9 do	dust	720	26
88	Agra Elbedde	1195	38 hf ch	or pek	2090	51 bid
89	Harangalla	1198	10 ch	hro or pek	1000	37
90	Grange Garden	1201	40 ch	bro or pek	4000	42
91		1204	28 ch	pek	2800	36
94	Clyde	1213	33 do	bro pek	2970	37
95		1216	26 do	pek	2340	32
98		1225	11 do	hro orpek	1210	32
99	Sirikandura	1228	15 ch 1 hf ch	bro pek	1583	35
100		1231	17 do	pek	1530	30
101		1234	9 do	pek sou	765	29
105	Lochiel	1246	21 hf-ch	dust	2100	27
109	Coreen	1258	26 do	hro pek	1560	41
110		1261	17 ch	or pek	1530	45
111		1264	17 do	pek	1530	40
113	Amblakande	1270	22 ch	hro pek	2200	33 bid
114		1 73	21 do	pek	1785	31
115		1276	9 do	pek sou	720	30
116	Roeherry	1279	19 ch	bro or pek	1900	55
117		1282	33 do	hro pek	3300	47
118		1285	33 do	pek	2970	36
119		1288	19 do	pek sou	1596	33
121	St. Heliers	1294	31 hf-ch	hro pek	1736	36
122		1297	20 ch	pek	1800	32
124	Errolwood	1303	29 hf-ch	bro or pek	1595	55
125		1306	16 do	or pek	1520	43
126		1309	20 do	pek	1800	38
128	Dea Ulla	1315	53 do	bro pek	3190	45
129		1318	47 ch	pek	3290	36
130	Tymawr	1321	36 hf ch	or pek	1800	42
131		1324	24 do	hro or pek	1340	41
132		1327	41 do	pek	1845	36
133		1330	45 do	pek sou	2025	33
134	Ella Oya	1333	27 ch	bro pek	2565	34
135		1136	29 do	pek	2465	32
136		1339	23 do	pek sou	1955	29
138		1345	20 hf ch	bro pek fans	1260	30
140	Karawookatiya	1351	7 ch	pekoe	723	27
141	Trewardene	1354	7 ch	bro pek	700	29
142		1357	9 do	pek	855	27
149	A M B	1378	15 ch	dust	2100	25
150	N	1381	23 ch	unas	2300	30
151		1384	6 do	bro tea	780	26
152	Frogmore	1387	25 hf-ch	hro pek	1375	44
144		1393	12 ch	pek	960	39
156	P G A	1399	11 ch	sou	1015	23
160	Dewalakande	1411	15 ch	hro tea	1035	24
161		1414	16 hf-ch	dust	1286	25
162	Ingurugalla	1417	8 ch	red leaf	725	23
163	Fairlawn	1420	40 hf ch	bro pek	2200	55
164		1423	16 ch	or pek	1360	43
165		1426	23 do	pek	2070	38
166		1429	9 do	pek sou	720	37
168	Carlabeck	1435	11 ch	pek sou	1100	40
174	Digdola	1453	19 ch	bro pek	1900	37
175		1456	28 do	pek	2100	33
178	Killarney	1465	35 ch	hro or pek	3500	49
		1468	25 do	pek sou	2500	40
181	Grace Land	1474	15 hf ch	bro pek	825	32
182		1477	15 do	pek	750	30
184	Dunbar	1483	25 hf ch	bro or pek	1250	67
185		1486	23 do	or pek	1104	51
186		1489	15 ch	pek	1200	45
190	Yatiyana	1501	12 do	bro pek	1200	32
191		1504	12 do	pek	1152	29
195	Bickley	1516	29 ch	pek sou	6124	33
196	Doranakande	1519	10 ch	hro pek	1000	23
200	Patiagama	1531	19 hf ch	bro or pek	1045	43
201		1534	14 ch	or pek	1190	37
202		1537	29 do	pek	2320	35
203		1540	10 do	pek sou	800	31
204	Galapitakande	1543	14 ch	or pek	1260	36
205		1546	29 ch	bro pek	2958	35
206		1549	29 do	pek	2700	34
207		1552	12 do	pek sou	1200	31
209		1558	33 ch	bro or pek	3630	39
210		1561	47 do	or pek	4465	37
212		1567	13 do	pek sou	1170	34
213	High Forest	1570	45 hf ch	or pek No. 1	2475	71
214		1573	34 do	or pek	1700	51
215		1576	20 do	pek	920	47
216	Polatagama	1579	29 ch	bro pek	2775	34
217		1582	24 do	or pek	1920	30 bid
218		1585	34 do	pek	3060	29
219		1588	11 do	pek sou	935	26
220		1591	23 do	fans	2185	28
222	Erracht	1597	22 ch	hro or pek	1980	32
223		1600	22 do	bro pek	1650	32
224		1603	31 do	pek	2108	31
228	Kelaneiya and Braemar	1615	28 ch	hro or pek	2800	48
229		1618	33 do	or pek	3300	38

Lot.		Box.	Pkgs.	Name.	lb.	c.
230		1621	29 ch	pek	2900	36
233	Sutton	1630	12 ch	pek sou	960	41
235		1636	12 hf ch	fans	840	37
236		1639	10 do	dust	850	29
239	Ninfield	1648	21 ch	bro or pek	2100	35
240		1651	7 do	bro pek	700	31
241		1654	19 do	or pek	1900	30
242		1657	52 do	pek	4680	30
243		1660	16 do	pek sou	1440	28
245		1666	7 do	fans	791	26
246	Waratenne	1669	15 hf-cb	bro or pek	825	34
247		1672	22 ch	bro pek	1980	31
248		1675	18 do	pek	1710	30
249		1678	16 do	pek sou	1440	27
252	Geragama	1687	29 hf ch	bro or pek	1595	34
253		1690	20 ch	bro pek	1800	32
254		1693	20 do	pek	2000	29 bid
255		1696	17 do	pek sou	1530	27
258	Arrdlaw and Wisbford	1705	53 hf-ch	bro or pek	3975	40
259		1708	19 do	or pek	950	42
261		1714	15 ch	bro pek	1425	40
263		1720	20 do	pek	1720	39
264	S W	1723	6 do	bro mix	738	28
266	Corfu	1729	15 hf-ch	or pek	750	35
267		1732	21 do	bro pek	1155	35
268		1735	51 do	pek	2550	32
269		1738	25 do	pek sou	1125	30
271	Vogan	1744	64 ch	bro pek	6400	37
272		1747	60 do	pek	5400	32
273		1750	9 hf-ch	dust	765	26
274		1753	7 ch	bro pk fans	875	28
276	Nahalma	1759	12 do	sou	1200	26
277	Hopton	1762	29 do	bro pek	2900	40
278		1765	23 do	pek	2070	33 bid
279		1768	12 do	pek son	1080	30 bid
281	H N in estate mark	1774	18 hf-ch	fans	1170	26
282	Choisy	1777	37 ch	bro pek	3885	42
283		1780	26 do	pek No. 1	2470	38
284		1783	28 do	pek No. 2	2550	36
285	Bandara Eliya	1786	52 hf-ch	bro or pek	3224	37
286		1789	84 do	or pek	4200	36
287		1792	28 ch	pek	2296	35
288		1795	18 do	dust	1440	32
289		1798	47 hf-ch	bro or pek	2867	38
290		1801	60 do	or pek	2940	36
291		1804	27 ch	pek	2187	35
292		1807	18 do	pek sou	1512	33
297	Mansfield	1822	51 hf-ch	bro pek	3060	47
298		1825	21 cb	pek	1890	38
300		1831	12 bf-ch	dust	1080	28
302	Teevaloya	1837	5 do	dust	890	22
303	Ireby	1840	27 do	bro pek	2970	49
304		1843	22 do	pek	1980	43
305		1846	11 do	pek sou	990	38
306	Walton	1849	13 do	bro pek	1456	46
307		1852	17 do	or pek	1700	34
308		1855	20 do	pek	1800	31
311	V O A	1864	12 do	bro tea	1200	23
312	Torwood	1867	50 do	bro pek	4500	35
313		1870	26 do	pek	2132	32
314		1873	21 do	pek sou	1680	29
315		1876	12 hf-ch	bro pk fans	768	31
316	Castlereagh	1879	25 cb	bro pek	2500	42
317		1882	27 do	or pek	2295	38 bid
318		1885	20 do	pek	1600	36
320		1891	12 do	fans	840	30
327	Anningkande	1912	28 do	bro pek	2800	34
328		1915	20 do	pek	1900	31
329	St. Leonards on-Sea	1918	12 do	bro pek	1260	35
330		1921	8 do	pek	720	32
332	Ascot	1927	26 do	bro pek	2340	31
333		1930	74 do	bro pek	6660	31
334	Rowley	1933	32 do	bro pek	1600	36
335		1936	30 do	pek	1700	34
336	Gallawatte	1939	19 do	bro pek	1805	34
337		1942	20 do	pek	1700	31
338		1945	10 hf-ch	pek fans	700	28
340	B & D	1951	13 ch	unast	1300	28
341	Yataderiya	1954	16 do	bro or pek	1696	32 bid
342		1957	22 do	bro pek	3300	31 bid
343		1960	14 do	or pek	1358	32 bid
344		1963	43 do	pek	4224	30 bid
350	Dunkeld	1981	41 hf-ch	bro or pek	2640	39
351		1984	20 ch	or pek	1900	40
352		1987	18 do	pek	1620	37
353	Ganapalla	1990	13 do	bro or pek	1170	31 bid
354		1993	11 do	bro or pek	1056	32 bid
355		1996	10 do	or pek	900	35
356		1999	48 do	pek	3840	31
357		2002	26 do	bro pek	2340	30
358		2005	12 hf-ch	bro pk fans	900	27
359	Maha Uva	2008	42 do	bro or pek	2520	37
360		2011	19 hf-ch	or pek	1064	40
361		2014	33 ch	pek	2970	33
362		2017	11 do	pek sou	880	31
365	Pelatagama	2026	38 do	bro pek	3610	34
366		2029	29 do	or pek	2320	31
367		2032	36 do	pek	3240	29
368		2035	12 do	pek sou	1020	27
369		2038	23 do	fans	2185	28
371	Talgaswela	2044	13 do	bro or pek	1300	32
372		2047	24 do	or pek	2040	33
373		2050	14 do	bro pek	1190	32 bid
374		2053	10 do	br pk No. 2	900	28
375		2056	26 do	pek	2080	30
376		2059	21 do	pek sou	1680	28
380	Glendon	2071	54 hf-ch	bro pek	3240	35
381		2074	25 do	or pek	1250	29
382		2077	38 ch	pek	3230	33
383		2080	20 do	pek sou	1700	30
384	G	2083	11 do	sou	1140	28
386	Stafford	2089	12 bf-ch	bro or pek	720	60
388		2095	9 ch	pek	765	42
391	B in est. mark	2104	8 do	sou	720	28
392		2107	10 do	dust	1500	26
393	Strathspey	2110	9 do	bro or pek	945	58
394	B in est. mark	2113	13 do	bro pek	1250	27 bid
395	Middleton	2116	28 do	bro pek	2800	59
396		2119	15 do	pek	1350	43
397		2122	13 do	pek sou	1235	40
401	Old Madegama	2134	10 do	bro or pek	700	40
402		2137	19 do	or pek	1330	38
403		2140	23 do	pek	1840	32
404		2143	10 do	pek sou	750	29
406	Palmerston	2149	14 hf-ch	bro or pek	700	96
407		2152	11 do	pek	990	49
410	Ouvahkellie	2161	16 ch	pek sou	1440	41
412	Doorooma-della	2167	40 do	bro pek	2320	30
413		2170	29 do	pek	2600	28
414		2173	8 do	pek sou	280	26

[Messrs. Somerville & Co.—193.253 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Meetiagoda	613	15 ch	bro pek	1575	26 bid
2		616	7 do	pek	700	23 bid
3		619	8 do	pek son	760	21 bid
6	Avisawella	628	41 ch	pek	3485	29 bid
7	Kurulugalla	631	17 cb	bro pek	1700	28 bid
8		634	34 do	pek	3060	29
9		637	9 do	pek sou	900	21 bid
11	Neuchatel	643	12 cb	bro or pek	1380	33
12		646	59 do	bro pek	5900	33
13		649	48 do	pek	4080	31
14		652	19 do	pek sou	1520	28
15		655	7 do	dust	1050	25
16	Salawe	658	22 ch	bro pek	2310	31
17		661	15 do	pek	1500	31
18		664	10 do	pek sou	950	29
24	Oolapane	682	13 hf ch	dust	1040	26
25	Dryburgh	685	13 do	bro or pek	780	40
27		691	8 ch	pek	1476	33
28		694	10 do	pek sou	740	29
30	Hatdowa	700	26 ch	bro pek	2470	30 bid
31		703	28 do	pek	2100	29
32		706	24 do	pek sou	1800	27
37	Arduthie	721	20 hf ch	bro pek	1000	36
38		724	25 do	pek	1250	32
39		727	15 do	pek sou	750	29
41	Hangraneya	733	87 bf-ch	bro pek	4785	34
42		736	23 ch	or pek	1955	36
43		739	71 do	pek	6745	32
44		742	38 do	pek sou	3230	30
45		745	13 bf-ch	fans	975	28
47	Yspa	751	20 ch	pek sou	1700	31
48	Warakamure	754	43 ch	bro pek	4300	30 bid
49		757	30 do	pek	2850	28
50		760	16 do	pek sou	1440	23 bid
51	Wilpita	763	10 ch	bro pek	1000	25 bid
52		766	7 do	pek	700	27
57	Charlie Hill	781	34 hf ch	bro pek	1870	29 bid
58		784	22 do	pek	1210	29
60	Mabatenne	790	17 ch	bro pek	1700	31 bid
61		793	9 do	pek	900	29
65	Depedene	805	82 hf-ch	bro pek	4920	32
66		808	74 do	pek	3700	30
67		811	68 do	pek sou	5400	29
71	G B	823	27 hf ch	dust	1370	25
72	I P	826	35 ch	pek sou	3080	27
73		829	20 hf ch	dust	1700	25
74	Siriniwasa	832	23 ch	bro pek	2415	35
75		835	28 do	pek	2800	30 bid
76		838	20 do	pek sou	1800	29
77	Gwernet	841	12 ch	bro pek	1200	37
78		844	8 do	pek	760	34
83	Bloompark	859	11 ch	bro pek	1100	29
84		862	12 do	pek	1140	27
85		865	7 ch	pek sou	770	28
87	Nyanza	871	10 do	bro pek	1000	38
88		874	17 do	or pek	1615	38 bid
89		877	21 do	pek	2100	36
90		880	10 do	pek sou	900	31

Lot.		Box.	Pkgs.	Name.	lb.	c.
92	Daluk Oya	886	16 hf-ch	bro or pek	960	41
93		889	13 do	or pek	1015	37
94		892	32 do	pek	1760	31
98	Kosgama	904	23 ch	bro pek	2415	31 bid
99		907	21 do	pek	1785	30
101	Citrus	913	8 ch	bro pek	800	31
102		916	9 do	pek	810	28
105	Moragalla	925	8 ch	bro pek	800	29
106		528	21 do	pek	2100	28
107		931	11 do	pek sou	1100	26
109	S R K	937	13 ch	pek sou	1235	31
115	P T N, in estate mark	955	21 hf-ch	pek sou	1050	24
116	Mary Hill	958	17 hf-ch	bro pek	1165	35 bid
117		961	23 do	pek	1380	35
118		964	13 do	pek sou	780	30
121	Kirrikelle	973	37 ch	or pek	3700	40
122	Bargany	976	18 hf-ch	bro or pek	1080	38 bid
125		985	21 ch	pek	2100	35 bid
126		988	29 do	pek sou	2465	32 bid
129	Carney	997	37 hf-ch	pek	1665	31
130	Ranasinghapatna	1	55 hf-ch	or pek	2750	33 bid
131		4	40 do	bro or pek	2480	35 bid
132		7	25 ch	pek	2000	31 bid
133		10	25 do	pek sou	2050	30
134	Killin	13	24 ch	bro pek	2400	31 bid
141	Forest Hill	34	20 ch	bro pek	1700	31 bid
142	Yarrow	37	45 hf ch	bro pek	2520	34
143		40	40 do	pek	2000	32 bid
145	Hanwella	46	14 hf ch	bro pek	770	30
155	Maligatenne	76	8 ch	pek sou	761	21 bid
159	L	88	16 do	pek	1600	27
160		91	16 do	sou	1565	21
			1 hf ch			
161		94	16 do	pek fans	960	21
162		97	20 do	pek dust	1860	22
163		100	12 do	dust	1020	26

[Mr. E. John.—214,706 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Mel Villa	958	15 hf-ch	pekoe	750	29
7	Vincit	967	18 ch	bro pek	1620	32 bid
8		970	16 do	pekoe	1440	29
9		973	8 do	pek sou	720	27
12	Perth	982	18 do	bro or pek	1890	36
13		985	48 do	bro pek	4320	35
14		988	19 do	pekoe	1425	33
17	Agra Ouvah	997	53 hf-ch	bro or pek	3392	55
18		1000	26 do	or pek	1430	44
19		3	16 do	pekoe	800	40
20	Iona	6	33 ch	or pek	3135	46
21		9	20 do	pekoe	1700	41
23	Wadhurst	16	12 do	bro pek	1200	42
24		18	14 do	pekoe	1260	33
25		21	9 do	pek sou	810	31
26	Kandaloya	24	49 hf-ch	bro pek	2205	36 bid
27		27	35 do	or pek	1400	33 bid
28		30	120 do	pekoe	4800	31
30	Loughton	36	11 ch	bro pek	1100	33
31		39	12 do	pekoe	1080	30
34	Lameliere	48	31 do	bro pek	3100	53
35		51	36 do	pekoe	3312	42
36		54	25 do	pek sou	1875	37
38	Koslande	60	15 hf-ch	bro pek	825	41
39		63	14 ch	pekoe	1260	34 bid
44	Uda	78	11 do	bro pek	1078	26
45		81	19 do	pekoe	1444	27
49	Gangawatte	93	15 do	or pek	1425	38 bid
50		96	26 hf-ch	bro or pek	1690	42
51		99	22 ch	pekoe	1870	37
57	Glassaugh	117	19 hf-ch	or pek	1045	80
58		120	19 do	bro or pek	1235	53
59		123	18 ch	pekoe	1800	47
61	Westhall	129	12 hf-ch	dust	1080	23
62		132	8 ch	bro mix	840	24
63	Choughleigh	135	17 do	bro pek	1785	34
64		138	31 do	pekoe	2790	31 bid
68	W H G	150	33 do	pek sou	3300	37
69		153	9 hf-ch	dust	765	26
72	G T	162	18 ch	dust	3060	24 bid
73		165	54 hf-ch	bro pek fans	3240	29 bid
74	Glasgow	168	25 ch	bro or pek	2975	65
75		171	23 do	or pek	1656	50
76		174	16 do	pekoe	1392	44
77		177	14 do	pek sou	1300	40
78	N D	180	24 do	bro or pek	2040	39
79		183	11 do	or pek	792	41
80		186	8 do	pekoe	720	39
81		189	7 do	pek sou	700	39
82	Glasgow	192	19 do	fans	1900	30
83	D D	195	32 ch	pek fans	4480	27 bid
84	Bittacy	198	40 hf-ch	bro pek	2200	52
85		201	20 ch	pekoe	1700	44 bid
87		207	9 hf-ch	dust	720	29
94	P T	228	22 ch	sou	1716	26 bid
95	Coslande	231	14 hf-ch	bro pek	770	40

Lot.		Box.	Pkgs.	Name.	lb.	c.
96		234	14 ch	pekoe	1260	33
101	M R	249	40 do	bro pek	4200	32 bid
102		252	51 do	pekoe	4590	30 bid
103		255	19 do	pek sou	1615	28 bid
104		258	8 hf-ch	dust	720	26
105	Brownlow	261	29 do	bro or pek	1682	54
106		264	38 ch	or pek	3800	42
107		267	40 do	pekoe	3720	39
108		270	11 hf ch	dust	957	27
109	B B	273	34 ch	sou	2618	26 bid
112	Bellongalla	282	16 hf-ch	bro pek	800	30
113		285	15 ch	pekoe	1200	30
114	Galella	288	18 do	bro pek	1800	40
115		291	16 do	pekoe	1600	33 bid
117	Tempo	297	12 do	bro or pek	1200	31 bid
118		300	16 do	pekoe	1280	29 bid
119		303	17 do	pek sou	1275	27
120		306	13 do	sou	975	26
122	Daisy Hill	312	20 do	pekoe	1800	32 bid
125	Mocha	321	22 do	bro or pek	2200	61
126		324	13 do	or pek	1170	51
127		327	18 do	pekoe	1620	48
128		330	10 do	pek sou	850	43
129	Whyddon	333	17 do	bro pek	1802	35
130		336	12 do	pekoe	1164	32
131	Kotuagedera	339	15 do	bro pek	1500	32
132	Ferndale	342	12 do	or pek	1080	39
133	Maskeliya	345	25 hf-ch	bro or pek No. 1	1250	56
134		348	15 do	do No. 2	750	61
135		351	24 ch	or pek	2160	37 bid
136		354	18 do	pekoe	1620	33 bid
139	Hiralouvah	363	9 do	pek sou	765	32
142	Keenagaha Ella	372	11 do	sou	825	27
145	Eladuwa	381	10 do	or pek	950	34
147		387	21 do	pek	1890	29
148		390	8 do	pek sou	720	26
150	M, in est. mark	396	8 do	bro pek	785	43
151		399	26 do	or pek	2100	48
152	Wilpita	402	7 do	bro pek	700	29
153	Rondura	405	7 do	bro pek	700	32
154		408	17 do	or pek	1530	34
155		411	28 do	pek	2240	30
156		414	18 do	pek sou	1440	29
157	Harrisland	417	12 do	bro pek	1152	32 bid
158		420	9 do	pek	7 0	30 bid
159		423	10 do	pek sou	800	29
161	Dalhousie	429	58 hf-ch	pekoe No. 1	2610	34
162		432	33 do	do No. 2	1320	31 bid

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
1	A, in estate mark	11	5 ch	unas	475	52
6	Mapitigama	26	6 hf-ch	bro or pek fans	390	28
		29	4 do	bro tea	320	25
1	Sapitiyagodde	62	10 hf ch	pek fans	650	28

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Wewewatte	940	1 hf ch	fans	70	26
4		943	1 do	dust	61	24
5	Cooroondoowatte	946	9 hf-ch	bro pek	495	34
8		955	8 do	congou	440	26
9		958	6 do	pek dust	480	26
10		961	1 do	dust	112	24
23	Glencorse	1000	1 ch	bro tea	115	31
24		1003	2 do	pek fans	250	27
31	Matale	1024	5 hf-ch	dust	400	26
33	Ettapolla	1030	7 do	pek	392	32
34		10 3	4 do	sou	224	26
37	D M V	1042	5 ch	pek sou	400	26
38		1045	2 do	fans	200	27
39		1048	1 do	bro tea	70	24
40		1051	2 do	dust	150	25
44	V, in estate mark	1068	5 hf-ch	dust	400	26
47	Carherry	1072	4 ch	bro or pek	440	28
48		1075	4 do	pek sou	360	28
49		1078	3 do	bro tea	270	25
50		1081	2 do	dust	230	25
60	M'Golla	1111	4 ch	sou	320	23
61		1114	7 ch	dust	560	25
62		1117	1 do	red leaf fans	95	18
66	Penrhos	1129	4 ch	pek sou	320	29
67		1132	5 hf ch	fans	360	28
77	Monkswood	1162	8 hf-ch	dust	680	27
78		1165	10 do	pek sou No. 2	430	36
79	K W D, in est. mark	1168	8 hf ch	fans	480	27
80		1171	2 do	bro tea	184	26

Lot.		Box.	Pkgs.	Name.	lb.	c.
85	Raglan	1186	3 ch	bro pek	300	27 bid
86		1189	6 do	pek	600	26
8[illegible]		1192	1 do	dust	155	22
92	Grange Garden	1207	2 do	pek sou	200	30
93		1210	4 hf ch	dust	340	27
96	Clyde	1219	7 ch	pek sou	630	30
97		1222	2 do	dust	280	26
102	Sirikandura	1237	4 ch	bro pek fans	400	28
103		1240	1 do	dust	115	24
104	Springwood	1243	8 ch	congou	680	26
106	D	1249	5 ch	sou	475	25
107	M	1252	3 ch	bro mix	255	21
108	Coreen	1255	12 hf-ch	bro or pek	696	62
112		1267	8 do	dust	680	27
120	Roeberry	1291	6 ch	dust	600	27
123	St. Heliers	1300	5 hf ch	dust	420	26
127	Errolwood	1302	3 hf-ch	pek sou No. 2	315	31
137	Ella Oya	134[illegible]	4 hf-ch	dust	340	27
139	Karawoo-katiya	1348	5 ch	bro pek	551	30
143	Trewardene	1360	2 ch	pek sou	180	25
144		1363	1 do	pek fans	95	26
145		1366	1 do	dust	80	26
146		1369	2 do	bro mix	140	21
147	Tennehena	1372	1 ch 1 hf ch	bro pek	146	29
148		1375	3 ch	pek	269	26
153	Frogmore	1390	10 hf ch	or pek	400	44
155		1396	1 do	pek dust	85	27
157	A G	1402	5 ch	pek sou	500	28
158		1405	1 do	dust	155	26
159		1408	1 do	bro tea	100	26
167	Fairlawn	1432	4 hf-ch	dust	340	26
169	Carlabeck	1438	8 do	bro pek fans	656	30
170	Allerton	1441	1 ch	fans	100	26
171		1444	2 do	pek fans	240	23
172		1447	1 do	red leaf	90	18
173		1450	2 do	dust	260	24
176	Digdola	1459	4 ch	pek sou	360	29
177		1462	5 do	bro pek fans	525	28
180	Killarney	1471	8 hf ch	dust	680	26
183	Grace Land	1480	9 do	pek sou	450	26
187	D B R	1492	7 hf ch	bro pek fans	420	33
188		1495	2 ch	pek sou	160	36
189		1498	1 hf ch	dust	80	26
192	Yatiyana	1507	3 ch	pek sou	294	26
193		1510	1 do	do No. 2	83	24
194		1513	1 do	dust	83	25
197	Doranakande	15[illegible]	4 ch	pek	380	31
198		1525	4 do	pek No. 2	360	30
199		1528	7 do	pek sou	630	28
203	Galapitakande	1555	4 hf ch	dust	300	26
211	Gampaha	1561	7 ch	pek	630	35
221	Polatagama	1594	4 ch	dust	600	25
225	Erracht	1606	8 ch	pek sou	560	26
226		1609	1 do	bro pek fans	128	27
227		1612	2 do	dust	276	25
231	Kelaneiya and Braemar	1624	2 ch	sou	200	31
232		1627	6 hf ch	dust	480	27
234	Sutton	1633	2 ch	unas	170	41
237		1642	2 ch	red leaf No. 1	170	24
238		1645	2 hf-ch	do „ 2	150	25
244	Ninfield	1663	4 ch	sou	320	23
250	Waratenne	1681	3 hf-ch	fans	225	25
251		1684	3 do	dust	225	25
256	Geragama	1699	3 do	fans	255	25
257		1702	2 do	dust	170	26
260	Ardlaw and Wishford	1711	6 ch	pek	510	39
262		1717	5 do	or pek	400	40
265	S W	1726	5 do	bro or pek	606	29
270	Corfu	1741	5 hf-ch	bro pk fans	400	28
275	A	1756	10 do	sou	500	26
280	Hopton	1771	4 ch	dust	420	26
293	Lindapatna	1810	4 ch	bro or pek	260	51
294		1813	4 do	or pek	410	53
295		1816	7 do	pek	665	36
296		1819	3 do	pek sou	285	34
299	Mansfield	1828	6 do	pek sou	510	31
309	Walton	1858	1 do	bro tea	90	25
310		1861	1 do	fans	103	27
319	Castlereagh	1888	8 do	pek sou	640	32
321		1894	6 do	dust	480	26
322	B D W P	1897	1 hf-ch	bro mix	85	[illegible]
323		1900	2 ch	bro pek No. 2	180	22
324		1903	2 do	pek No. 2	160	22
325		1906	2 do	pek sou No. 2	150	21
326		1909	2 do	dust	170	26
331	St. Leonards-on Sea	1924	4 hf-ch	dust	340	25
339	B & D	1948	6 ch	sou	510	31
345	Yataderia	1966	1 do	pek sou	124	26
346		1969	1 do	pek sou No. 1	125	23
347		1972	1 do	bro pk dust	149	24
348	Y	1975	3 do	pek sou	375	27
349		1978	do	pek sou No. 2	500	25
363	Maha Uva	2020	1 hf-ch	pek fans	80	28
364		2023	5 do	dust	425	26
370	Polatagama	2041	1 ch	dust	150	26
377	Talgaswela	2062	3 do	fans	270	26
378		2065	2 hf-ch	dust	170 }	25
378a			3 do	red leaf	240 }	
379		2068	1 ch	bro mix	100	20
385	G	2086	4 do	dust	280	25
387	Stafford	2092	6 do	or pek	540	48
389		2098	2 do	pek sou	160	38
390		2101	3 hf-ch	fans	210	30
398	K H L	2125	2 hc	bro mixed	140	18
399	Debatgama	2128	7 hf-ch	dust	560	26
400	Ragalla	2131	6 do	dust	540	26
405	Old Madegama	2146	6 do	sou	480	27
408	Palmerston	2155	3 hf-ch	pek sou	240	44
409		2158	2 do	br pk fans	132	32
411	Ouvahkellie	2161	7 ch	dust	560	27
415	Pooroomadella	2176	2 do	sou	194	23

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Meetiagoda	622	1 ch 1 hf ch	fans	150	25
5		625	1 ch	dust	126	20
10	K G A, in estate mark	640	2 ch	bro tea	200	33
19	Salawe	667	1 ch	pek dus	170	26
20	S	670	6 hf-ch	dust	480	23
21		673	6 do	bro tea	300	26
22	A	676	4 hf ch	dust	320	26
23		679	3 do	bro tea	150	26
26	Dryburgh	688	4 ch	or pek	356	38
29		697	3 hf ch	fans	222	27
33	Hatdowa	709	1 ch	dust	140	24
34		712	3 do	sou	225	27
35		715	3 do	bro mix	240	23
36		718	5 do	fans	500	24
40	Arduthie	730	2 hf-ch	dust	160	25
46	Hangranoya	748	4 hf-ch	dust	360	25
53	Wilpita	769	3 ch	pek sou	300	23
54		772	1 do	con	100	22
55		775	2 do	fans	200	26
56		778	1 do	dust	125	24
59	Charlie Hill	787	3 hf-ch	pek fans	225	25
62	Mahatenne	796	5 ch	pek sou	450	26
63		799	1 do	dust	100	26
64		802	1 do	red leaf	65	20
68	Depedene	814	2 hf-ch	bro mix	120	20
69		817	3 do	dust	270	26
70	G B	820	5 hf ch	bro tea	250	25
79	Gwernet	847	4 ch	pek sou	360	31
80		850	2 do	dust	260	25
81	F, in estate mark	853	4 ch	sou	248	33
82		856	8 hf-ch	dust	552	27
86	Bloompark	868	2 ch	con	140	21
91	Nyanza	883	3 ch	fans	300	28
95	Daluk Oya	895	10 hf-ch	pek sou	500	26
96		898	5 do	dust	300	27
97		901	11 do	fans	660	27
100	Kosgama	910	4 ch	pek sou	300	26
103	Citrus	919	3 ch	pek sou	300	26
104		922	2 do	bro or pek	185	26
108	Moragalla	934	1 ch	sou	102	22
110	S R K	940	1 ch	sou	100	27
111		943	3 do	dust	450	26
112		946	3 do	bro tea	300	22
113	P T N, in estate mark	942	8 hf-ch	bro pek	448	26
114		952	2 do	pek fans	120	25
119	Mary Hill	967	2 hf-ch	bro tea	130	25
120		970	2 do	dust	170	25
123	Bargany	979	1 ch	bro pek	73	35
124		982	7 do	or pek	665	36 bid
127		991	1 do	sou	85	28
128		994	3 hf ch	dust	270	26
135	Ravenoya	16	1 ch	fans	100	26
136	F A, in estate mark	19	4 ch	pek sou	328	32
137		22	4 hf-ch	dust	348	26
138	Mossville	25	6 ch	bro pek fans	600	27
139		28	5 hf ch	dust	450	25
140		31	1 ch	red leaf	90	19
144	Y, in estate mark	43	1 hf ch	dust	90	25
146	Hanwella	49	10 hf ch	pek	520	24 bid
147		52	1 do	pek	54	24
148		55	5 do	dust	350	25
149	Bope	[illegible]	6 hf-ch	bro pek	330	28
150		61	3 do	pek	156	25
151		64	1 do	pek sou	48	23
152	G, in estate mark	67	6 ch	dust	594	25
153	Maligatenne	70	4 ch	bro pek	377	27

Lot,		Box.	Pkgs.		Name.	lb.	c.
154		73	5	do	pek	476	25
156		79	1	do	bro sou	112	20
157	P	82	6	ch	unas	612	21 bid
158	M, in estate mark	85	7	ch	dust	693	23
164	B E	103	6	hf ch	dust	600	24
165	Glenalla	106	2	ch	dust	290	25
166		109	1	do	fans	100	26
167		112	1	do	sou	85	22

[Mr. E. John.]

Lot,		Box.	Pkgs.		Name.	lb.	c.
1	Sadamuila	949	1	ch	dust	123	24
2		952	1	do	congou	100	22
3	Mel Villa	955	13	hf-ch	bro pek	650	31
5		961	8	do	pek sou	400	27
6		964	1	do	dust	80	25
10	Vincit	976	5	ch	bro pek fans	575	28
11		979	1	do	dust	160	26
15	Perth	991	7	do	pek sou	490	30
16		994	4	hf-ch	pek dust	300	26
22	Iona	12	5	do	dust	375	26
29	Kandaloya	33	13	do	pek sou	520	29
32	Loughton	42	3	ch	pek sou	240	27
33		45	1	do	dust	76	27
37	Lamaliere	57	8	hf-ch	pek fans	608	28
40	Koslande	66	1	ch	pek sou	95	32
41		69	1	do	congou	95	29
42		72	2	do	fans	220	29
43		75	1	do	dust	152	26
46	P P P	84	2	do	bro pek	196	30
47		87	3	do	pekoe	291	28
48		90	2	do	pek sou	160	25
52	Gangawatte	102	8	do	pek sou	680	36
53		105	6	hf-ch	dust	540	25
54		108	9	do	pek fans	675	28
55		111	4	ch	sou	340	28
56		114	2	do	bro mix	190	17
60	Glassaugh	126	7	hf-ch	dust	665	27
65	Choughleigh	141	4	ch	pek sou	344	28
66		144	4	do	dust	568	26
67	N	147	7	hf-ch	dust	595	26
70	W H G	156	4	do	fans	300	28
71		159	6	ch	bro mix	570	26
86	Bittacy	204	7	do	pek sou	630	36
88		210	2	do	bro mix	180	28
97	Coslande	237	1	do	pek sou	95	32
98		240	1	do	congou	95	29
99		243	2	do	fans	220	29
100		246	1	do	dust	152	26
116	Galella	294	5	do	pek sou	450	32
121	Tempo	309	3	do	dust	438	24
123	L B	315	3	do	bro tea	195	14
124	D, in est. mark	318	1	do	pek sou	50	30
137	Maskeliya	357	10	hf-ch	fans	600	29
138		360	3	do	dust	270	26
140	Hiralouvah	366	4	do	fans	260	28
141		369	2	do	dust	180	25
143	Keenagaha Ella	375	9	do	bro pek fans	585	28
144		378	3	do	dust	235	23
146	Eladuwa	384	6	ch	bro pek	660	28
149		393	1	do	mix	140	23
160	Dalhousie	426	14	hf-ch	or pek	630	42

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent*).

MINCING LANE, Mar. 2nd.

"Patroclus."—Size 1, Thotala Galla, 1 tierce sold at 75s; size 2, ditto, 4 casks and 1 tierce sold at 68s; size 3, ditto, 1 cask sold at 54s; PB, ditto, 1 tierce sold at 82s; T, ditto, 1 cask and 1 bag out; Thotala Galla, 1 bag out.

"Omrah."—WHC OO, in estate mark, 1 barrel sold at 106s; ditto 1, 1 barrel sold at 59s; ditto P, 1 barrel sold at 96s; Olivers P, 1 cask sold at 106s.

CEYLON COCOA SALES IN LONDON.

"Socotra."—OBEC, in estate mark, Kondesalle Ceylon, OF, 20 bags out at 79s 6d; 24 bags out at 84s, 75s refused; ditto 1 F, 12 bags sold at 68s 6d; 5 bags sold at 65s; ditto O, 10 bags out at 80s; ditto 1, 1 bag sold at 64s: ditto DF 2, 4 bags sold at 60s 6d; ditto G, 7 bags sold at 35s 6d.

"Patroclus."—O, 86 bags sold at 74s 6d; A, 30 bags sold at 70s.

"Patroclus."—O, L in estate mark, Estate Cocoa, No. 1, 95 bags sold at 75s, 78s refused; ditto O, No. 2, 1 bag sold at 61s.

"Socotra."—1, MAK, in estate mark, 112, bags sold at 69s.

"Awa Maru."—Batagolla A, 20 bags out (no bid); B, 34 bags no bid; C, 7 bags sold at 58s, 55s refused; D, 3 bags sold at 45s.

"Duke of Buckingham."—North Matale, 180 bags sold at 85s, 75s refused.

"Awa Maru."—Beredewelle COC, Ex. No. 1, 27 bags sold at 81s 6d; ditto B, 4 bags sold at 32s 6d; ditto T, 2 bags sold at 58s 6d; SL, in estate mark, 117 bags sold at 64s 6d; SL, in estate mark, 8 bags sold at 60s 6d; Hylton OO, 27 bags sold at 82s; O. 2 bags sold at 60s.

"Patroclus."—Warriapolla, 72 bags sold at 90s; 20 bags sold at 83s; 60 bags sold at 82s 6d; 20 bags sold at 83s; ditto 40 bags sold at 82s 6d; 36 bags sold at 83s; 6 bags sold at 63s; 25 bags sold at 64s 6d; 27 bags sold at 58s; Suduganga, 27 bags sold at 82s; 9 bags out at 85s, 75s refused; 15 bags sold 75s; ditto 6 bags sold at 60s; 9 bags sold at 58s; Yattawatte, 1, 114 bags sold at 86s, 80s 6d refused; 2 bags sold at 60s 6d; 2, 16 bags out at 67s; 1 bag sold at 54s; Broken, 2 bags sold at 62s 6d; A Dynevor, 13 bags out at 76s; B, 55 bags sold at 69s; 1 bag sold at 53s; C, 19 bags sold at 67; C. 1 bag sold at 53s D, 4 bags sold at 45s.

"Awa Maru."—Bandarapola 1, 37 bags sold at 76s; ditto 2, 2 bags sold at 59s; T, 4 bags sold at 51s; Coodulgalla, 31 bags sold at 71s 6d.

"Hakata Maru."—Kepitigalla, 10 bags sold at 73s.

"Awa Maru.—1 Ross, 20 bags sold at 83s; 21 bags sold at 82s 6d; ditto 2, 10 bags sold at 60s; Brown, 2 bags sold at 60s; Black, 3 bags sold at 38s.

"Socotra."—Asgeria A 1, 16 bags sold at 81s; ditto 2, 7 bags sold at 76s; Inguragalle A 1, 24 bags sold at 78s 6d; ditto 2, 20 bags sold at 78s 6d; ditto T. 2 bags sold at 58s; Altwood Estate, 67 bags sold at 22s 6d; 22 bags sold at 75s; 26 bags sold at 66s; CH, in estate mark, 21 bags out.

CEYLON CARDAMOMS SALES IN LONDON.

"Awa Maru."—Delpotonoya, 4 cases sold at 3s 4d; 1 case sold at 3s 5d; 1 case sold at 3s 4d; 3 cases sold at 3s 5d; ditto 5 cases out; 4 cases out; 4 cases sold at 2s 3d; 1 case sold at 1s 5d.

"Diomed."—FA&Co., in estate mark, 6 cases out at 4s.

"Shropshire."—Nawanagalla, No. 1, 3 cases sold at 4s; ditto No. 2, 6 cases sold at 2s 8d; ditto No. 4, 1 case sold at 2s 10d; ditto seed, 1 case sold at 2s 4d.

"Patroclus."—L Mysore. in estate mark, 6 cases out at 1s 6d; No. 1, ditto, 4 cases out at 1s 9d.

"Clan McNeil."—A Malabar, in estate mark, 26 cases out at 1s 10d; HR, ditto, 17 cases out at 1s 7d.

"Clan McNab."—S, Malabar, in estate mark, 18 cases out at 1s 9d.

"Awa Maru."—L, Wild Long Cardamoms, in estate mark, 2 cases sold at 2s 10; 4 cases sold at 2s 7d.

"Patroclus."—Midlands O, 2 cases sold at 3s; 4 cases sold at 3s 1d; 2 cases sold at 3s 2d; ditto 1, 8 cases sold at 2s 3d; ditto 2, 1 case sold at 1s 7d; ditto B&S, 1 case sold at 1s 5d; ditto seeds, 1 case sold at 2s 2d.

"Diomed."—Elkadua, AO, 2 cases sold at 2s 9d; 1 case sold at 1s 8d; ditto, A1, 3 cases sold at 2s 1d; ditto A 2, 1 case sold at 1s 5d; ditto AB&S, 1 case sold at 1s 1d; ditto A, seed, 2 cases sold at 2s 2d; Elkadua O, 2 cases sold at 2s 9d; ditto 1, 2 cases sold at 2s 1d; 1 case sold at 2s; ditto 2, 1 case sold at 2s 1d; ditto B&S, 2 cases sold at 1s 5d; seed 2 cases sold at 1s 5d.

"Clan Chisholm."—Yattawatta 1, 2 cases sold at 1s 5d; ditto 2, 1 case sold at 1s 7d; seed, 1 bag sold at 2s 2d.

"Socotra."—OBEC, Dangkande, in estate mark, 4 cases sold at 2s 7d; 2 cases sold at 1s 7d: OBEC Nillumally, OOO, in estate mark, 2 cases sold at

2s 6d ; 1 case sold at 2s 5d ; ditto OO, 11 cases out ; ditto, O, 2 cases out; ditto splits, 1 case out ; ditto, brown, 2 acses out.

"Hakata Maru."—Dehigalla Estate, Ceylon, in estate mark, 20 cases sold at 3s ; ditto 1, 9 cases sold at 2s 3d ; ditto 2, 19 cases sold at 1s 11d ; ditto 3, 4 cases sold at 1s 5d ; ditto seed, 1 case sold at 2s 2d ; ditto lights, 3 cases sold at 1s 2d ; ditto O, 3 cases sold at 2s 7d ; ditto 1, 8 cases sold at 2s ; 4 cases sold at 2s ; 4 eases sold at 1s 11d. Dehigolla Estate, Ceylon, in estate mark, 4 cases sold at 1s 8d ; 8 eases sold at 1s 7d ; ditto B, 8 cases sold at 1s 6d ; ditto S, 7 cases sold at 1s 4d ; ditto seeds, 1 case sold at 2s 1d.

"Patroclus."—New Peacock, O, 1 case sold at 2s 4d ; ditto 1, 1 case sold at 2s 4d ; 1 case sold at 1s 9d ; ditto 2, 1 case sold at 1s 4d ; ditto S, 2 cases sold at 1s 4d ; ditto 2, 1 case sold at 1s 4d ; ditto B, 1 case sold at 1s 4d ; ditto B, 1 case sold at 1s 4d.

"Duke of Buckingham."—S, in estate mark, 6 cases sold at 2s ; 6 cases sold at 1s 11d ; 1 case sold at 2s.

CEYLON CINNAMON SALES IN LONDON.

"Java."—1 PBM, 4 bales sold at 9d ; ditto 2, 2 bales sold at 8½d ; ditto 3, 2 bales sold at 6d ; ditto 4, 1 bale sold at 4d.

"Clan Chisholm."—PBM, 1 bale sold at 6d ; ditto 4 bales sold at 6d ; ditto 4, 1 bale sold at 6d ; ditto 4, 5 bales sold at 4d.

"Machaon."—MS, in estate mark, 1, 1 bale sold at 8d ; ditto 2, 1 bale sold at 8d ; ditto 3, 1 bale sol d at 8d ; ditto 4, 1 bale sold at 3d.

"Glenshiel."—4 PBM, Plantation, 4 bales sold at 6d.

"Glengyle."—DBM, Ekelle Plantation, 1, 2 bales sold at 10½d ; ditto 2, 5 bales sold at 9½d ; ditto 4, 2 bales sold at 8½d.

"Formosa."—CA, London, 2 bales and 1 parcel sold at 1s ; 2 bales and 1 parcel sold at 10½d ; 1 bale and 1 parcel sold at 9½d ; 1 bale and 1 parcel sold at 8½d ; 3 bags sold at 6½d ; 4 bags sold at 3¾d.

"Kamakura Maru."—F, in estate mark, Ekelle Plantation 1, 6 bags sold at 9d ; 10 bags sold at 11d.

"Clan Menzies."—K, in estate mark, 34 bales out.

"Diomed."—F, in estate mark, Ekelle Plantation, 6 bales sold at 11½d ; 4 bales sold at 11d ; 25 bales sold at 9½d.

"Clan McLaren."—F, in estate mark, Ekelle Plantation, 18 bags sold at 9½d ; 7 bags sold at 9½d.

"Bombay."—M, in estate mark, Ekelle Plantation, 36 bales sold at 9d ; ditto Ekelle Plantation, 18 bales sold at 8½d ; 3 bales sold at 6½d ; 2 bales sold at 7d ; 1 bale sold at 5½d.

"Hitachi Maru."—M, in estate mark, Ekelle Plantation, 6 bales sold at 11d ; 9 bales sold at 8d ; 7 bales sold at 9d ; 3 bales sold at 8½d ; 1 bale sold at 4d.

"Menelaus."—F, Ekelle Plantation, 6 bags sold at 11d ; 6 bales sold at 9½d ; 30 bales sold at 9d ; 30 bales sold at 8½d.

"Duke of Portland."—M, in estate mark, Ekelle Plantation, 1 bale sold at 9d ; 5 bales sold at 9d ; 3 bales sold at 8½d ; SM, Mahawatte Plantation, 1 bale sold at 9d ; 2 bales sold at 8d ; 1 bale sold at 6d.

"Clan McIntyre."—F, Ekelle Plantation, 38 bales sold at 9½d.

"Dardanus."—2, Ekelle Plantation, 100 bags sold at 1d.

"Clan Chisholm."—MM, in estate mark, 48 bags sold at 1½d ; 61 bags sold at 1d.

"Clan Mclaren."—P, in estate mark, 62 bags sold at 1d.

"Bombay."—2 P, in estate mark, 29 bags sold at 1d ; ditto 1, 10 bags sold at 1d ; MLM, 77 bags sold at 1d ; JL, in estate mark, 2 bags sold at 1½d ; RS, in estate mark, 75 bags sold at 1d.

"Hitachi Maru."—JL, in estate mark, 78 bags sold at 1d.

"Clan Sinclair."—JL in estate mark, 115 bags sold at 1d.

"Menelaus."—RS, in estate mark, 84 bags sold at 1d.

"Clan Macalister."—MS, in estate mark, 83 bags sold at 1d ; ML, in estate mark, Mahawatte Quilling Pieces, 7 bags sold at 6d.

"McIntyre."—LO, in estate mark, 109 bags sold at 1d ; MLM, in estate mark, 106 bags sold at 1d ; O J, in estate mark, 17 bags sold at 2½d.

"McNeil."—AS, in estate mark, London, 97 bags sold at 1d ; RS, in estate mark, Mahawatte Plantation Quilling Pieees, 8 bags sold at 1d ; MLM, in estate mark, 3 bags sold at 1d ; O J, in estate mark, 3 bags sold at 2¾d ; 1 bag sold at 5¾d ; JL, in estate mark, 1 bag sold at 5d.

"Sanuki Maru."—MM & Co., in estate mark, 6 bags sold at 1d and 3 sold at ½d.

"Clan McKay."—H in estate mark, 40 bags sold at 1½d ; 10 bags sold at 1d ; 7 bags sold at 2d ; 23 bags sold at 1d.

"Patroclus."—AS GP, in estate mark, Kadirane, 6 bales sold at 1s 6d ; 4 bales sold at 1s 9d ; 11 bales sold at 1s 7d ; 6 bales sold at 1s 8d ; 12 bales sold at 1s 6d ; 2 bales sold at 1s 5d ; 16 bales sold at 11½d ; 3 bales sold at 9½d ; 1 box sold at 10d ; 6 bags sold at 8½d ; FS WS, in estate mark, Kadirane, 4 bales sold at 1s 5d : 6 bales sold at 1s 3d ; 8 bales sold at 1s 1d ; 2 bales sold at 10d ; 5 bales sold at 9½d ; 1 box sold at 10½d ; FS WS, in estate mark, North Kadirane, 6 bales sold at 1s 6d ; 9 bales sold at 1s 4d ; 9 bales sold at 1s 2d ; 2 bales sold at 9½d ; 4 bales sold at 9d ; 1 box sold at 10d : 4 bales sold at 1s 6d ; 6 eases sold at 1s 5d ; 6 bales sold at 1s 4d ; 9 bales sold at 1s 2d ; 2 bales sold at 10d ; 6 bales sold at 9d ; 2 bales sold at 8½d ; 1 bale sold at 10½d.

"Portia."—M, 29 bags Cinnamon Bark sold at 1d.

"Hakata Maru."—MK M, in estate mark, 2 bales sold at 1¾d ; 1 bale sold at 1½d ; 1 bale sold at 1¾d ; ditto 45 bags sold at 1½d.

"Patroclus."—CH de S Kuruwitte, 8 bales sold at 1s 1d ; 16 bales sold at 11½d ; 7 bales at 10½d 1 bale at 9½d.

"Hakata Maru."—CH de S, Salawa, 4 bales sold at 1s ; 14 bales sold at 11½d ; 11 bales at 10½d ; 4 bales at 9½d ; CH de S, Ratmalane, 2 bales sold at 1s ; CH de S, Morrotto, 5 bales sold at 11d ; 5 bales sold at 10d ; 2 bales sold at 9½d ; CH de S, TPH, in estate mark, 2 bales sold at 11d ; 3 bales sold at 10d ; CH de S, Kandevalle, 4 bales sold at 9½d ; 1 bale sold at 9d ; 2 bales sold at 10d ; 2 bales sold at 9½d ; 1 bale sold at 9d.

"Clan Ogilvy."—CH de S, Kandevalle, 2 bales sold at 1s ; 5 bales sold at 11d ; 7 bales sold at 10d ; 6 bales sold at 9½d ; 1 bale sold at 9d ; CH de S, DK W, in estate mark, 2 bales sold at 1s ; 4 bales sold at 11½d ; 2 bales sold at 10d ; 2 bales sold at 9d ; CH de S, Rustam, 1 bale sold at 1s ; 2 bales sold at 11½d ; 4 bales sold at 10d ; 1 bale sold at 9d ; CH de S, Kadirane, 1 bale sold at 10½d ; 2 bales sold at 10d ; 4 bales sold at 9d ; CH de S, Coottariavalle, 2 bales sold at 11d ; 3 bales sold at 10½d ; 1 bale sold at 10d.

"Clan Ogilvy."—CHdeS TPW, in estate mark, 1 bale sold at 1s ; 1 bale sold at 11d ; 2 bales sold at 10½d ; 2 bales sold at 9½d ; CHdeS Hiripittya, 2 bales sold at 10d ; 2 bales sold at 8½d.

"Kawachi Maru."—GR SA, in estate mark, 35 bales sold at 8½d ; 20 bags sold at 4d ; 2 bags sold at 2½d.

"Patroclus."—NDPS Ekelle Plantation, 11 bales sold at 1s 2d ; 10 bales sold at 1s 1d ; 46 bales sold at 9d.

"Clan Ogilvy."—F M S, in estate mark, 20 bales sold at 11d ; 50 bales sold at 10d ; 12 bales sold at 9½d ; 14 bales sold at 9d ; 4 bales sold at 8½d.

"Dardanus."—JL, in estate mark, 7 bags sold at 3½d ; ditto 2, 7 bags sold at 3½d ; ditto 3, 1 bale sold at 1½d ; LL, in estate mark, 10 bags sold at 1¼d ; ditto 2, 7 bags sold at 2¾d ; ML, in estate mark, 56 bales sold at 1½d.

WILD CEYLON CINNAMON.

"Duke of Norfolk."—M, in estate mark, 120 bags sold at 1d ; M, in estate mark, 280 bags sold at 1d.

"Clan McLeod."—E, in estate mark, 8 bales sold at 1d ; 2 bags pieces sold at 1d.

No. 12 COLOMBO, APRIL 2, 1900. PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[9,360 lb.]

Lot.		Box.	Pkgs		Name.	lb	c.
1	Battalgalla	12	43	ch	pek sou	3870	34
2	Horusey	15	38	ch	or pek	3420	37 bid
3		18	23	do	pek	2070	35 bid

Messrs. Forbes & Walker.

[455,593 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	Igalkande	2179	18	ch	pek	1620	29
4	C S G	2188	78	hf-ch	bro pek	3900	42
5		2191	69	ch	pek	5520	34
6		2191	18	do	pek sou	1440	30
8		2200	10	hf-ch	dust	800	27
9	Abbotsleigh	2203	19	ch	pek	1672	46
10		2206	25	do	pek sou	2125	35
11	Galkande	2209	9	ch	bro pek	900	31
12		2212	12	do	pek	1200	28
16	Fetteresso	2224	22	hf-ch	bro or pek	1320	56 bid
17		2227	52	do	bro pek	3120	46
18		2230	29	ch	pek	2465	43
19		2233	21	do	pek sou	1680	36 bid
20	Rickarton	2236	16	hf-ch	bro or pek	1040	47
21		2239	26	do	or pek	1430	44
22		2242	18	ch	pek sou	1836	36
23		2245	14	hf ch	bro tea	910	26
25	Kincora	1	40	ch	bro pek	4000	35 bid
27		7	55	do	pek	5325	32
29		13	20	do	fans	1400	29
30	Thedden	16	21	ch	bro pek	2100	36
31		19	18	do	pek	1800	32
34	Great Valley, Ceylon, in estate mark	28	20	ch	or pek	1800	39
35		31	36	do	bro pek	1980	47
36		34	41	do	pek	3690	34
37		37	12	do	pek sou	960	29
39		43	10	do	dust	800	27
40	O B E C, in est mark Summer Hill	46	52	ch	bro or pek	3588	60
41		49	30	do	or pek	1850	53
42		52	36	do	pek	3168	45
43		55	23	do	pek A	2162	40
44		58	19	do	pek sou	1615	38
45	Waitalawa	61	72	hf ch	bro pek	3600	37
46		64	89	do	pek	4450	31
47		67	23	do	pek sou	1150	29
48	P	70	8	ch	pek sou	720	27
51	Irex	79	40	ch	bro pek	4000	34
52		82	23	do	pek	1840	32
53		85	12	do	pek sou	960	29
56	Glengariffe	94	50	hf ch	bro pek	2700	43
57		97	24	do	or pek	1152	38
58		100	25	ch	pek	2375	35
59		103	13	do	pek sou	1053	32
60		106	11	hf ch	fans	715	29
62	Huanuco	112	25	hf ch	bro pek	1250	28
63		115	50	do	pek	2200	28
64		118	25	do	pek sou	1125	25 bid
66	Ismalle	124	16	ch	sou	1360	25
67		127	18	do	fans	1350	27
68		130	14	do	dust	1190	25
69	Clarendon	133	12	ch	bro pek	1320	33
70		136	8	do	pekoe	800	29
80	S P	166	9	ch	or pek	945	24
81		169	8	do	pek	760	30
82		172	33	hf ch	fans No. 1	2145	29
83		175	25	do	dust	2.25	25
84	Nugagalla	178	29	hf-ch	bro pek	1450	35
85		181	70	do	pek	3500	30
88	Naseby	190	21	hf-ch	bro or pek	1323	58 bid
89		193	21	do	or pek	1029	59 bid
90		196	22	do	pek sou	1012	42 bid
91	O B E C, in est. mark, Forest Creek	199	19	ch	bro or pek	19 0	71
92		202	24	do	bro pek	2400	54
93		205	23	do	or pek	2300	51
94		208	40	do	pek No. 1	3600	46
95		211	35	do	pek „ 2	3500	40
96	Gomalia	214	73	hf ch	bro pek	4745	04 bid
97		217	23	ch	pek	2185	41
98		220	14	do	pek sou	1120	36
100	K P W	226	50	hf-ch	bro pek	2750	32
101		229	51	do	bro or pek	3060	33
102		232	71	do	pek	3905	30
103		235	63	do	pek sou	3150	27
105	Pine Hill	241	20	hf ch	bro or pek	1200	49
106		244	28	ch	or pek	1680	37
107		247	35	do	pek	2625	36
112	New Galway	262	17	hf-ch	pek	935	42
113	Hayes	265	20	ch	bro or pek	2000	48
114		268	43	ch	bro pek	4300	37
115		271	43	do	or pek	3870	36
116		274	100	do	pek	8500	32
117		277	56	do	pek sou	5040	29
119	High Forest	283	44	hf-ch	or pek No 1	2728	69
120		286	40	do	or pek	2400	52
121		289	31	do	pek	1612	48
122	Pallagodda	292	17	ch	bro or pek	1700	34
123		295	21	do	bro pek	2100	42
124		298	16	do	or pek	1440	33
126		304	17	do	pek	1530	34
127		307	18	do	pek sou	1620	31
128		310	9	do	sou	810	28
129		313	13	do	dust	1105	27
130	Clunes	316	16	ch	bro or pek	1600	33
131		319	17	do	bro pek	1530	33
132		322	18	do	or pek	1440	33
133		325	57	do	pek	4560	30
134		328	9	do	pek sou	855	28
136	Bloomfield	334	59	ch	bro pek	6195	41
137		337	43	do	pek	4214	37
138	Killarney	340	17	ch	or pek	1530	41
139		343	17	do	pek	1445	38
141	Carfax	349	19	ch	bro or pek	1900	46
142		352	22	do	or pek	1980	43
143		355	21	do	pek	1890	39
144	Great Valley Ceylon in est. mark	358	28	ch	or pek	2520	38
145		361	15	do	pekoe	1350	34
148	Deyanella	370	32	ch	bro pek	3200	38
149		373	16	do	pek	1440	33
154	Ardlaw and Wishford	388	7	ch	bro or pek	840	40
155		391	19	do	bro pek	1843	47
156		394	22	hf ch	or pek No. 1	1100	41
157		397	19	ch	pek	1558	40
158	A M B	400	24	ch	fans	2203	26
159	Devonford	403	21	hf ch	bro or pek	1155	79
160		406	14	ch	or pek	1260	53
161	C R D	409	13	ch	dust	1300	25
162	Agra Oya	412	26	ch	bro pek	2600	35
163		415	20	do	or pek	1700	33
164		418	21	do	pek	1890	31
165		421	11	do	pek sou	990	29
166	Amblargoda	424	19	ch	bro pek	1900	39 bid
167		427	17	do	pek	1530	33 bid
170	Hopton	436	23	ch	bro pek	2300	40
171		439	23	do	pek	1800	32 bid
172		442	8	do	pek sou	720	30 bid
174	Harrington	448	20	hf ch	bro or pek	1000	60
175		451	23	ch	or pek	2185	41 bid
176		454	24	do	pek	2160	39 bid
180	Rockside	466	10	ch	pek sou	850	31
193	Macaldeniya	505	21	hf ch	bro pek	1310	37
194		508	20	do	pek	1015	33
195		511	16	do	pek sou	800	30
196	Queensland	514	14	hf ch	bro pek	700	51 bid
197		517	8	ch	or pek	720	41 bid
198		520	18	do	pek	1530	38 bid
201	Chesterford	529	41	ch	bro pek	4100	39
202		532	39	do	pek	3909	32
203		535	27	do	pek sou	2700	30
204		538	18	do	fans	1620	30
206		544	19	hf-ch	dust	1520	26
207	Waratenne Invoice No. 11	547	11	ch	bro pek	990	33
208		550	10	do	pek	950	28
209	P G A	553	9	ch	sou	855	24
210	Kennington	556	9	ch	bro pk fans	1080	29
215	Augusta	571	6	do	dust	840	25
221	Memorakande	589	7	do	dust	750	26
223	Ugieside	595	9	hf-ch	dust	720	25
224		598	13	ch	bro mixed	1365	26
225	Relugas	601	6	do	dust	750	22
230	Sunnycroft	616	6	do	bro tea	780	24
231	Harrow	619	19	hf-ch	or pek	1045	47
232		622	15	do	bro or pek	900	55
233		625	34	ch	pek	3400	40

Lot.		Box.	Pkgs.	Name.	lb.	c.
234		628	13 ch	pek sou	1235	36
237	Erlsmere	637	20 do	bro pek	2100	43
238		640	19 do	pek	1520	41
241	Anningkan'e	649	12 do	pek	1140	33
242		652	14 do	pek sou	1261	30
243	Malvern	655	26 hf-ch	bro pek	1980	44
244		658	46 ch	pek	3220	33
245		661	23 do	pek sou	1610	26
246	B D W P	664	23 do	bro pek	1955	31 bid
248	Cast'ereagh	670	27 do	or pek	2295	37 bid
249	Galpotagama	673	11 do	bro pek	1100	32
259	Ellaoya	703	15 do	bro pek	1500	34
260		706	14 do	pek	1260	31
261		709	9 hf-ch	pek sou	810	28
263		715	12 do	bro pek fans	780	29
265	Cooroondoo-watte	721	8 ch	pek	800	33
271	Galkadua	739	18 do	bro pek	1980	36
272		742	20 do	pek	2000	30
273		745	11 do	pek sou	1100	27
278	Seenagolla	760	17 hf-ch	bro or pek	1020	45
279		763	13 do	or pk No. 1	715	44
280		766	16 do	or pek	880	41
281		769	14 do	pek	770	40
286	Ganapalla	784	14 do	bro or pek	1260	37
287		787	27 do	bro pek	2160	30
288		790	13 do	pek sou	975	27
289		793	16 do	bro pek	1440	32
290		796	12 hf-ch	bro pk fans	900	28
292	Aberdeen	802	55 ch	bro pek	5500	34
293		805	54 do	pek	4428	31
294		808	13 do	sou	1368	28
295		811	23 hf-ch	bro pk fans	1725	28
297	Dammeria	817	27 ch	or pek	2700	36
298		820	30 do	bro pek	3300	37
299		823	25 do	pek	2500	33
300		826	10 do	pek sou	900	32
301	Vogan	829	54 do	bro pek	5400	40
302		832	50 do	pek	4500	33
303		835	15 do	pek sou	1200	28
304	Tembiligalla	838	34 hf-ch	bro or pek	1870	37
305		841	10 ch	pek	900	34
309	Digdola	853	13 do	bro pek	1235	36
310		856	23 do	pek	1725	33
312	Halwatura	862	37 do	bro pek	3700	31
313		865	41 do	or pek	3895	30
314		868	56 do	pek	4760	29
315		871	60 do	pek sou	4500	27
316		874	11 do	br pk fans	825	27
318	Queensland	880	13 hf-ch	bro or pek	715	69
319		883	13 ch	pek	1170	43
322	N B D	892	9 do	bro mix	810	23
324	Kelburne	298	8 hf-ch	dust	760	25
325	Halgolle	901	27 ch	or pek	2430	32 bid
327	Middleton	907	17 do	bro pek	1700	60
328		910	12 do	pek	1080	45

[Messrs. Somerville & Co.—226,782 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Yspa	118	13 hf-ch	pek dust	1105	26
3	M Ceylon	121	35 ch	pek sou	2800	27
4		124	25 hf-ch	pek fans	2000	26
5	Nillicollay-watte	127	14 hf ch	bro pek	812	34
6		130	17 ch	or pek	1462	31 bid
7		133	18 do	pek	1530	29 bid
11	Wendu'a	145	9 ch	bro pek	864	32
13		151	9 do	pek sou	720	28
15	Oaklan's	157	12 do	or pek	1140	35
16		160	13 do	bro pek	1274	31
17		163	22 do	pek	1980	31
18		166	17 do	pek sou	1360	30
21	F F, in estate mark	175	21 hf-ch	bro pek	1155	31
26	Avisawella	190	32 ch	bro pek	3200	33
27		193	21 do	pek	1785	29
28		196	29 do	pek sou	2320	27
32	Paragaha-kande	208	9 ch	bro pek	900	21
33		211	16 do	pek	1440	28
44	Ukuwela	244	14 ch	bro tea	1260	20
45	Mora Ella	247	24 hf ch	bro or pek	1440	37
46		250	27 ¾ ch	pek	1755	34
47		253	17 ch	pek sou	1275	31
50	Monte Christo	262	40 ch	bro pek	4000	37
51	Narangoda	265	30 ch	bro pek	3000	34
52		268	19 do	pek	1805	29
53		271	11 do	pek sou	990	27
55	Meddegodda	277	41 hf ch	bro pek	2050	37
56		280	63 hf ch	pek	2650	32
57		283	19 do	pek sou	950	29
60	Gangwarily	292	25 ch	sou	1875	24
2		298	12 ch	fans	1200	26
63		301	14 do	red leaf	980	20
65	Forest Hill	307	14 ch	bro pek	1274	31
66		310	19 do	pek	1615	29 bid
69	Dikmukalana	319	45 hf ch	bro pek fans	2475	30
70		322	37 do	pek	1850	28 bid
71		325	17 do	pek sou A	816	28
72		328	18 do	pek sou B	900	28
74	Ladysmith	334	61 hf-ch	bro pek	3050	32
75		337	39 ch	pek	2847	30
76	Maddagedera	340	18 ch	bro pek	1800	33 bid
77		343	22 do	or pek	1980	30 bid
78		346	29 do	pek	2320	28
79		349	23 do	pek sou	1610	27
80		352	9 do	bro pek fans	990	27
81		355	32 do	bro mix	2720	22
83	Doragalla	361	15 hf-ch	bro or pek	900	42
84		364	14 ch	bro pek	1400	41
85		367	26 do	pek	2080	36
86		370	21 do	pek sou	1785	31
87		373	8 do	bro mix	1040	25
88	Horagoda	376	7 ch	bro or pek	700	33
90		382	12 do	pek	1140	29 bid
93	Hopewella	391	29 hf-ch	bro or pek	1624	44
94		394	22 do	bro pek	1100	41
95		397	85 do	pek	4080	35
96		400	40 do	pek sou	1800	31
97		403	19 do	bro or pek	1121	44
99		409	27 do	pek	1350	34
100		412	18 do	pek sou	828	31
103	Rayigam	421	31 hf-ch	bro pek	3100	33
104		424	23 do	or pek	1955	33
105		427	18 do	pek	1440	31
106		430	12 do	pek sou	1080	29
107		433	15 hf-ch	dust	1275	27
108	Auburn	436	15 ch	bro pek	1500	26
109		439	9 ch	pek	792	30 bid
111	Blackburn	445	10 hf-ch	fans	700	28
113	Silverton	451	64 hf ch	bro pek	3200	32
114		454	30 ch	pek	2250	30
115	Pitaville	457	8 ch	bro or pek	800	30
116		460	13 hf ch	bro pek	715	29
118		466	9 ch	sou	900	20
119	Siriniwasa	469	22 ch	bro pek	2200	36
120		472	28 do	pek	2800	31
121		475	20 do	pek sou	2000	29
127	Harangalla	493	19 ch	bro pek	1805	36
128		496	61 do	pek	4880	32 bid
129		499	25 do	sou	2000	27 bid
130		502	18 do	dust	1350	26
131		505	12 do	bro pek fans	1200	30
133	Bogahagoda, watte	511	10 ch	bro pek	1000	31
137	R C T F, in estate mark	523	15 ch	bro pek	1500	31
138		526	21 do	pek	1785	29
139		529	25 do	pek sou unbulked	2000	26
142	Annandale	538	21 hf ch	bro or pek	1218	64
143		541	20 do	or pek	1140	48
144		544	19 do	pek	1045	38 bid
145		547	26 do	pek sou	1560	35 bid
147	Neboda	553	12 ch	bro or pek	1200	30 bid
148		556	42 do	bro pek	4200	30 bid
149		559	12 ch	pek	1080	29 bid
150		562	14 do	pek sou	1120	29
153	Neuchatel	571	44 ch	bro pek	4400	34
154		574	24 do	pek	2040	31
155		577	21 do	pek sou	1880	29
157	Hanagama	583	17 ch	bro pek	1700	34
158		586	35 do	pek	3325	29
159	Wilford	589	20 ch	bro pek	2000	31
160	Bidbury	592	11 ch	or pek	990	43
161		595	13 do	pek	1170	35
162		598	9 do	pek sou	810	31
168	Rahatungoda	610	20 hf-ch	bro pek	1400	47
169		619	22 do	or pek	1100	41 bid
170		514	45 do	pek	2250	36
171	Columbia	625	14 hf ch	or pek No. 1	700	50
172		628	29 do	do No. 2	1305	43
173		631	26 do	pek	1170	39
175	N Y Z	637	53 ch	pek sou	4770	22 bid
176		640	10 do	pek fans	795	25
178	Nyanza	646	11 ch	bro pek	1100	36
179		649	12 do	or pek	1200	37 bid
180		652	16 do	pek	1600	36
181		655	8 do	pek sou	720	31
183	Rayigam	661	31 ch	bro pek	2635	33
184		664	23 do	or pek	1610	33
185		667	18 do	pek	1170	32
186		670	12 do	pek sou	864	30
187	Attiville	673	10 ch	bro pek	1600	30
188		676	14 do	pek	1330	27

[Mr. E. John.—210,453 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
7	Woodstock	453	18 ch	bro pek	1530	37
8		456	18 do	pekoe	1450	33

Lot		Box.	Pkgs.	Name.	lb.	c.
11	Mount Everest	465	24 hf ch	bro or pek	1320	63
12		468	39 do	or pek	1950	46 bid
13		471	35 ch	pekoe	3500	38 bid
14		474	15 do	pek sou	1350	36
15	Rookwood	477	32 hf-ch	bro or pek (Venesta)	2176	43
16		480	23 do	or pek (Venesta)	1380	40
17		483	16 ch	pekoe (H)	1440	40
18		486	23 do	pek sou (H)	2520	35
20	Gonavy	492	57 hf-ch	bro pek	2850	38
21		495	20 ch	pekoe	1500	33
24	Glasgow	504	40 do	bro or pek	3400	56
25		507	21 do	or pek	1800	53
26		510	18 do	pekoe	1563	44
27		513	18 do	pek sou	1800	39
28	Agra Ouvah	516	87 hf-ch	bro or pek	5655	52
29		519	31 ch	or pek	2852	4[illegible]
30		522	17 do	pekoe	1530	40
31	Ottery	525	27 do	bro or pek	2700	38 bid
32		528	16 do	or pek	1360	42
33		531	32 do	pekoe	3200	35
35	Myraganga	537	26 do	bro pek	2340	33 bid
36		540	54 do	bro or pek	5400	33 bid
37		543	43 do	pekoe	3440	32
38		546	52 do	pek sou	4420	31 bid
39		549	12 hf-ch	fans	780	23
40	Eila	552	89 ch	bro pek	7565	33 bid
41		555	51 do	pek sou	4335	28 bid
42		558	16 hf-ch	dust	1360	26
43	Glentilt	561	60 do	bro pek	36[illegible]0	45
44		564	24 ch	or pek	2400	37 bid
45		567	23 do	pekoe	2300	36
46	St. John's	570	25 hf-ch	bro or pek	1550	73
47		573	25 do	or pek	1300	75
48		576	25 do	pekoe	1450	51
49		579	16 do	pek fans	1152	36
50	Alplakande	582	13 ch	sou	1170	26
51	Little Valley	585	12 do	or pek	1020	40
52		588	10 do	bro pek	1000	39
53		591	36 do	pekoe	2700	31 bid
54		594	11 do	pek sou	880	30
55		597	13 hf-ch	bro or pek	715	50
58	Glassaugh	606	18 do	or pek	954	80
59		609	18 do	bro or pek	1170	55
60		612	16 ch	pekoe	1520	50
62	G B	618	18 hf-ch	fans	1260	27
64	M G	624	15 do	fans	1170	27
65		627	8 ch	unas	760	25
69	Birnam	639	46 do	pek sou	2990	34
70	D D	642	58 hf-ch	bro pek fans	3770	29 bid
71		645	40 ch			
			18 hf-ch	pek fans	5340	26 bid
72		648	16 ch	pek sou	1328	28 bid
73		651	22 do	sou	1936	24
74	Perth	654	13 do	bro or pek	1365	37
75		657	33 do	bro pek	2970	37
76		660	14 do	pekoe	1120	34
79	Murraythwaite	669	14 do	bro pek	1330	37
80		672	14 do	pekoe	1190	31
81	Claremont	675	24 do	bro or pek	2400	33 bid
82		678	11 do	pekoe	935	30
83		681	9 do	sou	810	24
85	Ferndale	687	15 do	bro or pek	1500	40
86		690	12 do	pekoe	1080	35
87	Ben Nevis	693	25 hf-ch	bro pek	1500	46 bid
88		696	16 do	or pek	720	54
89		699	18 ch	pekoe	1620	28 bid
92	Ohiya	708	13 do	pek sou	1183	32
95	Ratwatte	717	48 do	bro pek	4800	35
96		720	33 do	pekoe	3240	31
97		723	15 do	pek sou	1200	28
98	Dickapittia	726	26 do	bro pek	2600	33
99		729	33 do	pekoe	3300	30 bid
100		732	8 do	pek sou	800	29
101	Chapelton	735	9 hf-ch	dust	810	28
102		738	14 ch	bro mix	1120	31
103	Poilakande	741	25 do	bro pek	2375	33
104		744	33 do	pekoe	2805	31
105	W H	747	19 do	pek sou	1530	28 bid
106	Yapame	750	36 do	bro pek	3600	36
107		753	21 do	pekoe	1890	34
108		756	15 do	pek sou	1275	30
111	Nahavilla	765	35 do			
			20 hf-ch	bro pek	4700	36 bid
112		768	51 do	pekoe	2550	35
113		771	19 ch	pek sou	1900	34
115	X Y Z	777	8 hf ch	pek dust	720	26
118	W H G	785	21 ch	pek sou	1995	32
119	Glassaugh	789	16 hf-ch	or pek	848	80
120		792	21 do	bro or pek	1365	56
121		795	15 ch	pekoe	1500	52
128	M, in est. mark	816	34 do	pek fans	4590	20 bid
129	Koslande	819	16 hf-ch	bro pek	880	57 bid
130		822	13 ch	pekoe	1170	32 bid
135	B D	837	20 do	pek sou	1600	27 bid
136	Coslande	840	16 hf-ch	bro pek	880	38
137		843	13 ch	pekoe	1170	32 bid

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name,	lb.	c.
2	C F, in estate mark	2182	2 ch	pek sou	190	28
3		2185	1 do	sou	90	25
7	C S G	2197	4 ch	bro mix	460	24
13		2215	6 ch	pek sou	600	26
14		2218	1 do	fans	85	27
15		2221	1 do	dust	120	25
24	Rickarton	2248	3 hf ch	fans	255	28
26	Kincora	4	7 ch	pek No. 2	665	28
28		10	2 do	congou	180	23
32	Thedden	22	6 ch	pek sou	540	29
33		25	3 do	dust	450	26
38	Great Valley Ceylon, in estate mark	40	7 ch	sou	525	26
49	P	73	1 ch	dust	160	26
5		76	1 do	fans	131	27
54	Irex	88	3 ch	dust	200	20
55		91	1 do	bro tea	70	22
61	Glengariffe	109	7 hf-ch	dust	550	26
65	Huanuco	121	8 hf ch	fans	6[illegible]0	25
71	Rockside	139	7 ch	sou	560	29
72		142	2 do	bro mix	170	21
73		145	5 do	dust	675	27
74	Mahayaya	148	5 hf-ch	bro or pek	360	33
75		151	8 do	bro pek	488	33
76		154	11 do	pek	627	29
77		157	10 do	pek sou	560	28
78		160	3 do	sou	180	25
79	S P	162	6 ch	bro pek	600	33
86	Nugagalla	184	13 hf ch	pek sou	650	27
87		187	6 do	dust	540	26
99	D B, 391, in est. mark	223	1 ch	bro pek	99	40
104	K P W	238	3 hf-ch	dust	270	25
108	Pine Hill	250	7 ch	pek sou	525	31
109		253	5 do	dust	425	27
110		256	1 do	sou	70	21
111	New Galway	259	11 hf ch	bro pek	660	54
118	Hayes	280	4 ch	dust	520	26
125	Pallagodda	301	7 ch	or pek No. 2	630	30
135	Clunes	331	5 ch	dust	450	25
140	Killarney	346	7 hf-ch	fans	490	29
146	S G	364	6 ch	pek sou	600	27
147		367	2 do	sou	184	24
150	Deynilla	376	5 ch	fans	500	28
151		379	2 do	sou	180	26
152		382	3 hf ch	dust	240	26
168	Amblangoda	430	6 ch	pek sou	540	32
169		433	3 do	dust	315	26
173	Hopton	445	4 ch	dust	420	27
177	Harrington	457	3 ch	pek	285	35
178		460	7 hf ch	or pek fans	490	32
179		463	2 do	dust	170	26
181	Palm Garden	469	5 ch	bro pek	575	34
182		472	6 do	pek	600	29
183		475	4 do	pek sou	400	26
184	B B, in estate mark	478	4 hf ch	bro pek	240	27
185		181	1 ch	pek	105	25
186		434	3 hf-ch	dust	240	25
187		487	2 do	bro pek	120	27
188		490	2 ch	pek	200	25
189		493	1 do	dust	168	25
190	S K M	496	1 hf ch	bro pek	65	31
191		499	1 do	pek	54	28
192		502	1 ch	pek sou	99	26
199	N B D	523	6 ch	bro mix	540	21
200		526	1 do	unas	100	22
205	Chesterford	541	2 do	congou	180	26
211	Kennington	559	4 do	unast	400	25
212		562	4 do	dust	505	26
213	C N	565	6 do	bro tea	600	25
214	Augusta	568	2 do	sou	210	24
216	Belgodde	574	2 hf-ch	bro pek	100	33
217		577	3 do	pek	150	29
218		580	3 do	pek sou	150	28
219		583	2 do	sou	100	25
220		586	1 do	dust	70	25
222	Poengalla	59[illegible]	5 ch	dust	450	26
226	Peakshadow	604	6 do	pek fans	600	27
227		6[illegible]7	2 do	dust	260	25
228		610	1 do	dust	130	25
229		613	2 do	bro mix	200	24
235	Harrow	631	2 hf-ch	dust	180	26
236	Erlsmere	634	9 do	bro or pek	540	59
239		643	7 ch	pek sou	630	37
240		646	2 hf-ch	dust	170	26
247	Agra Elbedde	667	9 do	pek sou	450	34
250	Galpotagama	676	7 ch	pek	630	27
251		679	8 do	pek sou	680	25
252		682	5 do	sou	400	24
253		685	3 do	fans	279	24

Lot.		Box.	Pkgs.	Name.	lb.	c.
254		688	1 ch	dust	140	23
262	Ellaoya	712	1 hf-ch	dust	75	25
264	Cooroondoowatte	718	9 do	bro pek	5 0	39
266		721	6 ch	pek sou	570	32
267	D G F	727	2 do 1 hf-ch	bro pek	250	29
268		730	2 ch 1 hf ch	pek	200	28
269		733	3 ch	pek sou	241	27
270	Galkadua	736	3 do	bro or pek	360	32
274		748	2 do	fans	252	27
275		751	1 do	dust	146	20
276	U R	754	2 do	br tea No. 1	200	25
277		757	7 do	br tea No. 2	672	24
282	Seenagolla	772	12 hf ch	pek sou	660	33
283		775	3 do	fans	210	31
284		778	3 do	mix	180	23
285	Ganapalla	781	7 ch	or pek	630	34
291		796	4 hf-ch	dust	352	24
296	Dammeria	814	5 ch	bro or pek	600	35
306	Tembiligalla	844	5 do	pek sou	450	33
307		847	1 hf ch	fans	70	26
308		850	do	dust	80	20
311	Tigdola	859	2 ch	pek sou	200	27
317	Halwatura	877	4 do	dust	380	24
320	Queensland	886	1 hf-ch	bro pek dust	80	27
321		889	2 do	fans	120	36
323	N B D	895	5 ch	unast	500	34
326	K H L	904	2 do	bro mixed	140	19

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Venture	115	6 ch	red leaf	510	23
8	Nillicollaywatte	136	6 ch	pek sou	480	28
9		139	2 hf-ch	dust	140	25
10		142	2 do	fans	140	26
12	Wendura	148	8 ch	pek	640	30
14		154	2 hf ch	dust	170	26
19	Oaklands	169	8 hf ch	pek fans	416	25
20		172	7 do	dust	525	28
22	F F, in estate mark	178	12 hf-ch	pek	600	28
23		181	6 do	pek sou	270	26
24		184	1 do	dust	90	23
25		187	3 do	bro pek fans	195	26
29	Avisawella	199	8 ch	sou	640	24
30		202	3 do	dust	420	24
31	X Z, in estate mark	205	5 do	sou	450	23
34	Paragahakanda	214	5 ch	pek sou	450	25
35		217	5 do	fans	450	25
36		220	2 do	red leaf	200	18
37	O H S, in estate mark	223	4 ch	bro pek	440	26 bid
38		226	6 do	pek	600	25
39		229	2 do	pek sou	179	23
40		232	1 do	red leaf	91	18
41	Galatota	235	4 ch	bro pek	400	28
42		238	2 do 1 hf ch	pek	250	26
43		241	1 ch	pek sou	100	24
48	Mora Ella	256	2 ch	bro pek fans	240	28
49		259	3 hf ch	dust	240	25
54	Narangoda	274	2 hf ch	dust	170	24
58	Meddegodda	286	4 hf ch	fans	260	29
59		289	2 do	dust	180	26
61	Gangwarily	295	5 hf-ch	dust	400	24
64	Forest Hill	354	8 hf-ch	bro or pek	504	36
67		313	6 ch	pek sou	404	27 bid
68		316	7 hf-ch	fans	546	27
73	Dikmukalana	331	12 hf ch	sou	600	24
82	Maddagedera	358	8 hf-ch	dust	680	25
89	Horagoda	379	7 ch	or pek	630	33
91		385	5 do	pek sou	425	29
92		388	1 do	dust	100	24
98	Hopewell	406	10 hf-ch	or pek	520	38
101		415	3 do	pek fans	189	29
102		418	3 do	dust	240	25
110	Auburn	442	7 ch	pek sou	560	26 bid
112	Blackburn	448	8 hf-ch	dust	640	25
117	Pitaville	463	10 hf ch	pek	530	27
122	Siriniwasa	478	3 ch	bro pek fans	315	27
123		481	2 do	dust	150	25
124	Kerenvilla	484	5 ch	bro pek	500	29
125		487	7 do	pek	665	26
126		490	5 do	pek sou	500	24
132	D	508	1 ch 1 hf ch	bro mix	130	24
134	Bogahagodawatte	514	6 ch	pek	570	27
135		517	3 do	pek sou	285	25
136		520	2 do	bro pek fans	224	27

Lot.		Box.	Pkgs.	Name.	lb.	c.
140	R C T F, in estate mark	532	1 ch	bro pek fans	100	26
141		535	2 hf ch	dust	150	24
146	Annandale	550	11 hf-ch	sou	572	32
151	Neboda	565	3 hf-ch	dust	255	25
152	Neuchatel	568	2 ch	bro or pek	230	29
156		580	2 do	dust	300	25
163	Alutkelle	601	10 hf-ch	bro pek	500	29
164		604	6 do	pek	600	27
165		607	5 do	s u	250	25
166		610	3 do	fans	141	25
167		613	1 do	dust	74	24
174	N Y Z	634	8 hf-ch	bro or pek	520	25
177		643	7 do	dust	595	24
182	Nyanza	658	2 ch	dust	200	26
189	Attiville	679	5 ch	pek sou	500	25
190		682	1 do	bro mix	100	22

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
1	Theresia	435	2 ch	bro pek fans	200	35
2		438	6 hf-ch	dust	480	28
3		441	1 do	sou	41	31
4	Bow Hill	444	12 do	b o pek	660	33
5		447	5 ch	pekoe	425	33
6		450	3 do	red leaf	300	22
9	Woodstock	459	3 do	pek sou	252	28
10		462	2 hf ch	dust	160	26
19	Genavy	489	4 do	bro or pek	200	36
22		498	7 ch	pek sou	475	30
23		501	7 hf-ch	dust	525	26
34	Ottery	531	2 ch	dust	240	27
56	Little Valley	600	4 do	bro tea	300	22
57		603	4 hf-ch	dust	340	25
61	G B	615	5 do	dust	425	26
63		621	5 do	bro mix	400	28
66	K P	630	4 do	dust	388	24
67		633	7 do	fans	546	26
68	Elston	636	4 ch	congou	400	18
77	Perth	663	4 do	pek sou	320	31
78		666	3 hf-ch	pek dust	225	27
84	Claremont	684	3 ch	dust	300	24
90	Ben Nevis	702	6 do	pek sou	480	35
91		705	2 hf-ch	dust	162	27
93	Ohiya	711	4 do	fans	340	26
94		714	6 ch	sou	540	27
109	Yapame	759	4 hf-ch	fans	300	31
110		762	6 do	dust	510	26
114	X Y Z	774	1 ch	sou	84	28
116	G	780	5 do 1 hf ch	unas	598	20
117		783	1 ch 1 hf-ch	dust	235	18
122	Glassaugh	798	3 do	dust	285	27
123	Mahagalatenne	801	4 ch	bro pek	400	28
124		804	2 do	pekoe	200	26
125		807	1 do	pek sou	100	25
126		810	2 do	fans	200	26
127		813	1 do	dust	100	24
131	Koslande	825	2 do	pek sou	190	31
132		828	2 do	congou	180	28
133		831	1 do	fans	110	29
134		834	1 do	dust	150	25
138	Coslande	846	2 do	pek sou	190	31
139		849	2 do	congou	180	29
140		852	1 do	fans	110	28
141		855	1 do	dust	150	25

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent).

Mincing Lane, March 9th.

"Staffordshire."—SACC, in estate mark, 80 bags sold at 85s, 38s refused.

"Ceylon."—S CC A. in estate mark, 5 casks sold at 69s ; ditto 1 7 casks and 1 barrel sold at 54 ; O, ditto 2, 3 casks and tierce sold at 47s 6d ; ditto PB, 1 cask and 1 barrel sold at 63s 6d ; ditto T, 1 cask, 1 tierce and 1 barrel sold at 37s ; ditto DSS, in estate mark, OO, 1 tierce sold at 70s ; ditto O, 3 casks and 1 barrel sold at 64 ; ditto 1, 7 casks sold at 55s ; ditto 2, 1 cask and 1 barrel sold at 43s ; ditto PB, 1 cask and 1 tierce sold at 58 ; ditto T, 4 casks sold at 37s.

"Diomed,"—Size 1, Ampittia Kande, 1 cask sold at 105s ; ditto Size 2, 2 casks sold at 84s ; ditto 3, 1 barrel out at 50s, 47s refused ; ditto PB, 1 barrel sold at 96s ; T AK, 1 barrel out ; AK, 1 barrel out.

"Diomed."—O Roehampton, 1 barrel sold at 103s ; ditto 1, 2 casks sold at 76s ; ditto 2, 1 barrel sold at 44s ; ditto DB, 1 barrel sold at 83s ; ditto T,1 barrel out ; GSR, in estate mark, 2 barrels out

"Inaba Maru."—Broughton 1, 1 barrel sold at 60s ; ditto 2, 1 cask sold at 54s ; ditto S. 1 barrel sold at 38s ; ditto PB, 1 barrel sold at 61s ; BGT, 1 barrel sold at 30s ; BGT T, in estate mark, 1 barrel sold at 30s ; BGT P, in estate mark, 1 barrel sold at 30s.

Coffee firm and trade showing great confidence in future values. Consumption has at last overtaken production. Wheat, Corn, Maize, Iron and Sugar should rise. Cotton for next season promises too heavy a supply.

CEYLON COCOA SALES IN LONDON.

"Diomed."—Wiharagama 1, 18 bags sold at 80s 6d ; ditto 2, 21 bags sold at 80s 6d.

"Socotra."—A Dynevor, 10 bags sold at 81s 6d ; ditto B, 19 bags sold at 72s ; ditto C, 10 bags sold at 61s 6d ; ditto D, 1 bag sold at 30s ; Goonambil, 20 bags sold at 80s 6d ; ditto 20 bags sold at 81s 6d ; ditto 10 bags out at 75s ; ditto 12 bags sold at 63s ; CGH, in estate mark, 46 bags out at 70s ; ditto 16 bags sold at 60s 6d ; ditto 8, bags sold at 60s ; ditto 13 bags sold at 57s 6d.

"Patroclus."—Dynevor C, 19 bags sold at 57s 6d.

"Diomed."—Nawanagala A, 19 bags sold at 77s 6d ; B, 8 bags out at 75s ; ditto C, 29 bags out.

"Socotra."—Altwood Estate, 4 bags sold at 77s ; ditto 26 bags sold at 63s ; ditto 1 bag sold at 64s ; CH in estate mark, 5 bags sold at 62s.

"Awa Maru."—Palle, London F, 69 bags out at 84s, 81s 6d refused ; ditto 2, 7 bags sold at 63s 6d ; ditto T, 3 bags sold at 61s.

"Socotra."—A Grove, London, 40 bags sold at 82s.

"Dordogore."—MAC, 26 bags out.

"Hakata Maru.—MA, in estate mark, 41 bags out.

"Duke of Norfolk."—MLM, in estate mark, 1 bag sold at 60s, sweepings.

"Diomed."—Udapolla A1, 92 bags sold at 77s 6d ; ditto A2, 7 bags sold at 67s ; ditto B, 17 bags sold at 62s ; ditto C, 6 bags sold at 47s ; ditto G, 10 bags sold at 50s 6d ; ditto Pieces, 1 bag sold at 61s.

"Duke of Buckingham."—OO MAF, 20 bags sold at 80s 6d ; OO MAF, 45 bags sold at 81s 6d.

"Arcadia."—HMS & Co., in estate mark, 4 bags out at 70s, 61s refused.

"Awa Maru."—Morankande, Ceylon, in estate mark, London 1, 13 bags sold at 80s 6d ; ditto 2, 3 bags sold at 61s ; ditto 3, 15 bags sold at 55s ; M, Ceylon, in estate mark, London, 15 bags sold at 81s ; Hentimalie Ceylon, in estate mark, London, 10 bags sold at 60s 6d.

"Omrah."—Goodwood Estate, Ceylon, in estate mark, AA, 14 bags sold at 75s 6d.

"Inaba Maru."—Anniewattte, 2 Gunnies, 44 bags sold at 82s 6d ; ditto GA, 4 bags sold at 66s.

No. 13 — COLOMBO, APRIL 9, 1900. — PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[13,948 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Mandara Newera, Invoice 8	13	16 ch 1 hf ch	bro pek	1772	42 bid
2		16	13 ch	pek	1144	40
5	Halgolla	25	31 ch	bro pek	2945	33
6		28	28 do	or pek	2520	30 bid
7		31	24 do	pek	2166	30
8		34	21 do	pek sou	1995	29
11	Mandara Newera, Invoice 6	43	30 hf ch	bro pek	1800	44
12		46	21 do	or pek	1134	43
13		49	16 do	pek	736	40
14	Sapitiyagodde	52	74 do	or pek	3552	33
15		55	63 do	bro or pek	3780	33 bid
16		58	40 ch	pek	3080	32
17		61	50 do	pek sou	4000	30

[Messrs. Somerville & Co.—197,360 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	G A Ceylon	691	10 hf ch	dust	800	25
6	Kelani	700	50 ch	bro pek	4000	34
7		703	21 do	bro or pek	2100	34
8		706	35 do	pek	2975	31
9		709	35 do	pek sou	3150	29
10	Blinkbonnie	712	22 ch	bro pek	1320	49
11		715	42 do	pek	3696	38
12		718	9 do	pek sou	720	36
13	Lonach	721	84 hf ch	bro pek	4620	35
14		724	30 ch	pek	2550	34
15		727	18 do	pek sou	1530	32
16	Ferriby	730	14 ch	bro pek	1330	33 bid
17		733	34 do	pek	2890	30
18		736	18 do	pek sou	1350	28
20	Ravana	742	40 hf-ch	bro pek	2400	36
21		745	42 do	pek	1890	33
22		748	20 do	pek sou	900	29
24	Marigold	754	78 hf-ch	bro pek	4290	45
25		757	24 do	pek	1200	41
26		760	24 do	pek sou	1200	38
28	Kurulugalla	766	15 ch	bro pek	1500	33
29		769	26 do	pek	2310	29
31	Hurstpierpoint	775	10 ch	bro pek	1060	32
38	Florida	796	12 ch	bro pek	1200	32
39		799	12 do	pek	1152	28
45	Lower Dickoya	817	18 ch	bro pek	1800	33
46		820	18 do	pek	1800	31
49	H J S	829	21 hf-ch	bro pek	1260	33
52	Oakham	838	15 do	bro pek	900	44
53		841	12 ch	pek	1080	36
56	Rothes	850	14 hf-ch	or pek	700	41
57		853	18 do	pek	810	36
62	R, in estate mark	868	16 hf ch	sou	720	27
66	Ravenscraig	880	12 ch	bro pek	1080	34
67		883	20 do	or pek	1700	34
68		886	21 do	pek	1890	32
71	L	895	10 ch	bro mix	1000	27
72		898	14 hf ch	dust	1120	26
73	Hapugasmulle	901	13 ch	bro pek	1430	33
74		904	15 do	pek	1425	30
79	Harangalla	919	23 ch	bro pek	2185	35 bid
80		922	37 do	pek	2960	33
81	Elchico	925	39 hf ch	bro pek	2145	33
82		928	32 do	pek	1600	30
83	Paradise	931	28 hf ch	bro pek	1540	33
84		934	15 ch	pek	1500	31
85	Rambodde	937	24 hf ch	bro pek	1320	44
86		940	34 do	pek	1700	38
89	Polgahakande	949	18 ch	bro pek	1530	32 bid
90		952	16 do	pek	1280	30
91		955	9 do	bro or pek	990	34
100	Ambalawa	982	33 hf-ch	bro pek	1815	31
101		985	30 do	pek	1350	30
102		988	20 do	pek sou	800	27
103		991	13 do	pek fans	780	27
106	Rahatungoda	1	24 hf-ch	or pek	1200	45
107		2	27 do	pek	1350	37 bid
108	Agarsland	4	24 hf-ch	bro or pek	1344	43
109		10	20 do	or pek	1000	41
110		13	54 hf-ch	pek	2592	35
111		16	38 do	pek sou	1748	33
114	Yarrow	25	76 hf-ch	bro pek	4256	36
115		28	83 do	pek	4648	33
120	Rookwela	43	14 ch	pek sou	1260	25
121	Bollagalla	46	22 ch	bro pek	2200	34 bid
122		49	19 do	pek	1520	34
123		52	12 do	pek	960	30
124	Deniyaya	55	46 ch	bro pek	4600	34
125		58	18 do	pek	1800	32
126		61	19 do	pek sou	1900	29 bid
127		64	13 do	sou	1300	28
128		67	5 do	dust	825	25
129	Ranasinghapatna	70	43 hf ch	or pek	2064	34 bid
130		73	30 do	bro or pek	1860	34
131		76	27 ch	pek	2160	33
132		79	33 do	pek sou	2640	30
133	K P W	82	23 hf-ch	pek sou	1035	28
134	Kuralana	85	8 ch 1 hf-ch	bro pek	860	26 bid
137		94	10 ch	red leaf	900	out
145	New Valley	118	37 ch	bro or pek	3330	47
146		121	37 do	or pek	2960	40
147		124	43 do	pek	3440	36 bid
148		127	39 do	pek sou	2730	34
150	N I T	133	10 ch	unas No. 2	900	26
155	Harangalla	148	28 ch	bro pek	2660	34 bid
156		151	38 do	pek	3040	33
163	O F	172	11 ch	bro pek	1100	31
164	Patulpana	175	23 hf ch	bro pek	1265	32
165		178	14 do	pek	700	30
168	F D E	187	12 ch	pek sou	1080	29
171	R K P	196	10 ch	bro pek	1000	33
174		205	8 do	pek sou	720	29
177	Welgampola	214	16 hf-ch	pek sou	800	27
180	Avisawella	223	25 ch	bro pek	2500	33
181		226	28 do	pek	2380	30
182		229	30 do	pek sou	2400	28
183		232	8 do	fans	800	27
184	Attiville	235	11 ch	bro pek	1100	27 bid
185		238	16 do	pek	1520	28

[Mr. E. John.—170,818 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Galella	858	9 hf-ch	dust	765	27
4		867	19 ch	bro pek	1900	40
5		870	18 do	pekoe	1800	34
8	Newn Halla	879	11 do	pek sou	1045	25
9		882	11 do	sou	990	21
13	L E L	894	20 do	bro or pek	1100	63
14		897	11 do	or pek	1045	47
15		900	10 do	bro pek	1050	46
16		903	22 do	pekoe	2090	42
17	Mocha	906	26 do	bro or pek	2600	55 bid
18		909	12 do	or pek	1080	46 bid
19		912	18 do	pekoe	1620	44
20		915	9 hf-ch	fans	720	29
21	Templestowe	918	25 ch	bro or pek	2000	42 bid
22		921	24 do	or pek	1680	41 bid
23		924	24 do	pekoe	2040	38 bid
24		927	15 do	pek sou	1200	34 bid
25		930	24 do	bro mix	1680	27
26		933	12 hf-ch	dust	900	27
27	Glentilt	936	43 do	bro pek	2580	45
28		939	16 ch	or pek	1600	42
29		942	12 do	pekoe	1200	38 bid
30		945	9 do	pek sou	855	34
31		948	12 do	fans	960	28
32	Glasgow	951	28 do	bro or pek	2380	54
33		954	14 do	or pek	1008	46
34		957	14 do	pekoe	1218	42 bid
35		960	12 do	pek sou	1200	40
36	D H K	963	13 do	bro pek	1235	27
37		966	12 do	pekoe	960	28
39	Kuruwatthai	972	10 do 3 hf-ch	bro or pek	1015	35 bid
40		975	13 ch	pekoe	1001	33
42	Systou	981	32 do	bro pek	3200	34
43		984	19 do	pekoe	1710	33
44		987	16 do	pek sou	1440	30
47	Mahanilu	996	18 hf ch	or pek	900	41
48		999	34 do	bro pek	1904	41
49		2	11 ch	pekoe	1023	37
50		5	8 do	pek sou	760	35
51		8	21 hf-ch	bro pek fans	1470	33
52	Brownlow	11	27 do	bro or pek	1539	53
53		14	35 ch	or pek	3570	41 bid
54		17	46 do	pekoe	4002	39
55	St. John's	20	30 hf-ch	bro or pek	1860	70

Lot.		Box.	Pkgs.	Name.	lb.	c.
56		23	30 bf ch	or pek	1560	76
57		26	35 do	pekoe	1960	53
58	P	29	13 cb	pek sou	1209	36 bid
59	G K	32	30 do	bro pek fans	1650	25 bid
60		35	17 cb	sou	1360	out
61		38	14 do	dust	2380	out
62	Myraganga	41	26 do	bro pek	2340	33
63		44	50 do	bro or pek	5000	34
64		47	40 do	pekoe	3200	33
65		50	46 do	pek sou	3910	32
66	Gampai	53	38 hf-cb	or pek	1824	34
67		56	25 do	bro or pek	1500	35
68		59	18 ch	pekoe	1440	33
69		62	20 do	pek sou	1640	31
72	Maskeliya	71	20 hf-cb	bro or pek	1000	57 bid
73		74	18 do	bro pek	900	37 bid
74		77	46 ch	or pek	4140	40
75		80	18 do	pekoe	1620	35
77	Evalgolla	86	38 hf-ch	bro pek	1900	37
78		89	52 do	pekoe	2600	33
79		92	17 do	pek sou	850	29
83	Ferndale	104	17 ch	or pek	1530	38
84		107	18 do	pekoe	1620	34
85	D K	110	30 hf-ch	bro pek	1650	34 bid
86		113	17 ch	dust	2244	25
88	Danwella	119	12 do	pekoe	1056	27
93	Rookwood	134	35 do	pekoe	3150	37 bid
94		137	38 do	pek sou	3420	35
95	M G	140	8 do	pekoe	720	29
97	D N D, in est. mark	146	22 hf-cb	fans	1540	28
100	Glasgow	155	39 ch	bro or pek	3315	53
101		158	21 do	or pek	1512	50
102		161	17 do	pekoe	1479	44
103		164	15 do	pek sou	1500	39
104	Agra Ouvah	167	62 hf-cb	bro or pek	4030	52
105		170	25 ch	or pek	2300	44
106		173	16 do	pekoe	1440	41
109	Dalbousie	182	31 hf-cb	pekoe No. 1	1395	32 bid
110		184	18 do	pekoe No. 2	720	31
112	Little Valley	191	36 ch	pekoe	2700	33
113	Sumtravalle	194	11 do	unas	1100	28
114	Choughleigh	197	11 do	bro pek	1100	35
115		200	22 do	pekoe	1980	33
116	Dickapittia	203	33 do	pekoe	3300	32
119	Karaudeniya	212	12 hf-cb	pek fans	810	24

Messrs. Forbes & Walker.

[480,321 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Kosgalla	913	42 hf-cb	bro pek	2100	31
2		916	34 do	pek	1530	30
4		922	21 do	pek sou	1050	28
6	Dambagas-talawa	928	27 cb	bro or pek	2970	58
7		931	51 do	bro pek	5610	46
8		934	39 do	pek	3588	39
11	Glencorse	943	16 ch	bro or pek	1520	37
12		946	24 do	bro pek	2160	33
13		949	18 do	pek	1620	31
14		952	16 do	pek sou	1280	28
17	Gingran Oya	961	10 hf-cb	dust	800	27
19	St. Paul's	967	32 do	bro pek	2030	40
20		970	42 do	pek	2436	34
21		973	29 do	pek sou	1450	32
22		976	11 do	dust	957	29
23	Tonacombe	979	26 ch	or pek	2340	40
25		985	14 do	bro pek	1400	45
26		988	33 do	pek	2970	37
27		991	12 do	pek sou	1080	32
30	Kakiriskande	1000	10 ch	pek	940	30
32	Putupaula	1006	20 bf-cb	bro or pek	1300	33
33		1009	39 do	bro pek	3510	34
34		1012	30 do	pek	2250	31
35		1015	13 do	pek sou	910	29
38	Ingrogalla	1024	15 cb	bro pek	1500	40
39		1027	19 do	pek	1615	36
40	I N G, in est. mark	1030	6 ch	bro pek dust	720	27
41	Penrhos	1033	21 bf ch	bro or pek	1113	41 bid
42		1036	26 do	or pek	1170	45
43		1039	40 ch	pek	3400	32
44		1042	9 do	pek sou	720	29
52	High Forest	1066	43 hf-cb	or pek No. 1	2709	74
53		1069	25 do	bro or pek	1925	41
54		1072	18 do	pek sou	936	39
56	Weoya	1078	20 ch	bro pek	2000	33
57		1081	17 do	or pek	1615	38
58		1084	31 do	pek	2635	32
59		1087	30 do	pek sou	2400	29
60		1090	5 do	dust	750	27
61	Maha Uva	1093	44 hf ch	bro or pek	2640	39

Lot.		Box.	Pkgs.	Name.	lb.	c.
62		1096	30 bf ch	or pek	1680	40
63		1099	39 do	pek	3510	39
64		1102	17 do	pek sou	1360	36
67	Ruanwella	1111	35 ch	or pek	2975	34
68		1114	13 do	bro pek	1300	33
69		1117	16 do	pek	1440	31
70		1120	10 do	pek sou	900	29
71		1123	9 do	dust	720	27
72	Polatagama	1126	54 ch	bro pek	5130	34
73		1129	26 do	or pek	2210	32
74		1132	39 do	pek	3510	30
76		1138	15 do	fans	1500	28
78	Dunkeld	1144	55 hf-ch	bro or pek	3300	42
79		1147	17 ch	or pek	1615	41
80		1150	18 do	pek	1620	38
81	Morankande	1153	16 hf ch	bro or pek	896	34
82		1156	15 ch	or pek	1275	35
83		1159	16 do	pek	1440	31
85	Fairlawn	1165	31 hf cb	bro pek	1705	54
86		1168	12 cb	or pek	1020	40
87		1171	15 do	pek	1350	39
88		1174	9 do	pek sou	720	35
92	Durbar	1186	23 hf cb	bro or pek	1150	69
93		1189	22 do	or pek	1056	51
94		1192	14 ch	pekoe	1120	42
100	Cooroondoo-watte	1210	7 ch	pek sou	700	31
101	H G M	1213	11 hf-ch	bro or pek	715	45
102		1216	25 cb	bro pek	2500	38
103		1219	30 do	pek	2700	34
104		1222	13 do	pek sou	1105	32
105		1225	10 do	bro pek fans	900	30
106	Ketadola	1228	8 ch	bro pek	840	33
107		1231	12 do	pek	1200	29
111	Mansfield	1243	49 hf-cb	bro pek	2940	45 bid
112		1246	21 ch	pek	1890	38
119	Naseby	1267	21 hf ch	bro or pek	1323	55 bid
120		1270	24 do	or pek	1152	53 bid
121		1273	19 do	pek	893	47
122	Stratbspey	1276	9 cb	bro or pek	945	56 bid
123		1279	13 do	or pek	1300	52
124		1282	16 do	pek	1600	44
125		1285	9 do	pek sou	900	39
127	Castlereagb	1291	29 ch	bro pek	2900	39 bid
128		1294	31 do	or pek	2635	37
129		1297	23 do	pekoe	1840	34
131	Weyunga-watte	1303	27 bf cb	bro or pek	1485	34
132		1306	25 ch	bro pek	2250	32
133		1309	33 do	pek	2640	29
137	Doomba	1321	5 ch	dust	700	26
141	Middleton	1333	14 bf cb	bro or pek	784	96
142		1336	10 ch	bro pek	1000	69
143		1339	14 do	pek sou	1330	41
144	Bickley	1342	40 hf-ch	bro or pek	2200	39 bid
145		1345	37 do	or pek	2405	35 bid
146		1348	53 do	pek	2915	35
147	Nakiadeniya	1351	14 cb	bro pek	1330	33
148		1354	45 do	pek	4560	30
149		1357	8 do	bro pek fan	800	30
150		1360	5 do	dust	700	26
151	Nillomally, O B E C, in est mark	1363	18 ch	or pek	1620	38
152		1366	18 do	bro pek	1800	39
153		1369	18 do	pek	1512	39
154	Dimbul-kelle	1372	17 hf ch	bro pek	1020	36
155		1375	14 ch	pek	1330	32
157	Knavesmire	1381	21 hf ch	or pek	1050	36
158		1384	47 cb	bro pek	4465	35
159		1387	39 do	pek	3315	33
160		1390	28 do	pek	2100	30 bid
161		1393	18 do	pek sou	1260	28 bid
162	Aberfoyle	1396	42 bf ch	bro pek	2520	36
163		1399	26 cb	or pek	2210	32
164		1402	17 bf-cb	pek	850	29
167	Ardlaw and Wisbford	1411	9 ch	bro or pek	900	43
168		1414	13 do	bro pek	1235	50
169		1417	10 do	or pek	750	40
170		1420	15 do	pek	1290	41
171	Palmerston	1423	14 hf cb	bro or pek	728	88
172		1426	14 do	bro pek	728	70
173		1429	18 ch	pek	1620	51
174	St. Heliers	1432	23 hf-ch	bro or pek	1128	43
175		1435	22 ch	pek	9500	33
176		1438	10 do	pek sou	889	31
177	Theydon Bois	1441	11 cb	bro or pek	1100	51
178		1444	12 do	bro pek	1200	44
179		1447	20 do	pek	1600	37
180		1450	10 do	pek sou	850	34
183	Doranakan-de	1459	8 ch	bro pek	800	35
186		1468	8 do	pek sou	720	29

Lot.		Box.	Pkgs.	Name.	lb.	c.
188	Pambagama	1474	25 ch	sou	2350	28
190	Erlsmere	1480	16 ch	bro pek	1680	50
191		1483	20 do	pek	1600	40
192	Tymawr	1486	32 hf ch	or pek	1600	38 bid
193		1489	20 do	bro or pek	1100	46
194		1492	40 do	pek	1800	36
195		1495	60 do	pek sou	2700	34
196	Gallawatta	1498	18 ch	bro pek	1710	35
197		1501	19 do	pek	1615	31
200	Gonapatiya	1510	29 hf ch	bro pek	1479	53
201		1513	39 do	or pek	1794	49
202		1516	54 do	pek	2592	41
203	North Cove	1519	22 ch	pek	1980	43 bid
204	Dea Culla	1522	45 hf ch	bro pek	2475	44
205		1525	35 do	pek	2450	35
207	Farnham	1531	47 do	bro pek	2585	35 bid
208		1534	41 do	or pek	1845	33 bid
210		1540	31 do	pek	2945	32
211		1543	25 do	pek sou	1875	30
215	Arapolakande	1555	65 ch	bro pek	5850	35 bid
216		1558	33 do	pek	2640	32 bid
219	H in est. mark	1567	23 do	fans	2185	28
220	Ireby	1570	16 do	bro pek	1760	55
221		1573	14 do	pek	1260	43
225	Bandara Eliya	1585	65 hf-ch	or pek	2990	38
226		1588	68 do	bro pek	3808	43
227		1591	66 do	pek	2838	36
228		1594	67 do	pek sou	2814	33
230		1600	51 do	or pek	2346	40
231		1603	55 do	bro pek	3080	45
232		1606	62 do	pek	2666	37
233		1609	55 do	pek sou	2200	33
234	Naseby	1612	21 do	bro or pek	1323	59
235		1615	22 do	pek sou	1012	41
236	Stamford Hill	1618	36 do	bro pek	2160	47 bid
237		1621	28 do	or pek	1260	49 bid
238		1624	28 ch	pek	2520	39
239		1627	10 do	pek sou	850	35
241	Glengariffe	1633	40 hf-ch	bro pek	2160	44
242		1636	40 do	or pek	1880	38
243		1639	23 ch	pek	2185	36
244		1642	13 do	pek sou	1053	36
246	Ugieside	1648	18 do	pek sou	1410	26
247	Woodend	1651	48 do	bro pek	4800	34
248		1654	84 do	pek	7560	31
249		1657	21 do	pek sou	1680	28
250		1660	5 do	dust	700	27
251	Fetteresso	1663	21 do	pek sou	1680	36
253	R	1669	12 do	pek sou	1172	24
256	N E M	1678	15 hf-ch	bro pek fans No. 1	975	27
257		1681	10 ch	sou	900	22
264	P in est. mark	1702	25 do	bro or pek	2500	57
265		1705	25 hf-ch	or pek	1250	48 bid
266		1708	21 do	fans	1470	34
267	Abbotsleigh	1711	20 ch	pek	1760	45 bid
268		1714	20 do	pek sou	1700	38 bid
269	Kincora	1717	40 do	bro pek	4000	35
274	Gampaha	1732	30 do	bro or pek	3300	39
275		1735	15 do	pek	1350	35
276		1738	18 do	pek sou	1620	35
277	Kirklees	1741	33 hf-ch	bro or pek	1980	41
278		1744	29 ch	or pek	2900	39
279		1747	41 do	pek	3895	32 bid
280		1750	43 do	pek sou	3440	30
282		1756	8 do	dust	720	29
283	Clunes	1759	15 do	bro or pek	1500	34
285		1765	25 do	or pek	2000	34
286		1768	55 do	pek	4400	30
287		1771	9 do	pek sou	825	28
289	Ganapalla	1777	15 do	bro or pek	1350	35
290		1780	18 do	bro pek	1620	33
291		1783	8 do	or pek	720	36
292		1786	30 do	pek	2400	31
296	Killarney	1798	17 hf-ch	or pek	1530	41
297	M T P in est. mark	1801	8 ch	bro tea	800	23
298		1804	4 do	dust	1400	27
299	Lynsted	1807	17 bf-cb	bro or pek	1020	70
300		1810	74 do	bro pek	4440	49
301		1813	11 ch	pek	1100	43
304	Queensland	1822	8 do	or pek	720	40 bid
305		1825	18 do	pek	1530	34 bid
306	Theddon	1828	24 do	bro pek	2400	33
307		1831	14 hf-ch	pek	1330	30
310	Pallagodda	1840	16 ch	bro pek	1440	34
312	Queensland	1846	13 hf-ch	bro pek	715	44
313		1849	9 ch	or pek	810	43
314		1852	12 do	pek	1020	37
315		1855	8 do	pek sou	720	33 bid
317	K	1861	42 hf-ch	or pek	2100	40 bid
319	Maragalla	1867	10 ch	bro pek	1120	45
320		1870	13 do	or pek	1300	36
321		1873	8 do	pek	800	32
322		1876	8 do	pek	720	30
328		1894	8 do	pek	720	33
329	Munukattia, Ceylon, in est. mark	1897	19 hf-ch	or pek	950	45
330		1900	35 do	bro pek	2100	43
331		1903	20 bf-ch	pek	1600	38
332		1906	8 ch	pek sou	760	34
333	Amblangoda	1909	17 do	pek	1500	33
334	Hopton	1912	23 do	pek	1800	33
339	Kalupahana	1927	18 do	bro mix	900	26
343	Monkswood	1939	18 hf-ch	bro pek	990	72
344		1942	21 do	bro pek	1155	72
345		1945	8 do	pek sou	760	41
346	Devonford	1948	24 do	bro or pek	1320	74 bid
347		1951	15 ch	pek	1275	46
348		1954	10 do	pek sou	800	41
349	Rowley	1957	28 hf-ch	bro pek	1400	39
350		1960	30 do	pek	1500	34
351	Gallawatte	1963	16 ch	bro pek	1520	35
352		1966	28 do	pek	2380	31
353		1969	22 do	pek sou	1870	25
354		1972	8 hf-ch	dust	865	27
355	Gonapatiya	1975	28 do	bro pek	1428	55
356		1978	43 do	or pek	2021	52
357		1981	44 do	pek	2112	43
358		1984	30 do	pek sou	1380	39
359		1987	22 do	pek fans	1364	34

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
3	Mandara Newera, Invoice 8	19	7 ch	pek sou	560	35
4		22	2 hf ch	dust	160	28
9	Halgolle	37	2 ch	fans	220	27
10		40	3 do	dust	390	25

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
2	Kataboola	861	8 hf-ch	dust	640	26
3		864	5 ch	pek fans	625	29
6	Galella	873	7 do	pek sou	630	28
7	W H R	876	6 do	dust	600	26
10	Newn Halla	885	6 hf-ch	pek fans	390	26
11		888	9 do	fans	540	26
12		891	1 ch	bro tea	100	17
38	D H K	969	3 bf-ch	dust	270	26
41	Kuruwatthai	978	2 do	bro tea	144	29
45	Syston	990	2 ch	dust	260	24
46		993	2 do	fans	230	26
70	Gampai	65	3 bf-ch	dust	240	26
71		68	1 do	red leaf	61	24
76	Maskeliya	83	8 hf-ch	fans	480	31
80	Evalgolla	95	3 do	fans	195	29
81		98	1 do	dust	80	26
82	Anamallai	101	1 do	dust	85	24
87	Danwella	116	1 ch	bro pek	86	29
89		122	2 do	fans	177	28
90	K	125	4 do	pekoe	400	27
91		128	5 hf-ch	pek fans	375	26
92		131	3 do	bro mix	162	20
96	M G	143	3 ch	pek fans	270	26
98	D N D, in est. mark	149	7 hf-ch	dust	630	25
99		152	4 ch	bro mix	400	19
107	Dalbousie	176	11 hf-ch	bro pek	660	50 bid
108		179	8 do	or pek	360	42
111		188	3 do	fans	180	28
120	Karaudeniya	215	5 ch 1 hf-ch	pek sou	530	19

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	G A Ceylon	685	5 ch	pek sou	400	26
2		688	2 do	sou	170	24
4	B watte	694	4 ch	bro mix	400	18
5	Lawrence	697	3 ch	red leaf	240	20
19	Ferriby	739	4 ch	fans	500	29
23	Ravana	751	5 hf ch	sou	225	27
27	Marigold	763	6 hf-ch	pek fans	450	31
30	Kurulugalla	772	4 ch	pek sou	400	26
32	Hurstpierpoint	778	6 ch	pek	558	28
33		781	4 do	pek sou	336	26
34		784	2 ch	fans	198	28
35		787	2 do	bro pek dust	269	25
36		790	1 do	con	64	23
37		793	2 do	red leaf	159	20
40	Florida	802	2 ch	pek sou	192	24
41		805	6 do	fans	540	26
42		808	2 do	red leaf	180	20
43		811	2 do	dust	224	25
44	Lower Dickoya	814	8 hf-cb	bro or pek	448	38

Lot.		Box.	Pkgs.	Name.	lb.	c.
47		823	4 ch	bro sou	360	22
48		826	2 hf ch	dust	170	24
50	H J S	832	6 hf-ch	pek	360	30
51	Oakham	835	14 hf ch	or pek	630	38 bid
54		844	4 ch	pek sou	380	33
55		847	2 hf ch	pek fans	160	27
58	Rothes	856	8 hf-ch	pek sou	360	30
59		859	2 do	bro pek fans	130	30
60		862	1 do	pek fans No. 2	55	30
61		865	1 do	dust	85	26
63	R, in estate mark	871	7 hf ch	sou	280	26
64		874	1 do	dust	80	25
65		877	1 do	bro mix	45	21
69	Ravenscraig	889	3 ch	pek sou	270	28
70		892	4 hf ch	fans	320	27
75	Hapugasmulle	907	3 ch	sou	270	26
76		910	1 do	fans	112	28
77		913	2 do	dust	302	25
78		916	1 do	mix	95	20
87	Rambodde	943	14 hf ch	pek sou	630	32
88		946	3 do	fans	210	32
92	Polgahakande	958	7 ch	pek sou	560	27
93		961	3 do	dust	375	25
94		964	7 do	pek No. 1	560	27
95	Sangaly Toppe	967	1 hf-ch	bro tea	70	28
96		970	2 do	pek dust	180	26
97		973	3 ch	red leaf	285	20
98	A D L, in estate mark	976	4 ch	bro or pek	400	28 bid
99		979	3 do	pek	285	27
104	San Cio	994	7 hf-ch	sou	287	24
105		997	3 do	bro mix	156	20
112	Agarsland	19	7 hf-ch	fans	441	30
113		22	7 do	dust	532	26
116	Yarrow	31	5 hf-ch	bro pek fans	350	29
117	Y, in estate mark	34	7 do	dust	595	26
118	Rookwela	37	1 hf-ch	bro pek	60	28
119		40	3 do	pek	180	27
135	Kuralana	88	6 ch	pek	600	28
136		91	4 do 1 hf-ch	pek sou	430	26
138		97	1 ch	dust	155	24
139	D C E	100	4 ch	pek	360	28
140	B A	103	1 hf-ch	bro pek	50	28
141		106	1 do	pek	45	27
142		109	1 ch	pek sou	70	24
143		112	1 do	bro tea	75	21
144		115	1 hf-ch	dust	85	23
149	N I T	130	6 ch	unas No. 1	600	24
151	Q, in estate mark	136	1 hf ch	bro pek	50	28
152		139	1 ch	pek	85	26
153		142	2 do	pek sou	175	24
154		145	1 do	dust	100	25
157	G B	154	6 ch	pek sou	480	27 bid
158	O R in estate mark	157	2 ch 1 hf-ch	bro or pek	258	39
159		160	2 ch	bro pek	152	29
160		163	1 do	pek	86	28
161		166	2 do	pek sou	194	26
162		169	1 hf-ch	dust	76	23
166	Patulpana	181	13 hf ch	pek sou	650	26
167		184	5 do	sou	225	26
169	R, in estate mark	190	3 hf ch	bro pek	168	29
170		193	2 ch	pek	226	29
172	R K P	199	6 ch	bro or pek	600	31
173		202	6 do	pek	510	29
175	Welgampola	208	7 hf ch	bro pek	392	33
176		211	13 do	pek	650	30
178		217	4 do	sou	200	26
179	A T E	210	5 ch	bro pek	500	28
186	Attiville	241	5 ch	pek sou	500	24
187		244	3 do	bro mix	300	18
188		247	1 do	dust	155	22

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
3	Kosgalla	919	12 hf ch	or pek	600	31
5		925	2 do	bro pek fans	140	28
9	Dambagastalawa	937	6 ch	pek sou	600	37
10		940	7 hf-ch	bro pek fans	574	32
15	Glencorse	955	3 ch	pek fans	360	30
16		958	1 do	dust	170	25
18	Gingran Oya	964	5 hf ch	fans	375	31
24	Tonacombe	982	6 ch	bro or pek	600	49
28		994	6 hf-ch	dust	540	27
29	Kakiriskande	997	2 ch	bro pek	200	36
31		1003	2 do	pek sou	185	28
36	Putupaula	1018	1 hf ch	sou	90	21
37		1021	7 do	dust	595	26

Lot.		Box.	Pkgs.	Name.	lb.	c.
45	Penrhos	1045	3 hf-ch	pek dust	228	26
46	A	1048	7 do	sou	350	27
47	E D P	1051	4 ch	sou	340	26
48		1054	7 do	dust	525	27
49	Springwood	1057	6 ch	congou	510	27
50	X X	1060	3 hf ch	pek fans	225	31
51		1063	3 do	pek dust	255	26
55	Weoya	1075	6 ch	bro or pek	660	32
65	Maha Uva	1105	1 hf-ch	pek fans	80	29
66		1108	4 do	dust	360	27
75	Polatagama	1135	7 ch	pek sou	630	28
77		1141	2 do	dust	300	26
84	Morankande	1162	7 ch	pek sou	630	30
89	Fairlawn	1177	4 hf ch	dust	340	28
90	F L, in est. mark	1180	2 ch	bro mix	255	22
91	S	1183	5 do	sou	450	27
95	D B R	1195	6 hf ch	bro pek fans	360	36
96		1198	3 ch	pek sou	240	36
97		1201	1 hf ch	dust	80	26
98	Coroondoowatte	1204	5 hf ch	bro pek	300	42
99		1207	6 ch	pek	600	34
108	Ketadola	1234	6 do	pek sou	570	27
109		1237	1 do	fans	124	27
110		1240	1 do	bro mix	105	19
113	Mansfield	1249	7 ch	pek sou	595	32
114	D, in estate mark	1252	3 hf-ch	fans	150	29
115		1255	2 do	dust	160	26
116		1258	5 do	sou	250	25
117		1261	11 do	fans	550	
118		1264	4 do	dust	400	26
126	Strathspey	1288	2 ch	dust	300	28
130	C R	1300	6 ch	bro mix	540	
134	Weyungawatte	1312	3 ch	pek sou	255	28
135		1315	3 hf-ch	dust	255	26
136	Doomba	1318	4 ch	fans	480	31
138	Kabragalla	1324	4 hf ch	dust	340	26
139		1327	9 do	bro tea	495	21
140	Strathdon	1330	6 hf ch	bro pek	335	50
156	Dimbulkelle	1378	6 ch	pek sou	600	28
165	Aberfoyle	1405	9 hf ch	fans	585	28
166		1408	8 do	dust	640	26
181	T B, in estate mark	1453	3 hf ch	dust	210	27
182		1456	2 do	fans	120	29
184	Doranakande	1462	4 ch	pek	380	31
185		1465	3 do	pek No. 2	270	30
187		1471	2 do	dust	224	26
189	Erlsmere	1477	8 hf ch	bro or pek	440	59
198	Opalgalla	1504	3 ch	red leaf	168	22
199		1507	6 hf ch	dust	450	23
206	Dea Culla	1528	10 do	dust	800	27
209	Farnham	1537	8 do	bro or pek	560	31
212		1546	4 do	pek fans	230	29
213		1549	5 do	dust	425	25
214	Arapolakande	1552	6 ch	bro or pek	660	32
217		1561	3 do	pek sou	270	29
218		1564	2 do	dust	220	26
222	Ireby	1576	6 do	pek sou	540	38
223		1579	5 do	fans	350	33
224		1582	5 do	dust	400	29
229	Bandara Eliya	1597	5 do	bro mix	225	31
240	Stamford Hill	1630	4 hf-ch	dust	340	28
245	Glengariffe	1645	10 do	fans	650	31
252	R	1666	4 ch	pek	413	28
254	N E M	1672	5 hf-ch	bro or pek	255	29
255		1675	2 do	bro pek	100	27
258		1684	1 ch	congou	80	19
259	Horagaskelle	1687	4 hf-ch	bro pek	216	35
260		1690	7 do	pek	360	30
261		1693	10 do	pek sou	574	27
262		1696	1 do	dust	80	22
263		1699	2 do	bro mix	114	20
270	St. Edwards	1720	7 hf-ch	bro or pek	420	34
271		1723	9 do	or pek	522	33
272		1726	11 do	pek	638	29
273		1729	3 do	pek sou	183	27
281	Kirklees	1753	2 ch	congou	120	23
284	Clunes	1762	7 do	bro pek	630	33
288		1774	3 do	dust	270	26
293	Ganapalla	1789	4 do	pek sou	300	28
294		1792	8 hf-ch	bro pk fans	600	29
295		1795	1 do	dus	90	25
302	Lynsted	1816	6 ch	pek sou	600	38
303		1819	4 hf-ch	dust	340	27
308	Theddon	1834	5 ch	pek sou	450	28
309		1837	1 do	dust	160	26
311	Kelvin	1843	4 hf-ch	dust	260	25
818	N B D	1858	5 ch	bro mixed	450	20
316	N	1864	1 hf-ch	pek sou	45	26
323	Maragalla	1879	7 ch 1 hf ch	pek sou	673	28

Lot.		Box.	Pkgs.		Name.	lb.	c.
324		1882	1	ch	fans	130	27
325		1885	1	hf-ch	dust	90	24
326		1888	6	ch	bro pek	672	45
327		1891	6	do	or pek	600	34 bid
335	Kalupahana	1915	8	hf-ch	bro pek	400	37
336		1918	15	do	or pek	691	32
387		1921	12	do	pek	600	31
333		1924	7	do	pek sou	315	27
340		1930	1	do	dust	67	25
341		1933	3	ch	sou	127	25
342		1936	4	hf-ch	bro or pek	282	40

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent).

MINCING LANE, March 16th.

"Logician."—Leangawella 1, 1 cask sold at 79s; ditto 2, 4 casks and 1 barrel sold at 59s; ditto 3, 1 barrel sold at 40s; ditto PB, 1 barrel sold at 69s.

"City of Sparta."—Pita Ratmallie 1, 1 barrel sold at 105s; ditto 2, 2 casks and 1 barrel sold at 86s 6d; ditto S, 1 barrel sold at 46s; ditto DB, 1 barrel sold at 85s.

"Inaba Maru."—Needwood F, 1 barrel sold at 110s; ditto 1, 1 cask sold at 105s; ditto 2, 2 casks sold at 85s; ditto S, 1 barrel sold at 48s; ditto PB, 1 barrel sold at 78s.

"Formosa."—WHD, in estate mark, O, 2 casks sold at 62s; ditto 1, 5 casks sold at 52s; ditto 2, 3 casks and 1 tierce sold at 44s 6d; ditto PB, 1 cask and 2 barrels sold at 59s; ditto T, 1 cask, 1 tierce and 1 barrel sold at 37s.

Santos Coffee is firm for Futures and 50s this year is confidently expected.

CEYLON COCOA SALES IN LONDON.

"Jumna."—Alloowihare A, 23 bags sold at 83s; B, 8 bags sold at 61s 6d; C, 2 bags sold at 49s 6d; B, 2 bags sold at 60s 6d; ditto 2 bags sold at 60s 6d; Owelle A, 2 bags sold at 60s; B, 1 bag sold at 60s 6d.

"Inaba Maru."—Alloowihare 1 F, 10 bags sold at 64s 6d; ditto C1, 10 bags sold at 62s 6d; Warriapolla, 4 bags sold at 65s; ditto 15 bags sold at 64s; ditto 13 bags sold at 60s 6d; Suduganga, 11 bags sold at 82s 6d; ditto 19 bags sold at 72s; 5 bags sold at 60s 6d; Suduganga, 3 bags sold at 63s; ditto 8 bags sold at 60s 6d.

"Diomed."—Suduganga 1, 5 bags sold at 62s 6d; OO MAF, 80 bags sold at 70s; 25 bags sold at 78s; ditto O, 7 bags sold at 67s; ditto OO, 5 bags sold at 63s 6d; ditto OO, 9 bags sold at 63s 6d.

"Staffordshire."—Yattawatte 1, 40 bags sold at 85s; 20 bags sold at 84s; 20 bags sold at 83s 6d; ditto 2, 12 bags sold at 65s; Broken 1 bag sold at 61s; ditto 1, 7 bags sold at 57s.

"Inaba Maru."—FN, in estate mark, Katugastota, 64 bags sold at 80s; 8 bags sold at 55s 6d; Kepitagalla, 57 bags sold at 80s; 21 bags sold at 74s 6d; 17 bags sold at 62s; 3 bags sold at 42s; Coodagalla, 19 bags sold at 79s.

"City of Sparta."—Bandarapolla 2, 1 bag sold at 73s; ditto T, 1 bag sold at 49s.

"Staffordshire."—Hylton OO, 42 bags sold at 85s 6d; 1 bag sold at 61; ditto O, 2 bags sold at 60s; ditto Brown, 1 bag sold at 58s; Black, 2 bags sold at 50s 6d.

"Awa Maru."—Hylton OO, 1 bag sold at 75s.

"Diomed."—Udapolla A1, 2 bags sold at 72s; MH, in estate mark, 118 bags sold at 61s 6d; 2 bags sold at 57s.

"Inaba Maru."—MH, in estate mark, 50 bags sold at 61s; SL, in estate mark, 20 bags sold at 59s 6d; 20 bags sold at 60s; SP, in estate mark, 17 bags sold at 61s.

CEYLON CARDAMOMS SALES IN LONDON.

"Jumna."—Vicarton A, 3 cases sold at 2s 10d; ditto B, 2 cases sold at 2s 3d; and 1 case sold at 2s 2d; ditto C, 1 case sold at 1s 6d; ditto D, 1 case sold at 1s 3d.

"Staffordshire."—B, in estate mark, 3 bags sold at 2s 8d.

"Clan Ogilvy."—FF 3, in estate mark, 3A, 1 case sold at 1s 7d.

"Staffordshire."—Hooloo Group 1, 2 cases sold at 2s 9d; ditto 2, 1 case sold at 2s 1d; ditto Seed, 1 case sold at 2s 3d.

"Inaba Maru,"—A & Co., in estate mark, 1 case sold at 2s 3d; 1 case sold at 2s 1d; 1 case sold at 2s; 1 case sold at 2s 1d; 1 case sold at 2s; 1 bag sold at 2s 11d.

Staffordshire."—Gallantenne Cardamoms, AA, 1 case sold at 4s 3d; ditto A, 5 cases sold at 3s 5d; ditto B, 5 cases sold at 2s 6d; ditto C, 1 case sold 2s 4d; ditto D, 4 cases sold at 2s.

"Clan McLean."—Gallantenne Cardamoms, B, 4 cases sold at 2s 6d; 1 case sold at 2s 4d; ditto D, 5 cases sold at 2s.

"Bingo Maru."—Kitoolmoola Cardamoms, AA, 2 cases sold at 2s 9d; 1 case sold at 2s 8d; ditto A, 4 cases sold at 2s; ditto B, 2 cases sold at 1s 4d.

"Awa Maru."—Altwood, Ceylon Cardamoms, 11 cases sold at 2s 3d.

"Kawachi Maru."—Altwood, Ceylon Cardamoms, 1 case sold at 2s 7d.

"Orestes."—WHD, Dryburgh, Mysore 2, 1 case sold at 2s.

"Kawachi Maru."—Peru Cardamoms, 1 case sold at 2s 2d.

"Socotra."—Kandaloya Cardamoms, A, 2 cases sold at 1s 11d; ditto B, 2 cases sold at 1s 5d; ditto C, 1 case sold at 1s 3d.

"Sanuki Maru."—Nichola Oya, No. 1, 2 cases sold at 3s 1d; ditto No. 2, 4 cases sold at 2s 2d; ditto No. 4, 1 case sold at 1s 3d.

"Sado Maru."—Nichola Oya, No. 1, 1 case sold at 2s 9d.

"Duke of Devonshire."—WN 1, 4 cases sold at 1s 8d.

"Inaba Maru."—Malabar 1, 7 cases sold at 1s 3d, part mouldy.

"Diomed."—MAC, 5 cases sold at 1s 5d; ditto 2, 1 case sold at 1s 6d; 5 cases sold at 6d.

"City of Sparta."—PBM 1, 7 cases sold at 1s 6d; ditto 2, 1 case sold at 1s.

OBSERVER PRINTING WORKS.

Lot.		Box.	Pkgs.	Name.	lb.	c.
			1 hf-ch	pek sou	1355	31
212	H A T in est. mark	373	12 ch			
			2 bf-ch	unast	1310	30
213	Palmerston	376	14 do	bro or pek	728	90
214		379	13 cb	pek	1170	49
216	Amblakande	385	9 do	bro pek	900	37
217		388	13 do	pek	1105	31
218		391	10 do	pek sou	800	29
219		394	9 do	dust	900	26
221	Coreen	400	10 do	bro pek	1100	40
222		403	17 do	or pek	1530	44
223		406	20 do	pek	1800	41
226	B D W P	415	14 do	bro pek	1190	33
227		418	21 do	bro pek	1890	31 bid
236	Maligatenne	445	8 do	bro pek	880	27
237		448	8 do	pek	800	27
239	Ewburst	454	12 hf-ch	bro or pek	720	35
240		457	29 do	bro pek	2523	32
241		460	19 do	pek	1520	28
242	Bickley	463	50 cb	pek	2750	33
243		466	33 do	pek sou	1815	29
244	Yatiyana	469	11 do	bro pek	1100	32
245		472	11 do	pek	1078	29
247	Tonacombe	478	34 do	or pek	3060	41
249		484	13 do	bro pek	1300	42
250		487	41 do	pek	3690	38
251		490	14 do	pek sou	1260	31
252	Middleton	493	18 do	bro pek	1800	58
253		496	20 do	pek	1800	43 bid
254	Agra Elbedde	499	67 bf-cb	bro or pek	4020	56 bid
255		502	34 do	or pk No. 1	1870	58 bid
256		505	51 do	or pk No. 2	2550	39 bid
257		508	29 do	pek sou	1450	40
258	Nortb Cove	511	22 ch	pek	1977	43
261	Harrow	520	25 do	pek	2500	40 bid
262		523	11 do	pek sou	990	35 bid
264	Ardlaw and Wisbford	529	13 hf-ch	bro or pek	702	55
265		532	13 cb	bro pek	1335	48
266		535	21 hf-cb	or pk No. 1	1029	42 bid
267		538	16 cb	pek	1360	39
268	Farnham	541	41 hf-ch	or pek	1842	33
269		544	31 do	pek	2942	31
270	Holton	547	12 ch	bro pek	1140	35
271		550	15 do	congou	1200	32
277	Avoea	568	14 do	bro or pek	1540	75
278		571	29 do	bro pek	3190	52
279		574	28 do	pek	2688	43
284	Abbotsleigh	589	21 do	pek sou	1785	37
286	Erlsmere	595	15 do	bro pek	1575	41 bid
287		598	16 do	pek	1360	39
290	Tymawr	607	30 hf-cb	or pek	1500	37 bid
291		610	40 do	pek	1800	36
292		613	21 do	pek sou	1550	33
295	Gallawatte	622	11 ch	bro pek	1045	34
296		625	11 do	pek	935	29
297	Ewhurst	628	26 do	pek	2080	28
299	Seenagolla	634	21 bf ch	bro pek	1050	45
300		637	17 do	pek	935	37
302	Dunkeld	643	69 do	bro or pek	4140	42
303		646	23 cb	or pek	2185	38
304		649	27 do	pek	2430	37
305	Erracht	652	14 do	bro or pek	1260	32
306		655	19 do	bro pek	1425	32 bid
307		658	39 do	pek	2652	29
308		661	9 do	pek sou	720	25
309		664	9 do	bro pk fans	900	28
311	Harrington	670	22 hf-ch	bro or pek	1100	56
312		673	19 ch	or pek	1805	46
313		676	22 do	pek A	1980	39
317	Freds Ruhe	688	56 do	bro pek	5600	33
318		691	54 do	pek	4860	29
319		694	23 do	pek sou	2070	28
321	P S	700	8 do	bro or pek	840	26
322		703	7 do	or pek	700	26
323		706	11 do	pek	1045	25
324		709	20 do	fans	1300	24
325		712	20 do	dust	1800	23
326	Fine Hill	715	27 hf-ch	bro or pek	1620	47
327		718	45 do	or pek	2700	35
328		721	31 ch	pek	2480	36
333	Maldeniya	736	12 do	bro or pek	1320	36
334		739	23 do	or pek	2070	33
335		742	30 do	pek	2640	31
336		745	20 do	pek sou	1800	29
337	Mawaliganga-watte	748	45 hf-cb	bro pek	3950	27 bid
338	Galkadua	751	31 cb	bro pek	1430	32 bid
339	Geragama	754	14 do	bro pek	1330	33
340		757	21 do	pek	2100	30
341	C	760	17 do	sou	1615	26
342	St. Heliers	763	18 bf-ch	br or pk No. 1	715	50
343		766	20 do	bro or pek	1120	39 bid
344		769	23 do	pek	2070	34
345	Ambragalla	772	25 do	or pek	1200	31 bid
346		775	16 do	bro or pek	960	31
347		778	10 ch	pek	780	[illegible]
348		781	11 do	pek sou	880	27
349	Bandara Eliya	784	56 hf-ch	or pek	2576	38
350		787	66 do	bro pek	3696	42
351		790	46 do	pek	1978	36
352		793	37 do	pek sou	1480	32
353		796	42 do	bro or pek	2520	40 bid
354		799	66 do	or pek	3300	35 bid
355		802	31 do	pek	2418	33
356		805	40 ch	pek sou	3200	30
357	Middleton	808	14 do	pek sou	1260	39
358	Penrhos	811	26 bf-ch	bro pek	1378	49
359		814	31 do	or pek	1395	39
360		817	45 ch	pek	3825	32
361		820	12 do	pek sou	1020	30
364	Putupaula	829	45 hf-ch	bro pek	4050	36
365		832	32 do	pek	2400	31
366		835	13 do	pek sou	910	29
370	Bandarawella	847	29 ch	bro or pek	2900	45 bid
371		850	22 do	pek	1925	44 bid
372	Monkswood	853	25 bf-cb	or pk No. 1	1250	62
373		856	15 ch	pek	1500	44 bid
375	W V R A	862	16 hf-cb	fans	1270	20 bid
376	Talgaswela	865	13 ch	bro or pek	1300	33
377		868	24 do	or pek	2040	31
378		871	17 do	bro pek	1445	32
379		874	25 do	pek	2000	29
380		877	20 do	pek sou	1600	27
383	Mawaliganga-watte	886	34 do	bro pek	3400	30
384		889	30 do	pek sou	2400	28
387	D M V	898	11 do	bro pek	1012	30
388		901	15 do	pek	1110	27
392	Beanmont	913	23 do	bro pek	2415	35
393		916	42 do	or pek	3906	31
394		919	9 hf-ch	fans	774	28

[Messrs. Somerville & Co.— 179,755 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	S R K	250	14 ch	pek sou	1330	31
5	Carney	262	28 hf-cb	bro pek	1400	34
6		265	41 do	pek	1845	30
7		268	20 do	pek sou	1000	27
10	Lonach	277	95 hf ch	bro pek	5225	34
11		280	39 ch	pek	3315	35
12		283	22 do	pek sou	1760	32
23	Forest Hill	316	14 ch	bro pek	1260	31 bid
24		319	21 do	pek	1764	29 bid
25	Havilland	322	8 cb	fans	800	27
28	J M D M	331	14 ch	bro pek	1400	29
29		334	25 do	pek	2250	27 bid
35	Tiddydale	352	18 ch	pek	1620	27
39	Labugama	364	21 ch	bro pek	2100	35
40		367	20 do	pek	1900	30
41		370	15 do	pek sou	1275	29
42	Roseneatb	373	25 ch	bro pek	2500	35
43		376	13 do	pek	1170	35
44		379	16 do	pek sou	1360	30
46	Rayigam	385	24 ch	bro pek	2400	33
47		388	22 ch	or pek	1540	33
48		391	20 do	pek	1300	30
49		394	11 do	pek sou	825	29
50		397	13 hf ch	dust	1105	27
52	Eilandbu	403	8 ch	bro pek	800	32
53		406	8 do	pek	760	29
56	P T N	415	16 hf-ch	pek sou	800	24
65	Jak Tree Hill	442	19 hf ch	bro pek	950	38
66		445	27 do	pek	1245	34
71	California	460	8 ch	pek	760	28
74	Dryburgh	469	9 ch	bro or pek	855	37
76		475	30 hf ch	pek	1410	32
77		478	10 do	pek sou	710	29
79	D	484	7 ch	bro pek	700	30
84	Annandale	499	15 hf-ch	bro or pek	855	62
85		502	18 do	or pek	1044	51
86		505	17 do	pek	952	41
87		508	21 do	pek sou	1218	36
91	Ingeriya	520	65 hf-ch	bro pek	3250	33
92		523	59 do	pek	2832	30
93		526	35 do	pek sou	1610	28
94		529	31 do	bro pek fans	1860	30
95	Rambodde	532	31 hf ch	bro pek	1705	40
96		535	30 do	pek	1500	36
100	Hangranoya	547	82 hf-ch	bro pek	4510	34
101		550	21 cb	or pek	1785	35
102		553	51 do	pek	5100	30 bid
103		556	12 do	pek sou	960	29
104	M	559	20 hf ch	bro pek	1100	43 bid
105	Avisawella	562	24 ch	bro pek	2400	32
106		565	29 do	pek	2465	29
107		568	26 do	pek sou	2080	27
108		571	7 do	dust	980	26
109	K P W	574	33 bf ch	pek sou	1650	27 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
110	Killin	577	32 hf-ch	bro or pek	1600	31 bid
111		580	18 ch	or pek	1710	29 bid
112		583	8 do	pek	720	27 bid
113	Bargany	586	33 hf-ch	bro or pek	2211	43 bid
114		589	19 ch	or pek	1900	35 bid
115		592	13 do	pek	1235	36 bid
118	Annandale	601	26 hf ch	pek sou	1560	34 bid
119	Chetnole	604	21 ch	bro or pek	2100	47
120		607	17 do	or pek	1700	35
121		610	31 do	pek	2945	34
122		613	26 do	pek sou	2340	31
123	Wilpita	616	19 ch	bro pek	1900	31
124		619	14 do	pek	1330	28
130	Hanagama	637	20 ch	bro pek	2000	30 bid
131		640	37 do	pek	3515	27 bid
132		643	18 do	pek sou	1620	26
136	Columbia	655	26 hf cb	or pek No. 1	1300	46
137		658	42 do	or pek	1890	40
138		661	37 do	pek	1665	36
139	Ambalawa	664	21 do	bro pek	1050	30
140		667	17 do	pek	765	28
141	Doragalla	670	9 ch	bro or pek	900	42
142		673	15 ch	bro pek	1500	40
143		676	43 do	pek	3655	36
144		679	14 do	pek sou	1190	33
145		682	12 hf ch	bro mix	840	27
147	O S	688	16 ch	unas	1600	22 bid
148	St. Gatberine	691	12 ch	bro or pek	1272	35
149		694	16 do	or pek	1440	33
154	Salawe	709	21 ch	bro pek	2310	33
155		712	11 ch	pek	1100	30
156		715	11 do	pek sou	1045	29
161	Wewatenne	730	10 ch	pek sou	900	28
166	Nyanza	745	12 ch	bro pek	1200	36
167		748	15 do	or pek	1500	37 bid
168		751	16 do	pek	1600	35
169		754	9 do	pek sou	810	30
171	Harangalla	760	21 ch	bro pek	1995	35
172		763	32 do	pek	2560	21 bid.
173		766	18 do	sou	1440	27 bid
174		769	7 do	bro pek fans	700	29

[Mr. E. John.—241,970 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
4	Bellongalla	227	14 ch	pekoe	1120	29
7	Galoola	236	26 do	bro pek	2600	40
8		239	28 do	pekoe	2800	38
9		242	18 do	pek sou	1800	35
12	Bokotua	251	12 do	bro pek	1140	out
16	Glassaugh	263	15 hf-ch	or pek	795	75
17		266	12 do	bro or pek	750	59
18		269	13 cb	pekoe	1235	50
19	N B	272	17 hf-ch	dust	1530	27
20		275	11 ch	sou	1100	31
21	Galella	278	12 do	bro pek	1200	40
22		281	12 do	pekoe	1200	34
25	Little Valley	290	8 do	bro pek	800	34 bid
26		293	31 do	pekoe	2325	32
27		296	12 do	pek sou	960	30
29	Glassaugh	302	14 hf-ch	or pek	742	76
30		305	13 do	bro or pek	845	58
31		308	13 ch	pekoe	1235	49
32		311	9 do	pek sou	900	40
33	Kanangama	314	27 do	bro or pek	2970	31 bid
34		317	33 do	bro pek	3135	31 bid
35		320	38 do	pekoe	3420	29 bid
36		323	12 hf-ch	dust	960	26
37	S J	326	14 ch	bro pek	1400	34 bid
38		329	8 do	or pek	800	37
39		332	18 hf-ch	dust	1620	25
40	Mocha	335	18 ch	bro or pek	1800	58
41		338	18 do	or pek	1620	46 bid
42		341	22 do	pekoe	1980	45
43		344	10 do	pek sou	800	40
44	Agra Ouvah	347	49 hf-ch	bro or pek	3185	50
45		350	22 ch	or pek	2046	44
46		353	9 do	pekoe	810	41
47	Callander	356	55 hf-ch	bro or pek	3300	37 bid
48		359	38 do	or pek	2090	35 bid
49		362	30 do	pekoe	1500	33 bid
55	Gonavy	380	48 do	bro pek	2400	38
56		383	21 ch	pekoe	1680	38
58	St. John's	389	30 hf-ch	bro or pek	1800	67 bid
59		392	29 do	or pek	1450	63 bid
60		395	30 do	pekoe	1680	45
61		398	14 do	pek fans	980	35
02	Templestowe	401	41 ch	bro or pek	3280	47
63		404	26 do	or pek	1950	45
64		407	40 do	pekoe	3400	39
65		410	15 do	fans	1350	33
68	Kandaloya	419	90 hf ch	pekoe	3600	32 bid
69		422	27 do	pek sou	1080	29
74	Loughton	437	29 do	bro pek	1595	40
75		440	60 do	pekoe	3000	33
76		443	42 do	pek sou	1890	30
78	Brownlow	449	26 hf-ch	bro or pek	1482	54
79		452	29 cb	bro pek	3045	41 bid
80		455	35 do	or pek	3570	38 bid
81		458	38 do	pekoe	3534	38
84	Glentilt	467	45 hf-ch	bro pek	2700	40 bid
85		470	22 cb	or pek	2200	38 bid
86		473	17 do	pekoe	1700	37 bid
87		476	12 bf-ch	bro mix	720	32
88	G W	479	22 ch	pek sou	2200	33
89		482	56 do	fans	5040	26 bid
91	M, in est. mark	488	8 do	bro or pek (Vanesta)	840	28
92		491	10 do	bro pek	1020	24
93		494	8 do	pek sou	768	23
94		497	15 hf-ch	bro pek fans	1200	23 bid
95	L P	500	24 ch	pekoe	1800	21 bid
96		503	10 do	bro mix	860	20 bid
97		506	9 do	red leaf	955	18 bid
98	Poilakande	509	27 do	or pek	2025	33
99		512	28 do	bro pek	2660	33
100		515	34 do 1 hf-ch	peko	2770	32
102	Ottery	521	22 ch	bro or pek	2420	40 bid
103		524	11 do	or pek	935	43
104		529	33 do	pekoe	3300	37 bid
106	Ferndale	533	12 do	or pek	1080	37 bid
107		536	14 do	pek sou	1260	31
108	Hiralouvab	539	9 do	pek sou	765	29
114	Claremont	557	19 do	bro or pek	1805	31
115		560	10 do	pekoe	850	29
116		563	8 do	sou	720	21
119	Orangefield, J M R	572	11 do	bro pek	1100	30
120		575	12 do	pekoe	1140	26 bid
124	E	587	19 do	pek sou	1425	27
125		590	11 do	unas	1045	21
126	Gangawatte	593	28 do	or pek	2660	40
127		596	23 bf-ch	bro or pek	1426	44 bid
128		599	15 ch	bro pek	1500	34 bid
129		602	39 do	pekoe	3198	37
136	H N	623	7 do	pekoe	700	23 bid
137		626	12 do	bro mix	1140	22 bid
138		629	10 do	unas	700	25
139	Sinne Dua	632	23 bf-ch	or pek	1334	33
140		635	16 ch	pekoe	1280	30 bid
141		638	11 do	pek sou	748	28
142	Myraganga	641	25 do	bro pek	2250	34
143		644	59 do	bro pek No.	5310	32
144		647	75 bf-ch	bro or pek	4500	33 bid
145		650	15 do	bro or pek	900	33
146		653	38 ch	pekoe	3040	33
147		656	53 do	pek sou	4505	31
148	W, in est. mark	659	36 do	bro pek	3420	28
149	Ganalande	662	7 do	or pek	725	out
152	Templestowe	671	14 do	or pek	980	45
153	Oonoogaloya	674	23 do	or pek	2070	40
154		677	16 do	bro or pek	1600	38
155		680	37 do	pekoe	3330	37
156		683	17 do	pek sou	1530	33
157		686	8 do	dust	1120	27
158		689	7 do	bro or pek No. 2	840	31
160	B, in est. mark	695	63 do	bro pek	5355	31 bid
161	Sadamulla	698	10 do	bro pek	1000	31
162		701	17 do	pekoe	1700	28
165	Galla	710	25 do	bro pek fans	1625	27 bid
166	Iona	713	62 hf-ch	bro or pek	3720	54 bid
167		716	31 ch	or pek	3100	44 bid
168		719	19 do	pekoe	1615	42
170	I	725	15 do	bro mix	1500	20 bid
171	Bellongalla	728	7 do	bro pek	700	28 bid
172		731	15 do	pekoe	1200	28 bid
179	Riseland	752	9 do	bro pek	810	31 bid
180		755	9 do	pekoe	810	27 bid
181		758	11 do	pek sou	880	25 bid

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Mapitigama	14	3 ch	bro or pek	315	39 bid
5	W	26	1 ch	bro pek	95	29
6		29	1 do 1 hf ch	pek	161	26
7		32	2 do	dust	189	25
12	Hapugastenne	47	5 ch	sou	375	27
14		53	4 do	dust	600	27
17	Oakfield	62	9 ch	pek sou	630	28

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name,	lb.	c.
3	C L	1996	6 ch	or pek	510	51
5		2002	6 do	pek sou	510	34
6	G D	2005	1 do	bro pek	113	39

Lot.		Box.	Pkgs	Name.	lb.	c.
7		2008	1 ch	pek	87	32
8		2011	1 do	pek sou	83	30
25	A B F	2062	4 ch	bro pek	400	31
26		2065	4 do	pek	400	29
27		2068	3 do	pek sou	300	27
28		2071	1 do	congou	90	25
29		2074	1 do	dust	50	24
32	C L, in estate mark	2083	6 ch	red leaf	540	29
33	Mount Pleasant, C E S D	2086	8 hf ch	bro pek	440	33
34		2089	7 do	pek	350	28
35		2092	5 do	pek sou	250	27
36		2095	2 do	fans	110	27
39	Villehena	2104	6 ch	pek sou	540	28
40		2107	2 hf ch	sou	100	26
41		2110	2 do	dust	160	26
42	Ahamed	2113	4 hf ch	bro pek	200	20
43		2116	9 do	pek	450	26
44		2119	9 do	pek sou	450	24
45		2122	4 do	fans	220	20
46		2125	4 do	red leaf	200	18
47	B F, in estate mark	2128	5 hf ch	bro pek	260	28
48		2131	5 do	pek	240	27
49		2134	7 do	pek sou	294	25
50		2137	2 do	fans	94	27
56	Walpita	2155	3 ch	sou	270	27
57		2158	3 do	fans	300	27
68	Clyde	2191	5 ch	pek sou	475	30
69		2194	2 do	dust	280	26
70	Gingranoya	2197	5 hf ch	bro pek fans	375	28
79	O B E C, in est. mark Forest Creek	2224	1 ch	sou	90	35
80		2227	3 do	fans	315	32
81		2230	1 do	red leaf No. 1	95	28
82		2233	4 do	pek dust	280	34
83		2236	3 do	dust	261	28
87	Sirikandura	2248	4 ch	bro pek fans	448	27
88		1	3 do	red leaf	246	22
89		4	1 do	dust	160	25
90	K	7	1 ch	sou	100	31
98	Erracht	31	1 ch	bro pek fans	127	28
99		34	2 do	dust	330	25
112	Maha Uva	73	1 hf-ch	pek fans	80	30
113		76	5 do	dust	425	27
120	W, in estate mark	97	2 ch	pek	180	30
121		100	3 do	dust	450	27
128	Beausejour	121	3 do	pek sou	240	27
129		124	4 hf-ch	bro pek fan	240	28
130	Arapolakande	127	6 ch	bro or pek	660	32
133		136	6 do	pek sou	540	29
134		139	2 do	dust	220	27
135	I G A	142	5 ch	red leaf	453	20
141	Beausejour	160	3 ch	pek sou	240	26
142		163	2 hf ch	bro pek fans	120	27
149	Parsloes	184	7 ch	pek sou	560	29
154	K P W	199	2 hf ch	dust	180	26
164	G	229	3 ch	dust	405	26
168	Rickarton	241	4 hf-ch	dust	340	28
170	Panmure	247	4 hf ch	bro or pek fans	300	31
175	Old Maddegama	262	8 ch	pek sou	640	28
176		265	5 do	sou	400	26
177		268	6 do	pek fans	540	28
178		271	3 do	dust	300	26
183	Kituigalla	286	3 do	pek sou	285	27
184		289	3 do	dust	360	26
185		292	1 hf ch	sou	60	25
196	Passara Grodn	325	4 ch	pek sou	400	33
197		328	1 do	fans	80	28
201	Passara Group	340	6 ch	pek sou	600	33
202		343	2 do	fans	160	28
203	B B, in estate mark	346	3 ch	bro pek	180	27
204		349	2 do	pek	200	27
210	Macaldeniya	367	6 hf-ch	unast	330	27
211		370	3 do	dust	255	27
215	Palmerston	382	2 ch	pek sou	160	41
220	Coreen	397	12 hf-ch	bro or pek	696	50
224		409	3 ch	pek sou	255	35
225		412	4 hf-ch	dust	320	27
228	B D W P	421	4 ch	bro pek No. 2	360	19
229		424	2 do	pek No. 2	160	19
230		427	1 do	pek sou No. 2	80	19
231		430	2 hf-ch	dust	185	27
232	B F B	433	4 hf-ch 1 box	unast	205	24
233	Cooroondoowatte	436	4 hf-ch	bro pek	240	54
234		439	4 ch	pek	400	32
235		442	3 ch	pek sou	300	30
238	Maligatenne	451	3 do	pek sou	285	25
246	Yatiyana	475	5 ch	pek sou	490	26
248	Tonacombe	481	6 do	bro or pek	600	53
259	Harrow	514	10 hf-ch	or pek	500	47 bid
260		517	11 do	bro or pek	660	52 bid
263		526	2 do	dust	170	27
272	Holton	553	8 ch	pek sou	640	29
272		556	2 do	dust	160	26
274	Allerton	559	2 do	sou	170	24
275		562	2 do	pek fans	240	26
276		565	2 do	dust	240	24
280	Avoca	577	1 do	bro pek	110	40
281		580	2 do	pek	220	36
282		583	5 do	pek sou	500	35
283		586	3 do	bro pek fans	246	30
285	Erlsmere	592	8 hf-ch	or pek	440	48
288		601	6 ch	pek sou	540	35
289		604	2 hf ch	dust	170	27
293	Gallawatte	616	7 ch	pek	595	28
294		619	4 do	pek sou	340	25
298	Ewhurst	631	9 hf-ch	fans	684	26
301	Seenagolla	640	4 do	fans	280	28
310	Erracht	667	1 ch	dust	177	26
314	Harrington	679	2 do	pek B	190	32
315		682	6 hf ch	or pek fans	420	30
316		685	1 do	dust	90	27
320	W A	697	3 ch	dust	480	27
329	Pine Hill	724	8 do	pek sou	600	31
330	B B B in est. mark	727	2 do	bro pek	240	28
331		730	2 do	pek	210	25
332		733	2 do	dust	320	26
362	Penrhos	823	5 hf-ch	fans	385	25
363	Putupaula	826	9 do	bro or pek	385	32
367		838	1 do	sou	80	17
368		841	2 do	dust	160	26
369	B B in est mark	844	1 ch	pek	110	27
374	B D W G	859	3 hf-ch	dust	270	30
381	Mawaliganga-watte	880	10 do	bro or pek	550	35
382		883	14 do	or pek	630	33
385		892	1 do	fans	103	26
386		895	4 do	dust	360	26
389	D M V	904	4 ch	pek sou	320	25
390		907	1 do	bro tea	61	23
391		910	1 do	bro pk fans	100	27

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	S R K	253	1 ch	sou	100	26
3		256	3 ch	dust	420	26
4		259	2 do	bro tea	200	25
8	Carney	271	2 hf-ch	bro pek fans	100	28
9		274	3 do	sou	150	24
13	Labuduwa	286	3 hf-ch	bro pek	204	32
14		289	3 ch	or pek	180	31
15		292	4 hf ch	pek	234	29
16		292	8 do	pek sou	472	27
17	Donside	295	1 ch	pek dust	140	25
18	Kabatagalla	301	3 ch	bro pek	240	3
19		304	5 do	bro or pek	200	32
20		307	3 do	pek	255	28
21		310	4 do	pek sou	360	26
22	Forest Hill	313	7 hf-ch	bro or pek	427	
26	Havilland	325	2 ch	sou	180	16
27		328	5 hf ch	dust	400	26
30	J M D M	337	3 ch	pek sou	252	24
31		340	2 do	fans	164	24
32		343	1 do	con	83	24
33		346	1 do	dust	120	24
34	Tiddydale	349	13 hf-ch	bro pek	650	31
36		355	7 ch	pek sou	595	25
37	S W J	358	4 ch	fans	400	25
38		361	2 do 1 hf-ch	pek dust	355	25
45	Roseneath	382	2 hf-ch	dust	200	26
51	A B C	400	3 ch	bro pek	282	25 bid
54	Eiiandhu	409	1 ch	bro tea	95	25
55	P T N, in estate mark	412	7 hf-ch	bro pek	392	22 bid
57		418	1 do	pek dust	90	23
58		421	1 do	pek fans	56	20
59	Glen Almond	424	5 ch	bro pek	500	31
60		427	5 do	pek	450	29
61		430	6 do	pek sou	480	27
62		433	1 hf ch	sou	37	25
63		436	1 do	fans	60	27
64		439	1 do	dust	70	25
67	Jak Tree Hill	448	8 hf-ch	pek sou	400	30
68		451	2 do	fans	130	28
69		454	1 do	dust	80	25
70	California	457	6 ch	bro pek	558	30
72		463	5 ch	pek sou	500	25
73		466	1 do	red leaf	85	18
75	Dryburgh	472	7 ch	or pek	623	34 bid
78		481	7 hf ch	fans	438	29

Lot.		Box.	Pkgs.	Name.	lb.	c.
80	D	487	6 ch	pek	570	29
81		490	4 do	pek sou	380	26
82	C N	493	1 hf ch	pek	50	26
83		496	2 do	unas	90	24
88	C T A, in estate mark	511	1 ch	red leaf	100	18
89	Blinkbonnie	514	8 hf-ch	fans	520	29
90		517	7 do	dust	595	29
97	Rambodde	538	9 hf-ch	pek sou	405	30
98		541	1 do	dust	90	25
99		544	2 do	fans	140	29
116	Bargany	595	3 ch	pek sou	270	31
117		598	3 hf ch	dust	?70	26 bid
125	Wilpita	622	6 ch	pek sou	540	25
126		625	1 do	con	100	23
127		628	3 do	fans	300	25
128		631	1 do	dust	140	24
129		634	2 do	red leaf	190	18
133	Hanagama	646	2 ch	sou	184	21
134		649	1 do	fans	118	22
135		652	1 do	dust	168	22
135a		652a	7 do	dust a	109	20
146	A, in estate mark	685	1 ch	bro mix	100	18
150	St. Catherine	697	8 do	pek	656	?0
151		700	5 do	pek sou	380	27
152		703	2 hf-ch	dust	132	25
153		706	2 ch	red leaf	120	22
157	Salawe	718	5 ch	unas	565	23 bid
158		721	2 do	pek dust	320	25
159	Wewatenne	724	6 ch	bro pek	540	32 bid
160		727	7 do	pek	595	29 bid
162		733	1 do	pek dust	113	26
163	Oladen	736	3 ch	pek sou	240	15
164		739	1 do	bro tea	60	22
165		742	1 do	dust	65	25
170	Nyanza	757	2 ch	fans	200	29

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
1	Lunugalla	218	6 hf-ch	or pek	300	33
2		221	11 do	bro pek	550	32
3		224	7 ch	pekoe	560	29
5	Bellongalla	230	7 do	pek sou	490	26
6		233	5 hf-ch	bro pek fans	350	27
6a		235	2 do	dust	160	25
10	Galloola	245	2 ch	dust	200	27
11		248	4 do	fans	400	31
13	Bokotua	254	3 do	pekoe	240	35
14		257	2 do	pek sou	160	25
15		260	1 hf-ch	pek dust	75	26
23	Galella	284	3 ch	pek sou	270	34
24	Little Valley	287	6 do	or pek	510	34 bid
28		299	10 hf ch	bro or pek	550	49
50	Callander	365	8 do	pek sou	360	32
51		368	2 do	fans	160	28
52		371	2 do	dust	160	26
53	A A	374	2 ch	dust	200	25
54	Gonavy	377	13 hf-ch	bro or pek	650	46
57		386	4 ch	pek sou	380	35
66	Templestowe	413	8 do	bro mix	600	37
67	Kandaloya	416	15 hf-ch	or pek	600	33 bid
70	Suriya	425	1 ch	bro pek	86	28
71		4 8	1 do	pekoe	84	26
72		431	1 do	pek sou	87	24
73		434	1 do	dust	104	25
77	Loughton	446	8 hf-ch	dust	400	27
82	West Hall	461	6 do	dust	5 0	26
83		464	3 ch	bro mix	315	19
90	G W	485	7 do	bro mix	665	27
101	Poilakande	518	6 hf-ch	dust	510	27
105	Ottery	530	1 ch	dust	170	27
109	Hiralouvah	542	6 do	fans	390	29
110		545	2 do	dust	180	26
111	K T	548	1 do	sou	100	20
112	Mipitia Kande	551	1 do	bro pek	65	40
113	Ankande	554	5 hf-ch	dust	400	26
117	Claremont	566	5 ch	fans	500	20
118		569	3 do	pek dust	300	26
121	Orangefield, J M R	578	3 do	pek sou	285	25
122		581	1 do	pek fans	80	21
123		584	1 do	bro mix	70	18
130	Gangawatte	605	3 hf-ch	dust	255	29
131		608	4 do	fans	300	28
132		611	8 ch	sou	624	28
133	M G	614	8 hf-ch	fans	640	29
134		617	6 do	unas	582	24
135	H B	620	1 ch	or pek	87	29
150	Ganalande	665	2 do	pekoe	150	26
151		668	3 do	bro mix	300	18
159	Oonoogaloya	692	1 do	red leaf	65	20

Lot.		Box.	Pkgs.	Name.	lb.	c.
163	Sadmulla	704	4 ch	sou	420	23
164		707	2 do	red leaf	190	20
169	Iona	722	6 hf-ch	dust	480	28
173	Bellongalla	734	2 ch	pek sou	120	26
174		737	2 do	bro pek fans	140	27
175		740	1 do	dust	90	25
176	W K	743	5 do	pekoe	560	21
177		746	3 do	pek sou	291	19
178	Riseland	749	2 do	bro or pek	200	28
182		761	2 do	fans	180	25
183		764	1 do	dust	110	25

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, March 23.

"Inaba Maru."—Gowerakellie 1, 1 tierce sold at 108s; ditto 2, 3 casks sold at 93s 6d; 1 tierce sold at 50s; ditto PB, 1 tierce sold at 106s.

"Patroclus."—Gowerakelle 2, 3 casks and 1 barrel sold at 92 6d; ditto S, 2 casks sold at 57s 6d; ditto PB, 1 cask sold at 105s.

"City of Sparta."—North Pundaloya F, 1 barrel sold at 112s; ditto 1, 1 tierce sold at 109s; ditto 2, 2 cask sold at 97s; ditto S, 1 barrel sold at 52s; ditto PB, 1 barrel sold at 105s.

"Inaba Maru."—Gonamotava 1, 1 tierce sold at 90s; 4 casks and 1 barrel sold at 77s; ditto 3, 2 casks sold at 50s: ditto PB, 1 cask sold at 80s; GMT T, in estate mark, 1 tierce sold at 40s; GMT, 1 barrel sold at 30s.

"Clan MacIntyre."—OKO OO, 1 barrel out at 72s; ditto 1, 6 casks sold at 51s; ditto 1, 1 barrel sold at 51s; ditto 2, 3 casks sold at 43; ditto PB, 1 cask and 1 barrel sold at 58s; ditto T, 2 casks sold at 38s 6d; Mahaouvah OO, 1 barrel sold at 111s; 1 tierce sold at 110s; ditto 1, 2 casks and 1 tierce sold at 83s; ditto, 2 casks sold at 60s; ditto PB, 1 barrel sold at 79s; ditto T, 1 barrel sold at 44s; TCC OO, 1 barrel sold at 64s; ditto 1, 3 casks and 1 barrel sold at 46s 6d; ditto 2, 1 casks sold at 44s; ditto PB, 1 barrel and 1 cask sold at 55; ditto T, 3 casks sold at 40s.

"City of Sparta."—JB Ouvah 2, 1 cask and 1 1 barrel sold at 67s; ditto 3, 1 cask sold at 46s; ditto IPB, 1 cask sold at 67s.

CEYLON COCOA SALES IN LONDON.

Diomed."—W H D & Co., 38 bags sold at 69s 6d.

"Diomed" and "Inabamaru."—1 MA, in estate mark, 55 bags sold at 62s; O MAK *, in estate mark, 59 bags sold at 64s; 1 MA, in estate mark, 5 bags sold at 59s; O MAK *, in estate mark, 3 bags sold at 59s; ditto, 3 bags sold at 61s 6d.

"Jumna."—DB and C 434, in estate mark, 27 bags sold at 80s; 1 bag sold at 62s.

"City of Sparta."—Beredewelle, GOC Ex No. 1, 30 bags sold at 84s 6d; ditto 1, 6 bags sold at 70s 6d; ditto B, 3 bags sold at 42s 6d; ditto X, 2 bags sold at 57s; O MAF, 65 bags sold at 60s; ditto 1, 60 bags sold at 62s 6d; ditto, 26 bags sold at 63s.

"Staffordshire."—Palli, London 1, 20 bags sold at 84s 6d; ditto F, 82 bags sold at 83s; ditto 2, 13 bags sold at 67s 6d; ditto T, 3 bags sold at 65s; Wiltshire, London 1, 23 bags sold at 80s; ditto 2, 1 bag sold at 68s; ditto T, 2 bags sold at 65s.

"Diomed."—Palli, London 2, 11 bags sold at 72s 6d; ditto T, 2 bags sold at 65s; Pathregalla, London 1, 48 bags sold at 78s 6d; ditto 2, 6 bags sold at 65s 6d; ditto T, 2 bags sold at 65s.

"Jumna."—Kaduwella, 17 bags sold at 75s; 9 bags sold at 65s 6d; ditto No. 1, 5 bags sold at 65s 6d, No. 2, 8 bags sold at 62s 6d.

"Antenor."—Kaduwella No. 1, 12 bags sold at 78s; ditto No. A1, 3 bags sold at 66s 6d.

"Inaba Maru."—O AS, in estate mark, 12 bags sold at 66s.

No. 15 COLOMBO, APRIL 30, 1900. PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[39,827 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Hornsey	18	29 ch	pek sou	2465	33 bid
3	Battalgalla	21	32 ch	pek sou	2720	33
4	Hornsey	24	30 ch	or pek	2700	38 bid
5		27	20 do	pek	1600	35 bid
6	H	30	27 ch	or pek	2430	39 bid
10	Halgolle	42	28 ch	bro pek	2660	33
11		45	27 do	or pek	2495	31 bid
12		48	25 do	pek	2125	30
13		51	16 do	pek sou	1440	29
16	Mandara Newara	60	32 bf ch	bro pek	1920	44
17		63	24 do	or pek	1272	39
18		66	17 do	pek	782	36
19	Meddakande	69	24 ch	bro or pek	2400	37 bid
20		72	19 do	or pek	1900	37 bid
21		75	28 do	pek	2660	33
22		78	32 do	pek sou	2880	30
23	Oakfield	81	25 bf ch	bro pek	1450	32
24		84	13 ch	pek	1066	27 bid
25		87	13 do	pek sou	910	26 bid

Messrs. Forbes & Walker.

[825,140 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	V, in estate mark	922	16 ch	pek sou	1520	28
3	New Peacock	928	8 ch	pek sou	720	32
5		934	26 do	pek fans	1950	28
6	C S G	937	84 hf-ch	bro pek	4200	42
7		940	81 ch	pek	6480	36
8		943	31 do	pek sou	2480	32
9		946	12 hf-ch	dust	960	28
10	Glencorse	949	18 ch	bro pek	1620	32 bid
11		952	11 do	bro or pek	1100	35
12		955	13 do	pek	1040	20
13		958	12 do	pek sou	960	27
25	Carandon	994	19 ch	bro pek	2086	32
26		997	10 do	pek	1000	30
30	Udapola	1009	7 ch	pek	760	31
34	Kincora	1021	11 ch	fans	825	32
35		1024	13 do	pek No. 2	1105	26
37	Shrubs Hill	1030	38 ch	bro pek	3800	35 bid
38		1033	63 do	pek	5727	35 bid
40		1039	9 do	bro pek fans	700	28
42	St. Paul's	1045	65 ch	pek	3705	37
43		1048	57 do	pek sou	2850	31
44		1051	9 do	dust	828	30
45	Great Valley Ceylon, in est. mark	1054	12 ch	or pek	1080	38
46		1057	64 do	bro pek	3520	40
47		1060	71 do	pek	6390	34
48		1063	20 do	pek sou	1600	30
50		1069	15 do	dust	1200	27
51	A M B	1072	26 ch	f ns	2652	26
52	Feteresso	1075	25 hf-cb	bro or pek	1500	53
53		1078	32 do	bro pek	2016	42
54		1081	25 ch	pek	2250	39
55		1084	22 do	pek sou	1980	36
56	Kotagaloya	1087	20 ch	pek	1700	32
57		1090	10 do	pek sou	850	30
58	Attempettia	1093	9 ch	bro pek	063	41
59		1096	11 do	pek	990	34
61	Wewawatte	1102	28 hf-ch	bro pek	1568	30
62		1105	19 do	pek	950	29
64	B, in estate mark	1111	9 ch	sou	810	27
65		1114	9 do	dust	1350	27
66	Mousakellie	1117	30 ch	bro or pek	3000	48
67		1120	27 do	or pek	2565	39
68		1123	23 do	pek	2070	37
72	Grange Garden	1135	46 ch	bro or pek	4600	44
73		1138	31 do	pek	3110	37
77	High Forest	1150	27 hf ch	or pek No. 1	1647	69
78		1153	20 do	or pek	1160	58
79		1156	24 do	pek	1248	45
80	Gampaha	1159	20 ch	bro or pek	2200	41
81		1162	11 do	or pek	1045	40
82		1165	30 do	pek	2550	37
83		1168	20 do	pek sou	1800	33
84	High Forest	1171	20 bf ch	or pek No. 1	1220	68
85		1174	19 do	or pek	1102	58
86		1177	23 do	bro or pek	1725	48
87	Carfax	1180	10 ch	bro or pek	1000	47
88		1183	11 do	or pek	990	44
89		1186	11 do	bro pek	1210	38
90		1189	11 do	pek	990	38
91	Ganapalla	1192	9 ch	or pek	810	36
92		1195	13 do	bro or pek	1170	33
93		1198	20 do	bro pek	1800	32
94		1201	28 do	pek	2240	31
96		1207	11 bf cb	bro pek fans	858	28
97	Dunkeld	1210	18 ch	pek sou	1620	33
98		1213	20 hf ch	pek fans	1400	30
99		1216	12 do	dust	1020	27
102	Gampaha	1225	30 ch	bro or pek	3300	41
103		1228	8 do	or pek	760	40
104		1231	22 do	pek	1870	38
105		1234	13 do	pek sou	1170	33
106		1237	12 bf ch	pek fans	1080	27
109	Galkadua	1246	20 cb	bro pek	2200	34
110		1249	24 do	pek	2400	29
111		1252	13 do	pek sou	1300	27
115	Kirklees	1264	37 bf-ch	bro or pek	2220	39
116		1267	26 ch	or pek	2470	36
117		1270	31 do	pek	2945	33 bid
118		1273	30 do	pek sou	2400	1
119	Dunkeld	1276	46 hf ch	bro or pek	2760	43
120		1279	14 do	or pek	1330	36
121		1282	17 ch	pek	1530	37
122	Fairlawn	1285	28 bf ch	bro pek	1540	52
123		1288	14 ch	or pek	1120	40
124		1291	17 do	pek	1530	37
125		1294	9 do	pek sou	720	31
127	Polatagama	1300	49 ch	bro pek	1655	33 bid
128		1303	36 do	or pek	3060	32
129		1306	51 ch	pek	4590	28
130		1309	11 do	pek sou	1100	27
131		1312	22 do	fans	2090	27
132		1315	13 do	bro mixed	1235	24
135	Hayes	1324	21 ch	bro or pek	2100	49
136		1327	42 do	bro pek	4200	36 bid
137		1330	48 do	or pek	4080	36
138		1333	94 do	pek	7990	32
139		1336	20 do	pek sou	1700	29
141	St. Paul's	1342	47 cb	pek	2585	37
142		1345	49 do	pek sou	2450	32
143		1348	8 do	dust	728	26
144	P, in estate mark	1351	36 cb	bro or pek	3600	58
146		1357	14 hf-ch	fans	980	33
148	Ingrogalla	1363	20 ch	bro pek	2000	37
149		1366	31 do	pek	2635	35
150	N	1369	13 cb	bro tea	1690	26
151		1372	7 do	bro tea unas	700	27
152	Doranakande	1375	10 ch	bro pek	1000	34
158	Pussella	1393	9 ch	or pek	756	33
159		1396	10 do	pekoe	730	31
162	Weyungawatte	1405	12 bf cb	bro or pek	720	34
163		1408	19 ch	bro pek	1710	32
164		1411	16 do	pek	1280	31
167	C N	1420	10 do	bro tea	1000	24
171	P G A	1432	9 ch	sou	855	24
172		1435	8 do	unas	760	24
173	Castlereagh	1438	33 ch	bro pek	3300	40
174		1441	35 do	or pek	2075	38
175		1444	28 do	pek	2240	36
176		1447	9 do	pek sou	720	31
177		1450	17 hf ch	fans	1190	30
185	Cotswald	1474	15 ch	bro pek	1500	46
186		1477	20 do	pekoe	1800	33
187		1480	18 do	pek sou	1350	30
190	Anningkande	1489	14 cb	bro pek	1400	35
191		1492	10 do	pek	950	35
192	St. Leonards-on-Sea	1495	21 ch	bro pek	2100	32
193		1498	12 do	pek	1140	29
196	Gonapatiya	1507	38 hf ch	bro pek	1938	59
197		1510	35 do	or pek	1680	50
198		1513	44 do	pek	2068	46
199		1516	36 do	pek sou	1656	39
200		1519	18 do	pek fans	1116	33

Lot,		Box.	Pkgs.	Name.	lb.	c.
202	B and D	1525	8 ch	unas	800	20
203	W N	1528	14 ch	bro tea	1620	25
204		1531	14 do	fans	1540	27
206	Strathspey	1537	8 ch	bro or pek	856	61
207		1540	10 do	or pek	1050	50
208		1543	14 do	pek	1428	45
209		1546	7 do	pek sou	700	38
212	Matale	1555	34 hf ch	bro pek	1870	35
213		1558	15 ch	pek	1275	31
214		1561	10 do	pek sou	800	29
215	Ireby	1564	23 ch	bro pek	2530	52
216		1567	22 do	pek	1980	42
217		1570	9 do	pek sou	810	36
218	Irex	1573	35 ch	bro pek	3050	34
219		1576	14 do	pek	1120	30
220		1579	9 do	pek sou	720	28
222	L	1585	31 oh	or pek	2790	64
223	Palmgarden	1588	7 ch	bro pek	805	33
224		1591	7 do	pek	700	28
232	Lindupatna	1615	26 ch	bro or pek	1690	61
233		1618	15 do	or pek	1650	50
234		1621	28 do	pek	2660	45
237	Nilloomally O B E C, in est. mark	1630	19 ch	bro or pek	1900	50
238		1633	41 do	bro pek	4100	42
239		1636	27 do	or pek	2130	39
240		1639	32 do	pek	2688	38
248	Stisted	1663	57 hf-ch	bro or pek	3705	35
249		1666	12 do	or pek	720	33
250		1669	24 do	pek	1488	31
251		1672	44 do	pek sou	2508	29
253	Patiagama	1678	31 do	bro or pek	1705	41
254		1681	20 ch	or pek	1700	38
255	Stisted	1684	34 do	pek	2890	35
256		1687	19 do	pek sou	1520	31
257	Theydon Bois	1690	20 ch	bro pek	2000	39
258		1693	31 do	pek	2480	34
259		1696	19 do	pek sou	1615	30
265	Tembiligalla	1714	16 ch	bro or pek	1600	36
266		1717	14 do	pek	1260	32
272	Mahayaya	1735	15 hf ch	pek	825	32
273		1738	13 de	pek sou	741	29
280	Carberry	1759	19 ch	bro pek	1710	34
281		1762	19 do	pek	1710	31
286	G K	1777	15 ch	bro tea	1350	27
287		1780	6 do	dust	840	27
288	T'Villa	1783	16 ch	bro or pek	1600	31
289		1786	8 do	or pek	800	30
290		1789	29 do	pek	2610	27
291		1792	9 do	pek sou	720	25
294	Obode	1801	13 ch	pro pek	1495	40
295		1804	15 do	or pek	1500	36
296		1807	17 do	pek	1615	32
297		1810	11 do	pek sou	935	32
299	Tymawr	1816	42 hf ch	or pek	2310	44
300		1819	47 do	pek	2350	39
301		1822	30 do	pek sou	1500	36
302	Ascot	1825	50 ch	bro pek	4500	33
303		1828	13 do	bro or pek	1300	32
304		1831	13 do	pek	1170	30
305		1834	8 do	pek sou	720	28
306		1837	10 do	bro pek fans	1000	29
309	Queensland	1846	19 hf ch	bro or pek	1015	62
310		1849	8 ch	bro pek	760	48
311		1852	8 do	or pek	720	46
312		1855	24 do	pek	2040	38
313		1858	9 do	pek sou	765	34
316	N B D	1867	12 ch	bro mix	960	19
317		1870	9 do	unas	855	25
318	Luckyland	1873	20 hf-ch	bro or pek	1200	40
320		1879	26 do	pek	1300	38
321		1882	18 do	pek sou	900	33
322	Massena	1885	23 hf-ch	or pek	1150	46
323		1888	37 do	bro pek	1850	32
324		1891	38 do	pek dust	1900	29
325		1894	28 do	pek sou	1400	27
329	Aberdeen	1906	65 ch	bro pek	6630	34
330		1909	73 do	pek	5840	31
331		1912	18 hf-ch	bro pek fans	1350	28
333	Letchemey	1918	16 hf-ch	dust	1360	26
335	Morankande	1924	18 ch	or pek	1530	35
336		1927	20 do	pek	1800	29
337		1930	10 do	pek sou	900	27
340	Seenagolla	1939	18 hf-ch	bro pek	1080	53
341		1942	12 do	or pek	720	43
342		1945	12 do	pek	720	37
343		1948	14 do	pek sou	840	35
345	High Forest	1954	45 hf ch	or pek No. 1	2475	64
346		1957	36 do	or pek	1836	56
347		1960	46 do	pek	2162	46
348	Maha Uva	1963	57 hf-ch	bro or pek	3420	54
349		1966	32 do	or pek	1792	40

Lot.		Box.	Pkgs.	Name.	lb.	c.
350		1969	54 ch	pek	4860	37
351		1972	27 do	pek sou	2160	31
353		1978	9 hf-ch	dust	765	27
354	Erracht	1981	22 ch	bro or pek	2090	32
355		1984	17 do	bro pek	1275	32
356		1987	33 do	pek	2244	31
366	Allagalla	2017	11 hf-ch	bro mix	825	27
367		2020	18 do	dust	1530	26
368		2023	17 do	fans	1020	28
369	Roberry	2026	27 do	bro or pek	2700	51
370		2029	33 do	bro pek	3300	45
371		2032	44 do	pek	4048	39
372		2035	24 do	pek sou	2016	34
373		2038	25 do	bro or pek	2500	51
374		2041	51 do	bro pek	5100	44
375		2044	67 do	pek	6030	39
376		2047	29 do	pek sou	2491	34
378		2053	9 do	fans	960	34
379	Ardlaw and Wishford	2056	22 hf-ch	bro or pek	1138	55
380		2059	14 ch	bro pek	1330	41
381		2062	13 do	or pk No. 1	1196	43
382		2065	27 do	pek	2214	39
383	S W	2068	8 do	bro mix	960	26
384	Amblakande	2071	9 do	bro or pek	800	35
385		2074	18 do	pek	1530	31
386		2077	14 do	pek sou	1120	30
387	Hopton	2080	34 do	bro pek	3400	36 bid
388		2083	29 do	pek	2610	33
389		2086	12 do	pek sou	1080	31
391	Monkswood	2092	21 hf-ch	bro pek	1000	75
392		2095	30 do	or pek	1500	66
393		2098	23 ch	pek	2300	48
394		2101	11 do	pek sou	900	41
396		2107	26 hf-ch	fans	1560	33
398	B D W P	2113	19 ch	bro pek	1710	32
399	Malvern	2116	36 hf-ch	bro pek	1980	43
400		2119	37 ch	pek	2590	34
401		2122	17 do	pek sou	1190	31
402	Rowley	2125	42 hf-ch	bro pek	2100	28
403		2128	43 do	pek	2150	34
410	Great Valley, Ceylon in est. mark	2149	55 hf-ch	bro pek	3022	44
411	A M B	2152	16 ch	dust	2400	27
412		2155	16 do	fans	1632	27
413	Dunbar	2158	42 hf-ch	bro or pek	2100	64
414		2161	33 do	or pek	1534	51
415		2164	20 ch	pek	1600	43
419	Torwood	2176	48 do	bro pek	4317	32 bid
423	N E M	2188	12 ch	pek sou	1050	24
424		2191	21 hf-ch	bro pk fans	14 7	24
426		2197	9 ch	sou	810	19
428	Old Maddegama	2203	24 do	bro pek	1680	34
429		2206	24 do	pek	2480	30
430		2209	15 do	pek sou	1125	29
433	Stafford	2218	24 hf-ch	bro or pek	1440	46
434		2221	11 ch	or pek	1045	43
435		2224	18 do	pek	1530	39 bid
439	Digdola	2236	17 do	bro pek	1700	39
440		2239	28 do	pek	2100	32
442	Bandara Eliya	2245	42 hf-ch	bro or pek	2317	56
443		2248	66 do	or pek	3297	34
445	I K V	4	6 ch	pek fans	720	26
446	Abbotsleigh	7	27 do	pek sou	2495	36
447		10	18 do	sou	1530	32
448		13	13 do	dust	2700	27
449	Naseby	16	27 hf-ch	bro or pek	1620	59
450		19	24 do	or pek	1152	65
451		22	27 do	or pek	1242	60
452		25	27 do	pek	1269	47
454	Harrow	31	14 do	bro or pek	832	55
455		34	21 ch	pek	2100	39 bid
456		37	25 do	pek	2497	39 bid
457		40	9 do	pek sou	810	35
458		43	11 do	pek sou	957	35
464	Ugieside	61	7 do	bro mix	735	26
465	Dambatenne	64	60 hf-ch	or pek	2760	38
466		67	75 do	bro pek	4200	40
467		70	49 do	pek	2058	37
468		73	45 do	pek sou	1800	32
469		76	27 do	pek fans	1755	31
470	Ambragalla	79	73 do	or pk No. 1	3504	35
471		82	64 do	bro or pek	3776	35
472		85	37 do	pek	2849	31
473		88	48 do	pek sou	3840	29
475	Panilkande	94	17 ch	bro pek	1700	33
476		97	13 do	pek	1235	31
480	Carlabeck	109	10 do	pek sou	1000	40
482	Palmerston	115	14 hf ch	bro or pek	728	89
483		118	15 ch	pek	1350	48
487	St. Heliers	130	35 hf-ch	bro or pek		39
488		133	21 ch	pek	1890	33
489	Ouvah Kellie	136	15 do	pek sou	1350	41
491	Warwick	142	23 do	bro pek	2300	55
492		145	40 do	pek	3600	41
493		148	26 do	pek sou	2340	37

Lot.		Box.	Pkgs.	Name.	lb.	c.
496	Chesterford	157	45 ch	bro pek	4500	36 bid
497		160	31 do	pek	3100	32
498		163	30 do	pek sou	3000	30
499	Waratenne	166	32 hf-ch	bro or pek	1760	34
500		169	24 ch	bro pek	2040	31
501		172	29 do	pek	2465	30
502		175	14 do	pek sou	1260	27
505	Geragama	184	32 hf-ch	bro or pek	1760	34
506		187	14 ch	bro pek	1260	32
507		190	22 do	pek	1870	30
508		193	13 do	pek sou	1235	27
511	Knavesmire	202	29 do	bro pek	2900	35
512		205	27 do	pek	2295	33
513		208	18 do	pek	1350	30
514		211	14 hf-ch	dust	1120	26
515		214	24 do	or pek	1320	36
516		217	33 ch	bro pek	3300	35
517		220	34 do	pek	3060	33
518		223	23 do	pek	1840	20
519		226	16 do	pek sou	1120	28
520	Middleton	229	14 do	pek sou	1330	40 bid
521	Naseby	232	19 hf-ch	pek	893	45
522	Gallawatte	235	17 ch	bro pek	1615	35
523		238	20 do	pek	1700	31
526		247	15 hf-ch	pek sou	1050	27
529	Ellaoya	256	19 ch	bro pek	1805	37
530		259	24 do	pek	2016	33
531		262	9 do	pek sou	720	30
532	Northcove	265	15 do	sou	1500	26 bid
533	Killarney	268	30 do	bro or pek	3000	42 bid
534	O in est. mark	271	20 do	bro or pek	2000	27 bid
535	Palmerston	274	11 do	pek	935	47 bid
536	Middleton	277	11 do	bro pek	1100	63
537		280	14 do	pek sou	1260	39
538	Gallapitakande	283	17 do	or pek	1445	35
539		286	39 do	bro pek	3900	36
540		289	38 do	pek	3420	34
541		292	17 do	pek sou	1530	30
543	Munaar	298	43 hf-ch	bro pek	2555	40 bid
544		301	78 do	or pek	3750	40
545		304	77 do	pek	3850	31 bid
546		307	49 do	pek sou	2125	29 bid
547		310	23 do	pek fans	1449	30 bid
550	Rickarton	319	39 do	bro or pek	2525	50 bid
551		322	58 do	or pek	3190	41 bid
552		325	37 ch	pek sou	3774	38 bid
554		331	10 hf-ch	fans	850	28
555	Mansfield	334	59 do	bro pek	3540	49
556		337	29 ch	pek	2610	39
557		340	9 do	pek sou	765	35 bid
560	Summer Hill	349	53 hf-ch	bro or pek	3604	55
561		352	34 do	bro or pek	2244	54
562		355	13 ch	or pek	1170	47 bid
563		358	30 do	pek	2550	40
564		361	30 do	pek A	2820	39
565		364	36 do	pek sou	2803	36
571	Bloomfield	382	26 do	pek sou	2470	37
572	B in est mark	385	11 hf-ch	pek fans	880	26
573		388	24 ch	unast	2520	27
574	Clunes	391	13 do	bro or pek	1300	33
575		394	12 do	bro pek	1080	32
576		397	24 do	or pek	1920	32
577		400	49 do	pek	3920	30
578		403	9 do	pek sou	855	28
581	Devonford	412	23 hf-ch	bro or pek	1265	74
582		415	14 ch	or pek	1260	58
583		418	14 do	pek	1180	46
584		421	12 do	pek sou	960	39
585	Talgaswela	424	16 do	bro or pek	1600	34
586		427	15 do	bro pek	1275	32
587		430	12 do	br pk No. 2	1140	27
588		433	22 do	or pek	1870	31
589		436	31 do	pek	2480	28
590		439	25 do	pek sou	2000	26
594	Hatton	451	25 do	bro pek	2750	64
595		454	33 do	pek	2970	48
599	Frogmore	466	18 hf-ch	bro pek	1080	45
600		469	10 ch	pek	850	40
612	Springwood	505	10 do	congou	850	28

[Messrs. Somerville & Co.—
406,366 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Gangwarily	722	27 ch	sou	2025	17 bid
2		775	9 do	fans	1008	20 bid
9	Razeen	796	26 do	bro pek	2600	34
10		799	10 do	bro or pek	800	31 bid
11		802	11 do	pek	1045	30
12		805	14 do	pek sou	1120	28
15	Lonach	814	69 hf-ch	bro pek	3795	34
16		817	30 ch	pek	2550	33
17		820	17 do	pek sou	1360	30
18	Bliukbonnie	823	32 hf-ch	bro pek	1920	45 bid
19		826	50 ch	pek	4400	35 bid
20		829	9 ch	pek sou	738	32
21	Woodthorpe	832	8 do	bro pek	800	36
22		835	14 do	pek	1232	32
23		838	13 do	pek sou	1040	29
26	Mary Hill	847	25 hf ch	bro pek	1375	35 bid
27		850	29 do	pek	1595	31 bid
28		853	17 do	pek sou	850	29 bid
31	Yspa	862	23 ch	pek sou	1955	30
32		865	15 hf ch	pek dust	1275	26
35	Dryburgh	874	18 ch	pek	1476	29
36		877	14 do	pek sou	980	27
38	Rahatungoda	883	30 hf-ch	or pek	1500	40
39		886	23 do	bro or pek	1150	45
40		889	26 do	pek	1300	36 bid
41		892	13 do	dust	1040	26
43	Theberton	898	26 ch	bro or pek	2660	35
44		901	40 do	pek	3600	33
46	Mahalla	907	24 hf-ch	bro pek	1344	31
47		910	9 ch	pek	747	27
51	Monrovia	922	36 ch	bro pek	3600	34
52		925	37 do	pek	3515	30
53		928	20 do	pek sou	2000	28
54	Ravenoya	931	15 hf-ch	bro pek	825	34
55		934	16 do	pek	800	31
59	Warakamure	946	22 ch	bro pek	2200	30
60		949	15 do	pek	1425	28
62		955	9 hf-ch	dust	810	26
63	Glenesk	958	11 ch	bro pek	880	30 bid
64		961	8 do	bro or pek	720	32
65		964	9 do	pek	765	28
71	Charley Hill	982	22 hf-ch	bro pek	1200	30
72		985	13 do	pek	715	28
76	N	997	7 ch	pek	700	29
81	Attiville	13	11 do	pek	1100	27
84	F	22	11 hf-ch	fans	883	24
85	Kosgahahena	25	12 ch	bro pek	1320	29
86		28	14 do	pek	1400	27
96	Mora Ella	58	14 hf ch	or pek	700	44
97		61	20 do	bro or pek	1200	37
98		64	18 ¾ ch	pek	1350	35
99		67	14 ¾ do	pek sou	980	32
100	Rayigam	79	34 ch	bro pek	3·00	33
101		73	26 do	or pek	2080	32
102		76	17 do	pek	1360	30
103		79	14 do	pek sou	1260	28
108	Pindenoya	94	20 ch	bro or pek	2000	37
109		97	20 do	pek	1800	32
110		100	10 do	pek sou	850	30
113	Kelani	109	30 ch	bro pek	2550	34
114		112	20 do	bro or pek	2000	33
115		115	33 do	pek	2805	30
116		118	26 do	pek sou	2340	29
121	Daluk Oya	133	23 hf ch	or pek	1275	36
122		136	33 do	pek	1815	32
126	G B	148	18 hf ch	dust	900	26
127	Narangoda	151	15 ch	bro pek	1500	34
128		154	9 do	pek	855	29
132	Depedene 6 6		48 hf-ch	bro pek	2880	33
133	1	169	47 do	pek	2350	30
134		172	41 do	pek sou	2050	27
137	Galphele A	181	19 ch	bro pek	1900	34
138		184	8 do	bro or pek	800	35
139		187	11 do	pek	990	31
140	Do B	190	14 ch	pek	1260	31
144	Mahatenne	202	48 ch	bro pek	4800	33
145		205	29 do	pek	2755	31
150	Nillicollay-watte	220	12 ch	or pek	1020	31
151		223	17 do	pek	1360	29
155	Hopewell	235	20 hf-ch	bro or pek	1200	45
156		238	51 do	pek	2448	35
157		241	19 do	or pek	969	33
158		244	23 do	pek sou	1058	33
160	Agarsland	250	19 hf ch	bro or pek	1140	43
161		253	52 do	pek	2296	35
162		256	19 do	or pek	969	38
163		259	21 do	pek sou	966	33
165	Doragalla	265	10 ch	bro or pek	1000	42
166		268	11 do	bro pek	1100	39
167		271	34 do	pek	2890	36
168		274	15 do	pek sou	1275	32
169		277	7 do	bro mix	945	25
174	Yarrow	292	16 hf ch	bro or pek	1040	33
175		295	32 do	bro pek	2950	35
			15 ch			
176		298	77 hf-ch	pek	3465	32
178	Bollagalla	304	25 ch	bro pek	2500	34
179		307	19 do	pek	1520	33
180		310	13 do	pek sou	1040	28
184	Citrus	222	28 cb	bro pek	2800	31
185		325	35 ch	pek	3150	29
186		328	12 do	pek sou	1200	26
187	Dikmukalana	331	31 hf-ch	bro pek	1705	35
188		334	24 do	or pek	1200	34
189		337	28 do	pek A	1400	30
190		340	21 do	pek B	1050	28
191		343	17 do	dust	850	27
192		346	37 do	bro pek fans	2035	28

Lot.		Box.	Pkgs.	Name.	lb.	c.
193	Marigold	349	86 hf-ch	bro pek	4730	44
194		352	39 do	pek	1500	40
195		355	32 do	pek sou	1600	36
196		358	10 do	pek fans	759	30
197	Oakham	361	20 hf-ch	or pek	900	41
198		364	23 do	bro pek	1380	43 bid
199		367	17 ch	pek	1530	36
207	Pitaville	391	13 ch	bro pek	1113	50
208		391	8 do	or pek	800	28
210	Columbia	400	40 hf-ch	bro pek	2400	33
211		403	28 do	or pek No 1	1400	46
212		406	48 do	or pek No. 2	2160	39
213		409	40 do	pek	1800	36
214		412	13 do	pek dust	1040	27
216	Honiton	418	33 hf ch	bro pek	1650	34
217		421	18 do	pek	1[illegible]30	28
218		424	20 do	pek sou	1600	27
221	Ferriby	438	29 hf-ch	bro pek	1450	32
222		436	40 ch	pek	3400	28
223		439	20 do	pek sou	1500	27
225	Nuawella	445	67 hf-ch	bro pek	3685	33
226		448	88 do	pek	3872	29
230	Rayigam	460	31 ch	bro pek	3100	32 bid
231		463	23 do	or pek	1955	32
232		466	17 do	pek	1360	30
233		469	10 do	pek sou	900	28
234		472	14 hf-ch	dust	1190	27
235	Kuralana	475	7 ch	bro pek	700	out
236		478	23 do	pek	2300	27
239		487	20 hf ch	dust	1700	23
240	Roseneath	490	22 ch	bro pek	2200	33
241		493	10 do	pek	900	32
242		496	18 do	pek sou	1440	29
245	Harangalla	505	31 ch	bro pek	2945	35
246		503	62 do	pek	4960	32
247		511	9 do	sou	720	26
248		514	23 hf ch	dust	1725	27
249	Hanagama	517	20 ch	bro pek	2000	32
250	Ranasingha-patna	520	60 hf ch	or pek	2880	bid
251		523	46 do	bro or pek	2760	
252		526	33 do	pek	2610	31
253		529	34 do	pek sou	2788	24 bid
254	Deniyaya	532	91 ch	bro pek	9100	35
255		535	49 do	pek	4900	32
256		538	35 do	pek sou	3500	29
257		541	25 do	sou	2500	28
260	Selvawatte	550	25 ch	bro pek	2500	
261		553	15 do	pek	1500	26 bid
264	Bargary	562	11 hf-ch	bro or pek	715	41
266		568	18 ch	pek	1710	26
269	Nyanza	577	11 ch	bro pek	1100	37
270		580	15 do	or pek	1500	37 bid
271		583	17 do	pek	1530	35
272		586	14 do	pek sou	1120	30
274	Neuchatel	592	42 ch	bro pek	4200	35
275		595	40 do	pek	3100	30
276		598	21 do	pek sou	1680	28
279	Daluk Oya	607	17 hf-ch	bro or pek	1020	41
280		610	16 do	or pek	880	36
281		613	28 do	pek	1540	32
283	Marigold	619	24 hf ch	pek	1196	39
284	Naboda	622	17 ch	bro or pek	1700	32
285		625	55 do	bro pek	5500	33
286		628	11 do	pek	990	29
287		631	14 do	pek sou	1120	27
289	Ravana	637	38 hf ch	bro pek	2090	35
290		640	45 do	pek	2025	32
291		643	16 do	pek sou	720	30
296	Lonach	658	83 hf ch	bro pek	4565	34
297		661	34 ch	pek	2890	33
298		664	21 do	pek sou	1680	30
299	L	667	15 ch	sou	1410	18
300	Hatdowa	670	39 ch	bro pek	3510	31 bid
301		673	32 do	pek	2400	28
302		676	33 do	pek sou	2475	27
303		679	7 do	fans	700	27
311	Mipitakande	703	79 hf ch	pek sou	3555	27
312		706	18 do	fans	1440	25
313	Ambalawa	709	28 hf ch	bro pek	1400	30
314		712	20 do	pek	900	27
316	Walahanduwa	718	48 ch	bro pek	4800	33
317		721	41 do	pek	3895	29
318		724	16 do	pek sou	1360	28
320	Wallasmulle	730	2 do	dust	840	25

[Mr. E. John.—386,591 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
5	W, in est. mark	779	8 ch			
			1 hf-ch	pekoe	855	27
9	Eladuwa	791	16 ch	pekoe	1440	28
12	Glasgow	800	42 do	bro or pek	3570	53
13		803	16 do	or pek	1152	51
14		806	14 do	or pek	1008	47
15		809	17 ch	pekoe	1479	44
16		812	15 do	pek sou	1500	40
17	Fernlands	815	9 do	sou	900	34
18	Agra Ouvah	818	57 hf-ch	bro or pek	3705	52
19		821	29 ch	or pek	2697	46
20		824	10 do	pekoe	900	43
21		827	10 do	pek sou	850	38
22		830	27 hf-ch	pek fans	2295	33
24	Glasgow	836	43 ch	bro or pek	2526	63
25		839	15 do	or pek	1050	53
26		842	13 do	pekoe	1131	44
27		845	14 do	pek sou	1400	40
28		845	18 do	fans	1800	33
31	Mocha	857	20 do	bro or pek	2[illegible]00	56 bid
32		860	14 do	or pek	1260	59
33		863	20 do	pekoe	1800	47
34		866	10 hf-ch	fans	800	30
35	Cleveland	869	60 do	flow or pek	3300	46 bid
36		872	55 do	pekoe	2915	40
37		875	15 do	pek sou	7[illegible]0	37
39	Koslande	881	25 do	br pek	1500	40
40		884	26 ch	pekoe	2340	32 bid
45	Lameliere	899	22 do	bro pek	2310	44 bid
46		902	31 do	pekoe	2852	40 bid
47		905	23 do	pek sou	172[illegible]	36
49	B K	911	20 hf-ch	dust	2044	30
51	St. John's	917	25 do	bro or pek	1450	65 bid
52		920	25 do	or pek	1250	59 bid
53		923	43 do	pekoe	21[illegible]0	41 bid
55	Kandaloya	929	22 do	or pek	880	35
56		932	33 do	pekoe	1320	31 bid
57		935	21 do	pek sou	840	30
58		938	19 do	fans	950	28
59		941	19 do	dust	950	26
60		944	37 do	sou	1480	27
64	Bittacy	956	26 ch	br pek	2600	55
65		959	25 do	pekoe	2000	45
66	Kandaloya	962	60 hf-ch	pekoe	2400	31 bid
67	Tempo	965	11 ch	bro or pek	1276	32
68		968	9 do	pekoe	720	29
71	Claremont	977	14 do	bro or pek	1350	32
72		980	9 do	pekoe	756	29
76	Harrisland	992	8 do	bro pek	784	33
80	Rookwood	4	12 hf-ch	bro or pek (Venesta)	780	43
81		7	35 do	or pek (Venesta)	2100	37 bid
82		10	15 ch	pekoe (H)	1350	37
83		13	38 do	pek sou (H)	3420	33
84		16	33 do	sou (H)	2376	28
85	Mount Everest	19	30 hf-ch	bro or pek	1650	65
86		22	41 do	or pek	2050	49
87		25	41 ch	pekoe	4100	40
88		28	19 do	pek sou	1710	36
89	G W	31	33 hf-ch	bro pek fans	2145	30
90	Agra Ouvah	34	58 do	bro or pek	3770	5[illegible]
91		37	23 ch	or pek	2139	45
92		40	10 do	pekoe	910	39
94	Dalhousie	46	15 hf-ch	bro pek	825	48
95		49	38 do	pek No. 1	1710	33
96		52	18 do	pek No. 2	810	40
98	H B	58	01 do			
			26 ch	pek fans	8085	28
99	Brownlow	61	22 hf-ch	bro or pek	1254	51
100		64	34 ch	bro pek	3400	41
101		67	32 do	pekoe	2880	36
102		70	18 hf-ch	bro pek fans	1260	33
103	Dic' apittia	73	25 ch	bro pek	2500	36
104		76	33 do	pekoe	3300	32
105		79	13 hf-ch	dust	1040	26
106		82	13 do	fans	910	28
108	Choughleigh	88	10 ch	bro or pek	1100	33 bid
109		91	17 do	pekoe	1615	31 bid
112	Nahavilla	100	40 do			
			4 hf-ch	bro pek	4240	40
113		103	12 ch			
			30 hf ch	pekoe	2700	35
114		106	24 ch	pek sou	2400	32
116		112	9 hf-ch	dust	720	28
119	G T	121	8 ch	pek sou	8[illegible]0	28
123	W H	133	15 hf-ch	pek sou	735	33
124		136	9 do	dust	810	27
126	Chapelton	142	12 ch	bro mix	960	27
127	Suduganga	145	14 do	or pek	1260	37
128		148	12 hf-ch	bro or pek	720	54
129		151	13 ch	pek sou	1[illegible]05	31 bid
132	Galella	160	26 do	or pek	2600	38
133		163	25 do	pekoe	2435	33 bid
134		166	10 do	pek sou	850	31 bid
135		169	10 hf-ch	dust	850	27
137	N	175	10 do	dust	850	27
138	M R	178	9 do	dust	810	27
139	Alplakande	181	13 ch	sou	1170	27
140	H S, in estate mark	184	12 do	bro mix	1200	21
144	Little Valley	196	8 do	bro pek	809	34
145	Glentilt	199	22 do	or pek	2200	36 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
143		200	17 ch	pekoe	1700	37 bid
148	Kandaloya	208	90 hf-ch	pekoe	3600	30 bid
149	O S	211	44 ch	sou	3960	26
150	Wewabedde	214	31 do	bro pek	3007	35
151		217	60 do	pekoe	5400	33
152		220	23 do	pek sou	2070	30 bid
155	Gonavy	229	57 hf-ch	bro pek	2850	37
156		232	27 ch	pekoe	2025	33
158		238	9 hf-ch	dust	720	28
160	Coslande	244	25 do	bro pek	1500	40
161		247	26 ch	pekoe	2340	32
166	G K	262	23 do	dust	3910	26
167	Agramalderiya	265	17 hf-ch	unas	765	15
169	Morahela	271	25 ch	bro or pek	2500	29 bid
170		274	27 do	pekoe	2468	30 bid
171		277	25 do	bro pek	2425	34
172		280	25 do	or pek	2350	33
173		283	13 do	sou	1026	27
175	Myraganga	289	50 do	bro pek	4500	32 bid
176		292	125 do	bro or pek	6875	31 bid
177		295	65 do	pekoe	5200	32 bid
178		298	71 do	pek sou	6035	29 bid
180		304	11 do	fans	1320	28
181	M	307	17 do	bro pek	1700	31
182		310	7 do	pekoe	700	30
183	Eadella	313	16 do	bro or pek	1600	33
184		316	21 do	bro pek	2100	31
185		319	30 do	pekoe	3000	30
189	Gampai	331	46 hf-ch	or pek	2208	32 bid
190		334	36 do	bro or pek	2160	35
191		337	22 ch	pekoe	1760	31 bid
192		340	25 do	pekoe (H)	2075	30
195	Perth	349	26 do	bro or pek	2730	35
196		352	50 do	bro pek	4500	36
197		355	16 do	pekoe	1280	33
200	D H K	364	25 hf-ch	bro pek	1250	27
201		367	19 do	pekoe	855	26
202	Wadhurst	370	9 ch	bro pek	900	45
203		373	12 do	pekoe	1080	37
204		376	9 do	pek sou	810	33
205	M, in est. mark	379	15 hf-ch	bro pek fans	1200	25
206	Myraganga	382	75 do	bro or pek	4500	33
207	Whyddon	385	15 ch	bro pek	1650	42
208		388	18 do	or pek	1800	39
209		391	13 do	pekoe	1235	37
211		397	11 do	pek sou	935	32
215	Maskeliya	409	20 hf-ch	bro or pek	1000	62
216		412	26 ch	or pek	2340	41
217		415	28 do	pekoe	2240	36
218		418	10 do	pek sou	1000	32
221	Ferndale	427	17 do	bro or pek	1700	38
222		430	13 do	or pek	1170	35 bid
222		433	23 do	pekoe	2070	33 bid
224		436	8 do	dust	1000	27
225	Maryland	439	7 do	bro pek	700	32
226		412	7 do	pekoe	700	28
227	Y K	445	13 do	sou	1235	17
228	Keenagaha Ella	448	15 do	sou	1125	27
229		451	11 do	bro pek fans	715	28
230	Hiralouvah	454	18 hf ch	bro or pek	1080	33 bid
231		457	19 ch	or pek	1710	32 bid
232		460	31 do	pekoe	2635	31 bid
233		463	12 do	pek sou	1020	29
236	Murraythwaite	472	9 do	bro pek	855	35
237		475	10 do	pekoe	850	31 bid
241	Gonavy	487	68 hf-ch	bro pek	3400	28
242		490	31 ch	pekoe	2325	32
243		493	8 do	pek sou	720	30
244	Galoola	496	30 do	bro pek	3000	39
245		499	30 do	pekoe	3000	37
246		502	20 do	pek sou	2000	32
249	Gangawatte	511	24 do	or pek	2280	40
250		514	21 do	bro or pek	2205	42 bid
251		517	21 do	pekoe	1890	35
253	Glassaugh	523	25 hf-ch	or pek	1400	75
254		526	24 do	bro or pek	1560	58
255		529	22 ch	pekoe	2090	47
257	Ottery	535	23 do	bro or pek	2294	41
258		538	14 do	or pek	1190	41
259		541	50 do	pekoe	5000	38
261	L E L	547	16 do	bro or pek	880	73
262		550	27 do	bro pek	2700	55
263		553	15 do	pekoe	1350	49
264	Poilakande	556	17 do	or pek	1275	33
265		559	31 do	bro pek	3100	32
266		562	31 do	pekoe	2635	29 bid
267	B D	565	37 hf-ch			
			38 do	pek fans	4855	30

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
1	A, in estate mark	15	5 ch	unas	500	26
7	Stamford Hill	33	1 hf-ch	dust	85	28
8	Queensland	36	1 hf ch	pek dust	80	23
9	Dambagastalawa	39	3 ch	bro or pek	330	35 bid
14	Halgolla	54	2 ch	fans	230	28
15		57	3 do	dust	435	27
26	P and O	90	8 hf ch	bro pek	400	31
27		93	1 ch	red leaf	92	18

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	V, in estate mark	925	5 hf-ch	dust	400	26
4	New Peacock	931	9 ch	bro mix	450	26
14	Glencorse	961	2 ch	bro tea	220	27
15		964	1 do	dust	78	27
16	Kincora	967	5 ch	bro pek	425	37
17		970	6 do	pek	462	33
18		973	4 do	pek No. 2	360	30
19	V, in estate mark	973	1 ch	pek sou	95	25
27	Crandon	1009	1 ch	fans	90	23
28	Udapolla	1003	5 ch	bro or pek	560	34
29		1006	4 do	bro pek	400	32
31		1012	3 do	pek sou	270	28
32		1015	1 hf ch	dust	80	26
33		1018	1 bag	red leaf	65	18
36	Kincora	1027	4 ch	dust	400	26
39	Shrubs Hill	1036	4 do	pek sou	352	30
41	Quilon	1042	5 ch	sou	330	26
49	Great Valley Ceylon, in estate mark	1066	7 ch	sou	575	26
60	Altempettia	1089	4 ch	pek sou	320	30
63	Wewawatte	1108	1 hf ch	dust	60	26
69	ousakelle	1126	5 ch	sou	450	30
70		1129	5 hf ch	dust	400	27
71	Ardross	1132	5 do	dust	425	26
74	Grange Garden	1141	3 ch	pek sou	300	30
75		1144	2 do	fans	200	23
76		1147	2 hf-ch	dust	170	27
95	Ganapalla	1204	6 ch	pek sou	450	out
100	B W D	1219	7 hf-ch	dust	490	27
101		1222	7 ch	red leaf	630	27
107	Gampaha	1240	1 hf ch	fans	90	27
108	Galkadua	1243	3 ch	bro or pek	360	31
112		1255	1 do	congou	105	22
113		1258	2 do	fans	240	27
114		1261	1 do	dust	180	26
123	Fairlawn	1297	3 hf ch	dust	255	27
133	Polatagama	1318	4 ch	bro pek fans	440	29
134		1321	3 do	dust	450	26
140	Hayes	1339	5 do	dust	650	27
145	P, in estate mark	1354	13 hf-ch	bro pek	650	51
147		1360	3 do	unas	270	31
153	Doranakande	1378	5 ch	pek	475	30
154		1381	2 do	pek No. 2	180	28
155		1384	7 do	pek sou	630	28
156		1387	1 do	dust	102	26
157	Pussella	1390	6 do	bro pek	594	33
160	Dewalakande	1399	9 ch	bro tea	558	25
161		1402	6 hf ch	dust	480	26
165	Weyungawatte	1414	2 ch	pek sou	170	29
166		1417	1 hf-ch	dust	85	26
168	Kennington	1423	5 ch	bro pek fans	630	28
169		1426	6 do	unas	570	26
170		1429	3 do	dust	735	26
178	Castlereagh	1453	7 hf-ch	dust	560	27
179	Y	1456	4 ch	pek sou	376	25
180		1459	3 do	pek sou	405	25
181	Ookoowatte, No. 1	1462	2 ch	dust	200	26
182		1465	1 do			
			2 hf-ch	pek fans	348	28
183		1468	1 ch	sou	30	26
184		1471	1 do			
			1 hf ch	red leaf	145	20
188	Cotswold	1483	3 ch	sou	225	28
189		1486	3 hf ch	dust	240	27
194	St. Leonards-on-Sea	1501	3 hf-ch	pek dust	240	26
195		1504	4 do	bro mix	300	24
201	B and D	1222	5 ch	sou	470	33
205	W N	1634	4 hf-ch	dust	340	26
210	Strathspey	1549	2 ch	sou	176	34
211		1552	2 do	dust	258	27
221	Irex	1582	2 do	dust	200	27
225	Palmgarden	1594	5 do	pek sou	[illegible]	27
226		1597	1 do	congou	92	23
227		1600	1 do	fans	110	25
228	K D A	1603	1 ch	bro pek	115	35

Lot.		Box.	Pkgs.	Name.	lb.	c.
229		1606	2 ch	pek	180	30
230		1609	1 do	pek sou	102	26
231	N B	1612	7 do	bro tea	525	21
235	Lindupatna	1624	6 do	pek sou	600	38
236		1627	3 do	dust	270	27
241	Nilloomally, O B E C, in est. mark	1642	1 ch	sou	70	33
242		1645	4 do	fans	280	28
243		1648	2 do	dust	160	27
244	Ellamulle	1651	4 bags	red leaf	207	20
245	V, in estate mark	1654	1 ch	bro or pek	87	31
246		1657	2 do 1 hf ch	unas	235	28
247		1660	1 do	dust	47	26
252	Stisted	1675	1 do	dust	60	30
260	D	1699	5 ch 1 hf ch	sou	550	21
261	Maldeniya	1702	4 ch	sou	360	26
262		1705	3 do	fans	240	26
263		1708	3 do	dust	270	26
264		1711	1 do	congou	80	26
267	Tembiligalla	1720	4 ch	peksou	360	30
268		1723	1 do	bro pek fan	120	27
269		1726	1 hf ch	dust	80	26
270	Mahayaya	1729	7 ch	bro or pek	510	33
271		1732	10 hf ch	bro pek	600	34
274		1741	2 do	sou	120	27
275		1744	1 do	dust	100	26
276	Rockside	1741	6 ch	sou	480	28
277		1750	3 do	bro mix	255	25
278		1753	4 do	dust	540	27
279		1756	4 do	bro pek fans	460	31
282	Carberry	1705	6 ch	pek sou	540	28
283		1768	3 do	bro or pek	330	32
284		1771	5 do	bro tea	450	27
285		1774	1 do	dust	140	26
292	T'Villa	1795	3 ch	sou	240	24
293		1798	4 do	fans	428	26
298	Obode	1813	2 hf ch	dust	160	26
307	Ascot	1840	3 ch	dust	240	26
308	K W P, in est. mark	1843	6 hf ch	bro or pek fans	360	31
314	Queensland	1861	3 do	bro pek dust	240	28
315		1864	1 do	bro pek fans	63	33
319	Luckyland	1876	10 do	or pek	500	42
326	Massena	1897	3 do	pek fans	180	28
327		1900	5 do	fans	350	27
328		1903	2 do	dust	170	26
332	Letchemey	1915	5 do	pek fans	400	27
334	Morankande	1921	11 do	bro or pek	616	52
338		1933	8 do	bro or pek fans	660	28
339		1936	2 do	dust	180	26
344	Seenagolla	1951	2 hf ch	bro mix	110	28
352	Maha Uva	1975	1 do	pek fans	80	28
357	Erracht	1990	7 ch	pek sou	560	28
358		1993	1 do	bro pk fans	135	27
359		1996	2 do	dust	316	26
360	D in est mark	1999	6 hf-ch	fans	360	27
361		2002	5 do	bro mixed	300	18
362		2005	3 do	dust	300	27
363	Allerton	2008	3 ch	br or pek fans	400	27
364		2011	3 do	dust	360	26
377	Roeberry	2050	5 ch	dust	500	26
380	Hopton	2089	5 do	dust	525	27
395	Monkswood	2104	5 do	pek sou No. 2	450	39
397		2110	7 hf-ch	dust	525	28
404	B D W P	2131	2 ch	bro pek No. 2	180	21
405		2134	1 do	pek No. 2	80	19
406		2137	2 hf-ch	dust	170	26
407	Cooroondoo-watte	2140	5 do	bro pek	300	54
408		2143	5 ch	pek	500	34
409		2146	5 do	pek sou	500	30
416	D B R	2167	8 hf-ch	bro pek fans	480	33
417		2170	2 ch	pek sou	160	35
418		2173	1 hf-ch	dust	80	26
420	Munukattia, Ceylon in est. mark	2179	7 do	dust	560	27
421	N E M	2182	6 do	bro pek	330	28
422		2185	1 do	pek	60	26
425		2194	1 do	bro pek dust	85	22
427		2200	1 do	sou	50	19
431	Old Maddegama	2212	7 ch	souchong	525	28
432		2215	3 do	pek dust	240	27
436	Stafford	2227	5 do	pek sou	400	37
437		2230	4 hf-ch	fans	280	30
438		2233	2 do	dust	180	26
441	Digdola	2242	1 ch	pek sou	100	28
444	I K V	1	1 do	bro mixed	112	21
453	Harrow	28	11 hf-ch	or pek	594	51

Lot.		Box.	Pkgs.	Name.	lb.	c.
459		46	2 hf-ch	dust	150	27
460	Peakshadow	49	7 ch	pek sou	630	28
461		52	3 do	pek fans	200	27
462		55	1 do	bro mix	100	22
463	Ugieside	58	5 do	dust	400	26
474	Ambragalla	91	5 do	congou	500	28
477	Panilkande	100	5 do	pek sou	450	29
478		103	3 hf-ch	dust	225	27
479		106	1 ch	congou	90	26
481	Carlabeck	112	6 hf-ch	bro pek fans	492	31
484	Palmerston	121	2 do	dust No. 1	166	29
485		124	1 do	dust No. 2	90	27
486		127	3 do	bro or pk fans	210	35
490	Ouvah Kellie	139	7 do	dust	560	27
494	Warwick	151	3 do	pek fans	225	32
495		154	3 do	dust	270	27
503	Waratenne	178	5 do	fans	425	26
504		181	2 do	dust	180	26
509	Geragama	196	3 do	fans	270	26
510		199	2 do	dust	180	25
524	Gallawatte	241	8 ch	pek sou	680	28
525		244	8 do	sou	640	26
527		250	2 hf-ch	dust	170	26
528		253	2 do	fans	100	26
542	Gallapitakande	295	7 do	dust	490	28
548	Munaar	313	8 do	dust	600	out
549		316	10 do	bro tea	350	out
553	Rickarton	328	7 do	bro tea	455	30
558	W L	343	1 ch	sou	94	24
559		346	1 hf-ch	pek dust	84	25
566	Summer Hill	367	4 ch	fans	358	30
567		370	6 hf-ch	bro pek	282	29
568		373	8 do	pek	344	27
569		376	9 do	pek sou	369	25
570		379	1 do	fans	56	26
579	Clunes	406	4 ch	dust	360	26
580	W W	409	1 do	pek	86	29
591	Talgaswella	442	6 hf-ch	fans	450	27
592		445	3 do	dust	270	26
593		448	1 ch	bro mix	100	19
596	Hatton	457	6 do	pek sou	480	39
597		460	1 do	unast	110	36
598	Frogmore	463	7 hf-ch	or pek	315	48
601		472	9 ch	pek No. 2	675	33
602		475	10 hf-ch	bro or pek	550	57
603		478	1 do	dust	85	28
604	Kalupahana	481	2 do	bro pek	108	35
605		484	2 do	or pek	100	30
606		487	2 do	pek	100	28
607		490	10 do	pek sou	500	27
608		493	1 do	sou	45	24
609		496	6 do	bro mix	300	23
610		499	1 do	pek dust	80	26
611		502	1 do	dust	80	25
613	Cooroondoo watte	508	6 do	bro pek	360	50
614		511	4 ch	pek	400	34
615		514	2 do	pek Sou	200	30

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
3	Gangwarily	778	4 ch	red leaf	300	18
4	Wendura	781	7 ch	bro pek	686	30
5		784	7 do	pek	560	29
6		787	3 do	pek sou	240	27
7		790	3 do	pek sou No. 2	270	25
8		793	1 do	dust	90	26
13	Razeen	808	4 ch	bro or pek	280	28
14		811	2 do	dust	170	26
24	Woodthorpe	841	3 ch	sou	228	26
25		844	2 hf-ch	dust	131	26
29	Mary Hill	856	4 hf ch	bro tea	260	26
30		859	2 do	dust	190	26
33	Dryburgh	868	5 ch	bro or pek	475	36
34		871	3 do	or pek	249	35
37		880	5 do	fans	335	28
42	Donside	895	1 ch	sou	85	27
45	Theberton	904	2 ch	fans	200	23
48	Mahalla	913	8 ch	pek sou	656	27
49		916	6 do	pek sou No. 2	456	26
50		919	1 do	dust	155	26
56	Kavenoya	937	2 hf ch	pek sou	110	28
57		940	1 do	sou	50	26
58		943	1 do	fans	80	26
61	Warakamure	952	6 ch	pek sou	540	22
66	Glenesk	967	7 ch	pek sou	560	27
67		970	2 do	bro tea	220	26
68		973	1 do	dust	172	26
69	St. Leys	976	1 hf-ch	fans	85	28
70		979	1 do	red leaf	63	17
73	Charlie Hill	988	2 hf ch	pek sou	100	26
74		991	3 do	pek fans	225	26
75	N	994	4 ch	bro pek	348	31
77	Allakolla	1	3 ch	sou	260	26
78		4	6 do	red leaf	540	20

Lot.		Box.	Pkgs.	Name.	lb.	c.
79		7	4 hf-ch	dust	400	26
80	Attiville	10	6 ch	bro pek	600	30
82		16	5 ch	pek sou	510	26
83		19	2 do	bro mix	224	22
87	Kosgahahena	31	4 ch	pek sou	400	26
88		34	6 hf ch	sou	300	24
89		37	1 ch	fans	102	26
90		40	1 do	pek dust	95	24
91	P	43	7 ch	red leaf	588	18
92	R K	46	ch	bro pek	340	34
93		49	2 do	bro or pek	200	31
94		52	6 do	pek	510	31
95		55	5 do	pek sou	450	28
104	F, in estate mark	82	4 ch	pek sou	296	34
105		85	8 hf ch	dust	592	28
106	F A, in estate mark	88	3 ch	pek sou	270	31
107		91	4 hf-ch	dust	340	28
111	Pindenioya	103	7 ch	sou	665	27
112		106	1 do	dust	140	26
117	J P E	121	2 ch	hro pek	170	31
118		124	1 do	hro or pek	100	32
119		127	2 do	pek	170	28
120		130	3 do	pek sou	270	26
123	D B	135	1 ch	bro mix	100	22
124		142	2 hf-ch	dust	160	26
125	G B	145	4 hf-ch	bro tea	200	24
129	Narangoda	157	4 ch	pek sou	360	24
130		160	1 hf ch	dust	85	27
131		163	1 do	sou	55	25
135	Depedene	175	1 hf ch	bro mix	55	25
136		178	3 do	dust	255	20
141	Galphele	193	3 ch	pek	270	27
142		196	1 do	sou	100	26
143		199	2 do	fans	300	26
146	Mahatenne	203	5 ch	pek sou	450	27
147		211	3 ch	dust	300	26
148		214	1 do	bro tea	100	20
149	Nillicolla-watte	217	10 hf-ch	bro pek	630	24
152		226	3 ch	pek sou	225	26
153		229	1 hf-ch	dust	75	27
154		232	1 do	fans	75	27
159	Hopewell	247	9 hf-ch	fans	540	30
164	Agarsland	262	10 hf-ch	fans	600	30
177	Y, in estate mark	301	5 hf-ch	dust	425	27
181	Bollagalla	313	1 hf-ch	dust	90	25
182		316	1 ch	red leaf	90	18
183		319	2 do	bro tea	220	22
200	Oakham	370	5 ch	pek sou	425	22
201		373	2 do	pek fans	160	31
202	Kurunegalla Estates Co.	376	3 hf-ch	or pek	180	34
203		379	3 ch	hro pek	300	33
204		382	3 do	pek	300	30
205		385	1 do	pek sou	100	27
206		388	2 hf ch	bro mix	120	27
209	Pitaville	397	1 ch	pek sou	91	24
215	C M, in estate mark	415	2 hf-ch	pek	78	30
219	Honiton	427	3 hf ch	fans	165	27
220		430	3 do	dust	210	26
224	Ferriby	442	5 ch	fans	625	26
227	Nugawella	451	8 ch	pek sou	640	27
228		454	4 do	bro mix	340	23
229		457	8 hf-ch	dust	680	26
237	Kuralana	481	5 ch	pek sou	470	22 bid
238		484	4 do	red leaf	415	18
			1 hf ch			
243	Roseneath	499	1 hf ch	dust	100	25
244		502	1 ch	bro mix	80	20
258	Deniya	544	4 ch	dust	640	26
259		547	1 do	bro pek fans	125	27
262	Selvawatte	556	1 ch	sou	100	22
263		559	2 hf-ch	fans	160	25
265	Bargany	565	6 ch	or pek	600	36 bid
267		571	6 do	pek sou	540	31
268		574	1 hf ch	dust	85	26
273	Nyanza	589	2 ch	fans	200	27
277	Neuchatel	601	4 ch	hro or pek	480	28
278		604	2 do	dust	300	26
282	Donside	616	5 ch	sou	425	27
288	Neboda	634	4 hf ch	dust	340	27
292	A	646	4 hf-ch	dust	320	26
293		649	5 do	bro tea	250	24
294	S	652	5 hf-ch	dust	400	27
295		655	8 do	hro tea	400	24
304	Hatdowa	682	5 ch	sou	375	18
305	Hanwella	685	8 hf-ch	bro pek	400	20
306	Bope	688	12 hf-ch	hro pek	600	30
307		691	6 do	pek	288	28
308		694	1 do	pek sou	48	25
309		697	5 do	dust	350	25
310	N	700	9 hf-ch	red leaf	453	18
315	Ambalawa	715	9 hf-ch	pek sou	360	26
319	Wallasmulla	727	3 ch	pek	270	26

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
1	C W Co.	767	2 ch	pekoe	167	36
2		770	1 do	pek sou	64	32
3		773	1 do	pek sou	89	31
4		776	1 do	pekoe	89	33
6	W, in est. mark	782	1 do	bro mix	100	23
7	Eladuwa	785	6 do	or pek	570	36
8		788	3 do	bro pek	330	31
10		794	6 do	pek sou	540	27
11		797	1 do	mixed	150	22
23	Agra Ouvah	833	5 hf-ch	dust	500	28
29	E E E	851	8 ch	sou	640	27
30		854	3 do	red leaf	240	19
38	Cleveland	878	6 hf-ch	fans	480	29
41	Koslande	887	1 ch	pek sou	90	30
42		890	2 do	congou	170	28
43		893	1 do	fans	110	28
44		896	2 do	dust	300	26
48	Lameliere	908	6 hf-ch	pek fans	480	31
50	B K	914	1 do	bro tea	53	18
54	St. John's	926	11 do	pek sou	594	35 bid
61	Theresia	947	3 ch	bro pek fans	300	35
62		950	7 hf-ch	dust	560	28
63		953	1 ch	sou	95	31
69	Tempe	971	6 do	pek sou	480	27
70		974	6 do	sou	480	25
73	Claremont	983	8 do	sou	680	19
74		986	3 do	fans	258	26
75		989	2 hf-ch	dust	198	25
77	Harrisland	995	7 ch	pekoe	560	31
78		998	7 do	pek sou	560	28
79		1	3 do	pek sou No.2	270	26
93	Dalhousie	43	9 hf-ch	or pek	405	40
97		55	4 do	fans	280	82
107	Choughleigh	85	6 ch	or pek	552	35
110		94	3 do	pek sou	288	29
111		97	4 do	dust	568	27
115	Nahavilla	109	9 hf-ch	pek fans	630	29
117	G T	115	1 ch	hro pek	100	31
118		118	5 do	pekoe	500	28
120		124	7 hf ch	dust	665	26
121	W H	127	8 do	bro pek	568	32
122		130	2 do	pekoe	114	29
125	Chapelton	139	7 do	dust	630	25
130	Suduganga	154	1 ch	pek fans	100	28
131		157	4 do	sou	320	28
136	Galella	172	2 bags	red leaf	106	18
141	Nanuoya	187	4 ch			
			1 hf-ch	sou	399	25
142	Caledonia	190	1 ch	hro mix	90	22
143	G B	193	1 do	bro pek	103	31
147	Kandaloya	205	15 hf-ch	or pek	600	33 bid
153	Wewabedde	223	6 ch	dust	600	27
154	Gonavy	226	13 hf-ch	bro or pek	650	36
157		235	6 ch	pek sou	570	30
159		241	3 do	congou	255	24
162	Coslande	250	1 do	pek sou	90	28
163		253	2 do	congou	170	28
164		256	1 do	fans	110	28
165		259	2 do	dust	300	26
168	Agramaldeniya	268	7 hf-ch	fans	385	26
174	Morahela	286	5 do	dust	420	26
179	Myraganga	301	6 ch	bro mix	510	25
186	Eadella	322	5 do	pek sou	450	27
187		325	6 hf-ch	dust	480	27
188		328	1 bag	unas	80	19
193	Gampai	343	3 hf-ch	dust	195	26
194		346	1 do	red leaf	50	25
198	Perth	358	6 do	dust	450	31
199		361	6 do	pek dust	450	27
210	Whyddon	394	2 do	unas	174	31
212		400	3 do	fans	375	29
213		403	3 do	dust	435	27
214	Farm	406	2 do	dust	180	26
219	Maskeliya	421	7 hf-ch	bro pek fans	420	30
220		424	4 do	dust	360	27
234	Hiralouvah	466	2 do	dust	180	26
235		469	4 do	fans	260	27
238	Murraythwaite	478	8 ch	pek sou	680	28
239		481	1 do	dust	170	25
240		484	1 do	hro pek fans	120	28
274	Galloola	505	2 do	dust	200	28
248		508	5 do	fans	500	30
252	Gangawatte	520	4 do	pek fans	420	30
256	Glassaugh	532	4 hf-ch	dust	380	29
260	Ottery	544	3 do	dust	246	27

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent).

MINCING LANE, March. 30.

"Duke of Argyle."—GA Ouvah O, 1 barrel sold at 96s; ditto 1, 1 cask sold at 86s; ditto 2, 1 cask and 1 tierce sold at 68s; ditto 3, 1 barrel sold at 42s; ditto IPB, 1 barrel sold at 46s.

"Kamakura Maru."—Tillicoultry O, 1 barrel, 3 casks and 1 tierce out at 112s; 1 ditto, 5 casks sold at 98s; ditto 2, 2 tierces and 1 barrel sold at 64s; ditto PB, 1 barrel and 1 tierce sold at 109s.

"Arabia."—Peaberry, 8 bags sold at 80s 6d; G, in estate mark, Mysore A, 69 bags sold at 101s 6d; Mockell, C, in estate mark, Mysore B, 114 bags sold at 81s 6d; ditto C, 9 bags sold at 56s; ditto P, 27 bags sold at 100s; Jacques Arnoldine, 2 bags sold at 79s; ditto B, 4 bags sold at 60s; ditto C, 1 bag sold at 50s; ditto P, 2 bags sold at 68s 6d; ditto B, 166 bags sold at 58s.

"Antenor."—Olivers, in estate mark, OO, 1 barrel sold at 97s; ditto O, 2 casks and 1 tierce sold at 83s; ditto P, 1 barrel sold at 69s.

CEYLON COCOA SALES IN LONDON.

"Mazagon."—Altwood Estate, 28 bags sold at 80s; 10 bags sold at 73s; 16 bags sold at 69s 6d.

"Antenor."—Mousava AA, 57 bags sold at 79s; A, 8 bags sold at 73; B, 8 bags sold at 40s; C, 2 bags sold at 57s 6d; Rockhill, AA, 24 bags sold at 74s; B, 5 bags sold at 42s 6d; C, 3 bags sold at 57s 6d.

"Ava Maru."—Rockhill AA, 43 bags sold at 72s 6d; B, 10 bags sold at 45s 6d; C, 4 bags sold at 57s; Mausava AA, 15 bags sold at 76s 6d; B, 6 bags sold at 45s 6d; C, 2 bags sold at 57s.

"Jumna."—Gangwarily No. 1, 11 bags sold at 83s; No. 2, 4 bags sold at 65s; No. 3, 4 bags sold at 59s.

"Mazagon."—CGH, in estate mark, 16 bags sold at 62s 6d.

"Kamakura Maru."—Kepitigalla, 47 bags sold at 76s; 27 bags sold at 67s 6d; 5 bags sold at 60s; 10 bags sold at 56s; 10 bags sold at 56s; 9 bags sold at 50s; 2 bags sold at 58; Old Haloya, 11 bags sold at 73s; 1 bag sold at 58s.

"Clan Chisholm."—KA H Muller, 1 bag sold at 64s.

"Kamakura Maru."—HK 1, 12 bags sold at 61s 6d; ditto 2, 6 bags sold at 61s; ditto T, 1 bag sold at 61s.

"Mazagon."—B HMS & Co., in estate mark, Estate Cocoa, 178 bags sold at 65s 6d; Polwatte A, 10 bags sold at 80s; ditto B, 4 bags sold at 67s 6d.

"Kamakura Maru."—Palli, London 1, 56 bags sold at 72s; ditto 2, 15 bags sold at 68s; 4 bags sold at 55s; ditto T, 2 bags sold at 61s 6d; 1 bag sold at 48s; PKY, London, 17 bags sold at 77s; ditto 2, 2 bags sold at 63s 6d; ditto T, 1 bag sold at 56s; Dodantalawa, 1 bag sold at 62s.

"Mazagon."—Grove, A 29 bags sold at 83s, ditto L, 4 bags sold at 56; Grove, 2 bags sold at 51s.

"City of Sparta."—PBM, 55 bags sold at 6Cs.

"Duke of Argyle."—OO MAC, 80 bags sold at 62s.

"Diomed."—C MAC, 40 bags sold at 65s 6d; O MAC, 105 bags sold at 66s.

"Kamakura Maru."—MH, in estate mark, 4 bags sold at 57s.

"Mazagon."—KRDG Dumbara, Ceylon, in estate mark, 67 bags sold at 80s; ditto 2, 2 bags sold at 57s 6d.

"Antenor."—A Glenalpin, 12 bags sold at 71s 6d; ditto B, 6 bags sold at 57s 6d.

Coffee futures steady and news still bullish. In New York they intend to open a new market for Tea futures.

CEYLON COFFEE SALES IN LONDON.

MINCING LANE, April 6th.

"Clan Campbell."—PB, 1 cask, 1 barrel and 1 tierce sold at 69s.

CEYLON COCOA SALES IN LONDON.

"Menelaus."—Ross A1, 31 bags sold at 81s; ditto B1, 16 bags sold at 80s 6d; ditto 2, 11 bags sold at 57s 6d; ditto 3, 5 bags sold at 51s.

"Duke of Argyle."—AS, in estate mark, Estate Cocoa, 36 bags sold at 64; DB, MACK, in estate mark, 20 bags sold at 69s.

"Patroclus."—DMA & Co., in estate mark 23 bags sold at 70s.

"Mazagon."—DMA & Co., in estate mark, 16 bags sold at 70s.

"Java."—DMA & Co., in estate mark, 15 bags sold at 71s 6d.

"Kamakura Maru."—Pansalatenne No. 1, 13 bags sold at 80s; 1 bag sold at 66s; 2, 2 bags sold at 57s 6d; Kotuwa 1, 15 bags sold at 72s 6d; 6 bags sold at 62s; 2, 1 bag sold at 61s.

"Diomed."—Megema, 1 bag out at 69s refused.

"Awa Maru."—Battagolla A, 20 bags sold at 66s; B, 34 bags sold at 63s.

"Duke of Argyle."—Monarakelle No. 1, 45 bags sold at 77s 6d 2, 9 bags sold at 58s 6d: Broken 1 bag sold at 60s; KK, 12 bags sold at 67s.

"Jumna."—Alluwiharie, 1 bag sold at 62s sweepings.

"Socotra."—Armagh A, 20 bags sold at 74s 6d.

"Duke of Buckingham." J 11, 6 bags out at 75s.

"Socotra."—Marakona, 5 bags sold at 71s.

No Cardamom sale this week.

OBSERVER PRINTING WORKS.

No. 16 COLOMBO, MAY 7, 1900. PRICE:—12½ cents each 3 copies. 30 cents; 6 copies ½ rupee,

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[12,380 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Meddakande	16	19 ch	or pek	1900	36 bid
2	Hornsey	19	30 ch	or pek	2700	36 bid
3		22	20 do	pek	1600	35 bid
4	Hornsey	25	37 ch	or pek	3330	36 bid
5		28	25 do	pek	2000	35 bid
6	Hornsey	31	10 hf ch	fans	850	28

Messrs. Forbes & Walker.

[489,846 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
8	Sutton	538	10 ch	or pek	1000	66 bid
16	Dambagas-talawa	562	12 ch	bro or pek	1320	69
17		565	20 do	bro pek	2200	48
18		568	28 do	pek	2688	40
21	Great Valley Ceylon, in est. mark	577	21 ch	or pek	1890	36
22		580	49 do	bro pek	2695	42
23		583	42 do	pek sou	3780	34
24		586	22 do	pek sou	1760	30
25	Kelaneiya and Braemar	589	43 ch	bro or pek	4300	51
26		592	33 do	or pek	3300	39
27		595	35 do	pek	3500	36
31	Harrington	607	13 ch	or pek	1235	43
32		610	14 do	pek	1260	38
36	Elfindale	622	7 ch	bro pek	700	29
37		625	12 do	pek	1140	28
39	E D P	631	11 hf-ch	dust	825	27
40	Kincora	634	41 hf-ch	pek	3075	32
41		637	19 do	pek No. 2	1330	30
42		640	11 do	f ns	770	33
43	uspone	643	20 ch	bro pek	2240	37
44		646	19 do	pek	1805	33
45		649	8 do	pek sou	720	29
46	Uragalla	652	9 ch	bro pek	765	28
51	Errollwood	667	20 hf ch	bro or pek	1100	52
52		670	13 ch	or pek	1235	40 bid
53		673	16 do	pek	1440	35 bid
54		676	7 do	pek sou No. 2	770	31
55		679	11 hf ch	dust	858	28
56	Lyegrove	682	12 ch	bro pek	1260	43
57		685	10 do	pek	900	35
61	Marguerita	697	35 hf ch	bro or pek	1820	42
62		700	34 do	pek	1700	38
63		703	20 do	pek fans	1240	33
64		706	14 do	dust	1120	26
66	Erlsmere	712	16 ch	pek sou	1618	42
67		715	15 do	bro pek	1575	42
68		718	15 do	pek	1200	38
69	Galkanda	721	25 ch	bro pek	2500	31
71		727	13 do	pek	1170	28
72		730	10 do	pek sou	900	26
75	Glengariffe	739	56 hf-ch	bro pek	3024	44
76		742	32 do	or pek	1472	38
77		745	24 ch	pek	2280	36
78		748	11 do	pek sou	891	34
81	Middleton	757	14 hf ch	bro or pek	784	92
82		760	17 ch	bro pek	1700	63
83		763	19 do	pek	1710	46
84	Waitalawa	766	95 hf-ch	bro pek	4750	35
85		769 {	65 do	pek	3250	33
86			65 do	pek	3250	32
87		772	35 do	pek sou	1750	29
88		775	14 do	dust	1260	27
89	Penrhos	778	25 hf-ch	bro or pek	1325	45 bid
90		781	25 do	or pek	1125	43
91		784	46 ch	pek	3910	34
92		787	10 do	pek sou	800	31
94	Vogan	793	41 ch	bro pek	4100	35
95			41 do	bro pek	4100	34 bid
96		796	68 ch	pek	6120	32
97		799	13 do	pek sou	1040	29
98		802	10 hf ch	dust	850	27
99		805	7 ch	bro pek fans	875	29
100	Dooroomadella	808	15 hf-ch	bro pek	810	32
101		811	14 do	bro or pek	854	3[illegible]
102		814	20 ch	sou	1660	27
103	Aberfoyle	817	32 hf-ch	bro pek	1920	36
104		820	32 do	or pek	1600	33
105		823	19 ch	pek	1710	31
107	Tonacombe	829	35 ch	or pek	3150	40 bid
109		835	20 do	bro pek	2000	42
110		838	59 do	pek	5310	38
111		841	11 do	pek sou	990	33
116	Putupaula	856	11 hf ch	bro or pek	715	34
117		859	45 ch	bro pek	4050	36 bid
118		862	35 do	pek	2625	32 bid
119		865	14 do	pek sou	980	29
121	Clyde	871	43 ch	bro pek	4050	39
122		874	9 do	bro or pek	1035	34
123		877	22 do	pek	1980	35
126	O B E C, in est. mark, Forest Creek	886	17 ch	bro or pek	1700	70
127		889	21 do	bro pek	2100	55
128		892	18 do	or pek	1800	49
129		895	28 do	pek No. 1	2520	40
130		898	25 do	pek ,, 2	2500	38
131	Sirikandura	901	14 ch 1 hf ch	bro pek	1500	35
132		904	14 ch	pek	1260	31
133		907	9 do	pek sou	765	29
136	Relugas	916	6 do	dust	720	27
137	L, in estate mark	919	11 ch	bro tea	1002	24
141	Ingurugalla	2260	10 hf ch	bro tea	851	25
142	Torwood	2263	20 ch	bro pek	1800	33
143		2266	23 do	pek	1886	30
144		2269	20 do	pek sou	1600	29
145	Battawatte	2272	45 ch	bro pek	4950	38
146		2275	36 do	pek	3420	36
147		2278	19 do	pek sou	1520	31
148		2281	10 do	dust	1000	27
149	Dunkeld	2284	60 hf ch	bro or pek	3600	44
150		2287	18 ch	or pek	1710	39
151		2290	24 do	pek	2160	37
152	Macaldeniya	2293	24 hf ch	bro pek	1500	37
153		2296	8 ch	or pek	800	38
154		2299	16 do	pek	1600	32
158	Theydon Bois	2311	10 ch	bro pek	900	40
136		2314	27 do	pekoe	2160	33
141		2317	14 do	pek sou	1190	30
666 011	B and H, Queensland	2323	14 hf ch	bro or pek	700	65
159		2326	25 ch	pek	2125	39
	N B D	2329	12 ch	bro mixed	1020	19
266	Macaldenia	2335	13 hf ch	bro pek	780	36
168		2341	14 do	pek	770	33
169		2344	16 do	pek sou	800	31
174	H G M	2359	12 hf ch	bro or pek	780	48
175		2362	8 ch	or pek	800	43
176		2365	25 do	bro pek	2500	37
177		2368	23 do	pekoe	2185	33
178		2371	13 do	pek sou	1170	34
179		2374	12 do	bro pek fans	1080	32
182	Castlereagh	2383	34 ch	bro pek	3400	48
183		2386	33 do	or pek	2805	38
184		2389	24 do	pek	1920	35
185	Abbotsleigh	2392	21 ch	pek sou	1785	36
186	St. Heliers	2395	28 hf ch	bro or pek	1568	45
187		2398	19 ch	pek	1710	35
189	New Galway	2404	16 hf ch	bro pek	960	57
190		2407	18 do	pek	990	40
192	Monkswood	2413	21 hf ch	bro pek	1050	69
193		2416	30 do	or pek	1500	67
194		2419	23 ch	pek	2300	47
195		2422	10 do	pek sou	900	41
196	W V R A	2425	16 hf ch	fans	1270	24
198	Erlsmere	2431	14 hf-ch	bro or pek	700	55
199		2434	23 ch	bro pek	2300	41
200		2437	23 do	pek	1840	38
201		2440	10 do	pek sou	900	33
203	Deaculla	2446	37 hf-ch	bro pek	2035	43
204		2449	36 ch	pek	2520	33
205		2452	17 do	pek sou	1190	31
206	Ella Oya	2455	14 do	bro pek	1330	41
207		2458	19 do	pek	1615	33
208		2461	19 do	pek sou	800	30
212	Knavesmire	2473	26 do	bro pek	2600	35
213		2476	21 do	pek	1785	31 bid
214		2479	14 do	pek	1050	30
215	Ismalle	2482	17 do	sou	1530	27
217		2488	14 hf-ch	dust	1260	27

Lot.		Box.	Pkgs.		Name.	lb.	c.
221	Robgill	2500	15	ch	pek sou	1350	30
222	Geragama	2503	13	ch	bro pek	1170	33
223		2506	17	do	pek	1445	30
224	Patiagama	2509	27	do	bro or pek	1485	43
225		2512	14	do	or pek	1190	36
226		2515	32	do	pek	2560	33
227		2518	11	do	pek sou	880	30
228	Palmerston	2521	14	hf-ch	bro or pek	728	90
230		2527	11	ch	pek	990	51
231	Gallawatte	2530	20	do	bro pek	1900	35 bid
232		2533	26	do	pek	2210	31
233	Woodend	2536	26	do	or pek	2470	32
234		2539	19	do	bro or pek	1900	34
235		2542	67	do	pek	6030	30
236		2545	18	do	pek sou	1440	28
238	Munukattia, Ceylon in est mark	2551	31	hf-ch	bro pek	1860	45
239		2554	20	do	or pek	1000	44
240		2557	19	ch	pek	1520	36
241		2560	8	do	pek sou	760	33
242	Ireby	2563	29	hf-ch	bro pek	1740	58
243		2566	14	ch	pek	1260	41
248	Arapolakande	2581	56	do	bro pek	5040	35
249	[illegible]	2584	34	do	pek	2720	32
252	Rickarton	2593	58	hf-ch	or pek	3188	42 bid
253	[illegible]	2596	37	ch	pek sou	3771	38 bid
254	Doranakande	2599	12	do	bro pek	1200	34
258	Halwatura	2611	38	do	bro pek	3800	34
259		2614	55	do	or pek	5225	32
260		2617	52	do	pek	4420	30
261		2620	25	do	pek sou	1875	29
262		2623	19	hf-ch	bro pk fans	1330	28
264	Corfu	2629	21	do	or pek	1050	40
265		2632	29	do	bro pek	1525	41
266		2635	45	do	pek	2250	34
267		2638	21	do	pek sou	945	32
269	Mora Ella	2644	14	do	or pek	700	43
270	Queensland	2647	13	do	bro pek	715	51
271		2650	9	ch	or pek	810	40 bid
272		2653	18	do	pek	1530	36
275	L L	2662	29	do	or pek	2758	68
276	Rookwood	2665	20	do	pek sou	1900	36
277	Agra Elbedde	2668	66	hf-ch	or pek	3630	57 bid
278		2671	51	ch	pek	5100	43 bid
279		2674	74	hf-ch	pek	3700	43 bid
280		2677	37	do	pek sou	1850	40 bid
281		2680	40	do	pek sou	2000	40 bid
282	Bandara Eliya	2683	46	do	or pek	2208	38
283		2686	64	do	bro pek	3712	42
284		2689	35	do	pek	1575	36
285		2692	36	do	pek sou	1512	33
286	Ambragalla	2695	119	do	or pek	5712	30 bid
287		2698	106	do	bro or pek	6148	35
288		2701	58	ch	pek	4524	30 bid
289		2704	71	do	pek sou	5680	29 bid
291	Carfax	2710	21	do	bro or pek	2100	47
292		2713	23	do	or pek	2070	43
293		2716	23	do	pek	2070	40
294	Killarney	2719	40	hf-ch	bro or pek	2200	47
295		2722	10	ch	or pek	800	45
296		2725	33	do	pek sou	2970	37
297	Nonpariel	2728	30	hf-ch	bro pek	1712	44
298		2731	17	do	pek	863	37
299		2734	20	do	pek sou	920	32
303	Mahauva	2746	48	do	bro or pek	2880	38
304		2749	33	do	or pek	1848	41
305		2752	43	ch	pek	3870	37
306		2755	23	do	pek sou	1840	32
309	Battiwatte	2764	43	do	bro or pek	4730	38
310		2767	35	do	pek	3325	36
311		2770	25	do	pek sou	2000	31
312	Weoya	2773	23	do	bro pek	2300	35
313		2776	20	do	or pek	1900	35
314		2779	50	do	pek	4250	30
315		2782	20	do	pek sou	1600	28
317	Pine Hill	2788	19	hf-ch	bro or pek	1140	46
318		2791	31	do	or pek	1376	41
319		2794	32	do	pek	2560	39
320	Nabalma	2797	10	ch	sou	1000	28
321	W in est mark	2800	73	do			
			1	hf-ch	pek sou	6977	28 bid

[Messrs. Somerville & Co.—171,696 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	S R K	733	12	ch	pek sou	1140	32
7	Dryburgh	751	22	hf-ch	pek	924	33
8		754	13	ch	pek sou	871	29
10	Meddegodde	760	28	hf-ch	bro pek	1400	37
11		763	33	do	pek	1650	33 bid
12		766	22	do	pek sou	1100	30 bid
15	Lower Dickoya	775	28	ch	bro pek	2300	33
16		778	13	do	pek	1235	29
17	A T	781	11	ch	bro pek	1188	31 bid
18		784	12	do	pek	1056	29 bid
19		787	17	do	pek sou	1275	28
25	W V Y	805	12	ch	pek	1296	30
26	Rambodde	808	29	hf ch	or pek	1595	42
27		811	28	do	pek	1500	36
29	Forest Hill	817	17	ch	bro pek	1445	31
30		820	19	do	pek	1520	29
33	Mousakande	829	19	ch	bro pek	1691	31
34		832	25	do	sou	2050	26
36	Ladysmith	838	26	ch	bro pek	2600	33
37		841	28	do	pek	2044	30
41	Siriniwasa	853	29	ch	bro pek	3045	36 bid
42		856	36	do	pek	3600	31
43		859	14	do	pek sou	1400	29
44		862	7	do	bro pek fans	735	32
47	Killin	871	28	hf-ch	bro pek	1400	34
48		874	18	ch	or pek	1710	30
49		877	8	do	pek	720	28
52	Oaklands	886	11	ch	or pek	1045	32
53		889	13	do	bro pek	1300	32
54		892	18	do	pek	1620	30
55		895	9	do	pek sou	765	29
57	Damblagolla	901	18	ch	or pek	1620	34 bid
58		904	24	hf-ch	bro pek	1440	34 bid
59		907	18	ch	pek	1530	31
60		910	18	do	pek sou	1440	29
61	I P	913	23	ch	pek sou	2024	28
63		919	13	do	dust	1118	27
64	Mahalla	922	33	hf-ch	bro pek	1749	53
65		925	11	ch	pek	924	29
66		928	9	do	pek sou	720	28
71	J M D M	943	13	ch	bro pek	1300	32
72		946	31	do	pek	2790	29
73		949	19	do	pek sou	1710	27
77	Monte Christo	961	33	ch	bro pek	3300	36
79		967	10	do	pek	900	32
81	Rayigam	973	27	ch	bro pek	2700	33
82		976	20	do	or pek	1700	32
83		979	19	do	pek	1615	30
84		982	12	do	pek sou	900	29
85	Kallobekka	985	31	ch	bro pek	3255	41
86		988	20	ch	pek	1800	36
90	Hapugasmulle	1	8	ch	bro pek	850	32
91		4	11	do	pek	1045	29
95	New Valley	16	26	ch	bro or pek	2340	51
96		19	18	do	or pek	1800	45
97		22	18	do	pek	1800	39
98		25	19	do	pek sou	1710	37
99	N I	28	9	ch	unas	720	27
100		31	12	do	unas No. 2	1080	27
102	Annandale	37	18	hf-ch	bro or pek	1044	72
103		40	20	do	or pek	1140	53
104		43	24	do	pek	1272	42
105		46	34	do	pek sou	1972	37
106		49	10	do	dust	780	27
108	Wattekelly	55	10	hf-ch	dust	800	26
110	Harangalla	61	33	ch	bro pek	3135	36 bid
111		64	36	do	pek	2880	32 bid
112	Marigold	67	90	hf-ch	bro pek	4950	46
113		70	34	do	pek	1700	38
114		73	36	do	pek sou	1800	37
116	Horagoda	79	9	ch	bro or pek	900	34
117		82	9	do	or pek	810	33
118		85	16	do	pek	1520	31
122	Doragalla	97	14	ch	bro or pek	1400	46
123		100	13	ch	bro pek	1300	40
124		103	43	do	pek	3655	36
127	Bogahagoda-watte	112	16	ch	bro pek	1600	32
128		115	11	do	pek	1045	29
131	Bidbury	124	10	ch	or pek	900	42
132		127	8	do	bro or pek	800	43
130		130	22	do	pek	1980	36
137	Tavalamtenne	142	9	ch	pek	810	33 bid
141	Ranasingha-patna	154	58	hf-ch	or pek	2784	35
142		157	40	do	bro or pek	2400	38
143		160	28	ch	pek	2240	32
144		163	20	do	pek sou	2378	30
149	Rahatungoda	178	23	hf ch	bro or pek	1150	51
150		181	44	do	or pek	1980	38 bid
151		184	20	do	bro pek	1300	40
152		187	65	do	pek	3250	35 bid
153		190	8	hf ch	pek sou	800	33
154	K V W	193	19	ch	pek	1900	29

[Mr. E. John.—174,550 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	Kuruwathai	568	11	ch	bro or pek	880	43
4		577	15	do	pekoe	1275	34
5	Vincit	580	11	do	bro pek	990	34
8		589	6	do	bro pek fans	720	28
11	Kolapatna	598	11	do	bro or pek	1265	37
12		601	27	do	bro pek	2835	

Lot.		Box.	Pkgs.	Name.	lb.	c.
13		604	26 ch	pekoe	2210	34
17	Galella	616	11 do	bro pek	1100	40
18		619	14 do	pekoe	1260	37
20	Kadien Lena	625	20 hf-ch	br or pk dust	1600	27
21		628	10 ch	sou	1000	27
23	G B	634	15 hf-ch	fans	975	29
25	Troup	640	11 ch	sou	1045	37
26		643	7 do	bro mix	700	28
29	Ohiya	652	12 do	pek sou	1092	32
30	Ben Nevis	655	26 hf-ch	bro pek	1560	47
31		658	20 do	or pek	900	57
32		661	21 ch	pekoe	1890	39
35	Rondura	670	13 do	bro pek	1300	34
37		676	26 do	pekoe	2340	32
38		679	18 do	pek sou	1440	29 bid
42	Glasgow	691	43 do	bro or pek	3655	57
43		694	17 do	or pek	1224	50
44		697	16 do	pekoe	1360	46
45		700	15 do	pek sou	1500	40
46	Glentilt	703	52 hf-ch	bro pek	3120	49
47		706	24 ch	or pek	2400	38 bid
48		709	17 do	pekoe	1700	38 bid
49		712	10 do	fans	800	29
50	Gonavy	715	14 hf-ch	or pek	700	36
51		718	38 do	bro pek	1710	35
52		721	29 ch	pekoe	2175	31
53		724	13 do	pek sou	1170	31
54		727	13 hf-ch	dust	975	27
56	L W	733	38 do	sou	1710	21
57	Lunugalla	736	13 ch	bro pek	1300	31
58		739	25 do	pekoe	2000	29
59	Mahanilu	742	23 hf-ch	or pek	1104	41
60		745	54 do	bro pek	3078	40
61		748	12 ch	pekoe	1140	36
62		751	12 do	pek sou	1235	36
63	Brownlow	754	32 hf-ch	bro or pek	1760	52
64		757	35 ch	or pek	3500	40
65		760	31 do	pekoe	2790	37 bid
66		763	19 do	pek sou	1653	35
67	Mahanilu	766	16 hf-ch	or pek	768	42
68		769	31 do	bro pek	1767	41
69		772	8 ch	pekoe	720	36
70		775	13 do	pek son	1300	35
71		778	8 do	unas	792	28
72	Choughleigh	781	92 do	pekoe	2090	32 bid
73	Koslande	784	26 hf-ch	bro pek	1560	40
74		787	22 ch	pekoe	1980	30 bid
80	K P	805	9 hf-ch	fans	738	28
81	Little Valley	808	10 ch	or pek	800	35 bid
82		811	14 hf-ch	bro or pek	770	47
83		814	14 ch	bro pek	1400	33 bid
84		817	56 do	pekoe	4760	32
85		820	9 hf-ch	dust	720	27
86	Coslanda	823	26 do	bro pek	1560	42
87		826	22 ch	pekoe	1980	32 bid
93	P, in est. mark	844	49 hf-ch	bro pek fans	2940	30
94	Nahavilla	847	26 ch	bro pek	2600	47
95		850	40 hf-ch	pekoe	2000	35 bid
96		853	20 ch	pek sou	2000	33
97	Maskeliya	856	22 hf-ch	bro or pek	1100	68
98		859	32 ch	or pek	2880	40
99		862	25 do	pekoe	2000	35
101	Evalgolla	868	25 hf-ch	bro pek	1250	37
102		871	30 do	pekoe	1500	35
103		874	20 do	pek sou	1000	32
112	Ferndale	901	14 ch	pekoe	1260	35
113	Murraythwaite	904	10 do	pekoe	850	33
114	L P	907	32 do 32 hf-ch	pek fans	5600	27
115		910	22 do	dust	2860	26
116	D N D, in est. mark	913	12 ch	fans	1620	29 bid
117		916	8 hf ch	dust	720	27
119	St. John's	922	25 do	bro or pek	1450	62 bid
120		925	25 do	or pek	1250	70
121		928	50 do	pekoe	2600	48
123	S J	934	14 ch	bro pek	1400	40
124		937	11 do	pekoe	1100	37
125		940	10 do	dust	900	26
127	Dalhousie	946	13 hf-ch	bro pek	715	56
128		949	31 ch	pekoe	1550	33
129		952	17 do	pekoe	756	30
131	Morahela	958	25 do	bro or pek	2500	82 bid
132		961	26 do	bro pek	2522	33
133		964	24 do	bro or pek	2400	32 bid
133		967	27 do	pekoe	2268	30 bid
136	Poilakande	973	31 do	pekoe	2635	29
138	Rookwood	979	31 hf-ch	or pek	1550	38
139		982	35 do	or pek	2100	37
140		985	53 ch	pekoe	4770	36
141		988	27 do	pek sou	2430	32 bid
142		991	27 do	sou	1944	29

SMALL LOTS.

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Tennebena	517	1 ch	bro pek	118	34
2		522	3 do	pek	289	28
3	S G	523	5 ch	pek sou	525	30
4	Cooroondoowatte	526	3 ch	pek	300	34 bid
5		529	3 do	pek sou	300	31
6	Gingrau Oya	532	4 hf-ch	dust	340	27
7		535	3 do	fans	225	29
9	Sutton	541	8 ch	pek	640	55
10		544	4 do	pek sou	340	46
11		547	4 do	fans	500	36
12		550	1 do	unas	77	55
13		553	1 do	red leaf No. 1	100	25
14		556	1 do	do No. 2	85	25
15		559	3 do	dust	465	29
19	Dambagastalawa	571	5 ch	pek sou	500	36
20		574	4 hf ch	bro pek fans	328	28
28	Kelaneiya and Braemar	598	3 ch	sou	300	29
29		601	8 hf-ch	dust	640	28
30	Harrington	604	13 do	bro or pek	650	64
33		613	1 ch	pek	95	32
34		616	4 hf ch	or pek fans	280	34
35		619	1 do	dust	90	27
38	E D P	628	4 ch	sou	380	27
47	Uragalla	655	8 ch	pek	640	28
48		658	4 do	pek sou	420	26
49		661	2 do	red leaf	144	18
50		664	1 do	dust	135	25
58	Lyegrove	688	5 ch	pek sou	425	32
59		691	1 hf-ch	dust	95	25
60		694	2 do	pek fans	150	28
65	Erlsmere	709	8 hf ch	bro or pek	440	55
70	Galkanda	724	2 ch	bro or pek	200	28
73		733	1 do	sou	90	25
74		736	2 do	dust	230	25
79	Glengariffe	751	10 hf ch	fans	670	32
80		754	7 do	dust	560	27
93	Penrhos	790	2 hf ch	dust	190	27
106	Aberfoyle	826	7 ch	pek sou	595	27
108	Tonacombe	832	6 ch	bro or pek	600	57
112		844	6 hf ch	dust	540	28
113	Galkanda	847	1 ch	sou	90	26
114	X X	850	3 ch	pek fans	240	29
115		853	5 do	dust	425	27
120	Putupaula	868	2 hf-ch	dust	160	27
124	Clyde	880	4 ch	pek sou	380	31
125		883	2 do	dust	280	27
134	Sirikandura	910	4 ch	bro pek fans	400	29
135		913	1 do	dust	141	25
138	P G A	2251	3 ch	fans	210	17 bid
139	Dromoland	2254	3 ch	red leaf	279	21
140	Ingurugalla	2257	3 ch	red leaf	270	20
155	Macaldenia	2302	10 hf ch	pek sou	500	30
156		2305	6 hf-ch	unas	360	29
157		2308	3 do	dust	255	27
161	Theydon Bois	2320	2 ch	dust	140	26
165	N B D	2332	4 ch	unas	380	24
167	Macaldenia	2338	9 hf-ch	or pek	500	39
170		2347	1 do	dust	85	27
171	L N S, in estate mark	2350	1 hf ch	bro pek	33	32
172		2353	1 do	dust	53	25
173		2356	2 ch	pek sou	170	28
180	H G M	2377	5 hf-ch	dust	450	27
181	Dromoland	2380	1 ch	red leaf	75	18
188	St. Heliers	2401	2 do	bro tea	234	22
191	New Galway	2410	2 hf-ch	pek sou	100	35
197	Macaldeniya	2428	6 ch	pek sou	600	30
202	Erlsmere	2443	5 hf-ch	dust	400	26
209	Ellaoya	2464	7 do	bro pek fans	420	30
210	B F B	2467	4 do	unast	168	28
211	P R S	2470	2 ch 1 hf-ch	pek	260	31
216	Ismalle	2485	8 do	fans	600	28
218		2491	8 do	congou	640	25
219	Kelburne	2494	7 do	dust	665	26
220	Ragalla	2497	1 ch	bro mixed	90	39
229	Palmerston	2524	5 do	bro pek	450	55
237	Woo lend	2548	3 do	dust	420	26
244	Ireby	2569	5 do	pek sou	450	37
245		2572	4 hf-ch	br or pek fans	280	35
246		2575	4 do	dust	425	28
247	Arapolakande	2578	6 ch	bro or pek	660	32
250		2587	5 do	pek sou	450	29
251		2590	2 do	dust	220	27
255	Doranakande	2602	6 do	pek	540	28
256		2605	6 do	pek sou	540	28
257		2608	1 do	dust	130	26
263	Halwatura	2626	6 hf-ch	dust	570	26
268	Corfue	2641	5 do	bro pk fans	350	29
273	Queensland	2656	8 ch	bro mix	630	19

Lot.		Box.	Pkgs.	Name.	lb.	c.
274	Doranakande	2659	7 ch	pek sou	630	29
290	G P W	2707	9 hf-ch	bro mixed	540	22
300	Nonpareil	2737	4 do	br pek fans	197	30
301		2740	1 do	bro pek dust	76	27
302	D B E	2743	7 ch	red leaf	644	20
307	Mahauva	2758	1 do	congou	90	22
308		2761	6 hf-ch	dust	510	27
316	Weoya	2785	3 ch	dust	450	26

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
32	S R K	736	1 ch	sou	100	27
23		739	4 do	dust	600	27
24		742	1 do	bro tea	100	26
25	Dryburgh	745	6 ch	bro or pek	540	35
4		748	6 hf ch	or pek	276	37
06		757	3 do	fans	204	29
43	Meddegodde	769	3 hf ch	fans	195	18
13		772	2 do	dust	160	25
	D P W	790	4 hf-ch	bro pek	200	32
		793	4 do	pek	200	28
10		796	5 do	pek sou	225	27
20		799	1 do	pek dust	60	27
68		802	1 do	fans	50	26
69	Forest Hill	814	6 hf-ch	bro or pek	342	35
70		823	6 ch	pek sou	498	28
74		826	8 hf-ch	fans	624	28
75	Mousakande	835	2 ch	red leaf	196	18
76	Radage	844	4 hf-ch	bro pek	200	33
78		847	4 do	pek	200	29
18		850	3 do	pek sou	150	26
40	Siriniwasa	865	3 ch	dust	450	26
48		868	1 do	con	100	23
18	Killin	880	2 ch	sou	210	18
38		883	2 do	dust	300	25
53	Oaklands	898	3 hf ch	dust	225	27
22	I P	916	2 ch	red leaf	168	19
13	Mahalla	931	5 ch	pek sou No. 2	380	26
39		934	1 do	dust	154	26
19	S F D	937	5 hf ch	sou	310	27
45		940	7 ch	red leaf	574	27
02	J M D M	952	4 ch	fans	360	28
67		955	2 do	dust	270	25
03		958	8 do	con	680	24
61	Monte Christo	964	7 ch	or pek	595	34
13		970	5 do	sou	425	29
67	Kellebokka	891	1 ch	pek so	110	28
18		994	2 hf-ch	dust	170	27
69		997	5 ch	pek fans	625	29
52	Hapugasmulle	7	2 do	sou	190	25
63		10	5 do	unas	500	28
54		13	2 do	dust	282	26
101	N I T	34	3 hf-ch	dust	285	25
107	A B C	52	1 ch 1 hf-ch	bro pek	131	26
109	Wattekelly	58	6 ch	bro tea	672	28
115	Marigold	76	6 hf-ch	pek fans	450	39
119	Horagoda	88	7 ch	pek sou	665	29
120		91	2 do	dust	220	26
121		94	1 do	con	95	25
125	Doragalla	106	8 ch	pek sou	640	31
126		109	4 do	bro mix	280	29
129	Bogahagoda-watte	118	6 ch	pek sou	570	25
		121	2 do	bro pek fans	250	28
332	Tavalamtenne	133	4 ch	bro or pek	373	36 bid
35		136	2 do	or pek No 1	200	37
436		139	7 do	or pek No. 2	630	33 bid
138		145	5 do	pek sou	425	30
139		148	2 do	fans	220	31
140		151	1 hf-ch	dust	97	26
145	W, in estate mark	166	1 ch	bro pek	80	31
146		169	1 do	pek	100	28
147		172	4 hf ch	pek sou	200	26
148		175	1 ch	dust	120	25
155	K V W	196	6 ch	pek sou	540	25
156		199	5 hf-ch	bro tea	250	24

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
312	Kuruwathai	571	2 hf-ch	bro tea	155	28
		574	1 do	golden pek	55	37
6	Vincit	583	7 ch	pekoe	630	29
7		586	4 do	pek sou	360	27
9		592	1 do	dust	140	26
10		595	1 do	bro red leaf	150	19
14	Kolapatna	607	2 do	pek sou	180	31
15		610	1 do	pek fans	100	29
16		613	1 do	dust	80	27
19	Galella	622	4 do	pek sou	340	31
22	G B	631	6 hf-ch	dust	510	27
24		637	1 ch	bro mix	90	21
27	West Hall	646	7 hf-ch	dust	630	27

Lot.		Box.	Pkgs.	Name.	lb.	c.
28		649	3 ch	bro mix	330	23
33	Ben Nevis	664	7 do	pek sou	595	33
34		667	3 hf-ch	dust	255	27
36	Rondura	673	4 ch	or pek	360	34
39		682	3 do	pek fans	315	28
40		685	3 do	sou	240	25
41		688	1 do	pek dust	120	26
55	Gonavy	730	4 do	sou	320	28
75	Koslande	790	1 do	pek sou	90	30
76		793	2 do	congou	170	28
77		796	1 do	fans	110	27
78		799	1 do	dust	150	26
79	K P	802	3 hf-ch	dust	294	26
88	Coslanda	829	1 ch	pek sou	90	29
89		832	2 do	congou	170	28
90		835	1 do	fans	110	26
91		838	1 do	dust	150	26
92	A A	841	2 do	dust	220	26
100	Maskeliya	865	2 hf-ch	dust	180	26
104	Evalgolla	877	3 do	fans	195	28
105		880	1 do	dust	80	25
106	Oakwell	883	3 ch	bro pek	344	36
107		886	3 do	pekoe	296	32
108		889	2 do	pek No. 2	142	31
109		892	1 do	fans	67	27
110		895	1 hf-ch	dust	50	26
111	Anamallai	898	2 do	dust	170	26
118	D N D, in est. mark	9 9	5 do	bro mix	350	17
122	St. John's	931	11 do	pek sou	594	[illegible]
126	Dalhousie	943	8 do	or pek	360	41
130		955	4 do	fans	300	28
135	Morahela	970	3 do	dust	252	26
137	R kwood	976	10 do	bro or pek	550	44

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, April 12.

"Bombay."—DAS, in estate mark, O, 1 cask and 1 tierce sold at 52s 6d; ditto 1, 4 casks and 1 tierce out; ditto 2, 2 casks and 1 tierce out; ditto PB, 1 cask sold at 58s; ditto T, 2 casks and 1 tierce sold at 37s 6d.

(The above are additional to last week's sales. No Coffee sales this week.)

CEYLON COCOA SALES IN LONDON.

"Hitachi Maru."—Wiharagama 1, 2 bags sold at 80s; ditto 2, 4 bags sold at 80s; 1 bag sold at 65s; Palli, London F, 102 bags sold at 85s; ditto 1, 100 bags sold at 88s 6d; 20 bags sold at 89s; ditto 1, 20 bags sold at 89s; ditto 2, 27 bags sold at 69s 6d; ditto T, 10 bags sold at 64s; Pathregalla, London 1, 23 bags sold at 82s 6d; ditto 2, 7 bags sold at 69s 6d; ditto T, 1 bag sold at 60s; Rosebury, London 1, 4 bags sold at 76s 6d; ditto 2, 2 bags sold at 69s; O, MAK, in estate mark, 15 bags sold at 75s 6d; 4 bags sold at 61s 6d.

"Duke of Argyle."—ODBM, 21 bags sold at 65s; DBM, 2 bags sold at 56s 6d.

"Duke of Devonshire."—A Grove, London, 19, bags sold at 84s; ditto L, 2 bags sold at 55s; ditto B, 1 bag sold at 47s; ditto A, 11 bags sold at 67s 6d.

"Hitachi Maru."—Marakona III, 7 bags sold at 52s; IIII, 1 bag sold at 30s; Maria 1, 17 bags sold at 71s; 2, 21 bags sold at 69s 6d; 3, 3 bags sold at 48s 6d; Benveula 1, 12 bags sold at 77s 6d; Benveula 2, 7 bags sold at 67s; Black, 3 bags sold at 50s 6d.

"Diomed."—1, MA, in estate mark, 55 bags out at 69s.

"Duke of Devonshire."—CTC, 2 bags sold at 92s.

"Clan Chisholm."—W H D & Co., 1 bag sold at 58s.

"Clan MacLeod."—WHD, 1 bag sold at 59s sweepings.

"Mazagon."—Gangaroowa, 39 bags sold at 82s; 10 bags sold at 70s.

"Hitachi Maru."—Lower Haloya, 7 bags sold at 77s; 2 bags sold at 64s 6d; 1 bag sold at 58s; Kepitigalla, 10 bags sold at 78s 6d; 3 bags sold at 72s; 15 bags sold at 64s 6d; 2 bags sold at 58s.

(No Cardamom sale this week.)

OBSERVER PRINTING WORKS.

No. 17 COLOMBO, MAY 14, 1900. PRICE:—12½ cents each; 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[25,977 lb.]

Lot.		Box.	Pkgs.	Name.	lb	c.
1	Hornsey	17	37 ch	or pek	3330	36 bid
2		20	36 do	pek	3060	36
3	Mandara Newera	23	34 hf-ch	bro pek	1904	44
4		26	23 do	or pek	1173	37 bid
5		29	25 do	pek	1069	37
7	Sapitiagodde	35	83 bf ch	or pek	3984	33
8		38	74 do	bro or pek	4292	34
9		41	39 ch	pek	2847	30 bid
10		44	48 do	pek sou	3744	28 bid

Messrs. Forbes & Walker.

[528,323 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Igalkande	2803	26 ch	pek	2340	29
3	Palawatte	2809	40 hf ch	bro pek	2400	34
4		2812	22 do	pek	1100	31
8	Ingrogalla	2824	14 cb	bro pek	1400	38
9		2827	21 do	pek	1785	35
10	Avoca	2830	9 ch	bro or pek	990	74
11		2833	16 do	bro pek	1680	50
12		2836	20 do	pek	1800	43
13	Glencorse	2839	32 ch	bro pek	2560	32
14		2842	23 do	bro or pek	2185	33
15		2845	22 do	pek	1870	30
16		2848	13 do	pek sou	975	28
20	Cooroondoo-watte	10	11 ch	pek	1100	33
25	Galpate	25	10 hf ch	or pek	900	31
29	Great Valley Ceylon, in est. mark	37	14 ch	or pek	1260	38
30		40	34 do	bro pek	1870	44
31		43	32 do	pek	2880	34
32		46	23 do	pek sou	1725	31
38	Puspone	64	15 ch	or pek	1410	36
39		67	18 do	bro pek	2016	36 bid
40		70	9 do	pek	810	31
43	Thedden	79	35 cb	bro pek	3500	34
44		82	25 do	pek	2375	32
45		85	8 do	pek sou	720	29
47	Walton	91	19 ch	bro pek	2128	40
48		94	19 do	or pek	1710	37
49		97	20 do	pek	1600	32
51	V, in estate mark	103	9 ch	bro pek	900	42
55	Kitulgalla	115	31 hf ch	or pek	1860	34
56		118	12 do	bro or pek	840	32
57		121	16 do	pek	1520	29 bid
60	W, in estate mark	130	13 ch	bro or pek	1560	46
61		133	10 do	or pek	1000	42
66	North Cove	148	21 ch	pek	1890	39 bid
67		151	15 do	sou	1500	27
68	Rowley	154	16 hf ch	bro pek	800	39
69		157	18 do	pek	900	34
70	Tembiligalla	160	50 hf ch	bro or pek	2750	35
71		163	26 ch	pek	2340	33
75	Hentleys	175	17 bf-ch	bro pek	901	35
77		181	21 ch	pek	1680	29 bid
80	Vogan	190	60 ch	bro pek	6008	36
81		193	60 do	pek	5400	32
82		196	9 do	pek sou	720	29
83		199	6 do	bro pek fans	750	29
84		202	10 hf ch	dust	850	27
85	Stamford Hill	205	34 bf-ch	bro pek	2040	49
86		208	25 do	or pek	1125	58
87		211	25 ch	pek	2250	42
88		214	9 do	pek sou	765	36
90	Digdola	220	23 c	bro pek	2185	37
91		223	30 do	pek	2250	32
100	P	250	12 ch	pek sou	1080	31
103	M'Golla	259	11 hf-ch	dust	880	27
104	Dunbar	262	36 hf-ch	bro or pek	1800	63
105		265	25 do	or pek	1200	53
106		268	16 do	pek	1280	41
112	Glendon	286	21 hf-ch	or pek	945	37

Lot.		Box.	Pkgs.	Name.	lb.	c.
113		289	39 cb	bro pek	3900	36
114		292	43 do	pek	3655	33
115		295	16 do	pek sou	1360	30
116	G	298	13 ch	sou	1040	28
117	High Forest	301	38 hf ch	or pek No. 1	1815	71
118		304	15 do	or pek	825	58
119		307	29 do	pek	980	45
120		310	29 do	bro or pek	1856	46
121	Pallagodda	313	18 ch	bro or pek	1800	34
122		316	31 do	bro pek	3100	43
123		319	31 do	or pek	2790	35 bid
124		322	23 do	pek	2070	33
125		325	21 do	pek sou	1200	32
126		328	14 do	dust	1190	27
128	Dea Ella	334	18 hf-ch	bro or pek	1044	41
129		337	34 do	or pek	1870	33 bid
130		340	25 do	pek	1250	32
131		343	16 do	pek sou	800	29
133	Inverness	349	46 hf-ch	bro or pek	2760	56
134		352	28 ch	or pek	2300	55
135		355	28 do	pek	2520	43
136		358	9 do	pek sou	810	40
138	Killarney	364	12 ch	pek	960	39
140		370	10 hf ch	dust	850	27
141	Weyunga-watte	373	33 hf ch	bro or pek	1815	34
142		376	33 ch	bro pek	3135	33
143		379	35 do	pek	2800	32
145	Mawi iganga-watte	394	44 ch	bro pek	3960	32
149		397	33 do	pek sou	2640	30
153	Arapolakan-de	409	8 ch	bro or pek	880	33
154		412	84 do	bro pek	7560	35 bid
155		415	47 do	pekoe	3760	31 bid
160	M A	430	8 cb	fans	720	27
161		433	20 hf-ch	dust	1800	26
163	Nugagalla	439	59 hf ch	bro pek	2950	35
164		442	141 do	pek	7050	30 bid
165		445	24 do	pek sou	1200	28
167	K P W	451	32 hf ch	bro pek	1760	34
168		454	39 do	bro or pek	2340	36
169		457	86 do	pek	3730	30
170		460	25 do	pek sou	1250	28
172	Old Medde-gama	466	13 cb	bro or pek	1125	39
173		469	15 do	bro pek	1050	34
175	Doorooma-della	475	23 hf ch	bro or pek	1472	31
176		478	39 cb	pek	3237	29
177		481	21 do	pek sou	1722	28
178	A M B	484	52 ch	fans	5200	27
179	Naseby	487	27 hf ch	bro or pek	1620	53
180		490	27 do	or pek	1242	56
181		493	27 do	pek	1242	48
182		496	27 do	pek sou	1242	40
183	Nakiadeniya	499	15 ch	bro pek	1350	32
184		502	32 do	pek	2560	29
185		505	25 do	bro pek fans	2500	34
186	Dyakulla, No. 2	508	40 hf ch	bro pek	2200	41
187		511	34 ch	pek	2330	33
188		514	16 do	pek sou	1120	30
189	Tymawr	517	20 hf ch	bro or pek	1200	56
190		520	30 do	or pek	1650	44
191		523	20 do	pek	1000	39
192		526	20 do	pek sou	1000	38
193	Middleton	529	18 ch	bro pek	1800	63
194		532	20 do	pek	1800	51
195		535	12 do	do	1080	46
196		538	14 do	pek sou	1260	40
197	Thedon Bois	541	16 cb	bro or pek	1440	52 bid
198		544	16 do	pek	1280	33
203	Shrubs Hill	559	54 ch	bro pek	5130	34
204		562	32 do	pek	2560	29 bid
211	O B E C, in est. mark, Summer Hill	583	4 bf ch	bro or pek	2665	56
212		586	23 do	pek	1955	42
213		589	22 do	pek sou	2496	38
214	Passara Group	592	23 ch	or pek	2070	38 bid
215		595	25 do	bro or pek	2500	39
216		598	26 do	pek	2340	37
219	G P	607	17 ch	bro pek	1700	28
221	S P	613	31 ch	bro pek	2942	33
222		616	23 do	pek	2041	31
223		619	16 do	pek sou	1133	28
226	C S G	628	18 do	pek sou	1440	31
227	Penrhos	631	27 hf-ch	bro or pek	1431	47 bid

Lot.		Box.	Pkgs.		Name.	lb.	c.
223		634	31	hf-ch	or pek	1488	44
229		637	48	ch	pek	4080	34
230		640	12	do	pek sou	960	30
232	Putupaula	646	18	do	pek sou	1260	28 bid
239	Poilakande	667	15	do	pek	1350	30 bid
240	C C in est mark	676	10	do	bro pek	984	32 bid
245	G G	685	18	do	pek	1620	35
247	Amblakande	691	11	do	bro pek	1100	35
248		694	15	do	pek	1275	30 bid
249		697	13	do	pek sou	1040	28
252	Pungetty	706	12	hf-ch	pek	744	41
254	Lynsted	712	16	do	bro or pek	960	66 bid
255		715	69	do	bro pek	4140	46 bid
256		718	12	ch	pek	1200	41
259	Chesterford	727	55	do	bro pek	5500	36 bid
260		730	37	do	pek	3700	33
261		733	35	do	pek sou	3500	30
262	Poengalla	736	9	do	dust	810	26
264	Ugieside	742	8	do	unast	880	26
271	Gonapatiya	763	21	hf-ch	bro pek	1218	49
272		766	33	do	or pek	1683	49
273		769	50	do	pek	2650	39
274	Errollwood	772	23	do	bro or pek	1150	58
275		775	16	ch	or pek	1520	44 bid
276		778	16	do	pek	1440	38
277		781	12	do	pek sou	1140	35
278	Gomalia	784	15	do	or pek	1500	48 bid
279		787	77	hf-ch	bro pek	4620	50 bid
280		790	17	ch	pek	1615	39 bid
281		793	15	do	pek sou	1200	36 bid
282	Glengariffe	796	43	hf-ch	bro or pek	2408	39 bid
283		799	37	do	or pek	1665	37 bid
284		802	26	ch	pek	2470	34 bid
286	Telbedde	808	20	do	bro or pek	2200	35 bid
287		811	20	do	or pek	2240	36 bid
288		814	23	do	pek	2250	32 bid
289		817	21	do	pek sou	1898	31 bid
290		820	12	do	sou	960	30
291	Abbotsleigh	823	20	do	pek sou	1700	35 bid
292	Sutton	826	22	do	bro or pek	2420	91
293		829	25	do	or pek	2500	65 bid
294		832	12	do	pek	1020	51
295	Graceland	835	26	hf-ch	bro pek	1430	32
296		838	26	do	pek	1300	28
297		841	15	do	pek sou	730	27
301	H G S in est mark	853	27	ch	bro pek	2646	} 33 bid
302		856	8	do	bro pek	800	
303	Hayes	859	19	do	bro or pek	1900	52
304		862	29	do	bro pek	2900	36 bid
305		865	31	do	or pek	2635	36
306		868	70	do	pek	5950	31
307		871	44	do	pek sou	3520	28
308	High Forest	874	24	hf ch	or pk No. 1	1320	72
309		877	28	do	or pek	1484	53
310		880	19	do	pek	931	43
311		883	20	do	bro or pek	1280	44
312	Ruanwella	886	32	ch	or pek	2720	35
313		889	11	do	bro pek	1100	33 bid
314		892	20	do	pek	1800	31
315		895	8	do	pek sou	720	29
317	Bloomfield	901	20	do	bro or pek	2200	46
318		904	22	do	bro pek	2310	40
319		907	28	do	pek	2800	38
320		910	19	do	unast	1900	28
321	Erracht	913	29	do	bro or pek	2755	34
322		916	15	do	or pek	1350	34 bid
323		919	22	do	bro pek	1540	32
324		922	39	do	pek	2652	29
328	Dunkeld	934	89	hf-ch	bro or pek	5340	43
329		937	20	ch	or pek	1900	37
330		940	34	do	pek	3060	37
331	Fairlawn	943	27	hf-ch	bro pek	1485	56
332		946	10	ch	or pek	800	42
333		949	19	do	pek	1710	36
334		952	11	do	pek sou	880	32
337	Yataderia	961	11	do	bro or pek	1696	35 bid
338		964	28	do	bro pek	2856	31 bid
339		967	11	do	or pek	1045	32 bid
340		970	38	do	pek	3344	28 bid
341	Talgaswela	973	10	do	bro or pek	1000	34
342		976	14	do	or pek	1190	31
343		979	12	do	bro pek	1020	32
344		982	21	do	pek	1680	30
345		985	16	do	pek sou	1280	27
346	Springwood	988	11	do	congou	935	28
347	K	991	33	hf-ch	or pek	1650	39 bid
348	K in est. mark	994	27	do	bro mix	2700	22
350	Farsloes	1000	77	do	bro pek	7700	35
351		1003	52	do	pek	4680	32
352		1006	12	do	pek sou	960	29
353	Gonapatiya	1009	23	do	bro pek	1311	55
354		1012	45	do	or pek No.1	2430	47
355		1015	20	do	or pek	1000	41
356		1018	37	do	or pek	1850	44
357		1021	51	do	pek	2499	38 bid
358		1024	41	do	pek	1968	40
359		1027	31	do	pek sou	1488	36
360		1030	22	hf-ch	pek fans	1200	33
362	Monkswood	1036	18	do	bro pek	1320	66 bid
363		1039	31	do	or pek	1705	67
364		1042	22	ch	pek	2200	46
367		1051	12	hf-ch	fans	720	36
368	Amingkande	1054	18	ch	bro pek	1800	33 bid
369		1057	23	do	pek	2185	30 bid
370		1060	8	do	congou	720	27
371	Bandaraeliya	1063	37	hf-ch	or pek	1776	37 bid
372		1066	64	do	bro pek	3712	45
373		1069	36	do	pek	1620	35
374		1072	39	do	pek sou	1638	31 bid
376	Hillside	1078	14	do	pek	1260	29

[Mr. E. John.—204,518 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
4	M G	3	15	hf-ch	fans	1140	33
10	Kandaloya	21	25	do	or pek	1000	33 bid
11		24	66	do	pekoe	2640	31
12	Templestowe	27	32	ch	bro or pek	2400	60
13		30	22	hf-ch	or pek	1100	47
14		33	31	ch	pekoe	2635	39
15		36	13	do	pek sou	1105	37
18	Mocha	45	20	do	bro or pek	2000	64
19		48	14	do	or pek	1260	65
20		51	22	do	pekoe	1980	52
21		54	14	do	pek sou	1120	40 bid
22	Glentilt	57	46	hf-ch	bro pek	2760	50
23		60	21	ch	or pek	2100	39
24		63	16	do	pekoe	1600	36 bid
25		66	10	do	pek sou	950	35
26	Agra Ouvah	69	21	hf-ch	bro or pek	1365	50 bid
27		72	7	ch	or pek	700	46
29	Glasgow	78	48	do	bro or pek	4080	59
30		81	19	do	or pek	1330	51
31		84	14	do	pekoe	1190	45
32		87	12	do	pek sou	1200	40
33	Rondura	90	20	do	bro pek	2000	33
34		93	15	do	or pek	1350	36
35		96	45	do	pekoe	3600	30
36		99	30	do	pek sou	2400	29
38	Agra Ouvah	105	61	hf-ch	bro or pek	3965	52 bid
39		108	22	ch	or pek	2090	46
40		111	13	do	pekoe	1170	39
41	Kandaloya	114	36	hf-ch	pekoe	1440	31 bid
43	Eila	120	41	ch	bro or pek	4100	34
44		123	40	do	pekoe	3400	20
45		126	11	do	fans	1210	29
46		129	15	hf-ch	dust	1200	27
47	St. John's	132	25	do	bro or pek	1450	66
48		135	25	do	or pek	1250	69 bid
49		138	30	do	pekoe	1500	44 bid
50		141	25	do	pek fans	1700	35
51	Uda	144	13	ch	bro pek	1235	27
52		147	25	do	pekoe	2000	27
53	Lynford	150	13	do	bro tea	1300	20
54	Doonhinda	153	20	do	bro pek	2200	39
55		156	31	do	pekoe	3100	35
56		159	10	do	pek sou	950	34
58	Galella	165	15	do	bro pek	1500	42
59		168	16	do	pekoe	1360	35
64	Poilakande	183	46	do	bro pek	4370	30
66	Mount Everest	189	22	hf-ch	bro or pek	1210	71
67		192	30	do	or pek	1500	49
68		195	27	ch	pekoe	2700	40
69		198	15	do	pek sou	1350	38
70	Brownlow	201	26	hf-ch	bro or pek	1430	55
71		204	16	ch	or pek	1600	40
72		207	20	do	pekoe	1800	36
73		210	13	hf-ch	bro pek fans	845	35
74	Lunugalla	213	39	do	bro pek	2340	30
75		216	34	ch	pekoe	2720	28
76	Happy Valley	219	19	hf-ch	bro or pek	1140	29
79	Glassaugh	228	31	do	or pek	1643	69
80		231	24	do	or pek	1560	53 bid
81		234	21	ch	pekoe	1995	49
83	Gangawatte	240	23	do	or pek	2300	37
84		243	30	do	bro or pek	3150	53
85		246	13	do	pekoe	1300	37
88	Keenagaha Ella	255	59	hf-ch	or pek	3245	35
89		258	28	ch	pekoe	2240	31 bid
90		261	21	do	pek sou	1575	29 bid
92		267	11	hf-ch	bro pek fans	715	34
95	Ferndale	276	13	ch	bro or pek	1300	49
96		279	16	do	or pek	1440	37
97		282	18	do	pekoe	1620	34 bid
98		285	13	do	pek sou	1170	32 bid
99	Callander	288	25	hf-ch	bro or pek	1560	42
100		291	20	do	or pek	1040	36 bid
105	Agra Ouvah	306	21	do	bro or pek	1260	57
106		309	47	do	bro pek	2990	47 bid
107		312	21	ch	pekoe	1995	41
108	Callander	315	42	hf-ch	or pek	2310	35 bid
109		318	29	do	pekoe	1305	33
113	Koslande	330	23	do	bro pek	1265	40
114		333	14	ch	pekoe	1260	31

Lot,		Box.	Pkgs.		Name.	lb.	c.
118	Gonavy	345	20	hf-ch	or pek	1100	33
119		348	51	do	bro pek	2295	33
120		351	32	ch	pekoe	2400	29 bid
121		354	15	do	pek sou	1425	28
122	D N D, in est. mark	357	12	do	fans	1620	28
123	Myraganga	360	39	do	bro pek	3315	33 bid
124		363	140	hf-ch	bro or pek	7700	34
125		366	62	ch	pekoe	4650	31
126		369	73	do	pek sou	6205	29
127	Ovoca	372	27	hf ch	bro or pek	1485	69
128		375	22	do	or pek	1034	45 bid
129		378	18	ch	pekoe	1620	38
130		381	14	do	pek sou	1260	35 bid

[Messrs. Somerville & Co.—162,946 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
4	Tientsin	211	18	ch	pek sou	1440	36
5		214	8	do	dust	1040	27
6	Polgahakande	217	10	do	bro pek	1000	33
7		220	9	do	or pek	810	32
		223	22	do	pek No. 1	1760	27 bid
9		226	9	do	pek	765	29 bid
10		229	28	do	pek sou	2240	28
11	Warakamure	232	41	do	bro pek	4100	31
12		235	18	do	pek	1710	28
13		238	8	do	pek sou	720	27
14	Jak Tree Hill	241	19	hf ch	bro pek	950	38
15		244	22	do	pek	1100	32 bid
16		247	15	do	pek sou	750	29 bid
19	R C T F, in est mark	256	16	ch	bro pek	1600	31
20		259	19	do	pek	1615	28
21		262	24	do	pek sou	1800	26
23	Hanagama	268	22	do	bro pek	2200	33
24		271	28	do	pek	2660	29
25	L	274	10	do	bro mix	1000	25
26		277	14	do	dust	1120	27
34	Maligatenne	301	8	do	pek sou	765	22 bid
36	P	307	7	do	unas	725	22 bid
40	Forest Hill	319	16	hf ch	bro pek	1408	31
41		322	18	do	pek	1494	30
43	Glenesk	328	18	ch	bro pek	1620	33
47	Woodcote, Nil.	340	20	hf-ch	pek	1000	30 bid
48	Wevatenne	343	17	do	bro pek	935	36
49		346	26	do	pek	1170	30
50		349	33	do	pek sou	1650	30
52	Avisawella	355	30	ch	bro pek	3000	33
53		358	34	do	pek	2890	30
54		361	31	do	pek sou	2480	28
55		364	8	do	dust	1120	27
56		367	23	do	bro pek	2300	33 bid
57		370	19	do	pek	1615	30
58		373	18	do	pek sou	1440	28
59	Ferriby	376	20	do	bro pek	1800	33
60		379	36	do	pek	3060	30
61		382	15	do	pek sou	1125	28
63	D A L, in est mark	388	18	do	pek	1710	28 bid
68	P T N, in est mark	403	19	hf ch	pek sou	950	27
70	Lonach	409	105	do	bro pek	5775	35
71		412	40	ch	pek	3400	34
72		415	25	do	pek sou	2000	31
73	Auburn	418	23	do	bro pek	2300	35
74		421	17	do	pek	1496	32
75		424	12	do	pek sou	1032	29
80	Ravenscraig	439	31	do	or pek	2635	35
81		442	9	do	bro pek	810	37
82		445	22	do	pek	1980	33
86	T S N, Nilgris	457	38	hf ch	pek	1900	32 bid
92	Kurulugalla	475	20	ch	bro pek	2000	32 bid
93		478	39	do	pek	3510	28 bid
95	Haraugalla	484	32	do	bro pek	3040	35 bid
96		487	42	do	pek	3360	32 bid
97		490	9	do	sou	720	27 bid
98		493	7	do	bro pek fans	700	32
99		496	13	hf-ch	dust	1040	28
100	Doragalla	499	13	ch	bro or pek	1300	45
101		502	12	do	bro pek	1200	42
102		505	37	do	pek	3145	35
103		508	15	do	pek sou	1275	30
104		511	6	do	bro mix	810	27
106	Yarrow	517	120	hf-ch	pek	4800	32 bid
107	Nyanza	520	10	ch	bro or pek	1000	63
108		523	10	do	bro pek	1000	37
109		526	12	do	or pek	1080	36 bid
110		529	20	do	pek	1800	34 bid
111		532	18	do	pek sou	1440	30
113	Columbia	538	26	hf-ch	or pek No. 1	1300	48
114		541	39	do	or pek	1755	41
115		544	31	do	pek	1395	38
126	H J S	577	25	do	pek sou	1500	27
128	Lower Dickoya	583	18	do	bro or pek	1008	38 bid

Lot.		Box.	Pkgs.		Name.	lb.	c.
130		589	16	ch	pek	1600	30
131	Rothes	592	14	hf ch	or pek	700	40
132		595	19	do	bro or pek	1140	55
133		598	17	do	pek	765	36 bid
137	R, in est mark	610	20	do	pek sou	900	27
142	Glenanore	625	11	ch	bro or pek	1210	40
143		628	8	do			
			1	hf ch	pek	775	41
149	Ambalawa	646	22	do	pek	946	29
150		649	34	do	pek sou	1258	27
151	S K	652	56	ch	pek sou	4928	25

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.		Name.	lb.	c.
6	Mandara Newera	32	7	hf ch	pek dust	574	27

[Mr. E. John.]

Lot,		Box.	Pkgs.		Name.	lb.	c.
1	St. Andrews	994	5	ch	bro tea	500	19
2		997	2	bf-ch	bro tea and dust	180	26
3	M G	1000	7	ch	unas	637	26
5	W H R	6	4	do	dust	400	26
6		9	3	do	fans	270	26
7	W K	12	1	hf-ch	bro or pek	56	34
8		15	7	ch	pekoe	595	30
9		18	2	do	pek fans	220	27
16	Templestowe	39	6	do	sou	510	29
17		42	7	do	bro mix	630	28
28	Agra Ouvah	75	6	do	pekoe	540	38
37	Rondura	102	3	do	dust	330	26
42	Kandaloya	117	10	hf-ch	pek sou	400	28
57	Doonbinda	162	3	ch	dust	330	27
60	Galella	171	5	do	pek sou	425	30
77	Happy Valley	222	1	do	bro pek	60	28
78		225	1	do	pekoe	60	27
82	Glassaugh	237	4	do	pek sou	420	41
86	Gangawatte	249	3	do	pek sou	270	27
87	W, in est. mark	252	4	do	bro tea	364	21
91	Keenagaha Ella	264	7	do	sou	525	26
93		270	2	do	congou	160	25
94		273	2	hf-ch	dust	180	26
101	Callander	294	10	do	pekoe	450	32
102		297	3	do	pek sou	120	28
103		300	1	do	fans	75	28
104		303	1	do	dust	80	26
110		321	10	do	pek sou	400	33
111		324	3	do	fans	225	28
112		327	3	do	dust	240	27
115	Koslande	336	1	ch	pek sou	90	29
116		339	2	do	fans	220	29
117		342	4	hf-ch	dust	300	28
131	G	384	8	ch	pekoe	640	26
132		387	6	do	pek sou	450	24
133		390	5	hf-ch	dust	425	25
134		393	6	ch	bro mix	577	20
135		396	1	hf-ch	pek fans	75	26

[Messrs. Somerville & Co.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	S L G	202	4	hf ch	fans	300	28
2		205	2	do	dust	180	27
3		208	5	do	red leaf	225	18
17	Jak Tree Hill	250	2	do	fans	130	29
18		253	1	do	dust	80	26
22	R C T F, in est mark	265	2	do	dust	150	27
27	Glenalmond	280	5	ch	bro pek	500	31
28		283	6	do	pek	540	29
29		286	4	do	pek sou	320	27
30		289	2	hf ch	fans	130	28
31		292	1	do	dust	67	26
32	Maligatenne	295	5	ch	bro pek	507	28
33		298	6	do	pek	542	27
35		304	1	do	bro sou	102	20
36a	P	307a	1	do	dust	108	26
37	Glenalla	310	2	do	dust	290	26
38		313	1	do	fans	100	27
39	Forest Hill	316	7	hf-ch	bro or pek	399	35
42		325	5	do	fans	385	28
44	Glenesk	331	8	ch	pek	680	30
45		334	7	do	pek sou	525	27
46		337	2	do	bro tea	200	27
51	Wevatenne	352	5	hf ch	congou	225	25
62	Ferriby	385	5	ch	fans	625	28
64	Sangaly Toppe	391	6	hf-ch	bro pek	420	32
65		394	2	do	pek dust	190	27
66		397	2	ch	red leaf	190	22
67	P T N, in est mark	400	8	hf-ch	bro pek	448	27
69		406	2	do	pek fans	112	26
76	Auburn	427	2	do	dust	160	26

Lot.		Box.	Pkgs.	Name.	lb.	c.
77		430	3 hf-ch	fans	210	28
78		433	1 ch	bro tea	90	19
79		433	1 do	sou	100	19
83	Ravenscraig	448	2 do	pek sou	180	28
84		451	5 hf ch	fans	400	28
85	T S N, Nilgris	454	10 do	bro pek	500	42 bid
87		460	3 do	pek sou	150	28
88	Handrookande	463	8 do	bro pek	440	36
89		466	7 do	pek	350	29
90		469	1 ch	pek sou	76	27
91		472	1 hf-ch	dust	53	27
94	Kurulugalla	481	5 ch	pek sou	100	26
105	R, in est mark	514	2 do	bro tea	200	25
112	Nyanza	535	3 do	dust	300	27
116	California	547	5 do	bro pek	475	33
117		550	6 do	pek	570	29
118		554	4 do			
			1 hf ch	pek sou	434	27
119	T F	556	20 box	pek sou	100	32
120		559	15 do	or pek	75	38
121	Wevatenne	562	5 hf-ch	bro pek	250	33
122		565	4 do	pek	200	28
123		568	8 do	pek sou	400	26
124		571	1 do	congou	49	24
125	K A	574	19 box	pek	95	32
127	A	580	7 do	tea	55	38
129	Lower Dickoya	586	6 ch	bro pek	600	32
134	Rothes	601	11 hf-ch	pek sou	440	30
135		604	5 do	br or pek fans No. 1	310	33
136		607	1 do	dust	85	27
138	R, in est mark	613	7 do	sou	280	26
139		616	3 do	bro mix	138	19
140		619	1 do	dust	85	27
141	T	622	8 box	tea	60	40
144	D B R, in est mark	631	2 hf-ch			
			1 ch	bro pek	189	32
145		634	2 do	pek	158	28
146		637	2 do	pek sou	144	27
147		640	2 do	dust	184	25
148		643	1 hf-ch	red leaf	48	18
152	S K	655	9 do	fans	540	27
153		658	2 do	dust	176	30
154	Rookwella	661	4 ch	bro pek	372	28
155		664	4 do	pek	372	29
156		667	4 do	pek sou	340	26
157		670	4 do	pek sou A	380	24

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	M'Golla	2806	1 ch	red leaf	95	18
5	Palawatte	2815	6 hf ch	pek sou	300	28
6		2818	3 do	sou	150	27
7		2821	1 do	dust	80	26
17	Glencorse	1	6 ch	bro tea	660	28
18		4	1 do	dust	190	26
19	Cooroondoowatte	7	9 hf ch	bro pek	540	42
21		13	6 ch	pek sou	600	29
22		16	4 hf ch	pek dust	348	27
23		19	4 ch	congou	400	26
24	Galpate	22	6 hf-ch	bro or pek	540	33
26		28	6 do	pek	480	29
27		31	2 do	pek sou	160	27
28		34	2 do	dust	174	27
33	St. Edwards	49	9 hf-ch	bro or pek	558	33
34		52	8 do	bro pek	480	31
35		55	9 do	pek	504	29
36		58	5 do	pek sou	260	28
37		61	1 do	dust	56	27
41	Puspone	73	2 ch	bro mixed	180	23
42		76	2 do	dust	306	27
46	Thedden	88	2 ch	dust	300	26
50	Walton	100	2 ch	bro tea	180	26
52	V, in estate mark	106	8 ch	pek	640	29
53		109	2 do	pek sou	190	27
54		112	1 hf ch	dust	80	26
58	Kitulgalla	124	3 do	pek sou	180	27
59		127	3 ch	dust	360	26
62	W, in estate mark	136	1 ch	pek	95	36
63		139	2 hf-ch	dust	112	28
64	K W D, in estate mark	142	2 ch	dust	266	27
65		145	3 do	bro tea	300	26
72	Tembiligalla	166	6 ch	pek sou	540	30
73		169	1 do	bro pek fans	110	28
74		172	1 do	dust	130	27
76	Henth ys	178	12 hf ch	or pek	528	34
78		184	6 ch	pek sou	426	27
79		187	6 hf ch	fans	456	28
89	Stamford Hill	217	4 do	dust	340	29
92	Digdola	226	7 ch	pek sou	675	29
93		229	2 do	bro pek fans	190	29

Lot.		Box.	Pkgs.	Name.	lb.	c.
94	Nahalma	232	5 ch	sou	500	26
95	B B, in estate mark	235	3 hf ch	bro pek	180	29
96		238	2 ch	pek	200	29
97		241	1 hf ch	dust	85	26
98	Avoca	244	4 ch	pek sou	376	37
99		247	3 hf ch	bro pek fans	240	34
101	P	253	3 ch	dust	480	27
102		256	2 do	fans	260	29
107	D B R	271	6 hf-ch	bro pek fans	360	36
108		274	1 ch	pek sou	80	33
109		277	1 hf-ch	dust	80	26
110	Karawkettia	280	4 ch	bro pek	435	34
111		283	6 do	pek	619	29
127	Tea Ella	331	4 hf ch	bro or flowery pek	240	50
132		346	6 do	fans	360	29
137	Inverness	361	7 do	dust	595	29
139	Killarney	367	8 do	fans	560	32
144	Weyungawattc	382	4 ch	pek sou	340	28
145		385	3 hf ch	dust	255	26
146	C D N	388	2 hf ch	red leaf	120	19
147	Mawiligangawatte	391	9 do	bro or pek	540	39
150		400	3 do	dust	270	26
151	V O A	403	5 ch	bro tea	500	21
152	Alton	406	4 hf ch	congou	216	21
156	Arapolakande	418	7 ch	pek sou	630	28
157		421	3 do	dust	300	27
158	Kabragalla	424	11 hf-ch	bro tea	605	19
159		427	7 do	dust	595	27
162	C, in estate mark	436	6 ch	bro tea	547	21
166	Nugagalla	448	6 hf-ch	dust	540	27
171	K P W	463	2 do	dust	170	26
174	Old Maddegama	472	6 ch	pek fans	480	33
199	Theydon Bois	547	6 ch	pek sou	510	31
200	T B, in estate mark	550	7 hf-ch	dust	490	27
201		553	3 do	fans	180	28
202		556	4 do	congou	340	26
205	Shrubs Hill	565	8 ch	bro tea	600	20
206	St. Edwards	568	4 hf ch	bro or pek	248	33
207		571	2 do	bro pek	116	33
208		574	4 do	pek	224	29
209		577	1 do	pek sou	52	27
210		580	1 do	dust	75	28
217	Passara Group	601	6 ch	pek sou	600	32
218		604	1 hf ch	fans	80	28
220	G P	610	6 ch	pek sou	540	24
224	S P	622	3 hf-ch	or pek fans	189	27
225		625	7 do	fans	585	27
231	Penrhos	643	5 do	fans	375	31
233	Kincora	649	3 ch	bro pek	285	41
234		652	5 do	pek	350	32
235		655	3 do	pek No. 2	255	29
236		658	3 do	bro mix	255	24
237		661	6 hf-ch	fans	420	34
238		664	1 do	dust	95	24
241	D in est. mark	673	6 do	s u	300	25
242		676	8 do	fans	480	27
243		679	4 do	dust	400	26
244	Rayigam	682	6 do	pek	498	32
246	P T N in est. mark	688	10 do	pek sou	497	25
250	Fungetty	700	5 do	bro or pek	375	56
251		703	9 do	or pek	666	56
253		709	5 do	pek sou	168	38
257	Lynsted	721	6 ch	pek sou	600	37
258		724	4 hf-ch	dust	340	29
263	Ugieside	739	5 ch	dust	400	27
265	D in est. mark	745	4 do	dust	360	27
266	G D	748	2 do	bro pek	184	31
267		751	2 do	pek	180	28
268		754	4 hf-ch	pek sou	180	27
269		757	1 do	sou	45	25
270		760	1 ch	red leaf	61	19
285	Gleagariffe	805	8 do	pek sou	567	30
293	Graceland	844	3 hf-ch	bro tea	150	23
299		847	2 do	red leaf	90	20
300		850	2 do	dust	150	24
316	Ruanwella	898	5 ch	dust	400	28
225	Erracht	925	5 do	pek sou	400	27
326		928	1 do	bro pek fans	141	27
327		931	1 do	dust	170	26
335	Fairlawn	955	3 hf-ch	dust	255	28
336		958	2 ch	bro mix	170	19
349	G A D	997	1 do	unast	66	26
361	Gonapatiya	1033	6 hf-ch	dust	540	27
365	Monkswood	1045	6 ch	pek sou	540	39
366		1048	4 do	pek sou	360	37
375	Hillside	1075	6 do	bro pek	600	33
377		1081	4 do	pek sou	360	27
378		1084	4 do	congou	340	26

TEA, COFFEE, CINCHONA, COCOA, AND CARDAMOM SALES.

No. 18 — COLOMBO, MAY 21, 1900. — PRICE:—12½ cents each 3 copies, 30 cents; 6 cop es ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[44,948 lb.]

Lot.		Bcx.	Pkgs	Name.	lb	c.
1	New Rasagalla	18	17 ch	bro cr pek	1760	35
2		21	20 do	bro pek	2000	36
3		24	41 do	pek	3690	34
4		27	22 do	pek sou	1980	32
6	Mandara Newera	33	23 hf-ch	or pek	1173	38
7	Horusey	36	24 ch	pek sou	2040	32 bid
11	Battalgalla	48	28 ch	pek sou	2380	32 bid
12	Hapugastenne	51	25 ch	bro cr pek	2500	35 bid
13		54	21 do	bro pek	1890	34 bid
14		57	42 do	pek	3570	34
15		60	45 do	pek sou	3600	31
16		63	11 do	sou	880	28
17		66	18 hf ch	fans	1152	30
19	Sapitiagodde	72	119 do	or pek	5712	32 bid
20		75	25 ch	bro or pek	2500	32
21		78	39 do	pek	2847	30 bid
22		81	48 do	pek sou	3744	28

Messrs. Forbes & Walker.

[536,850 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
7	Nem	1105	8 ch	sou	720	18
8	Ettapolla	1108	26 hf ch	bro pek	1456	32
12	Strathspey	1120	8 ch	bro or pek	800	63
13		1123	10 do	or pek	1000	48
14		1126	15 do	pek	1470	40 bid
17	O B L C, in est. mark, Nilloomally	1135	27 ch	or pek	2430	36
18		1138	33 do	bro pek	3300	36
19		1141	21 do	pek	1764	34
20	St. Coombs	1144	14 ch	bro or pek	1540	62 bid
21		1147	22 do	bro pek	2332	44 bid
22		1150	25 do	pek	2300	39 bid
25	Glencorse	1159	24 ch	bro pek	1920	31
26		1162	14 do	bro or pek	1400	34
27		1165	17 do	pek	1360	29
28		1168	12 do	pek sou	900	27
31	W N	1177	15 ch	bro tea	1350	22
32		1180	8 do	fans	800	15
35	IN G, in est. mark	1189	9 ch	pek sou	765	29
40	Elfindale	1204	8 ch	pek	760	23
41		1207	16 do	sou	1600	26
42		1210	22 do	fans	2200	26
44	B D W P	1216	21 ch	bro pek	1890	32 bid
45	Queensland	1219	16 hf ch	bro or pek	880	61
46		1222	18 ch	pek	1530	37
50	St. Heliers	1234	13 hf-ch	bro or pek No. 1	702	52
51		1237	16 do	bro or pek	896	41
52		1240	13 ch	pek	1170	33
53		1243	12 do	pek sou	1140	31
55	Palmerston	1249	14 hf-ch	bro or pek	728	78 bid
56		1252	14 do	bro pek	728	61
57		1255	13 do	pek	1105	41
60	Lindula	1264	8 ch	dust	720	27
61	Cooroondoowatte	1267	12 hf ch	bro pek	720	44
62		1270	8 ch	pek	800	32
64	Villahena	1276	32 ch	bro pek	3200	32
65		1279	16 do	pek	1600	29
69	Killarney and Braemar	1291	45 ch	bro or pek	4500	47
70		1294	3· do	or pek	3000	37
71		1297	28 do	pek	2300	35
74	Grange Garden	1306	42 ch	bro or pek	4200	41
75		1309	21 do	pek	2100	36
79	St. H	1321	18 ch	pek	1908	29
80	Tonacombe	1324	36 ch	or pek	3240	35 bid
81		1327	25 do	bro pek	2500	42
82		1330	50 do	pek	4500	37
83		1333	13 do	pek sou	1170	31
84		1336	13 do	bro or pek	1300	44
85	Walpita	1339	41 ch	bro pek	4100	34
86		1342	28 do	pek	2800	30
87		1345	12 do	pek sou	960	28
89	V, in estate mark	1351	16 ch	pek sou	1520	26
90		1354	15 hf ch	dust	1200	28
95	Ireby	1369	21 hf ch	bro pek	1260	56
96		1372	10 do	pek	900	41
97	M T P, in est. mark	1375	35 hf-ch	sou	3150	27
98		1378	15 do	pek dust	1800	27
100	H P	1384	13 hf-ch	fans	1105	28 bid
101	Kincora	1387	30 ch	pek	2100	31
102		1390	20 do	pek No 2	1300	27
103	Harrington	1393	25 hf-ch	bro or pek	1250	66
104		1396	19 ch	or pek	1805	44
105		1399	18 do	pek	1710	39
109	O R E C, in est. mark, Forest Creek	1411	19 ch	bro or pek	1900	61 bid
110		1414	25 do	bro pek	2500	56
111		1417	13 do	or pek	1300	49
112		1420	22 do	pek No. 1	1980	40
113		1423	19 do	pek „ 2	1900	37
114	Ketadola	1426	9 ch	bro pek	945	29
115		14 9	13 do	pek	1300	26
119	H P	1441	12 hf-ch	fans	1020	28 bid
120	Ardlaw and Wishford	1444	22 hf-ch	bro or pek	1232	54
121		1447	17 ch	bro pek	1530	40
122		1450	14 do	or pek No. 1	1260	37
123		1453	21 ch	pek	1680	38
124	Ardlaw and Wishford	1456	16 hf ch	bro or pek	832	55
125		1459	27 ch	bro pek	2430	40
126		1462	17 do	or pek No. 1	1530	38
127		1465	31 do	pek	2480	37
128	High Forest	1468	41 hf ch	or pek No. 1	2296	66
129		1471	28 do	or pek	1540	52
130		1474	21 do	pek	1008	48
131	Seenagolla	1477	41 hf ch	bro pek	2050	46
132		1480	15 do	pek	750	38
134	Dammeria	1486	11 ch	bro or pek	1450	34
135		1489	21 do	or pek	2100	34 bid
136		1492	37 do	bro pek	4070	35
137		1495	23 do	pek	2300	34
138		1498	12 do	pek sou	1050	30
141	D M	1507	7 ch	pek	700	26
142	Maha Uva	1510	51 hf ch	bro or pek	3240	34
143		1513	25 do	or pek	1400	39
144		1516	50 ch	pek	4500	37
145		1519	15 do	pek sou	1200	32
148	High Forest	1528	47 hf ch	or pek No. 1	2632	76
149		1531	39 do	or pek	2106	55
150		1534	29 do	pek	1392	46
152	B W D	1540	10 hf-ch	dust	800	27
153	Kirklees	1543	35 do	bro or pek	2100	36
154		1546	22 ch	or pek	2090	38
155		1549	39 do	pek	3705	34
156		15 2	28 do	pek sou	2240	30
159	Battawatte	1561	24 ch	bro or pek	2649	35
160		1564	17 do	pek	1615	33
161		1567	11 do	pek sou	880	29
163	Killarney	1573	23 hf ch	bro or pek	1265	43
164		1576	16 ch	pek sou	1440	37
166	Beaumont	1582	26 ch	bro pek	2730	32
167		1585	46 do	or pek	4232	30
168		1588	12 do	f ns	934	27
175	Beaumont	1609	14 ch	bro pek	1428	32
176		1612	28 do	or pek	2520	30
179	Weemalla	1621	8 ch	pek	720	27
182	Farnham	1630	38 ch	bro pek	3800	35 bid
183		1633	20 do	or pek	1600	33 bid
184		16 6	10 hf ch	bro or pek	700	32
185		1639	38 ch	pek	3300	32 bid
186		1542	25 do	pek sou	1875	29 bid
190	C R D	1654	12 do	dust	1200	26
192	Anningkande	1660	15 ch	bro pek	1500	33
193		1663	14 do	pek sou	1260	28
194		1666	16 hf ch	dust	1200	26
198	B F B	1678	16 do	bro pek dust	1088	28
199	B F B O	1681	16 hf ch	dust	1050	26
200	Agraoya	1684	24 ch	bro pek	2400	38
201		1687	26 do	or pek	2210	37
202		1690	39 do	pekoe	3510	33
203		1693	18 do	pek sou	1620	30
205		1699	10 hf ch	fans	700	29
206	Gallawatta	1702	14 ch	pek	1190	28 bid
207	Gallawatta	1705	23 ch	bro pek	2185	34 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
208		1708	13 ch	pek	1105	29 bid
209		1711	10 do	pek sou	850	27 bid
210		1714	11 hf-ch	pek fans	770	29
211	Pine Hill	1717	34 hf-ch	bro pek	2040	41 bid
212		1720	35 do	or pek	2450	39
213		1723	32 do	pek	2560	34
217	Queensland	1735	9 ch	or pek	810	38
218		1738	16 hf-ch	bro pek	800	39
219		1741	16 ch	pek	1280	34
221	ranakande	1747	9 do	bro pek	900	33
223		1753	9 do	pek sou	810	27
226	Harrow	1762	25 hf-ch	bro or pek	1500	45 bid
227		1765	16 ch	pek	1600	38
230	N	1774	11 do	bro mix	1430	25
231		1777	19 do	unast	1900	26
232	L G F in est. mark	1780	21 do	sou	1890	26
233		1783	37 hf-ch	dust	2775	27
234	L H O	1786	14 ch	pek sou	1190	25
235	Ganapalla	1789	35 do	bro pek	3150	32
236		1792	32 do	bro or pek	2873	33
237		1795	15 do	or pek	1350	33
238		1798	50 do	pek	4000	29
240		1804	19 hf-ch	bro pek fans	1425	27
242	Clunes	1810	19 ch	bro or pek	1900	34
243		1813	15 do	bro pek	1425	34
244		1816	16 do	or pek	1280	32
245		1819	56 do	pek	4480	29
246		1822	12 do	pek sou	1140	27
248	Polatagama	1828	49 do	bro pek	4900	36
249		1831	23 do	or pek	2070	32 bid
250		1834	59 do	pek	5310	29 bid
251		1837	17 do	pek sou	1445	27
252		1840	8 do	fans	800	28
254	Patiagama	1846	13 do	bro or pek	715	46
255		1849	14 do	or pek	1190	36
256		1852	34 do	pek	2720	23 bid
257		1855	10 do	pek sou	800	30
258	Castlereagh	1858	27 do	bro or pek	2700	48
259		1861	27 do	or pek	2295	36
260		1864	23 do	pek	1840	32
261		1867	12 do	pek sou	960	29
262		1870	18 hf ch	fans	1260	30
265	Agra Elbedde	1879	62 do	bro or pek	4600	62 bid
268	Rosita	1888	29 ch	pek sou	2220	29 bid
269		1891	11 do	dust	1650	27 bid
272	Old Maddegama	1900	31 do	pek	2480	29
273		1903	29 do	pek sou	2175	28
274	Puspone	1906	18 do	bro pek	2013	35 bid
275	Nakiadeniya	1909	20 do	bro pek	1800	31
276		1912	15 do	pek	1200	29
278		1918	21 do	br pk fans	2100	30
279	Mansfield	1921	62 hf-ch	bro pek	3720	49
280		1924	26 ch	pek	2340	36 bid
281		1927	9 do	pek sou	765	33
282		1930	11 hf-ch	dust	990	28
283	A M B	1933	8 ch	br pk sou	720	22
284		1936	18 do	dust	2700	26
285	Shrubs Hill	1939	32 do	pek	2557	29
286	Chesterford	1942	18 do	fans	1620	20
287	Warakamure	1945	22 do	pek	3040	28 bid
288	Eila	1948	32 do	bro pek	2720	30 bid
289		1951	31 do	bro pek	2620	29 bid
290	B D W	1954	8 do	unast	880	29
291		1957	7 do	pek	755	24
292		1960	9 do	s u	855	16 bid
293		1963	8 do	sou	800	21
294	Amblakande	1966	15 do	pek	1272	30
295	Lynsted	1969	69 hf-ch	bro pek	4137	45 bid
298	B in est mark	1978	10 do	sou	900	24
299		1981	11 do	dust	1650	26
300	Telbedde	1984	20 do	bro or pek	2197	36
301		1987	20 do	or pek	2237	36 bid
302		1990	23 do	pek	2247	33 bid
303	Augusta	1993	14 do	pek sou	1260	27
305		1999	8 do	dust No. 1	1120	25
307	Memorakande	2005	10 do	dust	1500	25
308	Hayes	2008	29 do	bro pek	2897	35 bid
309	Cotswold	2011	15 do	bro pek	1500	37 bid
310		2014	18 do	pek	1620	33 bid
311		2017	18 do	pek sou	1350	30
314	Anningkande	2026	11 do	bro pek	1100	33
315		2029	12 do	pek	1140	29
316	Deaculla	2032	60 hf-ch	bro pek	3000	40 bid
317		2035	40 ch	pek	2800	31 bid
318		2038	15 do	pek sou	1050	29 bid
319		2041	10 hf-ch	dust	800	27
320	Erracht	2044	15 ch	or pek	1347	34
321	Hopton	2047	35 do	bro pek	3500	34 bid
322		2050	32 do	pek	2880	30 bid
323		2053	14 do	pek sou	1200	26 bid
325		2059	53 do	bro pek	5300	34 bid
326		2062	42 do	pek	3780	31 bid
327		2065	18 do	pek sou	1620	28 bid
328		2068	7 do	dust	735	26
329	Stamford Hill	2071	22 do	bro pek	2310	44 bid
330		2074	25 hf-ch	or pek	1375	60
331		2077	20 do	pek	2700	36
332		2080	10 ch	pek sou	850	35
334	Knavesmire	2086	19 hf-ch	or pek	1045	26
335		2089	40 ch	pek sou	4000	35
336		2092	30 do	pek	2700	32 bid
337		2095	17 do	pek	1360	30
340	Ella Oya	2104	9 do	or pek	765	42
341		2107	12 do	bro pek	1200	45
342		2110	23 do	pek	1932	32 bid
343		2113	15 do	pek sou	1200	29 bid
347	Erlsmere	2125	23 do	bro pek	2185	39
348		2128	20 do	pek	1600	36
351	Gonapatiya	2137	25 hf-ch	bro pek	1350	42 bid
352		2140	30 do	or pk No. 1	1440	48
354		2146	25 do	pek	1100	37
355	Holton	2149	15 do	bro pek	1425	35
356		2152	13 do	pek	1040	33
361	Summer Hill	2167	37 do	bro pek	2442	50 bid
362		2170	19 do	or pek	1767	65
363		2173	33 do	pek	2838	43
364	Clyde	2176	11 do	bro or pek	1210	34
365		2179	43 do	bro pek	3870	40
366		2182	15 do	pek	1350	33
369	C F R	2191	3 do 8 hf-ch	br pek fans	905	24
373	W L	2203	24 do	bro pek	1344	27
374		2206	16 do	pek	880	26
378	Taldua	2218	13 ch	pek	1235	27
381	Yaha Ella	2227	7 do	bro pek	700	31
382		2230	16 do	pek	1520	28
385	Bandara Eliya	2239	55 hf-ch	or pek	2530	33 bid
386		2242	70 do	bro pek	4060	38 bid
388		2248	28 do	pek sou	1176	30 bid
390	Galapitakande	2254	18 ch	bro pek	1854	36
391		2257	16 do	pek	1440	33
392	Dooroomoodella	2260	34 hf-ch	bro or pek	2040	29
393	C M B	2263	9 do	dust	729	26
395	Waratenne	2269	26 hf-ch	bro or pek	1430	23
396		2272	25 ch	br pek	2125	30
397		2275	28 do	pek	2380	28
398	Geragama	2278	14 do	bro pek	1260	32
399		2281	10 do	pek	900	29

[Messrs. Somerville & Co.—232,157 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	Mossville	676	8 hf-ch	dust	720	26
4	Labugama	682	39 hf-ch	bro pek	1950	34
6		688	25 ch	pek	2375	28
7		691	21 do	pek sou	1785	27
8	Avisawella	694	24 ch	bro pek	2280	33
9		697	22 do	pek	1870	25
10		700	29 do	pek sou	2320	27
11	Hangranoya	703	80 hf-ch	bro pek	4000	36
12		706	17 ch	or pek	1275	35
13		709	39 do	pek	3510	32
14		712	22 do	pek sou	1540	30
15	Blinkbonnie	715	31 hf ch	bro pek	1860	48
16		718	39 ch	pek	3510	38
18	Paradise	724	27 hf-ch	bro pek	1485	32
19		727	14 ch	pek	1400	29
20		730	20 do	pek sou	1900	27
21		733	14 hf ch	dust	1050	27
22	Ingeriya	736	56 hf-ch	bro pek	2800	32
23		739	49 do	pek	2352	29
24		742	30 do	pek sou	1380	27
25		745	25 do	bro pek fans	1500	29
27	Mahatenne	751	22 ch	bro pek	2200	34
28		754	15 do	pek	1500	31
30	Hanagama	760	8 ch	bro pek	800	32
31		763	23 do	pek	2185	28
32		766	13 do	pek sou	1170	27
42	Rayigam	796	58 hf ch	bro pek	3190	33
43		799	31 do	or pek	1395	32
44		802	21 ch	pek	1680	30
45		805	18 hf-ch	pek sou	900	29
47	Abamad	811	4 ch 10 hf-ch	pek	900	26
48		814	4 ch 9 hf-ch	pek sou	850	24 bid
51	Woodthorpe	823	9 ch	bro pek	900	35
52		826	11 ch	pek	963	30
53		829	11 do	pek sou	858	23
56	Elchico	838	117 hf ch	bro pek	6435	34
61	G B	853	23 hf ch	dust	1150	26
62	Eilandhu	856	10 ch	bro pek	1000	33
63		859	10 do	pek	950	29
64	Warakamure	862	31 ch	bro pek	3100	29 bid
65		865	23 do	pek	2185	27
66		868	12 do	pek sou	1080	25
67	Polgahakaade	871	33 ch	bro pek	3300	30
68		874	13 do	or pek	1170	31 bid

Lot.		Box.	Pkgs.	Name.	lb.	c.
69		877	20 ch	pek	1600	28
70		880	32 do	pek sou	2560	25
72	Kurunegalle est. Co. of Ceylon, Ltd	886	16 hf-ch	bro pek	960	34
73		889	9 ch	pek	900	30
76	Tiddydale	898	18 hf ch	bro pek	900	31
77		901	13 ch	pek	1170	28
78	MoraEllа	907	29 hf-ch	bro or pek	1740	38
80		910	15 do	or pek	750	42
81		913	23 ¾ ch	pek	1725	36
82		916	15 ¾ do	pek sou	1050	32
85	Ossington	925	15 ch	bro pek	1500	32
86		928	20 ch	pek	2000	29
87		931	8 do	pek sou	800	27
90	Killin	940	48 hf-ch	bro or pek	2400	34 bid
91		943	29 ch	or pek	2755	28 bid
92		946	10 do	pek	900	27 bid
95	Neboda	955	15 ch	bro or pek	1500	32
96		958	47 do	bro pek	4700	31
97		961	11 do	pek	990	29
98		964	14 do	pek sou	1120	27
100	Neuchatel	970	44 ch	bro pek	4400	34
101		973	43 do	pek	3655	29
102		976	20 do	pek sou	1600	27
105	Galphele	985	19 ch	bro pek	1900	32
106		988	9 do	bro or pek	900	35
107		991	10 do	pek	900	29
108	Do B	994	13 do	pek	1170	28 bid
110	Meetiagoda	1	9 do	bro pek	900	31
111		4	9 do	pek	900	27
112		7	7 do	pek sou	700	26
113	Kosgama	10	23 ch	bro pek	2530	31 bid
114		13	18 do	pek	1530	28 bid
116	Silverton	19	43 ch	bro pek	3913	30 bid
117		22	51 do	pek	3468	28 bid
118		25	26 do	pek sou	1638	26 bid
119	Hanwella	28	19 hf-ch	bro pek	950	30
123	Charlie Hill	40	42 hf-ch	bro pek	2310	29 bid
124		43	20 do	pek	1100	27
126	Blauvais	49	8 ch	bro pek	808	30
127		52	16 do	pek	1408	28
129	Gwernet	58	13 ch	bro pek	1300	36
130		61	12 do	pek	1140	33
133	Ravenoya	70	18 hf-ch	bro pek	990	34
134		73	19 do	pek	950	30
136	Monrovia	79	29 ch	bro pek	2900	32
137		82	32 do	pek	3040	29
143	Pallegodde	100	24 ch	bro or pek	2400	33 bid
144	St. Catherine	103	13 ch	bro or pek	1300	35
145		106	19 do	or pek	1520	33
149	Yspa	118	34 ch	pek sou	2720	30
150	Rookwela	121	7 ch 3 hf-ch	or pek fans	1084	27
151		124	20 hf-ch	pek fans	1550	27
154	J D	133	31 ch	pek	2790	28 bid
155	Bargany	136	14 ch	or pek	1330	27 bid
156		139	54 hf ch	bro or pek	2700	45 bid
157		142	21 ch	pek	1680	34 bid
161	A B N	154	10 ch	bro pek	1000	32 bid
162	Roseneath	157	29 ch	bro pek	2900	30 bid
163		160	13 do	pek	1170	31 bid
164		163	21 do	pek sou	1680	29 bid
168	Yahalatenne	175	30 ch	bro pek	2970	33 bid
169		178	15 do	pek	1500	30 bid
170		181	10 do	pek sou	950	28 bid
172	A D L, in est. mark	187	18 ch	pek	1710	28
175	Hangranoya	196	20 hf ch	fans	1500	27
176	S R K	199	10 ch	pek sou	920	32
182	Ranasinghapatna	217	65 hf-ch	or pek	3120	34 bid
183		220	48 do	bro or pek	2784	34 bid
184		223	33 ch	pek	2541	30 bid
185		226	43 do	pek sou	3440	27 bid

[Mr. E. John.—230,728 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Mount Everest	399	39 hf-ch	bro pek fans	2780	31
4	Kadienlena	408	10 ch	sou	1000	26
5	Ottery	411	17 do	bro or pek	1700	47
6		414	10 do	or pek	850	45
7		417	30 do	pekoe	3000	39
9	Rookwood	423	14 hf-ch	bro or pek	868	48
10		426	23 ch	or pek	1150	40
11		429	16 do	pekoe	1440	36
12		432	18 do	pek sou	1620	34
13		435	19 do	sou	1368	31 bid
14	Osborne	438	23 do	bro or pek	2530	57 bid
16		444	17 do	bro pek	1870	40
17		447	8 do	pek sou	760	34
18		450	9 hf-ch	fans	810	29
19	Perth	453	23 ch	bro or pek	2415	34
20		456	36 do	bro pek	3096	33
21		459	13 do	pekoe	1040	32
24	Glasgow	468	48 ch	bro or pek	3264	54
25		471	19 do	or pek	1330	56
26		474	12 do	pekoe	1020	42
27		477	15 do	pek sou	1500	40
28		480	20 do	fans	2060	32
29	Rookwood	483	26 hf-ch	bro or pek	1768	46
30		486	25 do	or pek	1500	41
31		489	22 ch	pekoe	1980	37
32		492	51 do	pek sou	4590	33
33		495	21 do	sou	1512	29
34	P, in est. mark	498	29 do	dust	4930	26
35	Mocha	501	24 do	bro or pek	2400	65
36		504	12 do	or pek	1080	65
37		507	20 do	pekoe	1800	51
38		510	10 hf-ch	fans	750	34
39	Kanangama	513	26 ch	bro or pek	2860	31
40		516	28 do	bro pek	2660	30
41		519	28 do	pekoe	2520	29
42		522	37 do	pek sou	2960	27
43	Glentilt	525	45 hf-ch	bro pek	2880	50
44		528	22 ch	or pek	2200	38
45		531	14 do	pekoe	1400	35
47	Cleveland	537	60 hf-ch	flow or pek	3300	55
48		540	55 do	pekoe	2915	40
49		543	14 do	pek sou	700	38
51	Lameliere	549	30 ch	bro pek	3150	48
52		552	31 do	pekoe	2852	39
53		555	17 do	pek sou	1275	34 bid
55	Brownlow	561	25 hf-ch	bro or pek	1275	52
56		564	22 ch	or pek	2134	38 bid
57		567	23 do	pekoe	1955	36
58		570	11 hf-ch	pek fans	847	31
59	Dickapittia	573	30 ch	bro pek	3000	36
60		576	34 do	pekoe	3400	32
61	Galella	579	14 do	bro pek	1400	42
62		582	17 do	pekoe	1445	36
64	Birnam	588	44 do	pek sou	2948	35
65	Kotuagedera	591	33 do	bro pek	3300	32
66		594	17 do	pekoe	1615	28 bid
69	N	603	9 hf-ch	dust	765	29
74	W K	618	69 ch	sou	5520	23
76	Hayes	624	15 do	bro or pek	1500	40
80	Welicodde	636	10 do	bro tea	900	23
81	G L A, in est. mark	639	15 do	pek sou	1350	36
82	Iona	642	57 hf ch	bro or pek	3420	61
83		645	33 ch	or pek	3300	43 bid
84		648	19 do	pekoe	1615	41
86	D K	654	17 do	sou	1794	26
87	Tempo	657	24 do	bro pek	2280	34
88		660	32 do	pekoe	2560	29 b
89		663	12 do	pek sou	840	28
90		666	13 do	sou	1013	27
91		669	9 do	fans	765	28
92	G C	672	42 hf-ch	pek fans	3150	28
93	Mahanilu	675	18 ch	or pek	1530	38
94		678	35 hf-ch	bro pek	1960	45
95		681	5 ch	pek sou	1425	30
96		684	13 do	unas	1300	29
97	Ferndale	687	20 do	or pek	1800	36
98		690	30 do	pekoe	2700	34
99		693	13 do	pek sou	1170	31
100	Maskeliya	696	23 hf-ch	bro or pek	1150	68
101		699	34 ch	or pek	3060	41
102		702	25 do	pekoe	2000	34
105	Hiralouvah	711	18 do	or pek	1620	35 bid
106		714	22 hf-ch	bro or pek	1320	36 bid
107		717	23 ch	pekoe	1955	31 bid
108		720	14 do	pek sou	1190	30
112	Maryland	732	7 do	bro pek	735	30
113		735	7 do	pekoe	700	28
114	Murraythwaite	738	21 do	bro pek	1995	35
115		741	20 do	pekoe	1700	31
119	Agra Ouvah	753	18 hf-ch	bro or pek	1080	57
120		756	43 do	bro pek	2795	48
121		759	11 ch	pekoe	1045	42
123		765	26 do	pek fans	2210	31
124	G	768	42 hf-ch	pek fans	3150	27 bid
127	Glentilt	777	16 ch	pekoe	1600	36
128	L E	780	20 do	bro or pek	2000	59 bid
129		783	20 do	or pek	2000	40 bid
130		786	21 do	bro pek	2100	41 bid
131		789	18 do	pekoe	1530	38
132	Glassaugh	792	23 hf-ch	or pek	1219	71
133		795	19 do	bro or pek	1235	61
134		798	14 ch	pekoe	1330	50
138	Myraganga	810	23 do	bro pek	2070	30 bid
139		813	47 do	bro or pek	5170	32 bid
140		816	44 do	pekoe	3520	30 bid
141		819	56 do	pek sou	4760	28 bid
142	G C	822	42 do	pek fans	3150	27 bid
147		837	44 hf-ch	pek fans	3300	26 bid

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
5	New Rasagalla	30	4 ch	fans	440	28
8	W	39	2 do	bro pek	200	28
9		42	2 do	or pek	180	27
10		45	1 do	pek sou	80	26
18	Hapugastenne	69	8 hf ch	dust	680	26

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	M'Golla	1087	6 ch	sou	510	26
2	N E M	1090	9 hf ch	bro or pek	540	26
3		1093	8 do	unas	440	21
		1096	2 do	pek	108	25
5		1092	1 ch	pek	100	24
6		1109	7 do	pek sou	630	21
9	Ettapcll	1111	9 hf ch	pek	504	28
10		1114	5 do	sou	280	26
11		1117	2 do	dust	132	25
15	Strathspey	1129	8 ch	pek sou	576	37
16		1132	2 do	dust	252	27
23	St. Coomb	1153	5 ch	pek sou	470	36
24		1156	4 do	bro pek fans	320	29
29	Glencors	1171	3 ch	bro tea	380	28
30		1174	2 do	dust	350	25
33	W N	1183	6 hf-ch	dust	504	26
34	Ingrogalla	1186	6 ch	bro pek	600	33
36	I N G, in estate mark	1192	4 ch	sou	320	24
37		1195	4 do	bro pek dust	480	25
38		1128	3 do	pek fans	300	26
39	Elfindale	1201	6 ch	bro pek	600	24
43		1213	5 do	dust	500	25
47	N B D	1225	3 ch	bro mlxed	255	19
48		1228	3 do	unas	270	20
49		1231	2 hf-ch	bro pek oust	160	27
54	St. Heliers	1:16	7 do	dust	595	27
58	Lindula	1258	4 eh	bro pek	440	41
59		1261	6 do	pek	570	33
63	Cooroondoowatte	1273	6 ch	pek sou	600	29
66	Villahena	1282	6 hf ch	pek sou	540	27
67		1285	2 ch	sou	100	25
68		1288	2 do	dust	160	27
72	Kelaneiya and Braemar	1300	3 ch	sou	300	28
73		1303	6 hf ch	dust	480	27
76	Grange Garden	1312	2 ch	pek sou	200	30
77		1315	1 do	fans	100	28
78		1318	4 hf ch	dust	340	27
88	Walpita	1348	5 ch	sou	400	25
91	St. John's Wood	1357	9 hf ch	bro pek	522	36
92		1360	9 do	pek	450	31
93		1363	8 do	pek sou	360	29
94		1366	1 do	fans	121	25
99	A	1381	7 do	sou	350	23
106	Harrington	1402	4 hf ch	pek	224	33
107		1405	4 do	or pek fans	286	32
108		1408	1 do	dust	90	27
116	Ketadola	1432	5 ch	pek sou	475	25
117		1435	1 do	fans	137	22
118		1438	2 do	bro mix	200	18
133	Seenagolla	1483	2 hf ch	dust	170	27
139	Dammeria	1501	5 do	dust	450	28
140	D M	1504	5 ch	bro pek	600	28
146	Maha Uva	1522	3 hf ch	pek fans	240	28
147		1525	6 do	dust	510	27
151	B W D	1537	4 ch	red leaf	360	19
157	Kirklees	1555	2 ch	congou	130	25
158		1558	5 do	pek fans	550	29
162	Battawatte	1570	4 ch	dust	400	27
165	Killarney	1579	3 do	bro mix	300	28
169	K W	1591	4 ch	bro tea	403	29
170	Ingurugalla	1594	3 ch	pek sou	270	27
171		1597	5 do	bro tea	425	23
172		1600	2 do	red leaf	180	18
173	Kirrimettia	1603	6 ch	fans	600	28
174		1606	5 do	dust	600	27
177	Weemalla	1615	5 ch	bro or pek	500	30
178		1618	5 do	or pek	425	33
180		1624	1 do	pek sou	90	27
181		1627	1 do	bro tea	85	23
187	Farnham	1645	6 hf-ch	pek fans	420	27
188		1648	4 do	dust	3:0	27
189	C R G	1651	3 ch	sou	255	20
191		1657	1 do	bro pek	100	26
195	Kowlahena	1669	3 ch	congou	285	22
196	B D W G	1672	3 hf-ch	dust	270	28
197	B D W P	1675	7 ch	bro pek	595	28
201	Agra Oya	1696	9 hf-ch	dust	675	25
214	Pine Hill	1726	8 hf-ch	pek sou	560	31
215		1729	6 do	dust	480	27
216		1732	1 do	sou	70	23
220	Queensland	1744	3 do	bro pek fans	1:0	29
222	Doranakande	1750	6 ch	pek No. 2	540	28
224		1756	1 do	dust	116	27
225	Harrow	1759	12 hf-ch	or pek	624	47
228		1768	7 ch	pek sou	630	32
229		1771	2 hf-ch	dust	170	27
239	Ganapalla	1801	7 ch	pek sou	525	24
241		1807	3 hf-ch	dust	294	26
247	Clunes	1825	4 ch	dust	260	27
253	Polatagama	1843	3 do	dust	450	24
263	Castlereagh	1873	8 hf-ch	dust	640	28
264	C R	1876	3 ch	bro mix	270	18
266	I G A	1882	3 do	bro pek	302	29
267		1885	3 do	pek	272	25
270	Farnham	1894	1 do	pek	100	28
271		1897	4 do	pek	400	28
277	Nakiadeniya	1915	8 do	pek sou	640	26
304	Augusta	1996	2 do	sou	200	24
306		2002	1 do	dust	170	23
312	Cotswold	20:0	4 do	sou	300	24
313		2023	3 hf-ch	dust	225	27
324	Hopton	2056	5 ch	dust	525	26
333	Stamford Hill	2083	4 hf-ch	dust	340	28
338	G L T	2098	5 ch	dust	500	26
339	Nahaveena	2101	1 hf-ch	congou	50	25
344	Ella Oya	2116	3 ch	dust	210	26
345		2119	9 do	br pk fans	585	28
346	Erlsmere	2122	12 hf-ch	bro or pek	6:6	44
349		2131	7 ch	pek sou	595	32
350		2134	3 hf-ch	dust	240	29
353	Gonapatiya	2143	16 do	or pek	688	38
357	Holton	2155	8 ch	pek sou	640	29
358	B A	2158	1 do	red leaf No. 1	95	18
359		2161	1 do	red leaf No. 2	100	18
360		2164	2 hf-ch	dust	80	25
367	Clyde	2185	5 ch	pek sou	450	29
368		2188	2 do	dust	300	26
370	N E M	2194	3 do	bro or pek	315	28
371		2197	1 do	pek	110	25
372		2200	1 hf-ch	pek sou	50	23
375	W L	2209	2 do	pek sou	80	23
376		2212	1 do	red leaf	60	18
377		2215	1 do	dust	66	26
379	Taldua	2221	1 ch	dust	85	26
380	Yaha Ella	2224	3 do	br or pek	330	31
383		2233	5 do	pek sou	475	27
384		2236	2 do	pek fans	181	27
389	St. H	2251	1 do	dust	145	25
394	C M C	2266	8 hf-ch	bro pk fans	488	27
400	D	2284	4 ch	sou	340	18

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	Mossville	673	6 ch	bro pek fans	600	27
3		679	3 do	red leaf	270	13
5	Labugama	685	8 hf-ch	bro or pek	480	28
17	Blinkbonnie	721	6 ch	pek sou	492	32
26	Ingeriya	748	3 hf-ch	dust	240	25
29	Mahatenne	757	3 ch	pek sou	285	26
33	Hanagama	769	2 ch	sou	180	23
34		772	3 do	fans	300	27
35		775	1 do	dust	153	24
36	X Z	778	6 ch	sou	670	20
37	D W P	781	3 hf-ch	bro pek	150	26
38		784	2 do	pek	100	24
39		787	1 do	pek sou	45	21
40		790	1 do	fans	45	21
41		793	1 do	bro mix	50	23
46	Ahamad	808	2 ch 5 hf-ch	bro pek	450	30 bid
49			2 ch 3 hf-ch	fans	365	22
50		820	2 ch 2 hf ch	red leaf	320	16
54	Woodthorpe	832	1 ch	sou	65	24
55		835	1 hf-ch	fans	55	26
57	Elchico	841	6 hf-ch	fans	360	26
58		844	1 do	dust	90	27
59		847	1 do	con	50	23
60	B F	850	3 hf ch	pek fans	240	27
71	Kurunegalla est. Co. of Ceylon, Ld.	883	8 hf ch	or pek	480	34
74		892	3 ch	pek sou	300	27
75		895	2 hf ch	dust	180	24
78	Tiddydale	904	6 ch	pek sou	540	26
83	Mora Ella	919	8 hf ch	bro pek fans	690	29
84		922	2 do	dust	190	27
88	Ossington	934	1 ch	bro tea	119	19
89		937	1 do	dust	169	24
93	Killin	949	3 ch	sou	270	25
94		952	6 hf ch	dust	480	26
99	Neboda	967	4 ch	dust	480	25

Lot.		Box.	Pkgs.	Name.	lb.	c.
103	Neuchatel	979	3 ch	bro or pek	340	30
104		982	2 do	dust	320	25
109	Galpbele B	997	4 ch	pek sou	360	28
115	Kosgama	16	2 ch	pek sou	160	26
120	Hanwella	31	9 hf-ch	pek	432	26
121		34	1 do	pek sou	55	25
122		37	5 do	dust	350	25
125	Charlie Hill	46	5 hf-ch	pek fans	[illegible]	27
128	Blauvais	55	8 ch	pek s u	502	22
131	Gwernet	64	7 ch	pek sou	630	29
132		67	2 do	dust	200	27
135	D A	76	2 ch	bro mix	140	24
138	Patulpana	85	10 hf-ch	bro pek	550	30
139		88	9 do	pek	450	27
140		91	9 do	pek sou	450	25
141		94	2 do	bro mix	90	23
142		97	2 do	sou	110	23
146	St Catherine	109	6 ch	pek	450	28
147		112	2 do	pek sou	144	25
148		115	1 hf ch	dust	112	26
152	Rookwela	127	2 hf-ch	bro pek	116	30
153		130	6 ch	pek	619	27
158	Bargany	145	5 ch	pek sou	350	28 bid
159		148	1 hf-ch	red leaf	50	18
160		151	5 ch	dust	450	26
165	Roseneath	166	2 hf-ch	dust	209	26
166		169	1 do	bro mix	54	18
167	M A	172	7 ch	bro or pek	618	30 bid
171	Yahalatenne	184	4 ch	dust	584	27
173	D S	190	3 hf ch	sou	255	28
174		193	3 do	pek dust	420	24
177	S R K	202	1 ch	sou	100	27
178		205	3 do	dust	450	27
179		208	2 do	bro tea	200	25
180	Charlie Hill	211	1 hf-ch	bro pek	55	28
181		214	1 do	pek	55	27

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
2	Mount Everst	402	5 hf-ch	dust	500	27
3		405	2 do	bro mix	200	27
8	Ottery	420	3 do	dust	240	2
15	Osborne	441	6 ch	bro or pek No. 2	600	41 bid
22	Perth	462	3 do	pek sou	240	30
23		465	3 do	pek dust	300	28
46	Glentilt	534	11 hf-ch	bro mix	660	32
50	Cleveland	546	5 do	fans	400	32
54	Lameliere	558	8 do	pek fans	640	30
63	Galella	585	4 ch	pek sou	340	33
67	Kotuagedera	597	3 hf-ch	dust	270	25
68		600	2 do	bro pek fans	150	27
70	Suriya	606	1 do	dust	33	24
71		609	1 do	pekoe	47	24
72		612	1 do	pek sou	55	23
73		615	1 ch	bro pek	82	27
75	N M	621	5 hf-ch	fans	350	28 bid
77	P G	627	1 ch	bro pek	115	32 bid
78	S K D	630	1 do	pekoe	95	28 bid
79	K T	633	1 do	bro pek	100	36
85	Iona	651	6 hf-ch	dust	480	28
103	Maskeliya	705	9 do	fans	540	33
104		708	3 do	dust	270	27
109	Hiralouvah	723	5 do	fans	300	30
110		726	2 do	dust	180	26
111	K T	729	1 ch	sou	90	23
116	Murraythwaite	744	4 do	pek sou	340	28
117		747	1 do	fans	130	28
118		750	1 do	dust	170	25
122	Agra Ouvah	762	7 do	pek sou	630	38
125	Coslanda	771	2 do	fans	220	30
126		774	4 hf-ch	dust	300	27
135	G	801	3 ch	unas	308	30
136		804	1 do	unas	66	25
143	R S	825	1 box	bro pek	12	29
144		828	1 do	pekoe	10	28
145		831	1 do	pek sou	10	26
146		834	1 do	dust	16	26

CEYLON COFFEE SALES IN LONDON.

(*From Our Commercial Correspondent.*)

MINCING LANE, April 27.

"Hitachi Maru."—St. Andrews O, 1 barrel sold at 96s; 1, 1 cask sold at 93s; 2, 1 barrel sold at 59s; PB, 1 barrel sold at 84s; T, 1 barrel sold at 90s: Agra 2, 1 cask sold at 60s; B, 1 barrel out; PB, 1 barrel sold at 88s; Ferham OO, 1 barrel sold at 109s; O, 1 barrel sold at 104s; 1, 1 barrel sold at 88s; 2, 1 barrel sold at 62s; PB, 1 barrel sold at 95; T, 1 barrel out.

"Stentor."—Pingarawa F, 1 barrel sold at 85s; 1, 1 barrel sold at 76; 2, 5 casks and 1 barrel out; S, 1 cask and 1 barrel sold at 50s; PB, 1 barrel sold at 81s; PGT in estate mark, 1 tierce out.

"Wakasa Maru."—Morar F, 1 barrel sold at 121s; ditto 1, 1 cask sold at 115s; ditto 2, 2 casks sold at 104s 6d; ditto S, 1 barrel sold at 63s; ditto PB, 1 barrel sold at 101s; MR 2, 1 barrel out; ditto PB, 1 barrel out; MRP B in estate mark, 1 barrel out.

CEYLON COCOA SALES IN LONDON.

"Stentor."—Ditto O, 5 bags sold at 85s; ditto 1, 2 bags sold at 67s 6d; ditto C, 3 bags sold at 20s; OBEC in estate mark, Mahaberia Ceylon, O F, 5 bags sold at 86s 6d; ditto 1 F, 4 bags sold at 68s; ditto O C, 17 bags sold at 95s; ditto 1 C, 6 bags sold at 81s; ditto 11 C, 5 bags sold at 61s 6d; ditto D, 7 bags sold at 74s. E Mahawatte Plantation, 11 bags sold at 71s; E in estate mark, 101 bags sold at 67s; S in estate mark, 106 bags sold at 68s.

"Japan."—Sundry marks, 1 bag of sweepings sold at 58s.

"Stentor."—OO PBM, 5 bags sold at 67s 6d.

"Duke of Devonshire."—North Matale, 9 bags sold at 70s 6d; 9 bags sold at 64s 6d; New Peradeniya, 2 bags sold at 60s; 2 bags sold at 64s 6d.

"Jumna."—New Peradeniya, 18 bags sold at 88s.

"Stentor."—Batagolla A, 16 bags out at 82s; B, 22 bags sold at 76s; C, 4 bags sold at 62s.

"Cowrie."—J 1, 2 bags sold at 75s; 11, 3 bags sold at 45s.

"Stentor-"—J 1, 4 bags sold at 75s; 11, 2 bags sold at 75s; Pondappa A, 9 bags sold at 80s 6d; B, 1 bag sold at 64s; T, 1 bag sold at 51s; B. 1 bag sold at 64s; T, 1 bag sold at 51s; Meddagodda 1, 15 bags sold at 78s 6d; 1 bag sold at 67s; ditto 2, 21 bags sold at 62s 6d; 1 bag sold at 54s; ditto 3, 2 bags sold at 59s; ditto 4, 2 bags sold at 59s; ditto 5, 1 bag sold at 59s ditto 6, 1 bag sold at 58s.

"Hitachi Maru."—Hylton OO, 21 bags sold at 93s 6d; ditto O, 2 bags sold at 68s 6d.

"Mazagon."—PK Kurunegala, Ceylon, in estate mark, 1 bag sold at 61s.

"Hitachi Maru."—Goonambil, 27 bags sold at 89s; 6 bags sold at 71s; 7 bags sold at 70s. Bandarapola 1, 7 bags sold at 74s 6d; ditto T, 1 bag sold at 60s.

"Stentor."—Rockhill AA, 23 bags sold at 88s; A, 1 bag sold at 68s; B, 3 bags sold at 53s 6d; C, 3 bags sold at 61s 6d; Ukuwela A, 6 bags sold at 81s.

"Cowrie."—OBEC in estate mark, Kondesalle, Ceylon O F, 10 bags sold at 86s; ditto 1 F, 22 bags sold at 76s; ditto 0, 8 bags sold at 92s 6d; ditto 1, 2 bags sold at 69s. OEC in estate mark, Mahaberia, Ceylon, O F, 7 bags sold at 87s; ditto 1 F, 6 bags sold at 76s 6d; ditto C O, 30 bags sold at 94s; ditto C 1, 10 bags sold at 80s 6d.

"Kamakura Maru."—HK 1, 13 bags sold at 75s.

"Stentor."—OBEC in estate mark, Kondesalle, Ceylon, O F, 28 bags sold at 87s 6d; ditto 1 F, 13 bags sold at 66s 6d.

CEYLON CARDAMOMS SALES IN LONDON.

"Stentor."—Nellaoola O, 1 case sold 2s 6d ditto 1, 2 cases sold at 1s 11d; ditto 2, 1 case sold at 1s; ditto B & S, 1 case sold at 1s; ditto seed, 1 case sold at 1s 11d; ditto seed, 1 case sold at 2s 1d.

"Hitachi Maru."—Delpotonoya, 1 case sold at 3s ; ditto, 1 case sold at 3s 1d ; 2 cases sold at 3s 2d ; ditto, 2 cases sold at 3s 3d ; ditto, 1 case sold at 3s 4d ; ditto, 1 case sold at 2s 7d ; ditto, 3 cases sold at 2s 8d ; 1 case sold at 2s 9d ; ditto, 2 cases sold at 2s 8d ; 3 cases sold at 2s 1d ; 1 case sold at 2s 2d ; ditto, 2 cases sold at 2s 1d ; 1 case sold at 1s 7d ; 1 case sold at 1s 6d ; ditto, 5 cases sold at 2s ; DD Mysore, in estate mark.

"Diomed."—F A & Co. in estate mark, 2 cases sold at 3s 3d ; 4 cases sold at 3s 2d.

"Ouda."—C T in estate mark, 5 cases sold at 3s 4d ; 3 cases sold at 3s 6d ; 2 cases sold at 2s 9d ; ditto, 2 cases sold at 2s 10d ; 1 case sold at 2s 9d ; C C C, in estate mark, 2 cases sold at 3s 6d ; ditto, 2 cases sold at 2s 10d ; M G, in estate mark, 3 cases sold at 3s 6d ; 12 cases sold at 2s 9d ; ditto, M M M, in estate mark, 4 cases sold at 3s 3d ; 4 cases sold at 3s 4d ; 5 cases sold at 3s 5d ; ditto, 3 cases sold at 3s 4d ; 4 cases sold at 3s 5d ; 5 cases sold at 2s 9d ; 13 cases sold at 2s 10d.

"Hitachi Maru."—Mysore, 1 case sold at 2s 1d.

"Stentor."—2 ditto, 1 case sold at 1s 10d.

"Caledonia."—D, 5 cases sold at 3s 2d ; 2 cases sold at 3s 1d ; 1 case sold at 3s 5d ; ditto, 4 cases sold at 2s 9d ; 2 cases sold at 2s 8d ; 1 case sold at 1s 9d ; ditto, 1 case sold at 2s 3d ; 4 cases sold at 1s 6d ; 1 case sold at 1s 7d.

"Clan Macintosh."—N G, in estate mark, 4 cases sold at 1s 4d ; ditto 4 cases sold at 1s 3d ; 2 cases sold at 1s 2d ; ditto 3, 2 cases sold at 1s 2d ; ditto 3, 1 case sold at 1s 1d ; ditto 4, 3 cases sold at 1s.

"Hitachi Maru."—Gallatenna Cardamons A A, 1 case sold at 4s 5d ; ditto A, 8 cases sold at 3s 2d; ditto 1 case sold at 3s 4d ; ditto B, 6 cases sold at 2s 4d ; ditto C, 4 cases sold at 2s 1d ; ditto E, 4 cases sold at 2s 2d ; Altwood, Ceylon, Cardamoms, 8 cases sold at 2s ; 2 cases sold at 2s 1d ; 2 cases sold at 1s 7d.

"Stentor."—Pingarawa Cardamoms A, 3 cases sold at 3s 2d ; ditto A, 9 cases sold at 1s 8d ; ditto B, 4 cases sold at 1s 3d ; ditto C, 1 case sold at 2s 2d.

"Wakasa Maru."—Kandaloya Cardamoms, A. case sold at 1s 6d ; ditto B, 3 cases sold at 1s 6d, "Glengyle."—Kobo Mysore cardamoms 3, 2 cases sold at 1s 5d ; WN, Ceylon ditto 4, 4 cases sold at 2s 2d.

"Historian."—Kandaloya cardamoms, 1 case sold at 3s 2d.

"Port Chalmers."—Katooloya OO, 1 case sold at 1s 7d.

"Hakata Maru."—Lebanon Group Mysore C, 2 cases sold at 1s 2d ; AL O, 4 cases sold at 2s 7d.

"Diomed."—Duckwari D1, 2 cases sold at 1s 6d.

"Sanuki Maru."—Nichola Oya No. 4, 1 case sold at 1s.

"Caledonia."—FD, 2 cases sold at 1s 1d.

"Mallare."—K in estate mark, Kobo Mysore 3, 1 case sold at 1s 4d.

"Hitachi Maru."—Katooloya EX, 1 case sold at 3s 9d ; ditto AA, 11 cases sold at 3s 8d ; ditto A, 9 cases sold at 1s 10d ; Katooloya B, 14 cases sold at 1s 3d ; ditto C, 4 cases sold at 2s 2d.

"Stentor."—Kelvin EX, 1 case sold at 3s 9d ; ditto AA, 5 cases sold at 2s 7d ; ditto A, 4 cases sold at 1s 9d ; ditto B, 4 cases sold at 1s 3d ; ditto C, 1 case sold at 1s 3d ; Cottaganga EX, 1 case sold at 3s 9d ; ditto AA, 5 cases sold at 2s 7d ; ditto A, 4 cases sold at 1s 8d ; ditto A, 1 case sold at 1s 9d ; ditto B, 3 cases sold at 1s 3d ; ditto C, 1 case sold at 2s 2d ; Elkadua O, 1 case sold at 2s 9d, 1 case sold at 2s 7d ; ditto 1, 6 cases sold at 2s ; ditto 2, 1 case sold at 1s 6d ; ditto B&S, 1 case sold at 1s 2d ; seed 2 cases sold at 2s ; Midlands O, 3 cases sold at 3s ; ditto 1, 5 cases sold at 2s 3d : ditto 2, 1 case sold at 1s 2d ; B&S, 1 case sold at 1s 11d.

"Cowrie."—OBEC in estate mark, Nillomally Mysore OOC, 2 cases sold at 2s ; ditto OO, 6 cases sold at 1s 11d ; ditto O, 3 cases sold at 1s 5d ; ditto O, 2 cases sold at 1s 3d, 1 case sold at 1s 2d ; seed 1 case sold at 2s 11d ; OBEC in estate mark, Dankande 3 cases sold at 2s 1d, 2 cases sold at 1s 6d.

"Stentor."—OBEC in estate mark, Naranghena AAAA, 1 case out at 3s 9d ; ditto AAA, 10 cases sold at 2s 8d ; ditto AA, 10 cases sold at 1s 10d, 1 case sold at 1s 9d ; ditto A, 3 cases sold at 1s 3d ; ditto BB, 4 cases sold at 1s 4d ; ditto GG, 4 cases sold at 1s 2d ; R Seed 1 case sold at 2s 2d ; AAA, 1 bag sold at 1s ; GG, 1 bag out.

OBSERVER PRINTING WORKS.

No. 19 COLOMBO, MAY 28, 1900. PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[27,244 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	Halgolle	19	33	ch	bro pek	3135	33
2		22	32	do	or pek	2720	28 bid
3		25	38	do	pek	3420	27 bid
4		28	19	do	pek sou	1710	25 bid
8	Hornsey	40	21	ch	or pek	1890	39
9		43	30	do	pek	2520	36
10	Hornsey	46	22	ch	pek sou	1760	32
11	Oakfield	49	35	hf-ch	bro pek	2030	31
12		52	20	ch	pek	1610	29 bid
13		55	18	do	pek sou	1314	26 bid
15	Kapitigama	61	11	ch	bro pek	1100	31 bid
16		64	13	do	pek	1170	30

[Messrs. Somerville & Co.—283,279 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
3	Primrose Hill	235	16	ch	bro pek	1600	30 bid
4		238	20	do	pek	1760	27 bid
5		241	21	do	pek sou	1638	26
7	Marigold	247	88	hf-ch	bro pek	4840	46
8		250	34	do	pek	1700	39
9		253	44	do	pek sou	2200	36
11	Honiton	259	21	ch	bro pek	1995	30 bid
12		262	21	do	pek	1680	25 bid
13		265	23	do	pek sou	1725	24 bid
15	Neuchatel	274	30	ch	bro pek	3000	30 bid
17		277	25	do	pek	2 25	25 bid
18		280	25	do	pek sou	2000	24 bid
19	Citrus	283	22	ch	bro pek	2200	29 bid
20		286	25	do	pek	2250	26 bid
21		289	11	do	pek sou	1100	23 bid
22		202	8	do	fans	800	24
23		295	5	do	dust	750	25
30	Theberton	316	46	ch	bro or pek	4600	31
31		319	14	do	pek	1260	30
33	Fairfield	325	19	hf-ch	bro or pek	1045	64
34		328	14	ch	bro pek	1540	41
35		331	10	do	or pek	900	39
36		334	8	do	pek	720	35
37		337	26	hf-ch	fans	1820	29
38		340	8	do	dust	720	26
43	P	355	9	ch	unas	852	19 bid
44	Ambalawa	358	23	hf-ch	bro pek	1300	29
45		361	24	do	pek sou	888	26
49	Forest Hill	373	17	ch	bro pek	1530	30
50		276	16	do	pek	1248	28
53	Mousakande	385	26	ch	bro pek	2080	28 bid
54		388	26	do	sou	1050	24 bid
55		991	15	do	pek	1200	28
57	Hatdowa	397	25	ch	bro pek	2250	29 bid
58		400	30	do	pek	2250	25 bid
59		403	27	do	pek sou	2025	24 bid
62	G watte	412	30	ch	bro pek	3000	30 bid
63		415	30	do	pek	2850	28
64		418	18	do	bro mix	1980	24
65	Rayigam	421	33	ch	bro pek	3135	30 bid
66		424	27	do	or pek	2160	30
67	-	427	22	do	pek	1650	28
68		430	14	ch	pek sou	1120	27
69		433	22	hf-ch	dust	1760	25
70	Annandale	436	23	hf ch	pek sou	1311	36
75	Weyeweltalawa	415	14	ch	pek	840	29
80	T K, in estate mark	466	9	ch	bro or pek	864	31 bid
81	Kelani	469	30	ch	bro pek	3000	33
82		472	13	do	bro or pek	1170	28 bid
83		475	31	do	pek	2790	28
84		478	12	do	pek sou	1080	26
85	Nuawella	481	95	hf-ch	bro pek	5225	29 bid
86		484	115	do	pek	5060	26 bid
87		487	17	ch	pek sou	1360	24 bid
89	R K P	493	10	ch	bro pek	850	30 bid
92		502	10	do	pek sou	850	24
93	Carney	505	35	hf-ch	bro pek	1750	35
94		508	25	do	pek sou	1250	25
98	Welgompola	520	15	hf-ch	pek	750	26
101	I P	529	27	ch	pek sou	2376	24 bid
102		532	15	hf-ch	dust	1275	25
105	Dryburgh	541	11	ch	pek	880	28 bid
106		544	12	do	pek sou	768	24 bid
108	R C T F, in est. mark	550	20	ch	bro pek	2000	24 bid
109		553	20	do	pek	1700	out
110		556	26	do	pek sou	2080	out
113	Nyanza	565	7	ch	bro or pek	700	60
114		568	10	do	bro pek	1000	36
115		571	11	do	or pek	990	36 bid
116		574	21	do	pek	1785	29 bid
117		577	11	do	pek sou	1080	28
120	Oonankande	586	8	ch	bro pek	800	34 bid
123		595	12	do	sou	780	23 bid
129	E	613	14	hf-ch	pek dust	1045	20 bid
130	Bollagalla	616	23	ch	bro pek	2300	32 bid
131		619	16	do	pek	1280	30 bid
132		622	12	do	pek sou	960	27
133	Maddagedera	625	30	ch	bro pek	3000	31
134		628	25	do	bro or pek	2250	28 bid
135		631	21	do	pek	1680	27
136		634	28	do	pek sou	1960	26
137		637	11	do	bro pek fans	1320	27
138		640	10	hf-ch	dust	900	24
139	Doragalla	643	13	ch	bro or pek	1300	41
140		646	12	do	bro pek	1140	34 bid
141		649	27	do	pek	2295	33
142		652	9	do	pek sou	720	28
144	S	658	8 1	ch hf-ch	pek sou	920	20
145	Mahatenne	661	23	ch	bro pek	2300	32 bid
146		664	17	do	pek	1700	28
151	Danawkande	679	17	hf-ch	pek	850	28
161	Harrangalla	709	38	ch	bro pek	3610	34 bid
162		712	56	do	pek	4480	30 bid
163		715	21	do	sou	1680	25 bid
164		718	11	hf ch	dust	880	27
167	Yarrow	727	91	hf-ch	bro or pek	5096	33
168		730	97	do	or pek	3880	34
169		733	68	do	pek	2720	23 bid
170	Y, in estate mark	736	11	hf-ch	dust	880	24
178	H R O	760	52	ch	pek sou	4680	22
179		763	27	do	dust	2430	21 bid
181	Rambodde	769	39	hf-ch	or pek	2145	45
182		772	53	do	pek	2385	34
183		775	20	do	pek sou	900	28
185		781	10	do	fans	700	28
186	G watte	784	37	ch	bro pek	3700	27 bid
187		787	24	do	pek	2280	27
188	Yapa	790	16	hf-ch	pek dust	1360	25
191	Annandale	799	14	hf ch	bro or pek	812	72
192		802	19	do	or pek	1083	47
193		805	24	do	pek	1272	41
194		808	15	do	pek sou	870	37
195	Silverton	811	43	ch	bro pek	3913	29 bid
196		814	51	do	pek	3468	26 bid
197		817	26	do	pek sou	1638	24 bid
198	D, in estate mark	820	18	ch	pek	1710	27 bid
199	Salawe	823	25	ch	bro pek	2625	30
200		826	13	do	pek	1300	27
201		829	10	do	pek sou	950	25
203	Mipitiakande	835	58	hf ch	pek sou	2610	24 bid
205	Depedene	841	67	hf ch	bro pek	4020	32
206		844	64	do	pek	3200	28
207		847	59	do	pek sou	2950	26
209	Rahatungoda	853	31	hf ch	bro or pek	1550	50
210		856	17	do	bro pek	1120	45
211		859	25	do	or pek	1250	41
212		862	50	do	pek	2500	35
213	Mary Hill	865	28	hf ch	or pek	1400	38
214		868	34	do	pek	2040	30 bid
216		874	14	do	pek sou	840	26 bid
219	Warakamure	883	34	ch	bro pek	3400	26 bid
220		886	29	do	pek	2755	24 bid
221		889	26	do	pek sou	2340	22 bid
222	Lower Dickoya	892	11	ch	bro pek	1100	30
223		895	9	do	pek	900	26 bid

Messrs. Forbes & Walker.

[726,366 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
1	New Peacock	2287	9	ch	pek sou	810	27
3		2293	32	hf ch	pek sou	2400	28
4	Beverley	2296	30	do	pek sou	1500	29
7	Kakiriskande	2 05	11	ch	pek	1034	27
9	Bickley	2311	34	ch	pek	1870	33
10		2314	26	do	pek sou	1430	29
11		2317	27	do	dust	1890	27
13	Kincora	2323	10	ch	pek	700	31
15		2329	11	hf ch	fans	715	34

Lot.		Box.	Pkgs.	Name.	lb.	c.
20	D M V	2344	16 ch	bro pek	1520	26 bid
21		2347	23 do	pek	1725	24 bid
26	Great Valley Ceylon, in est. mark	2302	13 ch	or pek	1170	36 bid
27		2365	54 do	bro pek	2970	43
28		2368	36 do	pek	3240	33
29		2371	16 do	pek sou	1200	30
30		2374	14 do	sou	1050	24
31		2374	18 do	dust	1350	28
32	C S G	2380	100 bf-ch	bro pek	5000	44
33		2380	78 ch	pek	6240	31
34		2386	24 do	pek sou	1920	27
36		2392	15 hf-ch	dust	1200	27
37	Glencorse	2395	18 ch	bro or pek	1710	30
38		2398	23 do	bro pek	1840	28
39		2401	12 do	pek	960	26
40		2404	12 do	pek sou	900	24
43	Carberry	2413	12 ch	bro pek	1080	31
44		2416	20 do	pek	1800	28
45	G K	2419	21 ch	bro tea	1890	22
46		2422	10 do	dust	1400	24
47	Irex	2425	48 ch	bro pek	4800	31
48		2428	23 do	pek	1840	29
49		2431	14 do	pek sou	1120	26
50	Mousakelle	2434	27 ch	bro or pek	2700	51
51		2437	27 do	or pek	2565	35 bid
52		2440	26 do	pek	2340	34
55	Shrubs Hill	2449	52 ch	bro pek	4524	27 bid
56		2452	40 do	do	3800	27 bid
57		2455	18 do	pek	1260	23
59		2461	23 do	bro pek fans	1725	20
61	Ingurugalla	2467	13 ch	bro pek	1300	40
62		2470	21 do	pek	1785	33
63	Sirikandura	2473	10 ch	bro pek	1000	30
64		2476	11 do	pek	990	26
68	Dunkeld	2488	9 ch	pek sou	810	30
69		2491	20 hf ch	pek fans	1400	30
70		2494	12 do	dust	1080	26
72	Dammeria	2500	8 ch	bro or pek	1040	33
73		2503	23 do	or pek	2300	35
74		2506	33 do	bro pek	3630	38
75		2509	29 do	pek	2900	34
76		2512	14 do	pek sou	1200	29
80	Pallagodda	2524	18 ch	bro or pek	1800	33
81		2527	30 do	bro pek	3000	45
82		2530	27 do	or pek	2430	36
83		2533	19 do	pek	1615	33
84		2533	21 do	pek sou	1890	30
85		2536	8 do	sou	800	27
86	Glengariffe	2542	65 hf ch	bro or pek	3575	36 bid
87		2545	35 do	or pek	1575	31 bid
88		2548	24 do	pek	2208	30
89		2551	12 do	pek sou	936	28
90		2554	17 do	bro pek fans	1190	28
92	Tembiligalla	2560	48 bf-ch	bro or pek	2640	35
93		2563	24 ch	pek	2160	32
97	P, in estate mark	2575	15 ch	bro pek	1500	43
100	Stisted	2584	01 bf ch	bro or pek	3904	40
101		2587	19 do	or pek	1140	33
102		2590	30 do	pek	1800	31
103		2593	58 do	pek sou	3248	28
107	Debiowita	2605	10 ch	bro pek	1000	25
108		2608	9 do	pek	810	24
110		2614	9 do	pek sou	720	22
112	Middleton	2620	25 hf-ch	bro or pek	1400	91
113		2623	50 ch	bro pek	5000	57
114		2626	34 do	pek	2890	43
115		2629	18 do	pek sou	1620	40
116	H G M	2632	13 hf-ch	bro or pek	845	49
117		2635	25 ch	bro pek	2500	36
118		2638	25 do	pek	2375	33
119		2641	13 do	pek sou	1170	31
120		2644	11 do	bro pek fans	990	30
122	Putupaula	2650	14 ch	bro or pek	1540	33
123		2653	37 do	bro pek	3330	32 bid
124		2656	47 do	bro pek	4230	32 bid
125		2659	50 bf-ch	or pek	2000	29 bid
126		2662	31 do	pek	2325	28
127		2665	28 do	pek sou	1960	26
130	O B E C, in est. mark, Forest Creek	2674	18 ch	bro or pek	1800	65
131		2677	24 do	bro pek	2400	51
132		2680	18 do	or pek	1800	47
133		2683	24 do	pek No. 1	2160	38
134		2686	22 do	pek „ 2	2200	30
135	Torwood	2689	40 ch	bro pek	3600	32
136		2692	30 do	pek	2460	30
137		2695	21 do	pek sou	1680	27
138		2698	14 do	sou	1120	24
139	Blairgowrie	2701	24 ch	sou	1920	21 bid
141		2707	11 do	pek fans	1320	26
144		2716	11 do	dust	1782	27

Lot.		Box.	Pkgs.	Name.	lb.	c.
146	St. Paul's	2722	104 bf ch	bro pek	6760	44
147		2725	104 do	pek sou	5290	30
148	Naseby	2728	25 bf ch	bro or pek	1475	57
149		2731	25 do	or pek	1125	60
150		2734	15 do	sou	750	43
158	Roeberry	2758	33 ch	bro or pek	3300	51
159		2761	63 ch	bro pek	6300	38 bid
100		2764	70 do	pek	6440	37
161		2767	47 do	pek sou	4042	34
162		2770	7 do	dust	700	25
163		2773	16 do	fans	1600	34
164	Palmerston	2776	14 bf ch	bro or pek	728	73
165		2779	11 do	pekoe	935	45
169	St. Heliers	2791	18 ch	bro or pek	1800	37
170		2794	23 do	pek	2070	34
171	Macaldenia	2797	21 hf ch	bro pek	1260	35
172		2800	16 do	or pek	880	30 bid
173		2803	22 do	pek	1210	28
174		2806	17 do	pek sou	850	26
178	Monkswood	2818	21 do	bro pek	1260	63
179		2821	29 do	or pek	1595	62
180		2824	23 ch	pek	2300	44
181		2827	10 ch	pek sou	900	40
183		2833	13 bf ch	fans	780	34
187	St. Leooards-on-Sea	2845	20 ch	bro pek	2000	29
188		2848	12 do	pek	1140	26 bid
189	Gonapatiya	1	30 hf ch	bro pek	1620	37
191	Devonford	7	28 do	bro or pek	1540	82
192		10	16 ch	or pek	1440	56
193		13	12 do	pek	1020	44
202	Agra Oya	40	15 ch	bro pek	1500	37
203		43	13 do	or pek	1105	35
204		46	15 do	pek	1350	29
205	Rowley	49	16 bf ch	bro pek	800	39
206		52	18 do	pek	900	31
207	Gallawatta	55	14 ch	bro pek	1260	33
208		58	14 do	pek	1190	27
209		61	10 do	bro pek	900	31
210	Palm Garden	64	7 ch	bro pek	805	29
211		67	8 do	pek	800	26 bid
214	P, in estate mark	76	26 ch	bro or pek	2600	49
215		79	17 hf-ch	or pek	850	49
216		82	15 ch	bro pek fan	1050	34
217	Puspone	85	20 ch	or pek	1900	28
218		88	22 do	bro pek	2420	28
219		91	11 do	pek	990	25
220	Ninfield	94	23 ch	bro or pek	2300	31
221		97	7 do	pro pek	700	30
222		100	8 do	or pek	720	28
223		103	30 do	pek	2700	26
224		105	8 do	pek sou	720	24
226	Carlabeck	112	9 ch	pek sou	864	34
228	Mawiliganga-watte	118	24 bf ch	bro or pek	1200	29
229		121	117 ch	bro pek	10530	26
230		124	77 do	pek sou	6160	20 bid
231		127	8 bf ch	dust	720	25
232	Pussella	130	8 ch	bro pek	744	33
233		133	14 do	or pek	1078	31
234		136	12 do	pek	840	29
235	Weyunga-watte	139	55 ch	bro pek	5225	29
236		142	37 do	pek	3145	27
237		145	21 do	pek sou	1575	25
241	Harrow	157	22 hf ch	bro or pek	1320	49
242		160	25 ch	pek	2500	38
243		163	10 do	pek sou	900	33
245	K P W	169	25 hf ch	bro pek	1375	31
246		172	35 do	bro or pek	2100	34
247		175	57 do	pek	3135	27
248		178	23 do	pek sou	1150	25
250	Vogan	184	39 ch	bro pek	3900	34
251		187	43 do	pek	3870	30
252		190	10 do	sou	800	25
253	Digdola	193	22 ch	bro pek	1980	32
254		196	37 do	pek	2775	27
257	Queensland	205	14 hf ch	bro or pek	700	66
258		208	20 ch	pek	1700	40
259		211	9 do	pek sou	760	32
263	High Fore t	223	39 hf-ch	or pk No. 1	2340	73
264		226	23 do	or pek	1265	76
265		229	21 do	pek	1029	45
266		232	28 do	bro or pek	1820	43
267	Clunes	235	19 ch	bro or pek	1900	30
268		238	15 do	bro pek	1425	29
269		241	15 do	or pek	1200	29
270		244	49 do	pek	3920	26 bid
271		247	11 do	pek sou	1045	25
273	High Forest	253	18 hf-ch	pek	792	45
274		256	29 do	bro or pek	1856	43
275		259	25 do	pek sou	1100	39
276		262	21 do	pek dust	1890	28
277	Hayes	265	24 ch	bro or pek	2400	45
278		268	49 do	bro pek	4900	34
279		271	28 do	or pek	2240	35

Lot.		Box.	Pkgs.		Name.	lb.	c.
280		274	96	ch	pek	8160	30
281		277	25	do	pek sou	2125	28
282		280	8	do	dust	1040	26
283	Seenagolla	283	15	hf-ch	bro pek	825	
284		286	14	do	pek sou	840	8
286	Warwick	292	26	do	bro pek	2600	65
287		295	39	do	pek	3705	42
288		298	22	do	bro pek	1980	34 bid
291	Chesterford	307	50	do	bro pek	5060	38
292		310	48	do	pek	4800	30
293		313	28	do	pek sou	2800	28
294	Waratenne	316	34	hf-ch	bro or pek	1870	30
295		319	50	ch	bro pek	4000	27
296		322	55	do	pek	4400	25
297		325	17	do	pek sou	1615	24
300	Geragama	334	39	hf-ch	bro pek	2145	32
301		337	9	ch	bro pek	720	28
302		340	25	do	pek	2000	26
303		343	9	do	pek sou	900	25
311	Murukattia, Ceylon, in est. mark	367	17	hf-ch	or pek	850	34 bid
312		370	35	do	bro pek	2100	40
313		373	30	do	pek	2400	30
314		376	10	do	pek sou	950	28
315	Vogan	379	62	ch	bro pek	5890	34
316		382	73	do	pek	5840	30
317		385	14	do	pek sou	1120	25
318		388	8	do	br pk fans	1000	26
319		391	12	hf-ch	dust	1020	23
320	Nakiadeniya	394	20	ch	bro pek	1800	30
321	Palmerston	397	14	hf-ch	bro or pek	725	79
328	Woodthorpe	418	9	ch	bro pek	900	32 bid
329	Ireby	421	27	hf-ch	bro pek	1620	56
330		424	13	ch	pek	1170	39
331		427	9	do	pek sou	810	36
342	K G	460	10	do	pek	1000	29
313	Kotua	463	6	do	bro pek	800	28
351	Dunbar	487	31	hf-ch	bro or pek	1860	54
352		490	27	do	or pek	1485	47
353		493	19	ch	pek	1672	38
354	Hatton	496	44	do	bro pek	4620	57
355		499	56	do	pek	4760	39
356		502	5	do	dust	750	26
357	Neboda	505	30	do	bro pek	3000	30 bid
358	Amblakande	508	13	do	bro pek	1300	33
359		511	17	do	pek	1445	28 bid
360		514	11	do	pek sou	880	26 bid
362	Coreen	520	20	hf-ch	bro or pek	1100	54
363		523	13	ch	bro pek	1430	36 bid
364		526	24	do	or pek	2160	40
365		529	20	do	pek	1800	38
368	Amblangada	538	31	do	bro pek	3100	34
369		541	27	do	pek	2430	31
370		544	12	do	pek sou	1080	27 bid
372	N B	550	10	do	bro tea	750	18
374	Tymawr	556	21	hf-ch	bro or pek	1260	49
375		559	36	do	or pek	1980	43
376		562	43	do	pek	2155	36
377		565	37	do	pek sou	1850	34
378	Anningkande	568	13	ch	bro pek	1300	34
379		571	18	do	pek	1710	27
380	Cotswold	574	18	do	pek	1617	31 bid
381	Lyegrove	577	13	do	bro pek	1265	37
382		580	11	do	pek	990	32
386	Rowley	592	26	hf-ch	bro pek	1300	39
387		595	27	do	pek	1350	31
388	Bandara Eliya	598	46	do	or pek	2208	34 bid
389	Munaar	601	18	hf-ch	bro pek	1080	50
390		604	29	do	or pek	1450	37
391		607	27	do	pek	1350	32
392		610	22	do	pek sou	990	30
393	Morankande	613	14	do	bro or pek	784	32
394		616	17	ch	or pek	1445	33
395		619	13	do	pek	1170	27
398	Galkadua	628	20	do	bro pek	2000	28 bid
399		631	24	do	pek	2400	26 bid
400		634	15	do	pek sou	1500	23 bid
404	Gampaha	646	26	do	bro or pek	2860	37
405		649	22	do	br pek	2090	38
406		652	30	do	pek	2550	34
407		655	22	do	pek sou	1980	30
408	Erracht	658	31	do	bro or pek	2945	30
409		661	11	do	or pek	935	30 bid
410		664	14	do	bro pek	980	29
411		667	37	hf-ch	pek	2405	27
412		670	11	do	pek sou	825	25
415	Gampaha	679	23	ch	bro or pek	2530	39
416		682	15	do	or pek	1425	39
417		685	22	do	pek	1870	34
418		688	12	do	pek sou	1080	31
419	Polatagama	691	23	do	or pek	2067	30 bid
420		694	59	do	pek	5307	29
421	Talgaswela	697	51	do	br or pek	4335	30
422		700	14	hf-c	bro pek	840	27
423		703	54	ch	pek	4320	26
424		706	26	do	pek sou	2080	24

Lot.		Box.	Pkgs.		Name.	lb.	c.
429	Springwood	721	13	ch	congou	1040	24
430	Hopton	724	35	do	bro pek	3497	33 bid
431		727	32	do	pek	2877	31
432		730	14	do	pek sou	1257	27
433		733	53	do	bro pek	5297	33 bid
434		736	42	do	pek	3777	31
435		739	18	do	pek sou	1617	27 bid
436	Carendon	742	18	do	bro pek	1980	28
437		745	12	do	pek	1200	27
438	P S P	748	8	do	bro mix	880	25
439	M M	751	9	hf-ch	dust	756	20
449	C	781	13	ch	sou	1235	25
450	Glendon	784	29	do	bro pek	3045	34
451		787	12	do	or pek	900	35
452		790	28	do	pek	2520	31
453		793	18	do	pek sou	1440	29
454	G	796	10	do	sou	800	25
455		799	13	do	dust	1040	26
456	Glendon	802	37	do	bro pek	3705	32
457		805	20	do	or pek	900	31 bid
458		808	31	do	pek	2480	30
459		811	13	do	pek sou	1040	28
461	Ambragalla	817	119	hf-ch	or pek	5712	30 bid
462		820	80	do	bro or pek	4400	32
465	Ambragalla	829	83	hf ch	or pek	3984	32
466		832	67	do	bro or pek	3886	32
467		835	38	ch	pek	2774	27 bid
468		838	50	do	pek sou	3900	26 bid
476	Arapolakande	862	57	do	bro pek	5130	33 bid
477		865	33	do	pek	2640	28 bid
481	A M B	877	19	do	fans	1900	20
483	Castlereagh	883	21	do	bro pek	2945	47
484		886	33	do	or pek	2805	36
485		889	23	do	pek	1840	32

[Mr. E. John.—263,355 lb.]

Lot.		Box.	Pkgs.		Name.	lb.	c.
5	Poilakande	852	35	ch	or pek	2625	15 bid
6		855	65	do	bro pek	5850	17 bid
7		858	59	do	pekoe	4720	15 bid
8		861	16	hf-ch	dust	1440	22
11	Dalhousie	870	28	do	pek No. 1	1400	32
14	Glasgow	879	68	do	bro or pek	4216	52
15		882	24	do	or pek	1200	50
16		885	17	ch	pekoe	1445	43
17		888	12	do	pek sou	1200	39
18	Templestowe	891	31	do	bro or pek	2480	47
19		894	15	do	or pek	1050	44
20		897	31	do	pekoe	2634	37
21		900	12	hf-ch	fans	1080	32
23		906	9	ch	bro mix	810	23 bid
25	St. John's	912	25	hf-ch	bro or pek	1250	56 bid
26		915	35	do	pekoe	1820	42 bid
27		918	18	do	pek fans	1224	31 bid
28	Glentilt	921	48	do	bro pek	2880	57
29		924	23	ch	or pek	2300	37
30		927	17	do	pekoe	1530	33 bid
31		930	13	do	fans	1040	29
32	Mocha	933	18	do	bro or pek	1800	64
33		936	10	do	or pek	900	56 bid
34		939	13	do	pekoe	1105	48
35		942	11	do	pek sou	880	39
36	Harrisland	945	11	do	bro pek	1045	32
41	Rookwood	960	9	do	bro pek	918	29 bid
42		963	24	do	pekoe	2040	30 bid
43	Wendura	966	11	do	bro pek	1045	30 bid
44		969	9	do	pekoe	720	27 bid
48	Rookwood	981	43	hf-ch	bro or pek (Venesta)	2795	45
49		984	20	do	or pek (Venesta)	1200	37 bid
50		987	34	ch	pekoe	3060	33
51		990	58	do	pek sou	5220	31
52		993	20	do	sou	1440	26 bid
53	Kandaloya	996	45	hf-ch	or pek	1800	31 bid
54		999	75	do	pekoe	3000	30 bid
58	Little Valley	11	8	ch	bro pek No. 2	800	32 bid
59		14	12	do	bro pek No. 1	1200	41
60		17	42	do	pekoe	3570	31
62	Chapelton	23	8	hf-ch	dust	720	26
63		26	10	ch	bro mix	800	24
64	Alplakande	29	11	do	sou	924	24
65	H S, in est. mark	32	13	do	bro mix	1300	15 bid
66	M R	35	9	hf-ch	dust	810	24
67	D H K	38	23	ch	bro pek	2185	22 bid
68		41	9	do	pekoe	720	19 bid
69	Vincit	44	13	do	bro pek	1170	29 bid
70		47	12	do	pekoe	1080	26 bid
72		53	12	do	bro pek fans	1200	19 bid
74	Whyddon	59	15	do	bro pek	1650	45
75		62	16	do	or pek	1520	36 bid
76		65	20	do	pekoe	1900	35
80	Mossend	77	22	hf-ch	bro or pek	1320	45 bid
81		80	20	do	or pek	1000	42 bid
82		83	18	do	pekoe	1350	37 bi

Lot		Box.	Pkgs.	Name.	lb.	c.
83		86	10 hf ch	pek sou	700	29
86	Ottery	95	21 ch	bro or pek	2100	49
87		98	10 do	or pek	850	41 bid
88		101	35 do	pekoe	3500	34 bid
90	Agra Ouvab	107	22 hf-ch	bro or pek	1452	61
91		110	68 do	bro pek	4420	47
92		113	20 ch	pekoe	1900	38 bid
93	Galella	116	15 do	bro pek	1500	41 bid
94	Brownlow	119	16 hf-ch	bro or pek	1880	45 bid
95	K P	122	25 do	bro pek fans	1575	31
96		125	40 do	pek fans	3000	28
97	Galella	128	13 do	dust	1040	26
98	Brownlow	131	25 do	bro or pek	1300	47
99		134	20 ch	or pek	1800	37
100		137	27 do	pekoe	2430	33 bid
101		140	18 hf ch	dust	1566	27
102	N B	143	15 do	dust	1350	26
103	Galella	146	10 ch	bro pek	1000	42
106	N, in est. mark	155	18 do	pekoe	1620	30 bid
107		158	24 do	bro pek fans	2400	29 bid
108		161	23 do	sou	2300	24 bid
109	Oonoogaloya	164	13 do	or pek	1170	38 bid
110		167	14 do	bro or pek	1400	45
111		170	32 do	pekoe	2880	31 bid
112		173	11 do	pek sou	935	27
113		176	11 do	bro or pek No. 2	1320	34
114	Pitadeniya	179	40 hf-ch	bro pek	2320	33 bid
115		182	51 do	pekoe	2295	33
116		185	24 do	pek sou	1080	29 bid
117	Y K, in estate mark	188	24 ch	bro pek fans	2400	29 bid
118		191	46 hf-ch	pek fans	3450	27 bid
119	Nabavilla	194	40 do	bro pek	2400	42 bid
120		197	25 do	pekoe	1250	33 bid
121		200	30 do	pek sou	1500	31 bid
124	Sumtravelle	209	7 ch	unas	700	23
125	M G	212	10 do	unas	900	21
126		215	14 hf-ch	fans	1050	30
127	Bittacy	218	24 ch	bro pek	2280	48 bid
128		221	26 do	pekoe	1950	44
130		227	11 hf-ch	dust	830	28
132	Keenagaha Ella	233	59 do	or pek	3245	33 bid
133		236	54 ch	pekoe	4450	30 bid
134		239	52 do	pek sou	4135	29 bid
135		242	18 do	sou	1320	24
136		245	16 hf-ch	bro pek fans	1040	27
139	Ferndale	254	11 ch	bro or pek	1100	41
142	Gonavy	263	14 hf-ch	bro or pek	700	33
143		266	42 do	bro pek	1890	30 bid
144		269	26 ch	pekoe	1950	29
145		272	11 do	pek sou	1045	26 bid
146		275	12 hf-ch	dust	900	25
148	Bovey	281	22 ch	or pek	1848	28 bid
150		287	17 do	pekoe	1326	26
155	W R	302	25 hf-ch	bro pek fans	1575	29 bid
156		305	42 do	pek fans	1350	27 bid
157	W H R	308	7 do	dust	700	24
158	Ovoca	311	41 do	bro or pek	2255	67
159		314	30 do	or pek	1500	43 bid
160		317	22 do	or pek	1034	43 bid
161		320	23 ch	pekoe	2185	35 bid
162		323	19 do	pek sou	1710	33
163	Myraganga	326	34 do	bro or pek	3060	29 bid
164		329	33 do	pekoe	2640	26 bid
165		332	33 ch	pek sou	2640	24 bid
166		335	24 do	bro pek	2280	27 bid
167		338	9 do	pekoe	855	26 bid
169		344	18 hf-ch	pek fans	1170	26
171	Gampai	350	48 do	or pek	2304	30 bid
172		353	38 do	flow or pek	2204	32 bid
173		356	24 ch	pekoe	1848	27 bid
174		359	27 do	pek sou	2187	24 bid
177	P, in est. mark	368	22 do	pekoe	1980	32 bid
178	Kotuagedera	371	28 do	bro pek	2800	29 bid
179		374	20 do	pekoe	1900	27 bid
180	Morahela	377	23 do	or pek	2162	29 bid
181		380	24 do	bro or pek	2400	31
182		383	18 do	bro pek	1710	28 bid
183		386	22 do	pekoe	1848	26 bid
184	Choughleigh	389	27 hf-ch	or pek	1350	30 bid
185		392	58 do	bro or pek	3248	31 bid
186		395	24 ch	pekoe	2160	28 bid
188		401	12 hf-ch	dust	888	26
189	St. John's	404	25 do	bro or pek	1500	64
190		407	26 do	or pek	1300	67 bid
191		410	30 do	pekoe	1620	43 bid
192	Bellongalla	413	12 ch	bro pek	1200	out
193		416	40 do	pek	3200	out
194		419	30 do	pek sou	2100	out
195		422	24 hf-ch	bro pk fans	1440	23

SMALL LOTS.

E. Benham & Co.

Lot		Box.	Pkgs.	Name.	lb.	c.
5	Halgolla	31	6 ch	bro mix	540	24
6		34	3 do	fans	345	26
7		37	4 do	dust	620	25
14	Mapitigama	58	4 do	bro or pek	420	37
17		67	8 do	pek sou	640	28
18		70	2 do	bro or pek fans	240	28

[Messrs. Forbes & Walker]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	New Peacock	2290	10 hf ch	bro mix	500	25
5	Beverley	2299	5 do	dust	400	28
6	Kakiriskande	2302	3 ch	bro pek	300	36
8		2308	2 do	pek sou	183	25
12	Kincora	2320	6 ch	bro pek	510	39
14		2326	7 ch	pek No. 2	455	28
16		2332	1 hf-ch	dust	57	25
17		2335	1 do	congou	80	18
18	C F, in est. mark	2338	2 ch	pek sou	180	26
19		2341	2 do	sou	180	24
22	D M V	2350	6 ch	pek sou	400	23
23		2353	1 do	fans	100	23
24		2356	1 do	dust	80	23
25		2359	1 do	bro tea	65	21
35	C S G	2389	4 ch	bro mix	400	25
41	Glencorse	2407	2 ch	bro tea	220	25
42		2410	1 do	dust	173	24
53	Mousakelle	2443	6 hf ch	dust	480	26
54		2446	5 do	sou	450	26
58	Shrubs Hill	2458	7 ch	pek sou	560	21
60	Quilou	2464	3 ch	bro tea	240	18
65	Sirikandura	2479	8 ch	pek sou	680	24
66		2482	5 do	bro pek fans	500	25
67		2485	1 do	dust	115	22
71	S	2497	4 ch	sou	393	25
77	Dammeria	2515	4 ch	dust	400	27
78	D M	2518	4 ch	bro pek	480	28
79		2521	3 do	pek	300	26
91	Glengariffe	2557	7 hf-ch	dust	560	25
94	Tembiligalla	2566	5 ch	pek sou	450	27
95		2569	1 hf-ch	bro pek fans	70	26
96		2572	2 do	dust	170	24
98	Glen Alpin	2578	1 ch	pek	87	27
99		2581	1 do	bro pek	104	29
104	Stisted	2596	9 hf ch	bro pek	576	32
105		2599	5 do	dust	400	27
106	K	2602	1 ch	sou	100	27
109	Debiowita	2611	6 ch	pek sou No. 1	540	22
111		2617	1 do	bro tea	90	21
121	H G M	2647	4 hf ch	dust	360	26
128	Putupaula	2668	2 do	sou	150	18
129		2671	6 do	dust	450	24
140	Blairgowrie	2704	3 ch	sou No. 2	240	19
142		2710	6 do	fans	672	22
143		2713	2 do	bro pek dust	324	24
145	U S A	2719	2 ch 1 hf ch	bro tea	222	20
151	L, in estate mark	2737	2 ch	bro tea	182	23
152	A G	2740	2 ch	dust	263	26
153		2743	2 do	bro tea	190	25
154	L B K	2745	1 ch	pek sou	91	26
155	N W D	2749	3 ch	bro tea	300	19
156	C, in estate mark	2752	3 ch	bro tea	273	23
157	C N	2755	5 ch	bro tea	500	18
166	Palmerston	2782	2 hf ch	dust No. 1	170	28
167		2785	1 do	do No. 2	85	27
168		2788	2 do	bro or pek fans	140	35
175	Macaldenia	2809	2 do	dust	170	25
176		2812	5 do	unas No. 1	300	28
177		2815	4 do	unas No. 2	220	25
184	Monkswood	2836	7 hf ch	dust	560	26
185	B and D	2839	3 ch	sou	270	30
186		2842	7 do	unas	630	25
194	Devonford	16	3 ch	dust	255	27
195	D F D	19	4 hf-ch	bro pek	220	33
196		22	3 ch	or pek	270	35
197		25	7 do	pek sou	560	33
198	Ookoowatte	28	1 ch	sou	90	20
199		31	3 do	pek fans	435	27
200		34	3 do	red leaf	225	19
201		37	2 do	dust	210	21
212	Palm Garden	70	6 ch	pek sou	600	24
213		73	2 do	fans	240	23
225	Ninfield	109	4 ch	fans	528	24
227	Carlabeck	115	7 hf cb	bro pek fans	560	30
238	Weyunga-					

Lot.		Box.	Pkgs.	Name.	lb.	c.
	watte	148	4 ch	bro tea	320	23
239		151	5 hf-ch	dust	400	23
240	Harrow	154	7 ch	or pek	665	46
241		166	2 hf ch	dust	170	26
249	K P W	181	2 do	dust	170	23
255	Digdola	199	6 ch	pek sou	540	26
2 6		202	1 do	dust	150	24
260	Queensland	214	2 hf-ch	bro pek dust	160	29
261	N B D	217	2 ch	bro mixed	146	18
2 2		220	3 do	unas	270	18
272	Clunes	250	7 ch	dust	595	23
285	Seenagolla	289	4 hf-ch	bro mix	240	28
289	Warwick	301	4 do	pek fans	280	32
290		304	3 do	dust	270	26
298	Waratenne	328	7 do	dust	595	23
299		331	4 do	fans	320	24
304	Geragama	346	4 do	dust	360	24
305		349	3 do	fans	240	24
306	S in est. mark	352	1 ch	bro pek	110	46
307		355	1 do	pek	80	32
308		358	1 do	pek sou	100	29
309	B in est mark	361	2 do	pek	176	34
310		364	3 do	pek sou	225	32
322	Kelburne	400	1 do	bro pek	105	34
323		403	6 do	pek	540	31
324	Ragalla	406	6 hf-ch	bro or pek	360	39 bid
325		409	8 do	fans	560	30
326		412	2 do	dust	180	26
327		415	1 ch	bro mix	80	20
332	Ireby	430	2 hf-ch	br or pk fans	140	30
333		433	3 do	dust	255	26
334	Peak Shadow	436	2 ch	bro pek	200	26
335		439	2 do	pek	160	25
336		442	4 do	sou	320	24
337		445	2 do	pk fans	200	24
338		448	1 do	dust	130	22
339		451	1 do	bro mixed	110	22
340	Relugas	454	4 do	dust	500	30
341	K G	457	10 hf-ch	bro pek	620	31
344	Kotua	466	6 ch	pek	600	25
345		469	5 do	pek sou	475	24
346		472	2 do	sou	200	23
347		475	1 do	dust	110	21
348	S K M	478	1 hf-ch	bro pek	62	28
349		481	1 do	pek	96	26
350		484	1 ch	pek sou	78	24
391	Amblangoda	517	5 do	dust	500	25
366	Coreen	532	4 do	pek sou	340	34
367		535	4 hf-ch	dust	320	26
371	Amblakande	547	4 ch	dust	420	25
373	N B	553	2 hf-ch	dust	140	23
383	Lyegrove	583	5 ch	pek sou	425	31
384		586	2 do	pek fans	146	28
385		589	1 hf-ch	dust	90	22
396	Morankande	622	7 ch	pek sou	630	26
397	Galkadua	625	3 do	bro or pek	360	30
401		637	2 do	fans	240	26
402		640	1 do	son	100	24
403		643	2 do	dust	354	21
413	Eiracht	673	3 do	br pk fans	378	22
414		676	2 do	dust	320	22
425	Talgaswela	709	5 hf-ch	dust	450	24
426	B B in est mark	712	2 ch	pek	200	26
427		715	3 hf-ch	bro pek	180	25
428		718	2 do	dust	180	23
440	S M	754	4 ch	bro pek	448	25
441		757	1 hf-ch	bro pek	60	24
442		760	4 ch	pek	380	23
443		763	1 hf-ch	pek	58	23
444		766	1 ch	sou	87	19
445		769	5 hf-ch	dust	420	21
446		772	1 ch	dust	150	21
447		775	6 do	red leaf	510	15
448		778	5 hf-ch	fans	350	23
460	G	614	6 ch	sou	510	24
475	Arapolakande	859	6 do	bro pek	660	32
478		868	5 do	pek sou	450	26
479		871	3 do	dust	315	25
480	A	874	5 do	sou	450	24
482	A M B	880	8 do	bro tea	680	19

[Messrs. Somerville & Co.]

Lot		Box.	Pkgs.	Name.	lb.	c.
1	St. Leys	229	2 hf ch	red lea	110	17
2		232	1 do	fans	90	20
6	Marigold	244	2 hf ch	flowery pek	126	43
10		256	9 do	pek dust	675	23
14	Honiton	268	2 ch	fans	200	24
15		271	2 do	dust	280	22
24	H A	298	4 ch	fans	400	15
25		301	2 do	bro tea	154	13
26	S	304	6 hf-ch	dust	480	25
27		307	10 do	bro tea	500	21
28	A	310	4 do	dust	320	24

Lot,		Box.	Pkgs.	Name.	lb.	c.
29		313	6 hf-ch	bro tea	300	21
32	Theberton	322	2 ch	pek fans	200	24
39	Maligatenne	343	3 ch	bro pek	275	21
40		346	5 do	pek	493	19
41		349	6 do	pek sou	474	17 bid
42		352	2 do	bro sou	182	14
46	San Cio	364	13 hf-ch	sou	481	19 bid
47		367	4 do	bro mix	1 2	17
48		370	4 do	dust	240	24
51	Forest Hill	379	6 ch	pek sou	480	25
52		382	4 hf ch	fans	300	25
56	Mousakande	394	8 ch	pek sou	656	25 bid
60	Hatdowa	406	5 ch	fans	500	24
61		409	6 do	sou	450	21
71	Annandale	439	9 hf-ch	sou	441	29
12	R, in estate mark	442	4 hf-ch	con	204	16
73	Weyweltalawa	445	5 ch	bro or pek	400	31
74		448	6 do	or pek	420	36
76		454	9 ch	pek sou	495	26
77		457	2 hf-ch	dust	160	26
78		460	4 ch	pek fans	320	27
79		463	5 do	bro tea	325	23
78	Nuawella	490	5 ch	bro mix	425	19
80	R K P	496	3 ch	bro or pek	300	28
91		499	7 do	pek	595	26
95	Carney	511	7 hf-ch	sou	350	23
96	A	514	2 ch	dust	260	22
97	Welgampola	517	9 hf ch	bro pek	504	33
99		523	13 do	pek sou	650	24
900	B F	526	4 hf-ch	pek fans	320	27
103	Dryburgh	535	10 hf ch	bro or pek	540	36
104		538	9 do	or pek	423	36
107		547	3 do	fans	207	27
111	R C T F, in estate mark	559	3 hf ch	dust	225	24
112	H, in estate mark	562	2 ch	dust	260	22
118	Nyanza	580	2 ch	fans	200	27
119	X X, in estate mark	583	1 ch	dust	117	22
121	Oouankande	589	7 ch	pek	595	27 bid
122		592	9 do	pek sou	675	25 bid
124	F A, in estate mark	598	4 ch	pek sou	312	28
125		601	4 hf-ch	dust	348	27
126		604	4 ch	pek sou	240	30
127		607	8 hf ch	dust	544	27
128	A	610	2 ch	pek dust	230	23
143	Doragalla	6 7	0	bro mix	675	22
147	Mahatenne	660	5 ch	pek sou	475	25
148		673	3 do	dust	300	25
149		67	1 do	bro tea	100	19
150	Danawkande	676	9 hf ch	bro pek	450	31
152		682	13 do	pek sou	650	25
153		685	4 do	fans	240	19 bid
154		688	2 do	c. n	85	23
155		691	1 do	dust	80	23
156		694	1 do	red leaf	50	21
157	O S T	697	2 hf-ch	bro pek	112	26
158		700	2 do	pek	100	25
159		703	2 do	pek sou	100	24
160		706	1 do	pek dust	80	21
165	G A	721	1 hf ch	dust	78	20
166		724	8 ch	bro mix	584	18
171	Galpottagama	739	4 ch	bro pek No. 1	390	26
172		742	6 do	bro pek	600	26
173		745	3 do	pek No 1	270	24
174		748	6 do	pek	540	22
175		751	8 do	pek sou	680	20
176		754	1 do	dust	150	18
577		757	1 do	red leaf	85	12
180	H R O	766	6 ch	red leaf	600	13 bid
184	Rambodde	778	2 hf-ch	dust	180	26
189	California	793	6 ch	pek	570	26
190		793	4 do	pek sou	380	24
202	Salawe	832	2 ch	pek dust	330	24
204	Mipitiakande	838	8 hf-ch	pek fans	640	25
208	Depedene	850	4 hf-ch	dust	360	26
215	Mary Hill	871	5 hf-ch	bro or pek fans	325	30
217		877	4 do	bro tea	240	24
218		880	3 do	dust	225	25
224	Lower Dickoya	893	2 hf-ch	dust	180	25

[Mr. E. John.]

Lot,		Box.	Pkgs.	Name.	lb.	c.
1	Theresia	840	3 ch	bro pek fans	270	33
2		843	7 hf-ch	dust	560	25
3		846	1 ch	sou	80	33
4	Suriya	849	1 hf-ch	unas	30	25 bid
9	Dalhousie	864	11 do	bro pek	605	59
10		867	7 do	or pek	315	41
12		873	15 do	pek No. 2	675	29
13		876	5 do	fans	300	29

Lot.		Box.	Pkgs.	Name.	lb.	c.
22	Templestowe	903	6 ch	sou	510	26
24		909	4 bf-ch	dust	320	26
27	Harrisland	948	8 ch	pekoe	640	29 bid
38		951	7 do	pek sou	560	27 bid
39		954	5 do	pek sou No.2	450	25 bid
40		957	2 hf-ch	dust	170	26
45	Wendura	972	6 ch	pek sou	480	27 bid
46		975	4 do	pek sou No.2	360	25 bid
47		978	1 hf-ch	dust	54	26
55	Kandaloy	2	8 do	pek sou	320	27
56		5	8 do	fans	400	26
57		8	10 do	dust	500	25
61	W, in est. mark	20	1 ch	bro tea	91	23
71	Vincit	50	5 do	pek sou	450	24
73		56	2 do	dust	300	21
77	Whyddon	68	5 do	pek sou	425	29
78		71	1 do	bro pek fans	125	30
79		74	2 do	dust	290	26
84	Mossend	89	2 bf-cb	fans	120	33
85	Harrisland	92	2 do	fans	170	29
89	Ottery	104	2 do	dust	180	26
104	Galella	119	8 cb	pekoe	680	33
105		152	4 do	pek sou	340	30
122	Nahavilla	203	8 hf-ch	pek fans	560	32
123		206	5 do	dust	400	27
129	Bittacy	224	6 ch	pek sou	535	34
131		230	2 do	bro mix	180	29
137	Keenagaha Ella	248	2 hf-ch	dust	180	22
138	The Farm	251	6 do	dust	540	24
147	Gonavy	278	4 ch	congou	320	35
151	Bovey	290	3 do	pek sou	228	24
154	Morakona	299	1 do	dust	150	24
168	Myraganga	341	7 do	bro mix	560	24
170		347	8 bf-ch	dust	680	23
175	Gampai	362	2 do	dust	170	25
176		365	1 do	red leaf	50	24
187	Choughleigh	398	4 ch	pek sou	340	27

CEYLON COFFEE SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, May 4.

"Wakasa Maru."—Wiharagalla F, 1 barrel sold at 90s; ditto 1, 1 barrel sold at 85s; ditto 2, 1 cask and 1 tierce sold at 76s; ditto S, 1 barrel sold at 49s; ditto PB, 1 barrel sold at 73s; WHG T, in estate mark, 1 tierce sold at 42s.

"Workman."—Gonakelle F, 1 barrel sold at 112s; ditto 1, 1 tierce sold at 108s; ditto 2, 1 barrel and 1 cask sold at 98s 6d; ditto S, 1 barrel sold at 53s; ditto PB, 1 barrel sold at 76s; GK T, in estate mark, 1 barrel sold at 40s.

CEYLON COCOA SALES IN LONDON.

"Stentor."—Warriapolla, 39 bags sold at 97s; 55 bags sold at 92s 6d; 3 bags sold at 67s; 13 bags sold at 64s; Suduganga, 30 bags sold at 96s 6d; 2 bags sold at 81s; 1 bag sold at 76s; 6 bags sold at 85s 6d; 1 bag sold at 67s; 3 bags sold at 59s 6d; 6 bags sold at 60s.

"Elphinstone."—O AB, in estate mark, London, 36 bags sold at 69s.

"Clan McPherson."—O JL, in estate mark, 20 bags sold at 68s; ditto 15 bags sold at 69s.

"Wakasa Maru."—Kcenakelle, London, 2, 1 bag sold at 60s; ditto S, 3 bags sold at 60s 6d.

"Ceylon."—K A S & Co., 98 bags sold at 70s 6d.

"Patroclus."—A, 3 bags sold at 72s.

"Wakasa Maru."—Glangapitiya A, 5 bags sold at 83s 6d; B, 4 bags sold at 57s 6d; Alluwiharie B, 2 bags sold at 59s 6d; C, 1 bag sold at 50s; Alluwiharie, 25 bags sold at 50s 6d; C, 1 bag sold at 56s.

"Workman."—Wariagalla, 9 bags sold at 83s 6d.

"Wakasa Maru."—Kepitigalla, 6 bags sold at 78s 6d; 3 bags sold at 65s; 3 bags sold at 53s; 3 bags sold at 60s; 4 bags sold at 48s 6d; 1 bag sold at 59s.

OBSERVER PRINTING WORKS.

No. 20 COLOMBO, JUNE 4, 1900. PRICE:—12½ cents each 3 copies, 30 cents; 6 copies ½ rupee.

COLOMBO SALES OF TEA

LARGE LOTS.

E. Benham & Co.

[14,384 lb.]

Lot.		Box.	Pkgs	Name.	lb	c.
1	Meddakande	20	22 ch	bro or pek	2260	34 bid
2		23	22 do	or pek	2200	32 bid
3		26	25 do	pek	2375	31
4		29	20 do	pek sou	1800	28
5		32	20 hf-ch	fans	1400	27
6	Battalgalla	35	26 ch	pek sou	2210	32
9	Oakfield	44	18 ch	pek sou	1314	25 bid

Messrs. Forbes & Walker.

[581,134 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Andaradenia	892	16 ch	bro pek	1000	29
2		895	8 do	pek	800	27
7	New Angamana	910	18 ch	bro pek	1800	27
8		913	14 do	pek	1340	27
9		916	9 do	pek No. 2	810	22
10		919	10 do	pek sou	900	21
11	Maligatenne	922	10 ch	bro pek	1100	27
13		928	12 do	pek	1100	24
19	Cooroondoowatte	946	7 ch	pek	700	32
20		949	7 do	pek sou	700	27
21	Freds Ruhe	952	58 ch	bro pek	5800	31
22		955	47 do	pek	4230	28
23		958	22 do	pek sou	1980	25
26	Udapolla	967	15 ch	bro pek	1500	28
27		970	13 do	pek	1300	26
30	Ewhurst	979	32 ch	bro pek	3104	23 bid
31		982	35 do	pek	2835	27
32		985	13 do	pek sou	949	24
40	Thedden	1009	26 ch	bro pek	2600	30 bid
41		1012	25 do	pek	2250	27 bid
42		1015	9 do	pek sou	765	25
44	Dambagastalawa	1021	15 ch	bro or pek	1590	65
45		1024	23 do	bro pek	2438	42
46		1027	23 do	pek	2070	37
49	Bickley	1036	28 hf ch	pek	1540	32
55	Rockside	1051	4 ch	dust No. 2	700	24
57	P A N, in estate mark	1060	19 ch	bro pek	2185	29
58		1063	13 do	pek	1365	27
59		1066	7 do	pek sou	735	24
61	Loinorn	1072	28 ch	or pek	2520	70
62	Sunnycroft	1075	7 ch	bro tea	875	16
63	Corfue	1078	22 hf-ch	or pek	1100	41
64		1081	32 do	bro pek	1920	40
65		1084	42 do	pek	2100	33
66		1087	17 do	pek sou	850	30
68	Penrhos	1093	32 hf ch	bro or pek	1219	44 bid
69		1096	30 do	or pek	1350	42
70		1099	39 do	pek	3237	31
71		1102	11 do	pek sou	803	29
73	Weoya	1108	8 ch	bro or pek	880	28
74		1111	30 do	bro pek	3000	28
75		1114	38 do	or pek	3610	31
76		1117	65 do	pek	5525	27
77		1120	44 do	pek sou	3432	25
78		1123	9 do	dust	1350	24
79	Gampaha	1126	24 ch	bro or pek	4620	37
80		1129	44 do	pek	3740	37
81	Maha Uva	1132	61 hf ch	bro or pek	3660	35
82		1135	33 do	or pek	1848	36
83		1138	59 ch	pek	5310	36
84		1141	28 do	pek sou	2240	30
86	Polatagama	1147	45 ch	bro pek	4500	80
87		1150	23 do	or pek	1955	29
88		1153	41 do	pek	3485	26
89		1156	26 do	pek sou	2210	24
90		1159	16 do	fans	1600	27
92	Aberdeen	1165	74 ch	bro pek	7104	32
93		1168	94 do	pek	7332	28
94		1171	25 hf-ch	bro pek fans	1750	28
95	Dunkeld	1174	71 hf ch	bro or pek	4260	46
96		1177	16 ch	or pek	1520	38
97		1180	27 do	pek	2430	37
98	Fairlawn	1183	28 hf-ch	bro pek	1540	52
99		1186	9 ch	or pek	720	36 bid
100		1189	22 do	pek	1980	33

Lot,		Box.	Pkgs.	Name.	lb.	c.
103	Ouvah Kellie	1198	15 ch	pek sou	1350	36
104		1201	10 do	dust	800	27
105	Theydon Bois	1204	22 ch	or pek	1870	36
106		1207	37 do	pek	2960	30 bid
107		1210	20 do	pek sou	1700	28
108	Queensland	1213	16 hf-ch	bro pek	800	46
109		1216	18 ch	pek	1530	35
110	Palmerston	1219	15 hf-ch	bro or pek	780	60 bid
111		1222	12 ch	pek	1020	44
113	Halwatura	1228	30 ch	bro pek	3000	30 bid
114		1231	55 do	or pek	5225	30
115		1234	58 do	pek	4930	28
116		1237	64 do	pek sou	4800	26
117		1240	22 hf-ch	bro pek fans	1540	27
119	Geragama, Invoice No. 20	1246	14 ch	bro pek	1120	28
120		1249	33 do	pek	2640	26
121	Waratenne, Invoice No. 21	1252	11 ch	bro pek	880	28
122		1255	14 do	pek	1120	25
123	Waratenne, Invoice No. 22	1258	20 ch	bro pek	1100	29
124		1261	16 do	pek	1280	25
125	Gomalia	1264	34 ch	or pek	3230	41 bid
126		1267	31 do	bro pek	3410	49 bid
127		1270	25 do	pek	2250	38 bid
128		1273	16 do	pek sou	1200	36 bid
134	Harrington	1291	23 hf ch	bro or pek	1150	58
135		1294	23 ch	or pek	2185	41
136		1297	25 do	pek	2375	38
141	Great Valley Ceylon, in est. mark	1312	24 hf ch	or pek	2160	40
142		1315	59 ch	bro pek	3245	41
143		1318	51 do	pek	4590	35
144		1321	35 do	pek sou	2625	29
145	St. Stephen's	1324	12 hf ch	bro or pek	720	26
147		1330	14 do	pek	770	25
152	Doranakande	1345	8 ch	pek	760	26
156	Chesterford	1357	18 ch	fans	2160	26
158		1363	24 do	dust	1440	24
159	Roeberry	1366	9 ch	bro or pek	900	57
160		1369	12 do	bro pek	1200	44
161		1372	22 do	pek	2024	38
162	Shrubs Hill	1375	30 ch	pek	2550	29 bid
163	Galapitakande	1378	15 ch	or pek	1350	34
164		1381	21 do	bro pek	2184	32 bid
165		1384	11 do	pek	1302	31
166		1387	12 do	pek sou	1030	27
168	Errollwood	1393	19 hf ch	bro or pek	950	62
169		1396	19 ch	or pek	1805	42 bid
170		1399	16 do	or pek	1520	41
171		1402	22 do	pek	1870	34
172		1405	9 do	pek sou	855	32
173	Ascot	1408	160 ch	bro pek	14400	28
174		1411	12 do	pek	1080	26
175		1414	9 do	pek sou	810	25
176	Gallawatte	1417	9 ch	pek	726	26
177	Gallawatte	1420	12 do	bro pek	1033	32 bid
178		1423	12 do	pek	960	27
180	P G A	1429	16 ch	pek	1440	22 bid
185	Mawiligangawatte	1444	51 ch	bro pek	5100	26
186		1447	58 do	pek sou	4640	23
189	Kennington	1456	7 ch	bro pek fans	700	27
193	Weweywatte	1468	29 hf-ch	bro pek	1624	27 bid
194		1471	21 do	pek	1050	24
196	Shrubs Hill	1477	44 ch	bro pek	4048	30
197		1480	30 do	pek	2340	27
198		1483	10 do	bro pek fans	740	23
200	Cooroondoowatte	1489	12 hf ch	bro pek	700	44
201	P S P	1492	7 ch	or pek fans	854	28
203	Etungahawatte	1498	10 do	bro pek	980	22
204		1501	12 do	bro pek No. 2	1200	22
205		1504	9 do	pek	882	21
208	Ardlaw and Wishford	1513	12 ch	bro or pek	1140	51
209		1516	16 do	bro pek	1440	41
210		1519	14 do	or pek	1170	40
211		1522	16 do	pek	1200	36
215	Matale	1534	51 hf ch	bro pek	2805	30 bid
216		1537	20 ch	pek	1700	28 bid

Lot		Box.	Pkgs.	Name.	lb.	c.
217		1540	13 ch	pek sou	1105	26
219	Parsloes	1546	35 do	hro pek	3500	37
220		1549	23 do	pek	2070	30
222		1555	10 hf ch	dust	900	23
224	Torwood	1561	30 ch	hro pek	2640	33
225		1564	19 do	pek	1444	28 bid
226		1567	15 do	pek sou	1080	26
227		1570	11 hf-ch	hro pk fans	726	28
228	Walton	1573	17 ch	bro pek	1904	33
229		1576	18 do	or pek	1620	36
230		1579	15 do	pek	1350	27
233	W	1588	7 do	unast	700	23
234	Frogmore	1591	26 hf-ch	hro pek	1560	37
236		1597	16 do	bro or pek	880	57
237		1600	14 do	pek	1050	32
238		1603	16 do	pek	1280	31
240	Passara Group	1609	18 ch	or pek	1620	26
241		1612	16 do	bro or pek	1600	40
242		1615	17 do	pek	1530	34
243		1618	10 do	pek sou	1000	29
244	Old Madde-gama	1621	29 do	bro or pek	2030	30 bid
246		1627	25 do	pek	1875	26
248		1633	7 do	dust	700	27
249	Monkswood	1636	20 hf-ch	hro pek	1200	69
250		1639	28 do	or pek	1540	77
251		1642	20 ch	pek	2000	50
252	Ella Oya	1645	10 do	or pek	850	33
253		1648	14 do	bro pek	1400	28
254		1651	23 do	pek	1840	30
255		1654	18 do	pek sou	1440	27
256	Putupaula	1657	41 do	bro pek	4227	29 bid
257	Palmerston	1660	17 hf-ch	hro or pek	884	69 bid
258		1663	14 ch	pek	1190	47
259	Macaldeniya	1666	22 hf-ch	bro pek	1320	31
261		1672	23 do	pek	1265	28
262		1675	9 ch 2 hf-ch	pek sou	1005	25
267	Irehy	1690	13 ch	pek	1170	42 hid
268		1693	9 do	pek s u	810	34 hid
299	Amhragalla	1696	52 hf-ch	or pek	2496	30 hid
270		1699	119 do	or pek	5709	35
271		1702	48 do	bro or pek	2784	31 bid
272		1705	27 ch	pek	1971	28
273		1708	38 do	pek	2771	27
274		1711	39 do	pek sou	3042	26
275	Vogan	1714	52 do	bro pek	4940	31 bid
276		1717	60 do	pek	5100	27 bid
277		1720	12 do	pek sou	960	25
278		1723	7 do	br pk fans	875	27
279		1726	10 hf ch	dust	850	25
280	P'Kanda	1729	12 ch	bro pek	1200	30 hid
281		1732	14 do	pek	1190	27
282	Galkadua	1735	24 do	pek	2397	26
283		1738	15 do	pek sou	1497	24
284	New Galway	1741	13 hf-ch	hro pek	780	59
285		1744	18 do	pek	990	47
294	Woodend	1771	55 ch	hro pek	5000	28 bid
295		1774	62 do	pek	5580	27
296		1777	16 do	pek sou	1280	24
297		1780	6 do	dust	840	25
303	Middleton	1798	22 do	pek sou	1980	42
304	Ganapalla	1801	10 do	or pek	900	31
305		1804	27 do	hro or pek	2430	31
306		1807	25 do	hro pek	2250	28
307		1810	33 do	pek	3046	27
309		1816	9 do	br pk fans	1035	27
310	High Forest	1819	61 hf-ch	or pk No. 1	3660	79
311		1822	39 do	or pek	2145	56
312		1825	20 do	hro or pek	1440	44
313	Erracht	1828	38 ch	bro or pek	3610	28
314		1831	13 do	or pek	1040	30
315		1834	25 do	bro pek	1750	28
316		1837	46 do	pek	2990	26
317		1840	17 do	pek sou	1275	25
321	Dea Ella	1852	37 hf-ch	hro or pek	2035	35
322		1855	76 do	or pek	3800	29
323		1858	57 do	pek	2850	27
324		1861	33 do	pek sou	1584	25
325		1864	12 do	fans	780	28
326		1867	10 do	dust	750	26
327	Knavesmire	1870	49 ch	hro pek	4900	32
328		1873	37 do	pek	3145	30
329		1876	18 do	pek	1850	28
330		1879	18 hf-ch	dust	1530	26
331	Hopton	1882	42 ch	hro pek	4200	34
332		1885	34 do	pek	3060	30 bid
333		1888	14 do	pek sou	1260	28
338	Clyde	1903	39 do	bro pek	3510	36
339		1906	25 do	pek	2250	31
342		1915	7 do	bro or pek	805	32
346	St. Martin	1927	37 hf-ch	bro pek	1480	28 bid
347		1930	60 do	pek	2400	27
358	Talgaswela	1963	27 ch	bro or pek	2430	28
359		1966	35 do	pek	2975	26
360		1969	26 do	pek sou	1950	23
362	Forest Creek	1975	17 do	bro or pek	1700	59 bid
363		1978	27 do	br pek	2700	48
364		1981	19 ch	or pek	1900	45
365		1984	27 do	pek No. 1	2430	39
366		1987	25 do	pek No. 2	2500	36
367	Nilloomally	1990	30 do	bro or pek	3000	42 bid
368		1993	19 do	br pek	00	35
369		1996	18 do	or pek	1548	33
370		1999	18 do	pek sou	1440	29
371	T'Villa	2002	16 do	bro or pek	1600	28
372		2005	8 do	or pek	800	27
373		2008	19 do	pek	1615	25
374		2011	11 do	pek sou	880	22
376	Tymawr	2017	18 hf-ch	bro or pek	1080	51
377		2020	21 do	or pek	1155	42
378		2023	24 do	pek	1200	41
379	Malvern	2026	46 do	hro pek	2530	36
380		2029	42 ch	pek	2940	30
381	Gallawatte	2032	12 do	bro pek	1080	33
382		2035	17 do	pek	1360	27
383		2038	10 hf-ch	pk fans	700	28
384	Agra Oya	2041	13 ch	bro pek	1300	36
385		2044	11 do	or pek	935	34
386		2047	12 do	pek	1080	29
387		2050	11 do	pek sou	990	27
388	Munaar	2053	51 hf-ch	or pek	2545	35
389		2056	200 do	pek	10000	35
390		2059	53 do	pek sou	2385	29

[Messrs. Somerville & Co.—
249,479 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
1	Oolapane	901	13 ch	pek sou	1170	27
2		904	16 hf-ch	dust	1200	27
3	Mahalla	907	31 hf-ch	bro pek	1488	30
4		910	11 ch	pek	980	27
9	Lonach	925	65 hf ch	bro pek	3575	34
10		928	25 ch	pek	2125	31
11		931	17 do	pek sou	1360	29
12	Columbia	934	28 hf ch	or pek No. 1	1400	47
13		937	40 do	or pek No. 2	1800	40
14		940	28 do	pek	1260	38
15	Tientsin	943	12 ch	pek sou	960	34
17	Dryburgh	949	18 ch	pek	1440	27
18		952	14 do	pek sou	952	25
20	D	958	8 ch	bro pek	800	27 bid
21		961	8 do	pek	760	24
25	Avissawella	973	16 ch	hro pek	1520	29
26		976	34 do	pek	2720	25 bid
27		979	18 do	pek sou	1350	24
29		985	8 do	fans	800	23
30	Kurulugalla	988	21 ch	hro pek	2100	29
31		991	25 do	pek	2250	27
32		994	7 do	pek sou	700	23
33	K G A, in estate mark	997	7 ch	bro tea	700	14
36	Ambalawa	7	19 hf-ch	pek	817	26
37		10	20 do	pek sou	760	24
38	San Cio	13	19 hf-ch	sou	703	23
39	Oakham	16	22 hf-ch	or pek	990	42
40		19	25 do	hro pek	1500	50
41		22	18 ch	pek	1620	37
44	Kallebokka	31	40 ch	hro pek	4200	37
45	Attiville	34	16 ch	bro pek	1600	24 bid
46		37	17 do	pek	1615	20 bid
47		40	9 do	unas	810	18
51	Wilpita	52	14 ch	hro pek	1400	27
52		55	12 do	pek	1125	24
57	A T	70	39 ch	hro pek	3744	28
58		73	35 do	pek	2450	24
59		76	27 do	pek sou	1728	22
60	Ladysmith	79	50 ch	hro pek	4500	28
61		82	60 do	pek	4080	26
62	Siriniwasa	85	24 ch	bro pek	2400	36
63		88	28 do	pek	2660	29
64		91	15 do	pek sou	1350	24 bid
69	P T N, in estate mark	106	39 hf-ch	pek sou	1950	20
72	Paragahakande	115	9 ch	bro pek	900	28 bid
73		118	15 do	pek	1425	23 bid
78	Bogahagoda-watte	133	18 ch	hro pek	1800	28
79		136	13 do	pek	1235	24
80		139	10 do	pek sou	950	21
82	Ladysmith	145	55 ch	bro pek	5060	27
83		148	33 do	pek	2376	27
84		151	22 do	pek sou	1650	24
85	Deloongama	154	7 ch	bro pek	735	26 bid
86		157	7 do	hro pek No 2	910	23
87		160	15 hf-ch	pek	780	22 bid
88		163	11 ch	pek sou	1155	19
89	Gangwarily	166	24 do	sou	1920	23
91		172	15 hf-ch	fans	975	24
95	Wavena	184	19 ch	bro pek	1805	31
96		187	16 do	pek	1280	28
99	Fairfield	196	22 hf-ch	bro or pek	1210	58 bid
100		199	23 ch	bro pek	2530	46

Lot.		Box.	Pkgs.	Name.	lb.	c.
101		202	19 ch	pek	1710	40
102		205	19 do	pek sou	1710	37
106	Labuduwa	217	14 hf ch	pek sou	745	24
110	Moragalla	229	14 ch	bro pek	1400	28 bid
111		232	16 do	pek	1600	26
112		235	10 do	pek sou	1000	24
113	Comillah	238	16 hf-ch	bro pek hooped	800	29
120	Harangalla	259	27 ch	bro pek	2700	34
121		262	38 do	pek	3230	28 bid
122	Lyndhurst	265	42 hf-ch	bro pek	2310	28 bid
123		268	30 do	pek	1500	26
126	Narangoda	277	38 ch	bro pek	3800	28 bid
127		280	22 do	pek	2090	26
128		283	12 do	pek sou	1080	24
131	G watte	292	23 do	bro pek	2300	27
132		295	20 do	pek	1900	24 bid
133		298	15 do	pek sou	1350	22 bid
135	Ranasinghapatna	301	44 hf ch	or pek	2112	31 bid
136		307	32 do	bro or pek	1856	33
137		310	25 do	pek	1925	26 bid
138		313	30 ch	pek sou	2430	25 bid
139	Deniyaya	316	46 ch	bro pek	4600	32
140		319	28 do	pek	2800	28
141		322	22 do	pek sou	2200	26 bid
142		325	13 do	sou	1200	24 bid
143	Kekunaheena	328	40 ch	bro pek	4000	32
144	New Valley	331	26 ch	bro or pek	2860	49
145		334	18 do	or pek	1800	37
146		337	18 do	pek	1800	35
147		340	23 do	pek sou	1955	34
149	N I T	346	28 ch	unas No. 2	2240	20 bid
150	Oaklands	349	17 ch	or pek	1615	28
151		352	7 do	bro pek	700	26
152		355	15 do	pek	1350	24
173	Rayigam	418	26 ch	bro pek	2470	32
174		421	19 do	or pe	1520	30
175		424	22 do	pek	1760	25
176		427	13 do	pek sou	1105	26
177	Neboda	430	20 ch	bro or pek	2000	28
178		433	59 do	bro pek	5900	28
179		436	15 do	pek	1350	25
180		439	25 do	pek sou	2000	23
182	Neuchatel	445	37 ch	bro pek	3700	28 bid
183		448	32 do	pek	2720	25 bid
184		451	17 do	pek sou	1360	23 bid
185		454	9 do	bro or pek	1125	28
186	Hangranoya	457	130 hf-ch	bro pek	6500	28
187		460	18 do	or pek	1350	26
188	Dambawella	463	0 ch	bro pek	850	26
189		466	12 do	pek	1020	27
190		469	8 do	pek sou	720	22
191	Daluk Oya	472	14 hf-ch	bro or pek	840	38
192		475	23 do	or pek	1265	36
193		478	30 do	pek	1650	31
199	Allagolla	496	10 ch	pek	850	28
200		499	9 do	pek sou	747	25
201	Ambalawa	502	18 hf-ch	bro pek	936	28
202		505	13 do	pek fans	780	26
203	J M D M	508	11 ch	bro pek	1100	28
204		511	18 do	pek	1530	24 bid
206		517	11 do	fans	1100	23
209	P	526	9 ch	unas	852	15 bid

[Mr. E. John.—273,010 lb.]

Lot.		Box.	Pkgs.	Name.	lb.	c.
2	P D	428	10 ch	bro pek	700	27
3		431	20 hf-ch	pek sou	900	26
8	Wadhurst	446	8 ch	bro pek	800	46
9		449	12 do	pekoe	1080	37
10		452	8 do	pek sou	720	27
13	Ben Nevis	461	22 hf-ch	bro pek	1320	45
14		464	18 do	or pek	810	51
15		467	17 ch	pekoe	1530	39
18	Glasgow	476	50 do	bro or pek	3200	54
19		479	14 do	or pek	1260	50
20		482	16 do	pekoe	1360	44
21		485	17 do	pek sou	1700	41
22	Rondura	488	34 do	bro pek	3400	29
23		491	28 do	or pek	2520	33
24		494	80 do	pekoe	6400	28
25		497	29 do	pek sou	2320	25
26		500	7 do	dust	910	21
27	Uda	503	14 do	bro pek	1260	27 bid
28		506	26 do	peko	2080	22 bid
29	Poilakande	509	10 do	or pek	750	22
30		512	50 do	bro pek	4500	25
31		515	50 do	pekoe	4000	20
32	Rookwood	518	13 do	bro or pek (Venesta)	1560	42
33		521	10 do	or pek (Venesta)	1120	39
34		524	15 do	pekoe (Venesta)	1650	36
35		527	19 ch	pek sou (Venesta)	2014	30
36		530	13 do	sou	936	26
38	Mount Clare	536	16 do	bro or pek	1552	39
39		539	16 do	or pek	1376	34
40		542	16 do	pekoe	1362	30
41		545	12 do	pek sou	960	27 bid
42		548	11 do	sou	968	22 bid
45	Tempo	557	21 do	bro pek	2280	30
46		560	32 do	pekoe	2560	27 bid
47	Mocha	563	23 do	bro or pek	2300	65
48		566	14 do	or pek	1330	57 bid
49		569	19 do	pekoe	1710	50
50		572	9 hf-ch	fans	720	36
53	N B	581	11 ch	pek sou	1045	26
54		584	10 do	sou	950	26
65	Gangawatte	587	23 do	or pek	2300	35
95		590	26 do	bro or pek	2860	49
57		593	13 do	bro pek	1365	39
58		596	13 do	pekoe	1300	33
59		599	16 do	pek fans	1920	38
60	Westhall	602	13 hf-ch	dust	1170	22
61		605	10 ch	bro mix	1050	28
62	Doonhinde	608	16 do	bro pek	1760	39
63		611	23 do	pekoe	2300	35
64		614	9 do	pek sou	855	29
66	Dickapitiya	620	21 do	bro pek	2100	34
67		623	33 do	pekoe	3300	29
68		626	15 hf-ch	fans	975	29
69	Ratwatte	629	39 ch	bro pek	3900	30
70		632	43 do	pekoe	3870	27
71		635	13 do	pek sou	1010	25
72	Glassaugh	638	17 hf-ch	or pek	884	79
73		641	12 do	bro or pek	780	58
75		647	11 ch	pekoe	1045	51
79	Lunugalla	659	14 do	pekoe	1120	22
82	Rookwood	668	43 hf-ch	bro or pek	2795	43 bid
83	Galloola	671	31 ch	bro pek	3100	42
84		674	35 do	pekoe	3500	37
85		677	28 do	pek sou	2520	30
91	Wendura	695	11 do	bro pek	1045	29
92		698	9 do	pekoe	720	27
95	Vincit	707	13 do	b o pek	1170	29 bid
96		710	12 do	pekoe	1080	25
98		716	12 do	bro pk fans	1200	24
99	Eadella	719	11 do	or pek	990	29 bid
100		722	26 do	bro pek	2600	28 bid
101		725	21 do	pekoe	2100	26 bid
102		728	13 do	pek sou	1105	25 bid
107	B K	743	42 hf-ch	fanns	3150	27 bid
108		746	17 ch	dust	2890	21 bid
109	Poilakande	749	20 do	or pek	1600	27
110		752	20 do	bro pek	1800	29
111		755	20 do	pekoe	1600	25
112	Suduganga	758	14 do	or pek	1260	38
113		761	14 hf ch	bro or pek	840	48
114		764	22 ch	pek sou	1760	29
117	Birnam	773	24 do	pek sou	1584	31
118	Glentilt	776	49 hf-ch	bro pek	2940	51
119		779	24 ch	or pek	2400	41
120		782	18 do	pekoe	1620	37
121		785	10 do	pek sou	950	32
122	Eila	788	77 do	bro or pek	7700	29 bid
123		791	53 do	pekoe	4240	25 bid
124		794	14 hf-ch	dust	1190	22 bid
125	Orangefield	797	14 ch	bro pek	1400	26
126		800	14 do	pekoe	1330	24
132	Eladuwa	818	19 do	pekoe	1510	24
133		821	8 do	pek sou	740	22
135	Maskeliya	827	35 do	or pek	3150	37
136		830	26 hf-ch	bro or pek	1300	68
137		833	26 ch	pekoe	2080	32
139	Bovey	839	14 hf-ch	bro pek	868	29 bid
142	Ferndale	848	12 ch	or pek	1080	41
143		851	13 do	pekoe	1170	33
144	Hiralouvah	854	18 do	or pek	1620	32 bid
145		857	22 hf-ch	bro or pek	1320	33 bid
146	Gonavy	860	30 do	or pek	1350	35
147		863	19 do	bro pek	950	39
148		866	18 ch	pekoe	1350	32
149		869	10 do	pek sou	900	29
150	Loughton	872	10 hf-ch	bro or pek	500	29 bid
151		875	30 do	bro pek	1500	31 bid
152		878	54 do	pekoe	2700	31
153		881	46 do	pek sou	2300	26 bid
155	Bellongalla	887	12 ch	bro pek	1200	24
156		890	40 do	pekoe	3200	24
157		893	32 do	pekoe	2560	23
158		896	30 do	pek sou	2100	20
159	G T	899	42 hf-ch	pek fans	3150	28
160	Agra Ouvah	902	23 do	bro or pek	1518	66
161		905	74 do	bro pek	4810	49
162		908	30 ch	pekoe	3000	42
166	St. John's	920	25 hf-ch	or pek	1250	61
167		923	25 do	or pek	1300	63
168		926	18 do	pek fans	1224	34
169	Kandaloya	929	75 do	pekoe	3000	28

Lot.	Box.	Pkgs.	Name.	lb.	c.
170 Pitadeniya	932	40 hf-ch	bro pek	2320	34
171	935	24 do	pek sou	1080	27 bid
172 Myraganga	938	34 ch	bro or pek	3060	29 bid
173	941	33 do	pekoe	2640	28
174	944	33 do	pek sou	2640	25 bid
174a	946	9 do	pekoe	855	22 bid
175 Morahela	947	23 do	or pek	2162	31
176	950	18 do	bro pek	1710	30
177	953	22 do	pekoe	1848	27
178 Mossend	956	22 hf-ch	bro or pek	1320	43 bid
179	959	20 do	or pek	1000	41
181 Kotuagedera	965	20 ch	pekoe	1900	24 bid

SMALL LOTS.

E. Benham & Co.

Lot	Box.	Pkgs.	Name.	lb.	c.
7 M K W	38	6 hf ch	fans	360	33
8 A, in estate mark	41	5 ch	bro pek sou	525	15

[Mr. E. John.]

Lot.	Box.	Pkgs.	Name.	lb.	c.
1 A A	425	2 ch	dust	200	20
4 P P P	434	2 ch	bro pek	206	27
5	437	3 do	pekoe	270	26
6	440	3 do	pek sou	267	24
7	443	1 hf-ch	dust	60	26
11 Wadhurst	455	2 ch	bro mix	200	17
12	458	2 do	dust	280	27
16 Ben Nevis	470	6 do	pek sou	516	33
17	473	3 hf-ch	dust	258	27
37 A A	533	2 ch	dust	200	26
43 Mount Clare	551	6 do	fans	600	26
44	554	4 do	dust	400	26
51 W H	575	7 hf-ch	bro pek	448	28
52	578	6 do	dust	540	22
65 Doonhinde	617	3 ch	dust	330	72
74 Glassaugh	644	2 hf-ch	bro pek	130	50
76	650	2 do	fans	150	37
77 Farm	653	6 hf-ch	dust	540	23 bid
78 Lunugalla	656	10 do	bro pek	600	20
80	662	8 ch	sou	640	15
81	665	2 hf-ch	bro pek fans	120	19
86 Galloola	680	3 ch	dust	300	27
87	683	4 do	fans	400	34
93 Wendura	701	6 ch	pek sou	480	24
94	784	4 hf-ch	pek sou No. 2	360	22
97 Vincit	713	5 ch	pek sou	450	22
103 Mahagalatenne	731	6 ch	bro pek	600	22
104	734	4 do	pek sou	360	20
105	737	2 do	pek	200	21
106	740	1 do	dust	100	21
115 Suduganga	767	2 hf-ch	pek fans	160	29
116	770	4 ch	sou	320	25
127 Orangefild	803	3 ch	pek sou	285	21
128	806	1 do	pek fans	95	20
129	809	1 do	bro mix	95	17
130 Eladuwa	812	7 ch	or pek	665	29
131	815	5 do	bro pek	550	29
134	824	2 do	mixed	274	12
140 Bovey	842	1 ch	fans	70	22
141	845	1 do	dust	82	26
154 Joughton	884	6 hf-ch	dust	300	26
163 Callander	911	3 do	pek sou	120	33
164	914	2 do	fans	150	33
165	917	1 do	dust	80	26

[Messrs. Somerville & Co.]

Lot	Box.	Pkgs.	Name.	lb.	c.
5 Mahalla	913	9 ch	pek sou	612	24
6	916	3 do	pek sou No. 2	201	21
7	919	1 do	bro tea	77	18
8	922	1 do	dust	135	22
16 Tientsin	946	4 ch	dust	520	25
19 Dryburgh	955	4 hf ch	fans	260	26
22 D	964	5 ch	pek sou	450	21
23	967	1 hf-ch	br pek dust	85	20
24	970	1 ch	c n	65	18
28 Avissawella	982	8 ch	sou	600	20
34 K G A, in est. mark	1	3 ch	fans	420	20
35	2	2 do	pek dust	280	21
42 Oakham	25	6 ch	pek sou	570	34
43	28	3 hf ch	pek fans	240	27
48 Attiville	43	5 ch	fans	550	20
49	46	2 do	bro mix	200	14
50	49	1 do	dust	137	20
53 Wilpita	58	5 do	pek sou	450	21

Lot.	Box.	Pkgs.	Name.	lb	c.
54	61	1 ch	con	90	19
55	64	3 do	fans	300	18
56	67	1 do	dust	150	19
65 Siriniwasa	94	5 hf-ch	bro pek fans	525	20
66	97	3 do	dust	450	22
67	100	1 do	cou	77	16
68 P T N, in estate mark	103	10 hf ch	pek	560	22
70	109	5 do	pek fans	310	15
71	112	1 do	dust	88	22
74 Paragahakande	121	3 ch	pek sou	285	21
75	124	3 do	fans	330	18
76	127	2 do	red leaf	200	14
81 Bogohagoda-watte	142	3 ch	bro pek fans	375	25
90 Gangwarily	169	7 hf-ch	dust	560	22
92 Glenalla	175	4 ch	dust	580	21
93	178	3 do	fans	300	20
97 Wavena	190	3 ch	pek sou	240	25
98	193	1 hf-ch	dust	80	23
103 Labuduwa	208	7 hf ch	bro pek	435	29 bid
104	211	5 do	or pek	267	29
105	214	7 do	pek	368	26
107	220	2 do	fans	111	23
108	223	2 do	unas	101	22
109	226	1 do	con	60	18
114 Comillah	241	5 ch	pek	500	24
115	244	4 do	pek sou	400	23
116 Blackburn	247	7 hf ch	dust	602	24
117	250	8 do	fans	560	25
118	253	2 ch	bro tea	200	20
119	256	1 do	red leaf	90	16
124 Lyndhurst	271	10 hf ch	pek sou	450	24
125 L	274	10 hf-ch	bro mix	600	18
129 Narangoda	286	3 hf ch	dust	255	22
130	289	1 do	sou	55	20
134 Atherton	301	1 ch	bro mix	100	17
148 N I T	343	7 ch	unas No, 1	525	21
153 Oaklands	358	8 ch	pek sou	680	22
154	361	5 hf-ch	pek fans	360	24
155	364	4 do	dust	320	21
156 T H A De S	367	6 hf-ch	bro or pek	313	22 bid
157	370	6 do	or pek	240	26 bid
158	373	2 ch	bro pek	180	26 bid
159	376	2 do	unas	220	18
160	379	1 do	dust	162	20
161 T H A, in estate mark	382	8 hf-ch	or pek	360	32 bid
162 A S W	385	3 hf ch	bro pek	150	27
163	388	4 do	pek	200	24
164	391	7 do	pek sou	315	22
165	394	2 do	fans	100	20
166	397	7 do	red leaf	280	15
167 Star	400	4 hf-ch	bro pek	200	22
168	403	3 do	pek	150	20
169	406	3 do	pek sou	135	18
170	409	1 do	fans	45	14
171 Hanwella	412	9 hf ch	bro pek	477	27
172	415	10 do	pek	520	24
181 Nehoda	442	4 hf-ch	dust	340	20
194 Daluk Oya	481	10 hf-ch	pek sou	500	25
195	484	11 do	fans	660	26
196	487	4 do	dust	240	26
197 Allagolla	490	6 ch	bro pek	600	31
198	493	1 do	or pek	85	34
205 J M D M	514	3 ch	pek sou	255	22
207	520	3 do	con	240	20
208	523	1 do	dust	150	21

[Messrs. Forbes & Walker.]

Lot.	Box.	Pks.	Name.	lb.	c.
3 Andaradeniya	898	3 ch	pek sou	270	24
4	901	3 do	sou	150	24
5	904	1 do	dust	80	23
6 New Anga-mana	907	5 ch	bro or pek	550	27
12 Maligatenne	925	2 ch	bro pek No. 2	210	23
14	931	2 do	pek ,, 2	200	20
15	934	5 do	pek sou	475	19
16	937	5 ch	fans	575	24
17	940	1 do	dust	135	23
18	943	1 do	sou	66	16
24 W A	961	1 ch	dust	160	20
25 Udapolla	964	6 do	or pek	540	31
28	973	6 do	pek sou	510	24
29	976	2 hf ch	dust	280	25
33 Ewhurst	988	5 do	fans	370	25
34 Mahayaya (Veneta chts.)	991	5 hf ch	bro or pek	360	32
35	994	11 do	bro pek	660	30
36	997	12 do	pek	672	30
37	1000	10 do	pek sou	530	28
38	1003	3 do	sou	174	28
39	1006	1 do	dust	100	22
43 Thedden	1018	1 ch	dust	155	20
47 Dambagas					

Lot.		Box	Pkgs.	Name.	lb.	c
	talawa	1030	5 ch	pek sou	450	25
48		1033	5 hf ch	bro pek fans	390	31
50	Bickley	1089	12 do	pek sou	600	29
51		1042	3 do	dust	210	27
52	Rockside	1045	8 ch	sou	640	26
53		1048	2 do	bro mix	170	23
54		1051	3 do	dust	405	26
56		1057	5 do	bro pek fans	600	29
60	P A N, in est. mark	1069	2 ch	dust	300	24
67	Corfue	1099	8 do	bro pek fans	640	29
72	Penrhos	1105	3 hf ch	fans	210	29
85	Mah Uva	1144	7 do	dust	795	27
91	Polatagama	1162	3 ch	dust	450	21
101	Fairlawn	1192	8 do	pek sou	640	30
102		1195	3 hf ch	dust	255	28
112	Palmerston	1225	3 ch	pek sou	240	41
118	Halwatura	1243	7 hf ch	dust	665	23
129	A B F	1276	5 ch	bro pek	500	25
130		1279	3 do	pek	300	23
131		1282	5 do	pek ou	500	20
132		1285	1 hf-ch	pek sou	50	20
133		1288	2 ch	congou	200	16
137	Harrington	1300	6 do	or pek fans	420	38
138	D B R	1303	8 hf ch	bro pek fans	581	35
139		1306	2 ch	pek sou	176	31
140		1309	2 hf-ch	dust	178	28
146	St. Stephen's	1327	6 do	br pek	30	
[illegible]		1333	6 do	pek sou	306	24
149		1336	3 do	dust	219	26
150		1339	4 do	bro mix	220	19
151	Doranakande	1342	6 ch	bro pek	600	30
153		1348	4 do	pek No. 2	360	29
154		1351	6 do	pek sou	540	23
155		1354	1 do	dust	112	18
157	Chesterford	1360	1 do	congou	90	22
167	Galapitakande	1 90	5 hf-ch	dust	375	29
179	P G A	1426	6 ch	bro pek	582	26
181		1432	8 do	pek sou	600	20
182		1438	4 hf ch	dust	280	22
183		1438	3 do	fans	256	25
184	Mawiligangawatte	1441	9 hf ch	bro or pek	495	27
187		1450	2 ch	fans	186	23
188		1453	4 hf ch	dust	360	25
190	Kennington	1459	1 ch	bro pek fans	70	27
191		1462	6 do	unas	570	20
192		1465	4 do	dust	516	22
195	Weweywatte	1474	1 hf ch	dust	55	21
199	Quilon	1486	7 ch	bro tea	532	16
202	P S P	1495	8 hf ch	pek fans	672	22
203	Etungahatenne	1507	3 ch	pek sou	294	20
207		1510	2 do	pek sou No. 2	160	18
212	Elfindale	1525	4 ch	sou	400	20
213		1528	4 do	fans	400	20
214		1531	2 do	dust	200	23
218	Matale	1543	3 hfch	fans	270	20
221	Parsloes	1552	6 ch	pek sou	480	26
223	Y	1558	3 ch	bro pek	339	18
231	Walton	1582	2 hf-ch	bro tea	100	25
232		1585	2 do	dust	180	26
235	Frogmore	1594	14 do	or pek	630	45
239		1606	2 do	pek dust	180	27
245	Old Maddegama	1624	7 ch	bro pek	560	30
247		1630	8 do	sou	760	23 bid
260	Macaldeniya	1669	5 do 1 hf-ch	or pek	555	29
263		1678	2 do	dust	170	26
264		1681	2 do	unast	120	25
265		1684	2 do	bro mixed	120	22
286	N A	1747	1 ch	dust	122	26
287		1750	1 do	dust	144	24
288		1753	4 do	sou	360	19
289	G D	1756	4 do	bro pek	372	25
290		1759	4 do 1 hf-ch	pek	372	23
291		1762	4 ch	pek sou	288	21
292		1765	1 do	sou	75	19
293		1768	3 do	red leaf	230	17
298	Belgodde	1783	11 hf-ch	bro pek	550	28
299		1786	8 do	pek	400	26
300		1789	9 do	pek sou	450	24
301		1792	6 do	sou	270	21
302		1795	1 do	dust	60	24
308	Ganapalla	1813	1 ch	pek sou	75	23
318	Erracht	1843	3 do	br pk fans	348	22
319		1846	2 do	fans	172	22
320		1849	3 do	dust	525	21
334	Hopton	1891	6 do	dust	660	26
335	H T E in est. mark	1894	5 do	s u	400	16
336	Allerton	1897	2 do	sou	180	19
337		1900	4 do	dust	480	21
340	Clyde	1909	4 ch	pek sou	360	29
341		1912	1 do	dust	150	26
343	B B in est. mark	1918	2 hf-ch	bro pek	120	26
344		1921	1 ch	pek	100	27
345		1924	2 do	dust	170	26
348	St. Martin	19 3	17 hf-ch	pek sou	[illegible]	23
349		1936	2 do	congou	[illegible]	19
350		1939	7 do	fans	[illegible]	[illegible]
351	W L	1942	3 do	bro pek	168	[illegible]
352		1945	2 do	pek	112	[illegible]
353		1948	5 do	sou	[illegible]	[illegible]
354		1951	1 do	dust	74	23
355		1954	1 do	red leaf	56	16
356	T T	1957	3 ch	dust	435	22
357		1960	3 hf-ch	fans	174	22
361	Talgaswela	1972	3 ch	bro mix	285	16
375	T'Villa	2014	3 do	fans	396	22

CEYLON COCOA SALES IN LONDON.

(From Our Commercial Correspondent.)

MINCING LANE, May 11.

"Ceylon."—GW 1, 28 bags sold at 82s; 4 bags sold at 77ss; ditto 2, 15 bags sold at 72s.

"Kanagawa Maru."—Katugastota, 37 bags sold at 94s 6d; 2 bags sold at 77s 6d; 3 bags sold at 73s 6d; 3 bags sold at 58s 6d; Morankande 1 Cocoa, 25 bags sold at 89s; ditto 2, 45 bags sold at 80s.

"Glenshiel."—Alloowiharie 20 bags sold at 95s; Dickeria, 12 bags sold at 95s.

"Wakasa Maru."—Alloowiharie A, 17 bags out at 95s; Strathisla A, 4 bags out.

"Kanagawa Maru."—Meegama A, 2 bags sold at 61s 6d; B, 1 bag sold at 57s; Palli London, 31 bags sold at 97s 6d; ditto 2, 2 bogs sold at 72s 6d; ditto 1, 2 bags sold at 63s 6d; DB, in estate mark, 21 bags sold at 87s; Gilbury, 11 bags sold at 85s 6d; ditto 2 bags sold at 66s 6d; 1 bag sold at 60s; AS, in estate mark, 80 bags sold at 67s; O MAK, in estate mark, 43 bags sold at 73; MB, in estate mark, 23 bags sold at 83s 6d.

"Bombay."—O LO, in estate mark, 4 bags sold at 69s.

"Ankuor."—Kaduwella No. 1, 12 bags sold at 79s 6d.

CEYLON CARDAMOMS SALES IN LONDON.

"Kanagawa Maru."—Seeds, 1 case sold at 2s Nagalla O, 1 case sold at 2s 4d; ditto 1, 3 cases sold at 1s 8d; Knuckles Group, Madulkelle Mysore A, 4 cases sold at 2s 3d; ditto 6 cases sold at 2s 4d; ditto Ceylon Seeds, 4 cases sold at 2s 2d; Duckwari A1, 2 cases sold at 4s 2d, ditto C1, 8 cases sold at 2s 9d; ditto A Splits, 2 cases sold at 3s 7d; Kellie Mysore, A, 1 case sold at 1s 10d; ditto B, 1 case sold at 1s 4d.

"Inaba Maru."—Nawanagalla 1, 2 cases sold at 3s 10d; ditto 2, 6 cases sold at 2s 5d; 2 cases sold at 1s 4d; ditto seed, 7 cases sold at 2s.

"Kanagawa Maru."—Deyanelle No. 1, Bulked, 3 cases sold at 1s 6s; Deyanelle No. 2, 1 case sold at 1s 1d; C Galla A, 1 case sold at 1s 6d; ditto B, 1 case sold at 1s; ditto C, 1 case sold at 10d; ditto D, 1 bag sold at 10d; ditto E, 1 case sold at 2d.

"Egypt."—CCC, in estate mark, 2 cases sold at 2s 6d; ditto 2 cases sold at 2s 5d; ditto 1 case sold at 2s 6d; ditto 1 case 2s 5d; MMM, in estate mark, 5 cases sold at 3s 2d; ditto 1 case sold at 2s 6d; ditto 5 cases sold at 2s 5d; CT, in estate mark, 3 cases sold at 3s 5d; ditto 5 cases sold at 2s 7d; ditto 3 cases sold at 2s 3d; MG, in estate mark, 1 case sold at 3s 5d; ditto 1 case sold at 2s 7d: CCC, in estate mark, 4 cases sold at 3s 2d; ditto 2 cases sold at 3s 3d: ditto 5 cases sold at 3s 2d; ditto 4 cases sold at 3s 3d; ditto 1 case sold at 1s 1d; ditto 12 cases sold at 2s 6d; ditto 1 case sold at 1s 1d; 1 case sold at 2s 8d.

"Kanawaga Maru."—Elkadua O, 2 cases sold at 2s 8d; ditto 1, 2 cases sold at 2s 3d; ditto 1, 1 case sold at 2s; ditto B and S, 1 case sold at 1s; Seed, 1 case sold at 1s 10d: Midlands O, 3 cases sold at 3s 1d; ditto 1, 5 cases sold at 2s 2d; ditto 2, 1 case sold at 1s 3d; ditto B and S, 2 cases sold at 2s 3d; Seed, 1 case sold at 2s; OBEC, in estate mark, Nilloomally, 1 case sold at 1s 10d; ditto Dangkande. 2 cases sold 2s 5d; 1 case sold at 1s 8d; ditto Seed, 1 case sold at 2s Pitakande Group, 6 cases sold at 2s 7d; ditto No. 2, 2 cases sold at 1s 8d; 6 cases 1s 9d; ditto 1 bag sold at 9d; ditto 1 bag sold at 1 10d.

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